

* UMass/AMHERST *



312066 0333 3412 4

LIBRARY
OF THE



MASSACHUSETTS
AGRICULTURAL
COLLEGE

SOURCE *Colleg. funds*
Per
v. 61-62

Per ~~G~~ⁱⁿ Per G 166
v. 61-62



JUNE 30, 1917.

THE
GARDENERS' CHRONICLE

A Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS.

(ESTABLISHED IN 1841.)

VOL. LXI.—THIRD SERIES.

JANUARY TO JUNE, 1917.

LONDON:

41, WELLINGTON STREET, COVENT GARDEN, W.C.

1917.

INDEX OF CONTENTS.

JANUARY TO JUNE, 1917.

(FOR SPECIAL HEADINGS SEE UNDER BOOKS: CERTIFICATES; LAW NOTES; NURSERY NOTES; OBITUARY; PLANT PORTRAITS; PLANTS, NEW; SCIENTIFIC COMMITTEE; SOCIETIES; AND ILLUSTRATIONS.)

A

ABBOTT'S WOOD, Godalming, shrubs damaged by frost at, 160
 Abies Douglasii in chalky soils, 50
 Acer Davidii, 46
 Acetylene gas, forming by means of, 126
 Aciphylla Colensoi at Leontidejler, 255, 265
 Acorns and Chestnuts from Verdun, 6

Agricultural education for disabled men, 254
 Agricultural organisation in France, 36

Albanum plat-antibolium, 17
 Alcedium House, Elstree, the gardens in winter at, 95; the effect of frost on shrubs at, 124

Allahabad, flower shows at, 19, 230
 Allotments, 194, 201; a manual on, 204; free watering of, in America, 214; in Belfast, 155; in Brussels, 145; in Edinburgh, 6; in France, 127; in Glasgow, 161; in Leeds, 110; in Scotland, 87, 126, 127; in West Scotland, 141; method of cropping of, 154; operations in, displayed on the cinematograph, 194; protection of, 261; rights of holders of, 211; Sunday labour on, 127

Almond, flowering of, 175
 Alpine garden, the, 211, 241
 Alpines, the cultivation of, without a rock garden, 211

America, allotments in, 214; exports of Apples from, 41; free gift of seeds in, 83; note the hardness of, 211, 222, 242, 260

American Apples, a trial of, 116
 American blight, specific for, 27
 American President's appeal for in crossed crops, 162

Anemone Pulsatilla, 209, 226; A vitifolia, 88

Antirrhinum, rust disease of, 155
 Aphid eggs, 22

Aphis, woody, specific for, 27
 Apriay, the 167, 177, 255

Apple Allington Pippin, 152
 Apple Chelmsford Wonder, 40

Apple blossom, the glory of, 225
 Apple sucker, the story of, 251

Apple trees, development of fruit buds in, 40; development of rot fungus at different temperatures, 156; scab and canker diseases of, 57; pruning newly planted, 152; top grafting, 150

Apples, American exports of, 41; mysterious spotting of, 40; top grafting, 150; trial of American, 116

Appointments, agricultural, 7
 Artichokes, Globe, 2; Jerusalem, 60, 129

Artificial manures, 82
 Ascorb, food production under glass at, 174

A-poracous, a rust resistant, 214
 Astelia Banksii, 22
 Austria, note from, 95

Australian vegetable resources, 224
 Avicenna officinalis, the Grey Australian Mangrove, 56
 Azolla caroliniana and Mulgedium Plumieri as garden escapes, 255, 247

B

BACTERIA, nitrogen-fixing, 144
 Bacterium campestris; Black Rot disease of Cabbage, 115

Barley, L. H. *The Standard Cyclopedia of Horticulture*, 74

Barlow, Mr. A., appointment of, 7
 Barlow, Mr. Graham, honour for, 235

Batley, Capt., awarded the Cross of the Legion of Honour, 7

Beaulieu grown in shade, 85, 154
 Barley, the cultivation of, 112

Boston, Harold *British Insects and How to Know Them*, 245

Bathurst, Capt. Charles, appointment of, 6

Batsford, Park, Gloucestershire, effect of frost on plants at, 245

Beans, Broad, 221, 222, 242; Butter, 167, 191, 201, 212, 221, 251

Dutch Haricot, 202; Haricot, 107; Mastapepe, 142; Mont d'Or, 142; Wax pod (see Butter Beans for cattle, 67; for drying, 201; planting of Runner, on lawns, 166, 181; Runner, grown without supports, 153; varieties of, suitable for drying, 112

Bees, the management of, 167, 177, 253

Beet, 54, 123; for preserves, 119; the hardness of, 211, 222, 242, 260

Beets, Spinach, 50, 115; sugar, 30, 119, 125, 208; R.H.S. trial of, 242

Belfast, allotments in, 155
 Belgian Committee, address of the, 62

Belgian gardening at Letchworth, 87

Belvoir, spring flowers at, 29
 Benevolent Institution, Gardeners' Royal, 6; annual meeting, 42; Worcester Auxiliary of the, 344

Bestest to a gardener, 6, 62
 Berberis subacaulata, 53

Birds and fruit buds, 53; as allies, 251

Black Currant, abnormal flowers of, 160

Blenheim Palace, Woodstock, Orchids at, 53

BOOKS, NOTICES OF, **Algae** (*W. S. Hooper*), 110; Allotments and Small Gardens in War Time (*Austin & McLean*), 79, 65; Animals and Biennials (*Centradie J. L. Lyle*), 3; **B-etamed** Magazine, 154, 265; British Grown Timber and Timber Trees (*Lucas D Welch*), 3; British Insects and How to Know Them (*Harold Bustin*)

245; **Census of New South Wales Plants** (*J. H. Maiden*), 195, 225; **Centers and Taxids of Japan** (*E. H. Wilson*), 179; **Cropping of an Allotment of Small Kitchen Garden** (*Royal Horticultural Society*), 154; **Cultivation and Manuring of the Kitchen Garden** (*Royal Horticultural Society*), 64; **Culture of Profitable Vegetables in Small Gardens** (*Station and Sons*), 63; **Early Pests** (*L. Geoffrey Henslow*), 205; **Enquiry into Plants and Minor Works on Odours and Weather Signs** (*Alephrastus*), 209; **Field Notes on Sweet Peas** (*Leslie L. Morse and Frank G. Cuthbertson*), 100; **Food, Fruit and Flowers** (*Walter P. Wright*), 139; **Food Production in Cottage and Allotment Gardens** (*S. Hosking*), 112; **Forest Flora of New South Wales** (*J. H. Maiden*), 225; **Genus Eucalyptus** (*J. H. Maiden*), 148; **Herb Cataloguing for Boys and Girls** (*Mrs. L. Chamberlain and Miss E. C. W. Hocking*), 127; **Herbs Used in Medicine** (*Mrs. John D. Ellis*), 115, 250; **Hints on Potato Growing** (*L. J. Allsop*), 100; **Johnsons' Gardeners' Dictionary and Cultural Instructor** (*J. Vasey and A. Hensley*), 140; **Jottings of a Gentleman Gardener** (*M. F. Ellis*), 225; **List of the Most Desirable Varieties of Most Kinds of Fruits** (*Royal Horticultural Society*), 166; **Making and Manuring of an Allotment** (*L. S. Gully*), 204; **Notes on Medicinal Plants** (*L. Hosking*), 100; **Nuts; a Profitable Crop for Waste Land** (*G. Bingham and Co.*), 64; **Orchid Review** (*H. A. Bulley*), 76; **Parish War Societies** (*William Richard Bodley*), 23; **Plantae Wisconsinense** (*C. S. Sargent*), 127, 111; **Pruning Manual** (*L. H. Baily*), 135; **Publications Received**, 3, 16, 23, 53, 64, 76, 112, 127, 166, 176, 305, 225, 245, 264

Rockeries: How to Make and Plant Them (*H. E. Thomas*), 169; **Rose Annual** (*H. R. Dainton and Century Page*), 244; **Science and the Nation** (*L. C. Seward*), 239; **Select Varieties of Roses and Instructions for Pruning** (*National Rose Society*), 121; **Sweet Pea Annual** (*J. S. Broughton*), 40; **The Worker's Garden** (*Frank H. Butler and Cyril Harding*), 112; **Tropical Agricultural type** (*Hubert Vernon H. Jeay*), 81; **Vegetable** (*Henry J. Day*), 225; **Vegetable Culture for All** (*Evans*), 195.

Broccoli or Kale, 50
 Boston, U.S.A., flower show at, 127

Bottles for fruit preserving, 232

Bracken as a vegetable, 119, 126; the use and eradication of, 244

Bradford, hizzard at, 156

Brassicas, nitrates for, 252

Brasso-Cattleya Cynthia, 190
 Brasso-Laelia Jessica, 220

Brasso-Laelia-Cattleya Admiral Sams, 230; B. L. C. Diana, 121; B. L. C. Rumania, 22

Breeding, "pure line," 224
 Briscoe, Mr. T. W., 19

Broad Beans, 221, 222, 242
 Broccoli, the hardness of, 212; the planting of, 221, 252

Brooklyn Botanic Gardens, Nephrolepis in, 64
 Brown-rot disease of fruit trees, 54, 153

Brugmansia arborea, 52
 Bulbs, allotments in, 145

Brussels Sprouts, 59, 90, 161, 171, 181, 206, 211, 212, 222

Buckwheat, 177
 Bulb garden, the, 115

Bull-growing on Pacific Coast, 63
 Bulbs, home-grown and foreign, 115; imports of, from France, 185; cold storage of, 65

Business names, the registration of, 101

Butcher, Gerald W. (*The Worker's Garden*), 112

Butter Beans, 107, 191, 201, 212, 221, 251

C

CABBAGE, black rot disease of, 115; for feeding cattle, 157

Cabbage root fly and tarred felt discs, 127

Cabbages, 50, 228, 260
 Calanthes, effect of fog on, 33

Calceolaria Burbidgei, 53; origin of, 76

Calyces, tearing of, 238
 Calyx splitting in Carnations, some causes of, 7

Campanula Ephestra, 190; C. speciosa, 166; C. Stansfeldii, 39

Carnations, causes of calyx splitting in, 7; new varieties of Perpetual Flowering, 51

Carrots, 59; as a farm crop, 120
 Castlewellan, fire at, 17

Catalpa, old seed and plant, 9, 29, 41, 54, 65

Catalpa, regulations concerning the issue of, 110

Caterpillars, a plague of, 229, 255
 Cattle, Beans for, 67; Cabbage for, 157; fattening of, 90

Cattleyas: Eileen, 190; Rainbow, 45
 Cecil, Mr. Evelyn, honour for, 235

Celery, 59, 191; as a green vegetable, 171; R.H.S. trial of varieties of, 47
 Celery fly, the, and Parsnips, 261
 Census of agricultural stock, 177
 Centenarian gardener, a, 127

- CERTIFIED PLANTS:** *Androsace* ciliata, 176; *Antifonium Prina* Donna, 236; *Brasso-Cattleya* Bianca var. *Daphne*, 102; B. C. Lady Jellicoe, 137; *Brasso-Latho* Cattleya Jean var. *Mrs. Gratrix*, 102; *Carnation* Maldwin Drummond, 236; *Cattleya* Cowaniana alba, 206; C. C. alba var. *Princess*, 147; C. *Enid* var. *Mrs. Gratrix*, 102; C. *Enid* var. *Silver Queen*, 138; C. *Enid* alba var. *Fairy Queen*, 147; C. *Mabel*, 102; C. *Mendellii* Fairy Queen, 247; C. *Schröderae* var. *Manda*, 206; *Corylus* *Avellana* contorta, 30; *Cyclamen* *Cherry* *Ripe*, 101; *Cyclamen* *Crimson* *St. George*, 30; *Cymbidium* *Alexanderi*, 128; C. A. *exquisitum*, 102; C. A. var. *Celeste*, 206; C. *insigne* album, 101; C. *Mars*, 206; C. *Schlegelii* *Conyngham* var. 55; C. *Sch. roseum*, 55; C. *Sybil* *Conyngham* var., 128; *Cypripedium* *Acteas* *Cainiae* *Harefield* *Hall*, 10; C. *Aethea*, 10; C. *Clarke* var. *compactum*, 128; C. *Erythraea* *The Baron*, 137; C. *Garland* var. *Lord Northbourne*, 65; C. *Greyii* *magnificum*, 206; C. *insigne* *speculatum*, 55; C. *Iona* *Carter* *Place* var. 128; C. *Lathamianum* var. *Cardinal* *Mercier*, 30; C. *Marshal* *Haig*, 55; C. *Nigger*, 30; C. *niveum* *The Grange* variety, 237; C. *Persius*, 147; C. *Ranji*, 167; C. *Traceyanum* var. *Percy*, 55; C. *Verdun*, 55; *Dendrobium* *Atherton*, 147; D. *Chelye* *West Point* var. 147; D. *Illustra* var. *Florence* *Bartlett*, 196; *Dontzia* *Vilmoriniana*, 236; *Eulophella* *Rolfæ*, 101; *Exochorda* *macrantha*, 216; *Freesia* *La France*, 76; *Iris* *Rindove*, 236; *L. sibirica* *Perry's Blue*, 236; *Laelio* *Cattleya* *amabile* var. *Ashlandiae*, 10; L. C. *Beatrice* var. *Ashworthiae*, 147; L. C. *Briantia* var. *Lady Bromley* *Wilson*, 65; L. C. *General* *Maudie*, 120; L. C. *Linda*, 128; L. C. *Alonius*, 55; L. C. *Serbia* *Ashlandiae*, 55; L. C. *S. var. perfecta*, 176; L. C. *S. var. The President*, 120; L. C. *Trident*, 77; *Magnolia* *Watsonii*, 236; *Miltonia* *Bleuana* var. *Priam*, 206; M. *Princess* *Mary*, 257; M. *Venus*, 101; M. *vestivaria* var. *Sir Mervyn* *Buller*, 236; *Mycositis* *alpestris* *Indigo* *Queen*, 238; *Narcissus* *Bona* *parte*, 137; N. *Helmet*, 137; N. *Michael*, 176; N. *poeticus* *ornatus* *plenus*, 197; N. *Queen* *of* *Dawn*, 197; N. *Vintage*, 197; *Olfonditia* *Adonis*, 167; O. *aurea* var. *Beauty*, 206; O. *Beuchensis*, 167; O. *Bradshawiana* *Atras*, 247; O. B. var. *Columbia*, 206; O. *Cardinal*, 196; O. *Coronation* *Orchidhurst* var., 157; O. *Diana* *magnificum*, 102; O. *Dorothy*, 128; O. *General* *Haig*, 216; O. *Glady* var. *Smorba*, 167; O. *Golden* *Queen*, 167; O. *Gratrix* *amabile* var. 30; O. *Gratrix* *amabile*, 128; O. *Henry*, 128; O. *Jane* var. *Clarity*, 65; O. *Jean* var. *Ashlandiae*, 65; O. J. *Broadlands* var., 102; O. J. var. *Conyngham*, 65; O. *Keighley* *ensis* var. *magnifica*, 147; O. *Madeleine* var. *Evansiae*, 128; O. M. var. *Oporto*, 206; O. *Mazdi* *Sander* *alba* *Ashworth's* var., 147; O. *Prince* *Albert*, 247; O. *Red* *Cross* var. *Scarlet* *Pimpernel*, 147; O. *St. Fuscian*, 247; O. *St. Quentin*, 138; O. *The* *Prince*, 257; O. *Tigris*, 206; O. *Zenobia* *Beardwood* var., 167; O. Z. var. *Hamilton*, 206; O. Z. var. *Yellow* *Suprise*, 65; *Odontoglossum* *amabile* *Gilroyd* var., 102; O. *ardentissimum* var. *Caroline*, 102; O. a. var. *Daphne*, 167; O. a. *Glady*, 167; O. *Black* *Watch*, 55; O. *Ceres* *Sir* *Trevor* *Lawrence's* var., 102; O. *Cobbiae* var. *Mars*, 102; O. *Conqueror*, 30; O. *crispum* *Dreadnought*, 176; O. c. *Haide*, 247; O. c. var. *Hindu*, 65; O. c. *Kama*, 247; O. c. *Matador*, 247; O. c. var. *Mrs. E. W. Thompson*, 102; O. c. var. *Madame* *Lièvre*, 10; O. c. *Orestes*, 55; O. c. *Ragged* *Robin*, 167; O. c. var. *Rose*, 167; O. *eximium* *Marchet*, 247; O. e. var. *Red* *Monarch*, 10; O. e. var. *Zenith*, 65; O. *fasciatur* *aureum*, 247; O. *Felicia*, 30; O. *Grand* *Duke* *Nicholas*, 65; O. *Illustrious*, 55; O. *Jasper* var. *Ashworthiae*, 102; O. J. *Conyngham* var., 167; O. *Lambeianum* var. *Hazel*, 206; O. L. var. *Ruby*, 206; O. *laudatum* var. *Majestium*, 10; O. *Leaeanum*, 247; O. *lochristense* *Conyngham* var., 128; O. *Louisa* var. *splendens*, 147; O. *Mary*, 128; O. *mirum* *Haddon* *House* var., 206; O. *Moonlight*, 102; O. *Rex*, 176; O. *Thwaitesiae* var. *Gurka*, 167; O. *Wilps*, 167; O. *Zoë*, 206; *Oncidium* *superbissimum* *Bronze* *King*, 247; *Primula* *malacoides* *alba* *plena*, 76; *Primula* *obconica* *Eureka*, 196; *Primula* *sinopurpurea*, 196; *Rhenum* *Alexandrae*, 236; *Robinia* *Kelisevi*, 236; *Rosa* *Hugonis*, 196; *Schizanthus* *Dr. Badger's* *Hybrids*, 196; *Scleropedium* *caudatum* *Sanderæ*, 196; *Sophro-Cattleya* *Marathon* *superba*, 167; S. *Laelio* *C. Mense*, 167; S. L. C. M. var. *General* *Nivelle*, 138; *Stocks* *Crimson* *Brompton*, 237; *Mammoth* *Pale* *Lilac*, 237; *Mammoth* *Pyramidal* *Flesh* *Colon*, 237; *Mammoth* *Rose*, 237; *Nive* *Giant* *Light* *Blue*, 237; *Sweet* *Pea* *Alexander* *Malcolm*, 257; S. P. *Elegance*, 257; S. P. *Mrs. Tom* *Jones*, 257; *Stringa* *Miss* *Ellen* *White*, 236; *Trollius* *Ledebouri*, 257; *Tulip* *Eclipse*, 217.
- PRELIMINARY COMMENDATION:** *Miltonia* *Fairy* *Queen*, 257; *Olfonditia* *Madeline* var. *Opal*, 102; *Odontoglossum* *Alcibades*, 77; O. *crispum* *President* *Wilson*, 120; O. *Fabia* *splendens*, 216; O. *Felicity*, 257; O. *Peter*, 30.
- CERTIFIED VEGETABLES:** *Celesties*: *Clayworth* *Prize* *Pink*, 47; *Invisible* *White*, 47; *Savoys*: *Green* *Curled*, 128; *Late* *Drum* *head*, 128; *New* *Year*, 128; *Ormskirk*, 128; *Ormskirk* *Hawthorn* *Selected*, 128; *Ormskirk* *Late* *Green*, 128.
- Charlock* as a *Corn* *weed*, 129.
- Chester*, a new horticultural college at, 96; war gardening at, 63.
- Chestnuts* and *Acorns* from *Verdun*, 6.
- Chestnuts*, *Horse*, the need for harvesting, 235.
- Chicken*, shelter for, 157; the hatching of, 66.
- Chicory*, 59.
- China*, new plants from, 46.
- Chionodoxa* *Tunali*, 186, 206, 226.
- Chrysanthemum* *cinerariifolium*, the insect-powder plant, 38.
- Chysis* *bracteosus*, 230.
- Cinematograph* film showing operations on allotments, 194.
- Clematis* *vedrariensis*, 94.
- Connet*, M. *Gustave*, 7.
- Clover* for hay, 91.
- Clubbing* in *Brassicas*, treatment of, 136.
- Coffee* disease, 108.
- Confessions* of a *novice*, 52, 124, 251.
- Conifers*, notes on, 95; of *Japan*, 179.
- Cooper*, Mr. J. A., appointment of, 185.
- Copped* *Hall*, *Essex*, destroyed by fire, 194.
- Corley* scab disease of *Potato*, 2.
- Corn* crops, the, 183; multiplying the, 177, 187; world's shortage in, 28; condition of the, 188; late spring sowing of, 208; weeds in, 197, 248.
- Cotoneaster* *humilis*, 140.
- Cows*, the management of dairy, 55; the treatment of, before calving, 147.
- Craigendowie* *Training* *School* for *Women*, 166.
- Crickets* *Bats*, *Willow* *Timber* for, 12.
- Crops* and *stock* on the *home* *farm*, 43, 55, 66, 79, 90, 112, 120, 129, 147, 157, 167, 177, 187, 197, 208, 218, 225, 238, 248, 258, 264.
- Crown* *gill* disease, 118.
- Cruise's* *Island*, *Juan* *Fernandez*, 199, 209, 220, 230, 240.
- Chicken*, arrival of the, 195.
- Clothes*: in frames, 158; ridge, 123.
- Cyprus* *glabra*, 95.
- Curran's*, *standard* *trees* of, 55.
- Cyclamen*, the cultivation of, 52.
- Cymbidium* *Beatrice*, 45; C. *Sybil*, 45.
- Cypher*, Messrs. J. and Sons, *Orchids* at, 151.
- Cypripedium* *General* *Pétain*, 220; C. *Helice*, 190; C. *quarriense*, 169.
- Cypripediums* from *Walton* *Green*, 45; *hybrids*, 87.
- D**
- Dairy* *flies*, 175.
- Daffodils* in 1917, 234.
- Dairy* *cows* and *grass* *land*, 248.
- Damp-off* disease cured by sulphur, 115.
- Darlington*, H. R., and *Courtney* *Page* (*The* *Rose* *Annual*), 244.
- Dendrobium* *Alpha* var. *Eleanor*, 190.
- Dendrobiums* at *Cheltenham*, 151.
- Dendrochilum* *latifolium*, 121.
- Delyanisperma* *distichum*, 225.
- Digging*, the incredible profit of, 156.
- Divers*, Mr. W. H., 62.
- Douglas*, *Sergeant* *F. V.*, the late, 7.
- Douglas* *Fir* in *Chalky* *soils*, the, 50.
- Drainage*, the mole system of, 161.
- Drury*, Mr. C. T., 51.
- Dutch* *flowers*, imports of, 74.
- Epidendrums* at *Cheltenham*, 250.
- Eriogon* *R. Ladhams*, 106.
- F**
- "*FARMER*" *Lecture*, the, 214.
- Fayou*, the late M. *Oscar*, 84.
- Farm* *crops* and *stock*, 43, 55, 66, 79, 90, 112, 120, 129, 147, 157, 167, 177, 187, 197, 208, 218, 228, 238, 248, 258, 264.
- Farm* *crops*, condition of the, 27.
- Farm* *labourers*, civilian prisoners as, 208.
- Farmers*, credit for, 191.
- Farmyard* *manure*, amount of, used annually, 7.
- Feeding* *stuffs*, shortage of, 167.
- Fertilisers*, cheap, 245.
- Filberts* and *Cobnuts*, 12.
- Finger* and *Toe* disease, to combat, 136.
- Flora* of the new paper currency, 88.
- Flower* *garden*, work in the, 4, 14, 37, 48, 60, 72, 85, 97, 116, 124, 135, 143, 152, 163, 172, 183, 192, 203, 213, 223, 233, 243, 252, 262.
- Flowers*, double, 254; in season, 51, 244.
- Fly* *larvae* in *horse* *manure*, the destruction of, 8.
- Fog*, effect of, on *Calanthes*, 38.
- Food* *conservation*, the need for, 202.
- Food* *production*: by school children, 16, 181; in Scotland, 6; in Scottish *municipal* *parks*, 62; in U.S.A., 245; local authorities and, 16; hints on increasing the, 2, 18, 28, 34, 46, 58, 71, 83, 107, 114, 123, 133, 141, 152, 161, 171, 181, 191, 201, 211, 221, 231, 242, 251, 260; under glass, 118, 174.
- Forcing*: by means of *acetylene* *gas*, 126; shrubs, 40; with hot-beds seventy years ago, 17.
- Foreign* *correspondence*, 54, 122.
- Forestry*, 140; and hygiene, lecture on, 174.
- Forests* in the war area, the re-establishment of, 18.
- France*, agricultural organisation in, 86; agricultural education for disabled service men in, 254; allotments in, 127; notes from, 84; imports of bulbs from, 185; vegetable growing in, 215.
- Fraser*, J., and A. *Hemley* (*Johnston's* *Gardeners' Dictionary*), 140.
- French* *horticulture* after the war, 27, 165.
- Frost*: and the garden, 127; and rock plants, 94; effect of, on *Lilium* *bulbs*, 159; effect of, on shrubs, 124; grass protects ground from, 65; in the Midlands, 63.
- Fruit* and *Brassicas*, 123; and the food supply, 165; drying of, 251; Government offer for, 247.
- Fruit* *crops* in the Netherlands, 254.
- Fruit* *plantations*, the under-cropping of, 123.
- Fruit* *planting*, problems in, 145.
- Fruit* *preserving*: bottles for, 232; without sugar, 231; honey for, 222.
- Fruit* *prospects* and *mulching*, 175, 191; register, 116.
- Fruit* *Trees*, *Brown* *Rot*, disease of, 54; problems in slanting, 106; the pruning of, in frosty weather, 83, 101; winter wash for, 56.
- Fruits* under glass, cultivation of, 4, 15, 24, 37, 48, 61, 72, 85, 96, 109, 117, 124, 135, 143, 153, 163, 173, 183, 193, 203, 213, 223, 233, 243, 253, 262.
- Fuchsia* *splendens*, 245, 264.
- Fumigation* with *hydrocyanic* *acid* *gas*, 164.
- Fungus* which attacks *canvas*, a, 224.

G

GALANTHUS Imperati Atkinsii, 100
 Galloway garden, notes from a, 13,
 69, 105, 149, 169, 219, 259
 Galt A. S. (*The Making and Man-
 agement of an Allotment*), 204
 Gardener centenary, 127
 Gardener-soldier in India, a, 19
 Gardeners' and national service,
 62, 144; Bequests to, 6, 62
GARDENERS' AND THE WAR:
 Balfour, Capt. L. C., 235; Baxter,
 Capt. Ian, awarded the Military
 Cross, 39; Benbow, Lieut. E. L.,
 awarded the Military Cross, 76;
 Beney, M. Benoit, 255; Crame,
 Lance-Corp., awarded the D.C.M.
 and Russian Medal of St. George,
 18; Cutbush, Lieut. Douglas,
 awarded the Military Cross, 76;
 Dugoy, M. Charles, 99; Nomblot,
 M. Alfred, 99; Passy, M. Pierre,
 99; Rivoire, Capt. Philippe, 127;
 Voitch, Capt. J. L., 225; Vil-
 morin, M. Jean D., 175; Vil-
 morin, M. Pierre Léveque de,
 awarded the War Cross, 175, 255.
KILLED: Amphlett, Lieut. R. E.,
 175; Bordett, Harold B., 110;
 Carriat, M., 255; Crawshaw,
 Lionel, 215; Cutbush, Capt.
 Douglas, 175; Cutburt, George
 Charles Pratt, 195; Divers, John
 L., 18, 39; Doe, William Edward,
 127; Dwyer, Sergeant P. V., 7;
 Douglas, A., 195; Foster, Lieut.
 H. L., 258; Hayes, James, 235.
M'Lachlan, William, 195; Page,
 Private T. S., 119; Parkes,
 Private, Allen, 110; Parton,
 Sergt. John W., 215; Phillips,
 Second Lieut., Herbert, 110;
 Warner, Lieut. Bertram, 215;
 Woodward, James, 255; Wor-
 cester, Sydney, 235. Young,
 Thomas, 195
 "Gardeners' Magazine" suspends
 publication, 7
 Gardening in Egypt, 39
 Gardens, educational, in Yorkshire,
 75
 Garlick, 55
 Garra elliptica, hardness of, 4,
 19, 41
 Gaton Park, Reigate, Orchids at,
 239; food production at, 251
 Germany, lack of Potatoes in, 27
 Germination of grass seed, the, 7
 Hands on Peach leaves, 6
 Glasgow, allotments in, 161
 Glasshouses and food production,
 118, 174
 Globe Artichokes, 2
 Gordonia anomala, 250
 Grass for hay, 129
 Grass orchards and insects, 119
 Grass seed, the germination of, 7
 Greivillea Banksii, 71
 Grignan, M. G. T., 235

H

HAILSTORM in Lancashire, 256
 Halesia tetrapetala, 244
 Hall, Mr. A. D., 86, 118
 Harding, Cyril (*The Worker's Gar-
 den*), 112
 Hardy flower border, 245
 Hardy fruit garden, operations in
 the, 5, 15, 25, 37, 49, 61, 73, 85,
 97, 109, 117, 124, 135, 143, 153,
 163, 173, 183, 192, 203, 213, 225,
 232, 243, 253, 262
 Harrington, Lord, the late, 62
 Harrow, war gardening at, 99
 Hay, grass for, 124; top-dressing,
 258
 Haymaking, 249
 Hensley, Dr. W. Botting, 16
 Hensley, T. Geoffrey W. (*Early
 Potatoes*), 205
 Hinton Admiral, spring flowers at,
 195

Holland, horticulture in, 136
 Honey for fruit preserving, 222
 Hong Kong, State assistance to
 horticulture and forestry at, 87
 Hours list, the, 255
 Horse Chestnuts, the need for har-
 vesting, 245
 Horticultural College at Chester, the
 Horticulture, and the food crisis,
 93; and the State, 93; in Hol-
 land, 156
 Hoskin, S. (*Food Production in Cot-
 tage and Allotment Gardens*),
 112
 Hot beds seventy years ago, 17
 Bull public parks, 119
 Humogen, experiments with, 157,
 146, 166, 186, 224
 Hybrid Cypripediums, 87
 Hybrid Orchids, 45, 95, 106, 162,
 190, 220
 Hydroisation of Primulas, 70
 Hydrocyanic acid gas, fumigation
 by, 184

I

ILEX verticillata, 107
 Inchs, Mr. David, 164
 India, a flower show in, 19, 260
 Insecticides, 139
 Insect powder made from Chrysan-
 themum cinerariaefolium, 35
 Insects and birds, the effect of frost
 on, 255
 Interruption, the value of, 9, 19,
 23
 Ichne for wounds, 39
 Iris arizonica, 45
 Irises, notes on, 249; *Regelia*, 244,
 some June, 249; the planting of,
 10, 54
 Irrigation and food production in
 U.S.A., 245
 Italian nurseries, State aid to, 156
 Italian Rye grass, 203

J

Jam, sugar for, 212
 Japan, letters from, 249; the Con-
 tracts of, 179
 Jekyll, Gertrude (*Woods and Bi-
 cinalia*), 3
 Jerusalem Artichokes, 129
 Jones, Mr. Henry, 137
 Juan Fernandez's Curacao Island
 194, 204, 220, 250, 246

K

KALE, 59
 Keble, Dr. F. W., appointment
 as, 43
 "Kew Bulletin," suspension of the,
 224
 "Kew Gardens," visitors to, 63; inter-
 esting plants at, 194; Orchids at,
 95; the weather at, 75
 Kitchen garden, management of the,
 4, 14, 25, 36, 49, 61, 73, 81, 97,
 109, 116, 124, 135, 142, 152, 162,
 172, 182, 192, 202, 212, 222, 232,
 242, 252, 262
 Kitchen garden soil, the cultivation
 of, 123
 Kohl Rabi, 60

L

LAVETA Jeseica, 70
 Ladio Callithea Psyche, 220
 La Moctela, 75
 Land cultivation at Lidjet Green,
 76; need for mechanical aid in,
 87

LAW NOTE:—Claim for delay in
 transit, 44
 Lawns, growing Runner Beans on,
 166, 181
 Leaf curl of Peach and Nectarine,
 23
 Lee Gardeners' contribution to St.
 John's Hospital, 64
 Leeds, allotments at, 110
 Leeks, the value of, 59, 100, 107,
 142
 Legacies to gardeners, 6, 62
 Leschnaultia bibloa major, 190
 Lettoworth, Belgian gardening at,
 37
 Liddington, food-production society
 at, 145
 Lilies in 1916, 81
 Lilium bulbs, the effect of frost on,
 159
 Lily-of-the-Valley, the forcing of,
 40
 Lime, potash liberating effect of, 62
 Lime-sulphur, strength of, 56
 Lime trees damaged by frost, 247
 Liu-kiu Islands, vegetation of the,
 249
 Lockwyn, Sir John T. D. Iwan, 110
 Lockwood, Col. Mark, honour for,
 235
 Loganberry, origin of the, 9, 19
 London University, lectures at the,
 39
 Lonicera in orchards, 153, 189
 Lupins as poisonous plants, 51

M

MACHILIAN, Mr. Hugh F., 51
 Maiden, J. H. (*Forest Plants of
 New South Wales*), 255; (*The
 Genus Eucalyptus*), 145
 Maize as a farm crop, 203
 Manchester Corporation and food
 production, 16
 Mangos as a fertiliser, 6
 Mangoes, 147, 148, 225
 Mangrove, the Australian Grey, 58
 Manure, green, 145
 Manures, additional, 33; experi-
 ments with, 206; for Potatoes, 65;
 "mystery," 115
 Marning orchards, 57
 Market fruit garden, the, 20, 40,
 57, 106, 133, 149, 159, 189, 229,
 251
 Market gardening, research in, 126
 Marketing surplus produce, 263
 Mash, J. O. Brumham, 200
 Maxwell, Sir Herbert, notes from a
 Galloway garden, 13, 61, 105, 149,
 169, 219, 259
 Meconopsis amphidroma, Bailey's,
 variety, 245
 Medicinal herbs, cultural conditions
 for, 93
 Melons, early, 50; in pots, 38
 Mentha piperita, the cultivation of,
 for pepper-mint oil, 99
 Merodon fly, the, 175
 Mesopotamia in January, 135
 A soldier gardener in, 181
 Mint, a hybrid, 202
 Mites and frost, 76; damage by,
 83; destruction of, 203
 Mole-dorming, 131
 Monymus, Mr. Edwin, 175
 Molyneux, Mr. A. W., appointment of,
 7
 Morisia hypogaea, 241
 Mopaco, development of, 7
 Mulching and damage by frost, 191
 Mulching Strawberries, the effect
 of, 175
 Mulgedium Plumieri as a garden
 escape, 235
 Mushrooms, 59
 Myosotidum mobile, 245
 "Mystery" manures, 113

N

Narcissus disease, caused by eel
 worm, 204; lecture on, 207, 216,
 226
 Nectarine, leaf-curl of, 23
 Nephrolepis varieties in the Brook-
 lyn Botanic Garden, 64
 Nettles as a vegetable, 182
 Newcastle, lecture on food produc-
 tion at, 100
 New Zealand, Pines and Oaks in,
 116; the flora of, 99
 Nitrates for Brassicas and Onions,
 252
 Nitrogen-fixing bacteria in non-
 leguminous plants, 144
 Noin, Lieut. Henri, 7
 Norwich, a food production league
 at, 88
 Notes from a Galloway garden, 15,
 69, 105, 149, 169, 219, 259
 Notes from a garden in East Hamp-
 shire, 121
 Notes on Conifers, 95
 Novelties of 1916, 24
 Nowe, confessions of a, 52, 124,
 251
 Nurseries, some old, 9
 Nymphæas, the hybridising of, 111,
 51, 79

O

OAK, Cluster of, Saverake Forest,
 34
 Oak timber, brown and green, 170
 Oaks in New Zealand, 116
 Oak breeding on pure lines, 224
 Oak crop, stimulating the, 228
 Obit, 129; eelworms in, 258; the
 top dressing of, 208
OBITUARY:—Batters, Andrew, 11;
 Bosden, John H., 103; Burt,
 George, 123; Burvenich, Frede-
 rick, 247; Divoet, H. Van, 147;
 Dwyer, Richard J., 67; Dun-
 can, David W., 157; Foster,
 Lieut. H. L., 258; Gale, John,
 91; Harris, J., 264; Hartley,
 Levi, 44; Heath, Henry, 177;
 Hensley, Alfred, 67; Herdman,
 John H., H.; Houlston, William,
 32; Kersewell, George, 138; King,
 Herbert T., 264; Kirkpatrick,
 Robertson, 32; Lettis, Edward
 Harris, 167; Mardonald, Sir
 W. G., 264; Masee, George, 91;
 Miller, Dr. N. H. J., 57; Moly-
 neux, Mrs. Edwin, 175; Moore,
 Mrs. Margaret, 167; Oliver,
 Joseph, 30; Robinson, Charles
 Henry, 102; Ross, Charles, 67;
 Rothschild, Leopold de, 227;
 Salomon, Etienne, 103; Sander-
 son, Capt. Harry, 197; Schneider,
 George, H.; Sinclair, George, 91;
 Singleton, Robert, 187; Somer-
 ford, Frank, 67; Stredwick,
 James, 157; Thompson, William,
 20; Tourat, E. T., 67; Treseder,
 Edward J., 80; Walpole, Ed-
 ward, 91; Want, C. 177; Witte,
 H., 67; Wood, James London,
 197
 Odontiodia Belice, 106; O. Borneie,
 46; O. Fix, 140; O. Borham, 140;
 O. Brassicae, 140
 Odontoglossum ardensissimum John
 Smith, 58; O. Froubi, 22; O.
 Bronze Dragon, 58; O. Brotcham,
 106; O. Calypso, 159; O. Lady
 Roxburgh, 70; O. Minos, 259
 Odontoglossum seedlings at the
 Warren House, Stanmore, 200
 Odontonia Betsham, 151
 Oleria Gummata and its allies, 3,
 13, 23
 Onion crop, increasing the, 46
 Onions, 2, 59; nitrates for, 252
 Opuntias in Queensland destroyed
 by arsenic trichloride in a gaseous
 form, 7
 Oranges, 160

Orchards: effect of grass in, 186; grass and insect pests in, 119, 159; Lucerne in, 155, 189; the manuring of, 57; under cropping in, 59, 100
Orchid houses, the management of, 25, 37, 60, 72, 84, 97, 109, 117, 124, 134, 142, 153, 165, 172, 183, 195, 205, 213, 223, 232, 242, 252, 262
Orchid notes and gleanings, 22, 45, 53, 70, 95, 106, 121, 140, 151, 162, 169, 190, 200, 230, 250, 259, 259
Orchid novelties of 1916, 1
Orchid seeds, number of, in cap sale, 170
Orchids: at Bleddheim, Woodstock 58; at Gattou Park, Reigate, 239; at Kew, 95; botanical, 95; hybrid, 45, 95, 106, 162, 190, 220; sale of the Walton Grange collection of, 113, 185
Orestitrophe purpurea, 155
Orphan Fund, Royal Gardeners', 51, 79

P

PALMS, the potting of, 76, 88
Paper, restrictions on the use of, 118
Paris Spring Show, 87
Parrotia persica, 146
Parsley, the cultivation of, 253
Parsnip seed, the germination of, 212, 221, 264
Parsnips, 59, 141; for stock, 90
Pasture, conversion of, to arable land, 110
Pasture land, cropping in, 164
Pastures, renovating, 50
Peach, leaf curl of, 28
Peaches, leaf glands of, 6
Pearson, Mr. K. Hooper, 214
Peas and Beans for drying, 201
Peas as food for stock, 56; culture, 35; to bottle, 195, 208
Pea weevil, the, 225, 247
Pelegrinus, winter-flowering, 40
Peppermint oil, the production of, 98
"Peter Barr" Memorial Cup, award of the, 185
Pheasants, authorised destruction of, 113
Phoenix carolinensis at Sydney, 95
Phoma tuberosa attacking Potato, 2
Phosphate, acid, for Roses, 164
Phytophthora, studies of the genus, 155
Pigs, cottagers', 112; the feeding of, 155; the management of, 18, 27, 56
Pineapple industry in South Africa, 254
Pines and Oaks in New Zealand, 116
Pine tree seeds for France, 164
Plant diseases in Queensland, 52
Plant notes, 52, 58, 84, 90, 134, 207
Plant stove, the, 40
Plants under glass, the cultivation of, 4, 15, 25, 37, 48, 60, 75, 85, 97, 109, 117, 124, 135, 145, 155, 165, 173, 183, 195, 205, 213, 223, 235, 245, 253
Plants, damage by wind and frost to, 186; coloured stems in, 93
PLANTS, NEW OR NOTWORTHY:—
Siaphelia Dummeri, 132
PLANT PORTRAITS:—
Aesculus turbinata, 265; Amphiphylidius Kern, 154; Anguloa Cliftonii, 154; Berberis, Stapfiana, 154; Campanula Ephestia, 265; Chirita Trailliana, 265; Clematis Farquhar var. Souhai, 154; Corylopsis Willmottiae, 265; Cotoneaster sulcifolia var. rugosa, 154; Cytisus albus, 154; Disanthus cecidifolia, 265; Mearnsia Purpusii, 154; Mesembryanthemum Pillansii, 154; Myrsine africana, 265; Pilea Forstii, 154; Plagioglossum sinense, form brachyphylla, 265; Pyrola uliginosa, 265; P. bracte-

ata, 265; Quercus densiflora, 154; Rhodiodendron discolor, 154; Ribus alceoides, 265; Saxifraga manshuriana, 265; Senecio Monnei, 154; S. Hectori, 265; Stanopsis luthumum, 265; Vanda lizonicza, 265
Pleospora infectoria, a fungus which attacks canvas, 224
Flowers, value of, 162, 171
Pollen by post, method of sending, 7
"Pomologia Batavia," 50, 122
Pompon or Pomponie? 250
Populus saccharina, 46
Potash fertilisers, 136
Potash from sea-weed, 75
Potato, a mammoth, 165, 136
Potato culture in the eighteenth and twentieth centuries, 21
Potato difficulties, 127
Potato disease on virgin land, 57
Potato patch, planning the, 155; in 1916, 115
Potato "seed": for London, 155; for County Councils, 65; from Scotch growers, 119; hints on purchasing, 50; how to plant, 153; once grown, 54, 59, 71; scarcity of, 18; sowing in, 93
Potato trials in northern and southern countries, 103
Potato tubers for planting, 71
Potato Wart Disease Order, 1917, 47
Potato wart disease at Edinburgh, 191
Potatoes, 59, 164, 221, 258; and green manuring, 115; and prejudice, 53, 68; change of seed of, 76; corky scab disease of, 76; distances for planting, 152; early, 35; earthing up, 264; estimated crop of, 93; in 1800, 87; in Germany, 27; in Ice land seventy years ago, 185; lifting of immature, 242; main crop, 114, 123, 141; manures for, 65; on freshly tinned land, 20; on grass, 120, 129; planted at Christmas, 35; prices for, 18, 26, 38, 86; planting of, 114, 123, 171, 181, 201, 211, 222, 231, 242; planting of late, 155; prices of "seed," 145; resistant to late blight, 35; resistant to wart disease, 65; sowing crops, 201; spraying, 172, 186, 193, 201, 256; sulphate of ammonia for, 155, 146; early, under glass, 54, 107, 191; unorthodox method of cultivation of, 56; wasted in cooking, 5
Pot Pourri, to make, 253
Potting Palms, 76, 68
Poultry, the management of, on the home farm, 66; shortage of grain for feeding, 215
Prickly Pears in Queensland destroyed by gas, 7
Primula sinensis (type as a decorative plant), 75
Primula spicata, 241
Primulas, the hybridisation of, 70
Produce, marketing surplus, 265
Prothero, Mr., and the Gardeners' Company, 225, 234
Pruning: against Brown Rot, 155; in cold weather, 57, 68, 101; newly planted Apple trees, 132; scabbed Apple trees, 135
Prunus serotina, 191
Pteris aquilina: the use and cultivation of, 234
Pumpkins, 59; and squashes, 161
Pyper, Mr. T., 127

Q

QUELQUAND, plant diseases in, 52
Quercus pedunculata var. cristata, 34

R

RHIZANT mature, effect of, on plants, 218

Railway banks, gardens on, 86
Ramsbottom, Mr. J. K., lecture on Narcissus disease by, 207, 216, 226
Rape for sheep, 167, 223
Reading University College, lectures at, 38
Refuse heaps, crops for, 201
Remedy, an old, 225
Research in market gardening, 126
Rhodiodendron Mrs. Stirling, 50
Rimbar leaves as Spinach, 195, 215
Ribes alpinum arum, 230
Robinson, Cissie's, Island, Juan Fernandez, 199, 209, 220, 230, 240
Robinson, Mr. C. H., 155
Rock garden, the, 94, 211, 241
Roadway, Mr. Leonard, 74
Roses, damage by, 161; and the corn crops, 208
Root crops on the farm, 218
Root cuttings, sports from, 50
Rosary, the, 53, 155
Roses, Augustus Hartmann, 54; Lady Plymouth, 54; Trier, 53
Roses, acid phosphate for, 164; decorative, 155; exhibition of seedling, 174; select varieties of, 121, 136
Royal Horticultural Society and the purchase of books, 127, 157
Royal Society, nomination of biologists for the, 93
Ruhleben camp, horticultural society at, 29, 106
Runner Beans, on Lewis, 166, 181; to obtain early, 35
Russia, trade with, 39

S

SALOMON, the late M. Etienne, 111
Sargent, Prof. C. S. (*Plantae Widdsonianae*), 127, 144
Saucerkraut in France, 261
Saxony, 59
Saxifraga appendiculata alba, 180; S. Gloria, 166
Saxifragas, mossy, 205
Schneider, the late George, 20, 255
Schoolboys for agriculture in France, 98
School gardens and increased food production, 16
SCIENTIFIC COMMITTEE:—
Aegrotis alba, forms of, 157; Alnus glutinosa, nodules on the roots of, 147; American Gooseberry mildew, spraying against, 157; Anthoxanthum Praelii, 119; Apple bark, the splitting of, 167; Arundina bambusaefolia, 206; Chlorosis in Prunus sylvatica, 167; Crataegus sanguinea, stipules of, 29; Crataegus, various species of, 147; Erythronium rhodioides, 226; Fagus sylvatica, chlorosis in, 167; Fraxinella gracilis, 206; Galanthus Elwesii var. Whittallii, 65; Hawthorn, the stipules of, 89; Iris Wittii, 206; Ixora coccinea, scale insects on, 119; Leaves, cup-shaped, 247; Light, the action of, in inducing variation, 119; Maces, George, the late, 119; Narcissus cyclantheus hybrid, 65; N. dubius, 206; N. muticus, 206; Narcissus, tetra-nemous flowers of, 226; Olechids, leaves of hybrid, 80; Plectranis, rare, 247; Phoradendron, wood flower, 65; Polygonatum verticillatum, 247; Primula stencalyx, 157; Prunus Pseudo-cerasus, gall-like growths on, 147; P. spinosa, forms of, 206; Rhodiodendron, a large, 39; R. ferrugineum, gall on, 226; Richardsonia, a double spatheed, 147; Scale insects on Ixora, 119; Snowdrop, a two flowered, 147;

Tropaeolum, alteration in foliage of, 226; Tulipa Kaufmanniana, 89; Tulips, branched, 247; Wood Flower, the (Phoradendron), 65
Scotland, allotments in, 87, 126; food production in, 6, 62; vegetable growing in, 27
Seakale, the cultivation of, 85
Sea-weed, potato from, 75
Sedum rariflorum, 186
Seed and plant catalogues, old, 29, 41, 54
Seed growing in heavy soils, 171
Seed, old and new, 244, 255, 261
Seed-raising in the Empire, 164
Seed supplies during the war, 41
Seed trade, an appeal to the, 256
Seeds, expected shortage of, 136; germination of, 224; hints on the sowing of, 115; protection of, from birds, 88
Seward, Prof. A. C. (*Science and the Nation*), 239
Sheep, food for, 168
Sherwood, the late N. N., 6
Shrubs damaged by frost in a Surrey garden, 180
Shrubs: effect of frost on, 124, 130; forcing of, 40; propagating, 5; with coloured bark, 93
Snapdragon, rub, 155
Snow, hints on shovelling, 62
Snowdrops, late, 115
SOCIETIES:—
Aberaman Hort., 129; British Wholesale Florists, 62, 105, 147; Debating, 129; General Bulb Growers of Haarlem, 10; Haywards Heath Hort., 177; Horticultural Club, 207, 217, 226; annual meeting, 111; Kew Guild, 247; Limon, 10, 102, 157; Manchester and North of England Orchid, 10, 55, 65, 90, 102, 128, 147, 167, 206, 247; National Anemona and Primula (Southern Section), 177; National Chrysanthemum, 89; (annual meeting), 78; National Dahlia, 31; National Rose (annual meeting), 31; National Tulip, 226; Norfolk and Norwich Hort., 102; North of England Hort., 102; Nursery and Seed Trade, 147; Reading and District Gardeners', 129; Royal Caledonian Hort., 43; Royal Hort., 30, 55, 89, 101, 120, 128, 157, 147, 157, 167, 175, 195, 215, 226, 226, 247, 257; (annual meeting), 77; Royal Scottish Arborescent, 43, 50; Scottish Hort., 55, 89, 128, 157; Southampton Royal Hort., 31; United Hort., Benefit and Provident, 31, 103, 128, 157, 226; Wargrave and District Gardeners', 129
Soil ventilation, 16
Sophrone-Laelia Stella, 220
Sparrow, a good word for the, 264
Sparrows, damage by, 204
Sparganium, moss as an aseptic, 39
Spinach as a farm crop, 223
Spinach Beet, 59, 115
Sporozospora subterranea, a disease of Potatoes, 2
Spots from root cuttings, 50
Spraying demonstration at Wisley, 202
Spraying fruit trees, the time for, 126; in winter, 150; with warm water, 51
Spraying Potatoes, 198
Spring bedding plants, the raising of, 170
Spring flowers at Belvoir Castle, 29; at Hinton Admiral, 195
Spring in the woodland, 140
Spiraeal, the American grey, 100
Stockdale, Mr. F. A., 50
Stocks, trial of flowering, 194
Strawberry beds, the treatment of, 9, 30, 47
Strawberry, the White Wood, 33, 101, 166

Strawberries, the effect of mulching, 175; substitutes for littering, 146; layering early runners of, 251; under glass, 19
Stroptocarpus orientalis, 63
 Strutt, Hon. E. G., 86
 Sugar Beet, 80, 125, 208; for fruit preserving, 111, 119, 156
 Sugar for jam, 212
 Sulphate of ammonia, for Potatoes, 133, 146; for wheat, 147; prices of, 261
 Sulphate of copper, fixed prices for, 110
 Sumach growing in Italy, 245
 Sundial, the construction of a cheap, 150
 Sunflower seeds for poultry, 208
 Sun heat, the value of, in plant houses, 185, 206, 215
 Swede Turnips, 58, 167; method of putting, 188

T

TAYMOUTH Castle, vegetable culture at, 6
Telopha speciosissima, 119, 154
 Tenbury, Dr. H. A., 50
 Thistles in Corn, 248
 Thomas, H. H. (*Gardening a Complete Guide*), 155; (*Aboleries: How to Make and Plant Them*), 166
 Tillage, an old farmer on, 8
 Timber trade, the home, in 1916, 33

Tomatoes, 60; profitable method of training, 251, 260
 Tree, a historic, 195
 Tree roots, to destroy, 92
 Trees and shrubs, 5, 48, 60, 83, 124, 134, 170, 180, 230, 245
 Trenching, 28; methods of, 54
 Trials at Wisley, 58, 47, 194, 237
Trifolium incarnatum, 208
 Truffaut, M. Georges, 7
 Turkeys, the breeding of, 187
 Turner's Hill Experimental and Research Station, 126
 Turnips, 60; Swede, 58, 167, 188
 Twickenham gardeners' contribution to St. John's Hospital, 64

V

VANAS Land cultivation, 41, 75, 165
 Vander Miss Joopium, 166
 Vanilla, the, in hothouses, 22
 Vegetable crops, the preparation of land for, 65
 Vegetable economy, 260
 Vegetable imports, 148
 Vegetable Marrow, the 60; Rother side Orange, 260
 Vegetable seeds, need for economy in the use of, 136
 Vegetables, 2, 23, 34, 46, 56, 71, 85, 107, 114, 125, 133, 141, 152, 171, 181, 201, 211, 242, 251, 260; after notice, 140; ornamental, 166, 171; prices of, eighty years ago, 232; sowing, 59, 71, 86, 115, 152; the relative food values of, 16, 123, 194; under glass, 125

Vendim, Avorns and Chestnuts from, 6
Veronica La Solitaire, 52, 60, 256, 226, 236, 255, 256
 Vetches for horses, 208
 Vines, the bleeding of, 111
 Violets in frames, the management of, 40
 Violets, propagating, 206, 225, 215, 236

W

WALDCHIA disticha, 236
 Walton Grange, *Cypripedium* from, 45; sale of Orchids at, 62, 118
 War gardening pamphlets, 65
 War Horticultural Relief Fund, 50, 164, 225, 255
 War Items, 7, 48, 59, 63, 76, 99, 110, 127, 175, 185, 195, 215, 225, 255, 255
 Waratah, the, 119
 Warren House, Stanmore, *Odontoglossum* seedlings at, 200
 Wart disease of Potatoes Opler, 1917, 47
 Wart disease of Potatoes; at Edinburgh, 191; varieties resistant to, 65
 Wasps, the destruction of, 232
 Waste land, the cropping of, seventy years ago, 26; the cultivation of, 31; the cultivation of, after the war, 165

Y

Water-lilies (see *Nymphaeas*)
 Waterproofing cotton and paper, 238
 Watts, Dr. Francis, 74
 Weather; at Godalming, 65; at Kew, 75; at La Mortola, 75
 Webster, Angus W. (*British grown Timber and Timber Trees*), 8
 Weeds in Corn, 197; in pastures, 258
 Weevils, 178, 206, 242, 247, 249; damage to Peas and Beans by, 222, 255, 260
 Wendy War Society, 38
 West, G. S. (*Alpa*), 110
 Wheat, area under, 258; for 1913, 197; prospects of the crop of, 157; sulphate of ammonia for, 147; spring sown, 67
 Willow for cricket bats, 12
 Wilson, Mr. E. H., 65; (*The Conifers and Taxods of Japan*), 179
 Winter wash for fruit trees, 56
 Wireworms, 147, 221
 Wisley, trials at, 38, 47, 194, 237
 Women and the land, 185
 Woodland, spring in the, 140
 Woolly aphid, specific for, 27
 Worcester Chrysanthemum Show, 8
 YORKSHIRE, educational gardens in, 75

LIST OF ILLUSTRATIONS.

A

Acier Davidii, 46
Aciphylla Colensoi flowering at Leonardlee, Sussex, 255
Mangium plataniifolium, 170
 Allahabad Flower Show, 19, 260
Anemone pulsatilla, 209; *A. vitifolia*, 87
 Apple (Chelmsford Wonder), 41
 Apple trees, the effect of pruning newly-planted, 152
 Ascott, Leighton Buzzard, food crops in the glasshouses at, 171, 175
Astelia Banksii, 22

B

Berberis Gagnepainii, 122; *B. subcaulabata*, 55
 Black Currant normal and abnormal blossoms of, 150
 Brussels Sprout and Savoy, cross-bred plant from, 182

C

Cabbage Palm of Juan Fernandez, the, 210
Campanula Ephesia, 190; *C. speciosa*, 166; *C. Stansfieldii*, 39
 Castlewellan, Co. Down, 17
Chrysanthemum at an Indian flower show, 19
Clematis vedrariensis, 94
 Cluster Oak, the, 35
 Cockchafer, 143
 Cook, Mr. W. A., portrait of, 5
 Copped Hall, Essex (Supplementary Illustration, May 12)
Cotoneaster humifusa, 140
 Crane, Sergeant, portrait of, 18
Cupressus glabra, 96
Cyclamen Cherry Ripe, 123
Cymbidium insigne album, 90

D

Dendroseris bicrantha growing on Juan Fernandez, 240
Didymosperma (see *Wallichia*)
 Dives, Mr. John, portrait of the late, 40
 Dunn, Mr. John, portrait of, 5

E

Eschscholzia Cambridge Cream, 145

F

Fuchsia splendens, 246

G

Gordonia anomala, flower and foliage of, 250
Grevillea Banksii, 71
 Guise, Mr. W. J., portrait of, 5
Gunnera chilensis on Juan Fernandez, 241

H

Hemsey, Alfred, portrait of the late, 80
 Hudson, Mr. James, portrait of, 4

I

Ilex verticillata, 107
 India, a flower show at Allahabad 19, 260

J

Jones, Mr. Henry, portrait of, 157
 Juan Fernandez, *Dendroses in crantha* on, 240; map of the island of, 199; peak El Yunque, 231
 Tree Ferns on, 210; views of, 200, 241
Junonia australis on, 210; vegetation of, 241

L

Labelle Cavleya Trident, 75
 Leaves of *Olearia stellulata*, *O. lyrata*, *O. rugosa*, *O. quevifolia*, *O. Guianana* var. *subrotunda*, *O. subrepanda*, *O. canescens*, *O. Guianana*, 9
 Lucks, a market bundle of, 59
Lilium, a new species of, 82
Lilium giganteum, seed capsule of, 85; *L. g. yunnanense*, seed capsule of, 85; *L. Grayi*, 160; *L. Henryi*, with double-flowered pedicels, 82; *L. Parryi*, 165; *L. Thayeri*, seed capsule of, 82; *L. Willmottiae*, seed capsule of, 82

M

Micranopsis cambuca, double-flowered variety of, 254; *M. quintuphervis* growing wild in China, 216
Melolontha vulgaris, the cockchafer, 143
 Monreith, Wigtonshire, *Trillium grandiflorum* at, 219; *Rhododendron hybrid* at, 229

M

Mosses, *Branded Beauty*, 229; *Ermine Apple*, 229; *Mottled Umber*, 229; *Winter*, 229

N

Nymphalis alba rosea, 111; *Ellisiana*, 111; *Mrs. Richmond*, 108

O

Oak, the Cluster, of Sixteenake Forest, 35; twig of, 34
Odontioda Gratrixiae Blyndir variety, 27
Odontoglossum crispum Dreadnought, 176
Olearia Guianana, 7; *O. lyrata*, 14; *O. stellulata*, reproduction of Lilliarthere's plate of, 2
Olearias, leaves of, 9
 Onions grown from transplanted seedlings, 58
Orestrocloe imbricata, 155

P

Panicola pusca, a flowering branch of, 158
Papilio japonica, flowering shoot of, 70
Pinus pumila, 179
 Plan of an allotment in West Scotland, 141
 Plan of the kitchen garden crops at Moncton Paddock, Warwick, 114
Populus szechuanica, 47
Prunus serrulata, 191
 Pypor, Mr. T., portrait of, 127

Q

Quercus pedunculata var. *cristata*, the Cluster Oak, 35; twig of, 34

R

Rhododendron hybrid at Monreith, Wigtonshire, 221
Rhododendron Mrs. Stirling, 51
Robinia Kelseyi, 237
 Ross, Charles, portrait of the late, 67
 Rothschild, Leopold de, portrait of the late, 227
 Rohleben Horticultural Society's membership card and rules, 29

S

SANDERSON, Captain Harry, portrait of the late, 207
Saxifraga apiculata alba, 181
Saxifraga manshuriensis, 264
Saxifraga, a group of mossy, 205
Schizanthus, plant of, 196
 Sea-elephant or elephant seal on Juan Fernandez, 221
Sedum rariflorum, 185
 Singleton, Robert, portrait of the late, 187
 Snowdrops in a Scottish woodland, 105
Streptocarpus orientalis, 63
 Sundial, a simply-constructed, 150, 151

T

TELOPEA speciosissima, 119
 Tree ferns in the virgin forest of Juan Fernandez, 210
Trillium grandiflorum at Monreith, 219

V

VANILLA planifolia, fruits of, 23

W

Wallichia disticha in the Botanic Gardens, Peradeniya, Ceylon, 225
 Waratah, the, 119
 Weevils, black and clay-coloured, 178
 Weston, Mr. J. G., portrait of, 4

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No 3967

No. 1567. VOL. LXI. (THIRD SERIES) SATURDAY, JANUARY 6, 1917.

Registered as a Newspaper. (PRICE 3d. POST-FREE, 3d.)

SUBSCRIPTION—Inland, 15/-; Foreign, 17/6 (22/yr. 10/-) [24 26/-] per annum. Entered at New York Post Office as second-class matter. Postal Address—41, Wellington Street, Covent Garden, W.C. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 1.

NOTICE TO ADVERTISERS.

Owing to the earlier despatch of the morning train from London the hour of spring to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

FIELD'S SEEDS.

PEEDS' SEEDS FOR RICH CROPS. You want exceptional results from your garden this year. Write for our 1917 Seed List. We can give you the record crops you want.

JOHN PEED & SON, The King's Seeds-men and Nursetmen, WEST NORWICH.

DOBIE & CO., ROYAL SEEDSMEN. EDITH RAIL, will send a copy of their 1917 Catalogue and Guide to Gardening, 160 pages, nearly 150 illustrations, free, if this paper is mentioned.

TO THE TRADE—COOPER TAPER & CO., LTD., 50 and 52, Southwick Street, London, have posted their Wholesale Catalogue of Seeds to their customers. If not received another copy will be sent on application.

NEW PELVONS.

A GRAND STOCK of these Brilliant Pelvons in all shades now ready for delivery. For lists, with full particulars, apply **GUN & SONS,** Olton, Warwickshire.

DICKSON'S HORTICULTURAL MANURE and other high class Fertilisers, are Dickson's Improved Mushroom Spawn, Prepared entirely free on application to **DICKSON S., Royal Seed & Nurseries and Nurseries, Chester.**

LAYTON'S SEEDS AND FRUIT TREES. See Catalogue of the above seeds and fruit trees, Grand New Early Pear, Layton's Superior Apple, Fruit Trees. A fine stock of other may still be safely planted. Pamphlet on Cultivation on receipt of stamped envelope. **LAYTON BROTHERS,** Nurseries, Bedford.

BAER'S CASH CLEARANCE SALE OF Spring Flowering Bulbs, Dahlias, Tulips, Frezias, Anthers, Narcissi, Hyacinths, etc. Also surplus Hardy Perennials, Rock Plants, Climbers, Shrubs, etc. Best quality, at low prices. Clearance lists post free. **BAER & SONS,** King Street, Covent Garden, London.

BATH'S SELECT SEEDS. Now Illustrated Catalogue of Choice Vegetables and Flower Seeds, with full cultural notes, as usual, and will be sent post free on application (Dept. A, R. H. BATH, LTD., The Floral Farms, Walsley).

COWAN'S NEW ORCHID MATERIAL. This is the best and most cheap. Full particulars on application to **JOHN COWAN & CO.,** Gateacre Nurseries, Gateacre, Liverpool.

WATERER'S ROSES & FRUIT TREES. Grand stocks of the best varieties. Lists free. **JOHN WATERER, SONS & CRISP, LTD.,** The Nurseries, Twyford, Berks.

THE EARLIEST CROPS WILL PROVE OF THE GREATEST VALUE. NOW SOW UNDER GLASS.

SUTTON'S EVERGREEN DWARF BEAN, 10/- per 2 1/2 oz. per packet 1/9
SUTTON'S POMPON PEAS, 10/- per 2 1/2 oz. per packet 1/9
SUTTON'S MANGA BONE CALLFLOWER 10/- per 2 1/2 oz. per packet 1/9
SUTTON'S BEST OF ALL TOMATO, 10/- per 2 1/2 oz. per packet 1/9

SUTTON & SONS, The King's Seedsmen, LONDON.

MACKENZIE and MONCUR, Limited, 41, Holborn Buildings and Heating Engineers, London, Edinburgh and Glasgow. By special Appointment to H.M. the King. London Office, 8, Camden Road, N.W.

WELLS' Catalogue of Chrysanthemums and Perennial Plants is now ready, post free on application. **W. WELLS & CO.,** Merstham, Surrey.

JAMES GRAY, LTD., Builder of Commercial Buildings, 41, and Heating Engineers, 10, Abchurch Lane, London, S.W. Ware 101, W. 10, London. Telephone 201 West 101.

R. HALLIDAY & CO., Horticultural Engineer and Heating Engineer, Royal Horticultural Society, 1, Marlborough Place, London, W. 1. Telephone 4810. Also Garden Frames, Catalogue and Estimates.

FIDLER'S NEW ILLUSTRATED CATALOGUE OF HOUSE-GARDEN SEEDS is now ready, post free, on application. Write for same per packet. It is a cheap one to use. All per packet sent by the same. **FIDLER & SONS,** Royal Botanic Gardens, Reading.

GENUINE OLD YORK STONE PAVING, for Rose Walks, Terraces, Lily Ponds, etc., is made in a factory, situated in large, small quantities. **H. BROOK,** Quarry Owner, 40, Valley Road, Southam, S.W.

BERGERIS DARWINI and STENO PHYLLOPS are the best and most popular of the lot, including many dwarf and compact varieties, suitable for the Rock Garden, etc. to be found in the Free and Standard Catalogue. Free on application to **J. SMITH, Daisy Hill Nurseries, N. York.**

ORCHIS FOLIOSA. The "Madonna Orchid." The best form of the flower and the best, grows 1-2 1/2 inches high, with 6-8 inch solid pale yellow-purple flowers. Strong roots, 1/6 each, 1/2 doz. per dozen. **J. SMITH, Daisy Hill Nurseries, N. York.**

FRUIT TREES. Fine to name, very speedily fruited trees, in all varieties, extra good specimens, with fibrous roots, 4/6 per Vine, Orange Tree, Fig Tree, in pots, for fruiting. Catalogues, **WILL LAYLER,** Hampton, Middlesex.

200 CAMELLIAS in variety, 2/6 to 3/6, bushy and bushy, 10/6, each; 250 Large *Dryas* individual, 4/6, 5/6, each. **J. SMITH, Fernley, Loughborough Junction, London, S.W.**

For Advertisement Charges see page vii.

SANDER AND SONS, Oldfield Growers, St Albans.

NOW IS THE TIME TO PLANT **KELWAYS' COLOR BORDERS**

By sowing Kelways' Plants arranged to give a succession of bloom during the Spring, Summer, and Autumn. NOW THAT LABOUR IS SCARCER these borders solve the difficulty of having a Garden always in bloom without the trouble of replanting and lifting the plants every year.

Plant a border this Autumn and you will be able to enjoy its beauty for several years without any additional expense.

Send the measurements of your beds or borders and we will recommend a selection of plants suitable for your district, and quote our special reduced War prices. Extract from a letter received from "29/11/16.

"Last year, this month I believe, I wrote you re Kelways' plants, when you submitted price list. I also took a proof and plan from you, and finding he was much obliged, I gave him an order for over £3 worth of plants.

"To my regret, the plants were hardly worth growing, and the plan scheme was so bad that I have just disposed of them and given them away."

WATERER'S GOLD MEDAL RHODODENDRONS. We cordially invite you to come and select any plants you require. We have over 80 acres, comprising the finest collection in cultivation. Call on free. **JOHN WATERER, SONS & CRISP, LTD.,** The Nurseries, Bagshot, Surrey.

GUSHURST COMPOUND. Insecticide and Fungicide. Over 50 years' reputation; highly Commended R.B.S. Seventy-eight Control Trials at Wisley 1914-15. Sold by Dealers in Garden Sundries, Wholesale. **FRIE'S PATENT CANDLE CO., LTD.,** Battersea, London, S.W.

100,000 LARGE GARDEN FERNS. *Asplenium*, *Polypodium*, *Pteris*, *Begonia*, *Oxystele*, *Dryopteris*, *Rose*, *Erigeron*, *Glycyrrhiza*, *Lilium*, *Hydrangea*, *Senecio*, *Calluna*, etc. **J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.**

ENGLISH YEWS. The cleanest and healthiest for the London area, every plant a perfect specimen and plentifully rooted. 2/6 to 2/10, 6/6, per 100; 2/10 to 3/6, 9/6, per 100; 3/6 to 5/6, 1/6, per 100; 5/6 to 7/6, 1/6, per 100; 7/6 to 9/6, 1/6, per 100; 9/6 to 11/6, 1/6, per 100; 11/6 to 13/6, 1/6, per 100; 13/6 to 15/6, 1/6, per 100; 15/6 to 17/6, 1/6, per 100; 17/6 to 19/6, 1/6, per 100; 19/6 to 21/6, 1/6, per 100; 21/6 to 23/6, 1/6, per 100; 23/6 to 25/6, 1/6, per 100; 25/6 to 27/6, 1/6, per 100; 27/6 to 29/6, 1/6, per 100; 29/6 to 31/6, 1/6, per 100; 31/6 to 33/6, 1/6, per 100; 33/6 to 35/6, 1/6, per 100; 35/6 to 37/6, 1/6, per 100; 37/6 to 39/6, 1/6, per 100; 39/6 to 41/6, 1/6, per 100; 41/6 to 43/6, 1/6, per 100; 43/6 to 45/6, 1/6, per 100; 45/6 to 47/6, 1/6, per 100; 47/6 to 49/6, 1/6, per 100; 49/6 to 51/6, 1/6, per 100; 51/6 to 53/6, 1/6, per 100; 53/6 to 55/6, 1/6, per 100; 55/6 to 57/6, 1/6, per 100; 57/6 to 59/6, 1/6, per 100; 59/6 to 61/6, 1/6, per 100; 61/6 to 63/6, 1/6, per 100; 63/6 to 65/6, 1/6, per 100; 65/6 to 67/6, 1/6, per 100; 67/6 to 69/6, 1/6, per 100; 69/6 to 71/6, 1/6, per 100; 71/6 to 73/6, 1/6, per 100; 73/6 to 75/6, 1/6, per 100; 75/6 to 77/6, 1/6, per 100; 77/6 to 79/6, 1/6, per 100; 79/6 to 81/6, 1/6, per 100; 81/6 to 83/6, 1/6, per 100; 83/6 to 85/6, 1/6, per 100; 85/6 to 87/6, 1/6, per 100; 87/6 to 89/6, 1/6, per 100; 89/6 to 91/6, 1/6, per 100; 91/6 to 93/6, 1/6, per 100; 93/6 to 95/6, 1/6, per 100; 95/6 to 97/6, 1/6, per 100; 97/6 to 99/6, 1/6, per 100; 99/6 to 101/6, 1/6, per 100; 101/6 to 103/6, 1/6, per 100; 103/6 to 105/6, 1/6, per 100; 105/6 to 107/6, 1/6, per 100; 107/6 to 109/6, 1/6, per 100; 109/6 to 111/6, 1/6, per 100; 111/6 to 113/6, 1/6, per 100; 113/6 to 115/6, 1/6, per 100; 115/6 to 117/6, 1/6, per 100; 117/6 to 119/6, 1/6, per 100; 119/6 to 121/6, 1/6, per 100; 121/6 to 123/6, 1/6, per 100; 123/6 to 125/6, 1/6, per 100; 125/6 to 127/6, 1/6, per 100; 127/6 to 129/6, 1/6, per 100; 129/6 to 131/6, 1/6, per 100; 131/6 to 133/6, 1/6, per 100; 133/6 to 135/6, 1/6, per 100; 135/6 to 137/6, 1/6, per 100; 137/6 to 139/6, 1/6, per 100; 139/6 to 141/6, 1/6, per 100; 141/6 to 143/6, 1/6, per 100; 143/6 to 145/6, 1/6, per 100; 145/6 to 147/6, 1/6, per 100; 147/6 to 149/6, 1/6, per 100; 149/6 to 151/6, 1/6, per 100; 151/6 to 153/6, 1/6, per 100; 153/6 to 155/6, 1/6, per 100; 155/6 to 157/6, 1/6, per 100; 157/6 to 159/6, 1/6, per 100; 159/6 to 161/6, 1/6, per 100; 161/6 to 163/6, 1/6, per 100; 163/6 to 165/6, 1/6, per 100; 165/6 to 167/6, 1/6, per 100; 167/6 to 169/6, 1/6, per 100; 169/6 to 171/6, 1/6, per 100; 171/6 to 173/6, 1/6, per 100; 173/6 to 175/6, 1/6, per 100; 175/6 to 177/6, 1/6, per 100; 177/6 to 179/6, 1/6, per 100; 179/6 to 181/6, 1/6, per 100; 181/6 to 183/6, 1/6, per 100; 183/6 to 185/6, 1/6, per 100; 185/6 to 187/6, 1/6, per 100; 187/6 to 189/6, 1/6, per 100; 189/6 to 191/6, 1/6, per 100; 191/6 to 193/6, 1/6, per 100; 193/6 to 195/6, 1/6, per 100; 195/6 to 197/6, 1/6, per 100; 197/6 to 199/6, 1/6, per 100; 199/6 to 201/6, 1/6, per 100; 201/6 to 203/6, 1/6, per 100; 203/6 to 205/6, 1/6, per 100; 205/6 to 207/6, 1/6, per 100; 207/6 to 209/6, 1/6, per 100; 209/6 to 211/6, 1/6, per 100; 211/6 to 213/6, 1/6, per 100; 213/6 to 215/6, 1/6, per 100; 215/6 to 217/6, 1/6, per 100; 217/6 to 219/6, 1/6, per 100; 219/6 to 221/6, 1/6, per 100; 221/6 to 223/6, 1/6, per 100; 223/6 to 225/6, 1/6, per 100; 225/6 to 227/6, 1/6, per 100; 227/6 to 229/6, 1/6, per 100; 229/6 to 231/6, 1/6, per 100; 231/6 to 233/6, 1/6, per 100; 233/6 to 235/6, 1/6, per 100; 235/6 to 237/6, 1/6, per 100; 237/6 to 239/6, 1/6, per 100; 239/6 to 241/6, 1/6, per 100; 241/6 to 243/6, 1/6, per 100; 243/6 to 245/6, 1/6, per 100; 245/6 to 247/6, 1/6, per 100; 247/6 to 249/6, 1/6, per 100; 249/6 to 251/6, 1/6, per 100; 251/6 to 253/6, 1/6, per 100; 253/6 to 255/6, 1/6, per 100; 255/6 to 257/6, 1/6, per 100; 257/6 to 259/6, 1/6, per 100; 259/6 to 261/6, 1/6, per 100; 261/6 to 263/6, 1/6, per 100; 263/6 to 265/6, 1/6, per 100; 265/6 to 267/6, 1/6, per 100; 267/6 to 269/6, 1/6, per 100; 269/6 to 271/6, 1/6, per 100; 271/6 to 273/6, 1/6, per 100; 273/6 to 275/6, 1/6, per 100; 275/6 to 277/6, 1/6, per 100; 277/6 to 279/6, 1/6, per 100; 279/6 to 281/6, 1/6, per 100; 281/6 to 283/6, 1/6, per 100; 283/6 to 285/6, 1/6, per 100; 285/6 to 287/6, 1/6, per 100; 287/6 to 289/6, 1/6, per 100; 289/6 to 291/6, 1/6, per 100; 291/6 to 293/6, 1/6, per 100; 293/6 to 295/6, 1/6, per 100; 295/6 to 297/6, 1/6, per 100; 297/6 to 299/6, 1/6, per 100; 299/6 to 301/6, 1/6, per 100; 301/6 to 303/6, 1/6, per 100; 303/6 to 305/6, 1/6, per 100; 305/6 to 307/6, 1/6, per 100; 307/6 to 309/6, 1/6, per 100; 309/6 to 311/6, 1/6, per 100; 311/6 to 313/6, 1/6, per 100; 313/6 to 315/6, 1/6, per 100; 315/6 to 317/6, 1/6, per 100; 317/6 to 319/6, 1/6, per 100; 319/6 to 321/6, 1/6, per 100; 321/6 to 323/6, 1/6, per 100; 323/6 to 325/6, 1/6, per 100; 325/6 to 327/6, 1/6, per 100; 327/6 to 329/6, 1/6, per 100; 329/6 to 331/6, 1/6, per 100; 331/6 to 333/6, 1/6, per 100; 333/6 to 335/6, 1/6, per 100; 335/6 to 337/6, 1/6, per 100; 337/6 to 339/6, 1/6, per 100; 339/6 to 341/6, 1/6, per 100; 341/6 to 343/6, 1/6, per 100; 343/6 to 345/6, 1/6, per 100; 345/6 to 347/6, 1/6, per 100; 347/6 to 349/6, 1/6, per 100; 349/6 to 351/6, 1/6, per 100; 351/6 to 353/6, 1/6, per 100; 353/6 to 355/6, 1/6, per 100; 355/6 to 357/6, 1/6, per 100; 357/6 to 359/6, 1/6, per 100; 359/6 to 361/6, 1/6, per 100; 361/6 to 363/6, 1/6, per 100; 363/6 to 365/6, 1/6, per 100; 365/6 to 367/6, 1/6, per 100; 367/6 to 369/6, 1/6, per 100; 369/6 to 371/6, 1/6, per 100; 371/6 to 373/6, 1/6, per 100; 373/6 to 375/6, 1/6, per 100; 375/6 to 377/6, 1/6, per 100; 377/6 to 379/6, 1/6, per 100; 379/6 to 381/6, 1/6, per 100; 381/6 to 383/6, 1/6, per 100; 383/6 to 385/6, 1/6, per 100; 385/6 to 387/6, 1/6, per 100; 387/6 to 389/6, 1/6, per 100; 389/6 to 391/6, 1/6, per 100; 391/6 to 393/6, 1/6, per 100; 393/6 to 395/6, 1/6, per 100; 395/6 to 397/6, 1/6, per 100; 397/6 to 399/6, 1/6, per 100; 399/6 to 401/6, 1/6, per 100; 401/6 to 403/6, 1/6, per 100; 403/6 to 405/6, 1/6, per 100; 405/6 to 407/6, 1/6, per 100; 407/6 to 409/6, 1/6, per 100; 409/6 to 411/6, 1/6, per 100; 411/6 to 413/6, 1/6, per 100; 413/6 to 415/6, 1/6, per 100; 415/6 to 417/6, 1/6, per 100; 417/6 to 419/6, 1/6, per 100; 419/6 to 421/6, 1/6, per 100; 421/6 to 423/6, 1/6, per 100; 423/6 to 425/6, 1/6, per 100; 425/6 to 427/6, 1/6, per 100; 427/6 to 429/6, 1/6, per 100; 429/6 to 431/6, 1/6, per 100; 431/6 to 433/6, 1/6, per 100; 433/6 to 435/6, 1/6, per 100; 435/6 to 437/6, 1/6, per 100; 437/6 to 439/6, 1/6, per 100; 439/6 to 441/6, 1/6, per 100; 441/6 to 443/6, 1/6, per 100; 443/6 to 445/6, 1/6, per 100; 445/6 to 447/6, 1/6, per 100; 447/6 to 449/6, 1/6, per 100; 449/6 to 451/6, 1/6, per 100; 451/6 to 453/6, 1/6, per 100; 453/6 to 455/6, 1/6, per 100; 455/6 to 457/6, 1/6, per 100; 457/6 to 459/6, 1/6, per 100; 459/6 to 461/6, 1/6, per 100; 461/6 to 463/6, 1/6, per 100; 463/6 to 465/6, 1/6, per 100; 465/6 to 467/6, 1/6, per 100; 467/6 to 469/6, 1/6, per 100; 469/6 to 471/6, 1/6, per 100; 471/6 to 473/6, 1/6, per 100; 473/6 to 475/6, 1/6, per 100; 475/6 to 477/6, 1/6, per 100; 477/6 to 479/6, 1/6, per 100; 479/6 to 481/6, 1/6, per 100; 481/6 to 483/6, 1/6, per 100; 483/6 to 485/6, 1/6, per 100; 485/6 to 487/6, 1/6, per 100; 487/6 to 489/6, 1/6, per 100; 489/6 to 491/6, 1/6, per 100; 491/6 to 493/6, 1/6, per 100; 493/6 to 495/6, 1/6, per 100; 495/6 to 497/6, 1/6, per 100; 497/6 to 499/6, 1/6, per 100; 499/6 to 501/6, 1/6, per 100; 501/6 to 503/6, 1/6, per 100; 503/6 to 505/6, 1/6, per 100; 505/6 to 507/6, 1/6, per 100; 507/6 to 509/6, 1/6, per 100; 509/6 to 511/6, 1/6, per 100; 511/6 to 513/6, 1/6, per 100; 513/6 to 515/6, 1/6, per 100; 515/6 to 517/6, 1/6, per 100; 517/6 to 519/6, 1/6, per 100; 519/6 to 521/6, 1/6, per 100; 521/6 to 523/6, 1/6, per 100; 523/6 to 525/6, 1/6, per 100; 525/6 to 527/6, 1/6, per 100; 527/6 to 529/6, 1/6, per 100; 529/6 to 531/6, 1/6, per 100; 531/6 to 533/6, 1/6, per 100; 533/6 to 535/6, 1/6, per 100; 535/6 to 537/6, 1/6, per 100; 537/6 to 539/6, 1/6, per 100; 539/6 to 541/6, 1/6, per 100; 541/6 to 543/6, 1/6, per 100; 543/6 to 545/6, 1/6, per 100; 545/6 to 547/6, 1/6, per 100; 547/6 to 549/6, 1/6, per 100; 549/6 to 551/6, 1/6, per 100; 551/6 to 553/6, 1/6, per 100; 553/6 to 555/6, 1/6, per 100; 555/6 to 557/6, 1/6, per 100; 557/6 to 559/6, 1/6, per 100; 559/6 to 561/6, 1/6, per 100; 561/6 to 563/6, 1/6, per 100; 563/6 to 565/6, 1/6, per 100; 565/6 to 567/6, 1/6, per 100; 567/6 to 569/6, 1/6, per 100; 569/6 to 571/6, 1/6, per 100; 571/6 to 573/6, 1/6, per 100; 573/6 to 575/6, 1/6, per 100; 575/6 to 577/6, 1/6, per 100; 577/6 to 579/6, 1/6, per 100; 579/6 to 581/6, 1/6, per 100; 581/6 to 583/6, 1/6, per 100; 583/6 to 585/6, 1/6, per 100; 585/6 to 587/6, 1/6, per 100; 587/6 to 589/6, 1/6, per 100; 589/6 to 591/6, 1/6, per 100; 591/6 to 593/6, 1/6, per 100; 593/6 to 595/6, 1/6, per 100; 595/6 to 597/6, 1/6, per 100; 597/6 to 599/6, 1/6, per 100; 599/6 to 601/6, 1/6, per 100; 601/6 to 603/6, 1/6, per 100; 603/6 to 605/6, 1/6, per 100; 605/6 to 607/6, 1/6, per 100; 607/6 to 609/6, 1/6, per 100; 609/6 to 611/6, 1/6, per 100; 611/6 to 613/6, 1/6, per 100; 613/6 to 615/6, 1/6, per 100; 615/6 to 617/6, 1/6, per 100; 617/6 to 619/6, 1/6, per 100; 619/6 to 621/6, 1/6, per 100; 621/6 to 623/6, 1/6, per 100; 623/6 to 625/6, 1/6, per 100; 625/6 to 627/6, 1/6, per 100; 627/6 to 629/6, 1/6, per 100; 629/6 to 631/6, 1/6, per 100; 631/6 to 633/6, 1/6, per 100; 633/6 to 635/6, 1/6, per 100; 635/6 to 637/6, 1/6, per 100; 637/6 to 639/6, 1/6, per 100; 639/6 to 641/6, 1/6, per 100; 641/6 to 643/6, 1/6, per 100; 643/6 to 645/6, 1/6, per 100; 645/6 to 647/6, 1/6, per 100; 647/6 to 649/6, 1/6, per 100; 649/6 to 651/6, 1/6, per 100; 651/6 to 653/6, 1/6, per 100; 653/6 to 655/6, 1/6, per 100; 655/6 to 657/6, 1/6, per 100; 657/6 to 659/6, 1/6, per 100; 659/6 to 661/6, 1/6, per 100; 661/6 to 663/6, 1/6, per 100; 663/6 to 665/6, 1/6, per 100; 665/6 to 667/6, 1/6, per 100; 667/6 to 669/6, 1/6, per 100; 669/6 to 671/6, 1/6, per 100; 671/6 to 673/6, 1/6, per 100; 673/6 to 675/6, 1/6, per 100; 675/6 to 677/6

SALES BY AUCTION.**WEDNESDAY NEXT.**

Consignments of thousands of Spring Flowering and other Bulbs, Choice Hardy Herbaceous Plants, Rock Plants, Rhododendrons, Boxer Carnations, Fruit Trees, &c., &c.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.,

On Wednesday, January 10th, at 12 o'clock.
On view morning of sale and catalogues had.

ROSES.**THURSDAY NEXT.**

MESSRS. PROTHEROE & MORRIS will sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on Thursday, January 11th, and every succeeding Thursday at 1 o'clock, consignments of well-grown ROSES, especially lotted to suit all buyers.
On view morning of sale and catalogues had.

BUSINESSES TO LET.

NURSERY TO LET, commanding position: five minutes' front rail and tram; 5500 ft. glass; 1½ acres land, house, &c. MILES, Royal Hotel, Sheerness.

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORISTS' AND SEED BUSINESSES TO BE Let or Sold, Published by

MESSRS. PROTHEROE & MORRIS every month. Copies may be obtained post free on application.—Estate Offices, 67 and 68, Cheapside, London, E.C.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock, cash or exchange. See other advertisements; catalogues free—SMITH, London Fern Nursery, Longborough Junction, London, S.W.

WANTED, large Kentia Fosteriana PALMS, from 5 to 25 feet in height, for cash or exchange.—ROBERT GREEN (1911), LTD., 28, Crawford Street, London, W.

WANTED, 500 good TURFS, for Bowling Green.—Reply, G. BENNETT, Hon. Secretary High Wycombe Bowling Club, High Wycombe.

WANTED, Particulars, Prices, and Quantities of Erica carnea, Calluna vulgaris, &c., Kalnia latifolia, &c. to 30 ft. and grown Outlanders and Olear of Lebanon, to FREDERICK MARTIN, Bourne Place Gardens, Hildenborough, Kent.

PLANTS, &c., FOR SALE.

ROCK GARDEN PLANTS, Where and In What Soils to Plant Them," with Catalogue, free on application. Special selections, 12, 3s. 6d.; 25, 6s. 6d.; 50, 12s. 6d.; 100, 25s. All different, named, strong stock.—G. R. PHIPPS, Alpine Nursery, Barnham, Bognor.

MISCELLANEOUS.

EXPENSIVE ADVERTISING. In these days, when every firm has to advertise or see its business decline, it is necessary to make sure that the beneficial publicity is so obtained that the results justify the expenditure. It is this consideration that has led most keen business men to discontinue the wasteful method of advertising by catalogue. If enquiries be made of any printing firm it will be found that catalogue printing has fallen away since the war by about 80 per cent., nor is this to be wondered at. The price of paper is nearly three times what it was formerly, printing rates are higher, and the cost of postage is much increased, so that the wholesale distribution of large catalogues is now too expensive for business purposes. The newspapers, though they themselves are produced at much greater expense all round, have nevertheless refrained from increasing their prices for advertisements, and it is by utilising these permanent media that profitable advertising may still be practised.

FLORY & BLACK,
ORCHID NURSERY,

(Late Messrs. JAS. VEITCH'S Hybrid Establishment),

SLOUGH.

STOCK VARIED AND FINE.

Catalogue on application.

SELECT LIST OF BOOKS ON GARDENING.

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Publisher.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Orchids, Fertilisation of.** By Chas. Darwin. Illustrated. 2s. 11d.
- Orchid Growers' Manual.** By the late B. S. Williams. 800 pages. Numerous Illustrations. 16s. 8d.
- Pansies and Violets.** By D. B. Crane. Paper. 1s. 2d.; cloth, 1s. 9d.
- Pears and Plums, The Book of.** By the Rev. E. Bartrum, D.D. Illustrated. 2s. 9d.
- Pinus, The Genus.** By George Russell Shaw. Price £2 15s. 6d.
- Plant Breeding.** Being Five Lectures upon the Amelioration of Domestic Plants. By Prof. J. H. Bailey. Illustrated. 5s. 4d.
- Plant Life.** By C. A. Hall. £1 0s. 6d.
- Practical Plant Physiology.** By Frederick Keeble, F.R.S. Illustrated. 5s. 10d.
- Practical Tree Repair.** By Elbert Peets. The Physical Repair of Trees—Pruning and the Treatment of Wounds and Cavities. Illustrated. 7s. 11d.
- Plants and Trees, Diseases of Cultivated.** By George Massoe. Well Illustrated. 7s. 11d.
- Plants, A Popular Treatise on the Physiology of.** By Dr. Paul Soreau. Translated by F. E. Weiss, D.Sc. With 53 Illustrations. 9s. 6d.
- Practical Tree Repair.** By Elbert Peets. A pioneer Text book of Tree Surgery. Fully Illustrated. 7s. 11d.
- PRESENT DAY GARDENING.** Edited by R. Hooper Pearson, Managing Editor of the GARDENERS' CHRONICLE. Each of the seventeen volumes following contains 8 full page Coloured Plates. 1s. 10d. each.
- Sweet Peas.** (Second and Revised Edition, 1914.) By Horace J. Wright, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by Thos. Stevenson.
- Pansies, Violets, and Violets.** By William Cuthbertson and R. Hooper Pearson.
- Daffodils.** By the Rev. J. Jacob. With Preface by the Rev. W. Wilks, M.A.
- Orchids.** By James O'Brien, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.
- Root and Stem Vegetables.** By the late Alexander Dean.
- Carnations and Pinks.** By T. H. Cook, Head Gardener at Sandringham; James Douglas, V.M.H.; and J. F. McLeod, Head Gardener to the late Mr. Pierpont Morgan.
- Rhododendrons and Azaleas.** By W. Watson. With Preface by Sir F. W. Moore, M.A. (The first popular volume published on this subject.)
- Lilies.** By A. Grove. With Preface by H. J. Elwes, F.R.S.
- Apples and Pears.** By George Bunyard, V.M.H., Chairman of R.H.S. Fruit Committee.
- Irises.** By W. R. Dykes, M.A. With Preface by Prof. Bayley Balfour, F.R.S.
- Annuals.** By Charles H. Curtis.
- Rock Gardens.** By Reginald Farrer. With Preface by Dr. J. Bretland Farmer, F.R.S.
- Chrysanthemums.** By Thomas Stevenson. With Chapters by Charles E. Shea and C. Harman Payne.
- Tulips.** By Rev. Joseph Jacob, member of R.H.S. Tulip and Daffodil Committee.
- Dahlias.** By George Gordon, President of the National Dahlia Society.
- Roses.** By H. R. Darlington. A double volume, 2s. 10d. and 3s. 10d.
- Climbing Plants.** By William Watson, A.L.S. With introduction by William Robinson, author of "The English Flower Garden." 2s. 10d. and 3s. 10d.
- Primula, Handbook of the Hardy.** By H. M. Paul. An Illustrated Work on the Culture, Mode of Growth and Utility of Primulas. 1s. 11d.
- Pruning.** A Compendium of Outdoor Work, with special chapter for Small Holders. Reprinted from the "Fruit Trades' Journal." Illustrated. 1s. 1d.
- Pruning, The Handy Book of.** With Chapters on Grafting and Budding. By James Udale, with introduction by the Right Hon. Viscount Cobham. New Edition. Illustrated. 1s. 9d.
- Rock and Alpine Gardening.** By H. Hensley, rockwork expert. A practical guide to the making of Rock, Alpine, Wall and Water Gardens. Profusely Illustrated. 1s. 6d.
- Rock Garden, The English.** By Reginald Farrer. A complete dictionary of Hardy Plants suitable for Rock Garden Culture. Contains 500,000 words and 300 Illustrations. In 2 Vols. Price, £2 2s. 10d. post free (in the press).
- Rose, The Book of the.** By Rev. A. Foster-Mellier, M.A. Illustrated. New Edition. 5s. 5d.
- Roses for the Garden and Greenhouse.** By John Weathers. Description, Culture, Propagation, Manures, etc. Coloured Illustrations. 5s. 4d.
- Roses in Pots.** By Wm. Paul. Ninth Edition. An invaluable Guide to the Cultivation of Roses in Pots, whether for forcing or otherwise. 2s. 2d.
- Roses, their History, Development and Cultivation.** By Rev. J. H. Pemberton. Illustrated. 10s. 11d.
- Salads and their Cultivation.** By T. W. Sanders. How to grow them in the Open, on Hot Beds, and under Glass, etc. Freely Illustrated. Paper, 1s. 2d.; cloth, 1s. 9d.
- Saxifrages or Rockfoils.** By W. Irving and R. A. Malby. A practical work on the Culture of Saxifrages. Well Illustrated in Colour and Half-tones. 2s. 10d.
- Soil, The.** By A. D. Hall, F.R.S. An introduction to the Scientific Study of the Growth of Crops. New Edition. 5s. 5d.
- Species and Varieties, their Origin by Mutation.** By Prof. Hugo De Vries. Second Edition. 21s. 6d.
- Strawberry Culturist, The Illustrated.** A Book worthy of the attention of Raisers of New Varieties, as of the General Cultivator. 1s. 7d.
- Strawberry, The Book of the.** With Chapters on the Raspberry, Blackberry, Loganberry, Japanese Wineberry, and Allied Fruits. By Edwin Beckett. Illustrated. 2s. 9d.
- Sweet Peas.** (Second and Revised Edition.) By Horace J. Wright. Contains 8 Coloured full-page Plates. With Chapter on Sweet Peas for Exhibition by T. Stevenson. 1s. 10d.
- Sweet Peas and Antirrhinums.** By William Cuthbertson. 1s. 3d.
- Teratology, The Principles of Plant.** By W. C. Worsdell, F.L.S. Containing a large amount of new and interesting information. Illustrated. Price 25s. 8d.
- Tomato Culture for Amateurs.** By B. C. Ravenscroft. Illustrated. New Edition. In paper, 1s. 3d.
- Tomato Culture for Market.** By J. Stoddart. 1s. 1d.
- Topiary, The Book of.** By C. H. Curtis and W. Gibson, of Levens Hall. 2s. 10d.
- Trapping of Vermin and Birds, Practical.** By W. Carnegie. 1s. 3d.
- Trees: A Woodland Notebook.** By the Rt. Hon. Sir Herbert Maxwell, Bart., F.R.S., LL.D. 22s.

Complete New Catalogue sent Post Free on application to

THE PUBLISHER,
41, Wellington Street, Covent Garden, W.C.



Webbs' Exhibit at the R.H.S. Vegetable Exhibition, 1916, which obtained THE ONLY GOLD MEDAL awarded at this Show. *Gardener's Magazine* — "A very fine display and greatly admired." *The Gardener* — "A magnificent collection of exceptional quality."

GOLD MEDAL (Highest Award)

ROYAL HORTICULTURAL SOCIETY'S GREAT VEGETABLE EXHIBITION,
Vincent Square, Westminster, September, 1916,
Won by Messrs. Webb for a Collection of Vegetables, 80 distinct varieties.

GOLD MEDAL (Highest Award)

ROYAL AGRICULTURAL SOCIETY OF ENGLAND, MANCHESTER SHOW,
(Horticultural Exhibition), June, 1916.
Won by Messrs. Webb for a Collection of Vegetables, 40 distinct varieties.

GOLD MEDAL (Highest Award)

BIRMINGHAM UNITED HORTICULTURAL SOCIETY'S PATRIOTIC SHOW,
Town Hall, Birmingham, November, 1916.
Won by Messrs. Webb for a Collection of Vegetables, 50 distinct varieties

100 GOLD MEDALS & SILVER CUPS
WON BY WEBBS' VEGETABLES and FLOWERS
AT LEADING EXHIBITIONS, IN 5 YEARS.
Also Hundreds of Champion Prizes in Open Competitions

The Gardener's Task

—to obtain the largest amount of produce that the ground is capable of yielding—is a difficult one in existing conditions, and can only be achieved by sowing THE **FINEST SEEDS** and using THE **BEST FERTILISERS**.

WEBBS
Garden Catalogue

— FOR 1917

IS NOW READY. Contains particulars and illustrations of the **BEST AND MOST PRODUCTIVE STRAINS** of

VEGETABLE SEEDS.

SEED POTATOES.

GARDEN FERTILISERS.

FLOWER SEEDS.

LAWN SEEDS, ETC.

If not already on our books, send for a copy **POST FREE.**

Moulton Gard. Chronicle.

E. WEBB & SONS, Ltd.,
The King's Seedsman,
STOURBRIDGE.

RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges,
AND
Orchard House Trees.

A LARGE and SELECT STOCK
ALWAYS ON VIEW.

ILLUSTRATED AND
DESCRIPTIVE CATALOGUE
POST FREE.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.



Food Production
on Farms & in Gardens.

To obtain the best results sow
Dicksons Seeds
which are all carefully selected from
the finest and most productive strains,
and are always reliable.

Prices moderate. Catalogues free.
Dicksons Seed
Chester.

BULL'S SHRED

THE

Fumigant for 1917.

A PERFECT SHRED—AT LAST !

And certain death to all insect pests in greenhouses.



We have no hesitation in proclaiming this to be the most efficacious and economical fumigating shred on the market.

DIRECTIONS FOR USE.

Place the shred in heaps on the ground, light in three or four places and leave to smoulder.

Sufficient to fumigate 20,000 cubic feet of space, in sealed packets, 5/- per lb.

SOLE MANUFACTURERS—

BULL'S PLANT FOOD CO.,

536, KING'S ROAD, CHELSEA, LONDON, S.W.

JANUARY 6, 1917.]

THE

Gardeners' Chronicle

No. 1567.—SATURDAY, JANUARY 6, 1917.

CONTENTS.

Acorns and Chestnuts from Verdun .. .	6	Obituary—	
Agricultural appointments .. .	7	Batters, Andrew .. .	11
Bequest to a gardener .. .	7	Bridman, John H. .. .	11
Books, notices of—		Schneider, George .. .	13
Annuals and Biennials .. .	8	Olearia Guaniana and its allies .. .	13
British-grown Timber and Timber Trees .. .	8	Opuntias in Queensland .. .	13
Carnations, calyx splitting in .. .	7	the destruction of .. .	7
Catalpa, old seed and plant .. .	8	Orchid novelties of 1916 .. .	10
Fly larvae, destruction of .. .	7	On Almanac .. .	6
Food, ministry of .. .	6	Peaches, the leaf glands of .. .	6
Food production in Scotland .. .	6	Pollen by post .. .	7
Gardeners' Royal Benevolent Institution .. .	6	Sherrwood, the late Mr. N. N. .. .	6
Grass seed, germination of .. .	7	Societies—	
Intercropping, the value of .. .	9	General Bulb Growers' of Haarlem .. .	11
Iris, the planting of .. .	10	Linnean .. .	10
Laid tillage seventy years ago .. .	8	Manchester and North of England Orchid .. .	10
Loganberry, origin of the Manganese as a fertiliser .. .	6	New Zealand .. .	9
Manure, farmyard .. .	7	The Gardeners' Magazine .. .	9
Morocco .. .	7	Trees and shrubs .. .	8
		Vegetables .. .	8
		War items .. .	8
		Week's work .. .	4, 5
		Winter Chrysanths .. .	8

ILLUSTRATIONS.

Olearia Guaniana, <i>O. stellulata</i> , Labillardiere's plate of .. .	7
Olearias, leaves of .. .	7
Portraits—Cook, W. A., 4; Dunn, J., 4; Fausch, W., 4; Hudson, J., 4; Weston, J., 4 .. .	4

NOVELTIES OF 1916.

ORCHIDS

A REVIEW of the Orchids during the past year discloses the fact that hybrids have been pre-eminent in 1916, though they had been very few novelties amongst species and varieties of species. The only new species of importance was the New Guinea *Dendrobium Wollastonii*, which flowered at the gardens of the Hon. N. Clais, Rotterdam, at Ashton Wood, Urdie. It will be seen from the lists of new hybrid Orchids published in these pages from time to time that 340 novelties flowered for the first time last year. The plants were almost equally divided amongst amateurs and nurserymen, although probably some of the amateur exhibits were acquired by purchase. As most of these hybrids have not yet proved their worth for gardens, we propose to deal only with novelties certificated by the Royal Horticultural Society. The awards of the R.H.S. Orchid Committee in 1916 included fourteen First-class Certificates and sixty-seven Awards of Merit, of which two were withdrawn, as the exhibitors failed to comply with the rule that flowers of certificated plants must be placed at the Society's disposal for painting. The Society's collection of illustrations of certificated Orchids compiled since 1896 numbers 2,335, and is constantly referred to by the Orchid Committee for comparison with plants entered for awards. Cattleyas, Laelia Cattleyas, Odontiodas, Odontoglossums, Miltonias, Cypripediums and Sophronitis crosses continue to be favourites.

Exhibits from amateurs began to decline in numbers at the commencement of the war; Lieut. Col. Sir Geo. L. Holford has entirely ceased showing, whilst other well-known growers have only shown occasionally. The death of Mr. J. Gurney Fowler was a great loss to the Orchid world and to horticulture in general.

Sir Jeremiah Colman, Bart., Gattou Park, Surrey (gr. Mr. Collier), showed many good hybrids raised at Gattou, the most interesting being *Vuytstekeara Colmanii*, an elegant cross

between *Miltonia Warszewiczii* and *Odontioda Bradshawiae*. This exhibitor received Awards of Merit for *Odontoglossum Lambaebanum* var. *Gattou Prince*, and *Laelio-Cattleya Isabel Sander* var. *Gattou Queen*. The Duke of Marlborough, Blenheim, Woodstock (gr. Mr. J. Smith), secured First-class Certificates for *Laelio-Cattleya Britannica* Blenheim variety and *L.-C. Isabel Sander* Blenheim variety, both showy Orchids, and an Award of Merit for *L.-C. Weedonaurea*.

The late Mr. Gurney Fowler showed the noteworthy *Odontioda Joan Fowler's* variety in the month before he died. The remarkable *Odontoglossum ardentissimum* Memoria J. Gurney Fowler, which was exhibited by Miss Fowler from the Brackenhurst collection, secured a First-class Certificate, and is unique in its section, the corolla being ruby red blotched with *O. crispum* Solms, which is species crossed with *O. Pescatorei*, produces it, appearing in that plant alone.

Dr. Miguel Lacroze, Bryndir, Roxborough Lane, a comparatively new but enthusiastic Orchidist, secured Awards of Merit for *Laelio-Cattleya Bionis Aves*, a showy cross between *L.-C. luteo-helveticus* and *L. Emil*; *L.-C. Thymé* Bryndir variety, a rich yellow flower with dark labellum-edged lip; the bright red *Odontioda Elm Bryndir* variety; and *Brasso-Laelio Cattleya Queen of the Belgians*.

R. Windsor Rickards, Esq., Fisk Priory, Monmouthshire, a great fancier of *Cypripediums*, obtained a First-class Certificate for the large and handsome *Cypripedium* Mrs. Hilary Jenkinson, and Awards of Merit for the yellow and white *Cypripedium John Cypher* and *C. Chardwar*.

F. M. Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Bahntorf), showed *Odontoglossum ardentissimum* The Shrubbery variety, of rich claret colour with white margin; *Miltonia vexillata* The Shrubbery variety, bright rose with white work on the lip; and *M. Hyacinth* var. *F. M. Ogilvie*, a charming, delicately tinted form, for each of which an Award of Merit was given.

Ernst G. Meitling, Esq., Woburn Place, Addison-st. Mr. Stevenson, obtained a First-class Certificate for his handsome *Odontoglossum Memoriae* var. *Memoriae* available on October 24, and Awards of Merit for *O. pectinatum* var. *Naxos* and *Laelia Fata*, the latter a remarkable cross between *L. flava* and *L. Loma* G. W. Earl, Esq., The Manor House, Wickham, obtained a First-class Certificate for *Odontioda Gladys* and Award of Merit for *Olea Aurora*; Mrs. N. C. Cookson, Oakwood, Wylam, obtained an Award of Merit for *Cypripedium A. J. H. Smith*, with pretty, wax-like white flowers with violet purple markings; G. F. Moore, Esq., Chardwar, Bontton on the Wat., an Award of Merit for *Cypripedium Madame Albert Fey* var. *Chardwar* variety, the award being won by Patricia Ball, Esq., Ashford Park, Surrey, for *Cattleya Venus var. Victoria*, a beautiful yellow and ruby red form; and Cyril Mann, Esq., for Lycaete Skinner; Mrs. G. Hamilton Smith.

NURSERYMEN'S EXHIBITS.

Messrs. Armstrong and Brown, Orchidhurst, Timberidge Wells, who have added to their responsibilities by taking over the extensive block of Orchid houses at Brackenhurst, have been very successful in the raising, flowering and exhibiting of new Orchids. They were awarded three First-class Certificates, thirteen Awards of Merit, and had a monopoly of the Awards of "Preliminary Commendation," securing nine for new *Odontoglossums* and three for *Odontiodas*, the plants being shown with first flowers of remarkable beauty. The First-class Certificates were given for *Sophro-Cattleyas* Rex Orchidist variety and *Sa Mervyn Buller*, both of fine colour; and *Brasso-Laelio Cattleya* The Baroness Orchidist variety, a flower of perfect shape and clear, citron-yellow colour. The Awards of Merit were

given for *Cattleya Chlorina alba*, C. Monastri, C. Prince John Orchidist variety, C. Saturn Orchidist variety, C. Venus Orchidist variety, *Cypripedium Wm. Lloyd* var. Negro, chiefly of a blackish-purple colour; *Laelio-Cattleya Golden Wren*, L. C. Lady Munningham Buller, L. C. Maquoda, L.-C. Erzerum, L.-C. Sir Mervyn Buller; *Miltonia vexillaria* Drounought, one of the largest rose-pink forms, and *Miltonia Frank Reader*, a very handsome variety with rose-coloured flowers of fine shape and a rich ruby mask to the lip.

Messrs. Charlesworth and Co., Haywards Heath, sustained their reputation for fine novelties, winning four First-class Certificates and twelve Awards of Merit. The First-class Certificates were gained by *Brasso-Laelio-Cattleya Joan var. Verdun*, a rich yellow flower; *Laelio-Cattleya Antinous*, L.-C. Momus, a showy dwarf hybrid between *L. C. rubens Lambaebanum* and *C. Octave Doin*; and *Odontoglossum The Czar*, which, as shown on March 7, was one of the finest dark *Odontoglossums* and one of the best specimens shown. Awards of Merit were received by *Cattleya Trianae* Roehling's var., a fine flower with bands of claret-red in the petals; *C. Rosta*, an attractive white-petalled flower; *C. Venus Golden Queen*, *Laelio-Cattleya General Letchitsky* and *L. C. Serbia*, the last having much of the large size and fine form of its parent, *L. C. St. Gothard*; *Miltonia Isabel Sander* Charlesworth's variety, *Odontioda Alcantara*, *O. Brevii cupreum*, *O. Florence*, *O. Dora*, *Sophro-Laelio Cattleya Lutetia*, and the interesting *Wilsonara insignis*, with mauve flowers.

Messrs. Floy and Black, Orchid Nursery, Slough, showed a variety of interesting hybrids from their establishment at Slough, taken over from Messrs. Jas. Veitch and Sons. They obtained ten Awards of Merit for *Brasso-Cattleya Mars var. xantholeuca*, a perfect, large cream-white flower with cowslip yellow centre; *Cattleya Alexandra*, and *C. Rhoda Langley* variety, one of the darkest of the cross between *C. Iris* and *C. Hardyana*; *C. Naidia* var. *luminosa*, *Laelio-Cattleya Soudange*, *L.-C. Lorna*, *L.-C. Verdun*, *Odontioda Irene* var. *Gloria*, *O. Gratryae* Byndir variety and *O. Prince Albert*.

Messrs. Sander and Sons, St. Albans, in *Cattleya Thebes* (*Adula* s. *Dowiana*), for which they obtained a First-class Certificate on October 24, showed one of the handsomest yellow-petalled *Cattleyas* of the year, its rich ruby red labellum contrasting effectively with the other segments. Messrs. Sander also received Awards of Merit for *Brasso-Cattleya Orion* var. *Majestic*, a large cream-white flower tinged with rose; *Miltonia John Barker*, an attractive flower of unrecorded derivation; and *Cattleya Fabia Memoria* Lord Roberts, fine in form and rich in colour. Messrs. J. and A. McBean, Cooksbridge, obtained Awards of Merit for *Cattleya chionosis alba*, a pure white form; *Cymbidium Alexanderianum*, and *C. A. Excelsior*, two of the best which their numerous *Cymbidium* crosses have produced; *Odontoglossum amabile* McBean's variety, and *O. crispum* Aldworth, which was one of the attractions at the Chelsea Show.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, obtained Awards of Merit for *Brasso-Cattleya Home Low's* variety and *Cattleya Per cybalina grandiflora*, the latter one of the largest forms of the species and of good shape and colour.

The following new or rare Orchids were illustrated in the e pages during 1916:

- Brasso-Laelio-Cattleya The Baroness Orchidist variety, December 9, p. 235.
- Cattleya illustris, September 30, p. 153.
- Cyrtopetalum Rothschildianum, October 13, p. 139.
- Coleogyne corymbosa at Colesborne, March 18, p. 159.
- Cymbidium Parishii Sanderae, June 10, p. 307.

- Cypripedium Fairricanum from seed, December 9, p. 276.
 Cypripedium Thalia Mrs. F. Wellesley, June 10, p. 309.
 Dendrobium glomeratum, August 26, p. 97.
 Dendrobium Victoria Regina, May 20, p. 267.
 Dendrobium Wollastonii, April 15, p. 206.
 Dendrobium Sanderæ, October 7, p. 163.
 Disa Blackii Langley variety, August 5, p. 65.
 Disa grandiflora and parts, December 2, p. 270.
 Disa longicornu, December 2, p. 266.
 Disa racemosa, December 2, p. 271.
 Disa sagittalis, December 9, p. 285.
 Disa tripetaloides, December 9, p. 284.
 Disa Veitchii, December 2, p. 269.

VEGETABLES.

ONIONS.

ONIONS succeed in the same beds for several seasons in succession, and without the ground being dug. After the crop has been harvested rake up and burn all rubbish immediately and sprinkle the ground with lime. During the next three or four months feed the ground lavishly with slops from the house, garden, cess-pools, and pisties. This should be done until the end of February, then rake the rubbish from the surface and apply another dressing of lime. I prefer to sow the seed under glass in February, and transplant the seedlings into

manures. The ground having been treated as recommended will be rich in nitrogen, and will absorb and retain the ammonia for the use of the plants during their season. Sprinklings of a mixture of soot and wood ash between the rows occasionally will be beneficial. Should other manure be deemed necessary, give it in a liquid state. Transplanting is a great help in warding off attacks of the Onion maggot, but the practical gardener of to-day cannot afford to ignore the old saying, "prevention is better than cure." Therefore use a preventive from the start, and thus save time, labour, and expense. Quassa extract, to which has been added a small wineglass of paraffin to the gallon, is a good specific for the maggot. I have also great faith in clear soot water. *M. S. A., B.E.F., France.*

GLOBE ARTICHOKE.

I was surprised to read Mr. James' directions for growing Globe Artichokes (*Gard. Chron.*, Vol. LX., p. 219). In Scotland, in high inland districts, where the winters are certainly not mild, these plants were always grown without protection (I speak of gardens 550 feet above sea level), but the preparation of the ground is very thorough. For each plant a hole 3 feet by 3 feet deep is dug, material for drainage placed at the bottom, and the hole filled with good manure and leaf mould incorporated with the local staple, in which the Artichokes are planted, and these last for years without renewal.

However, this is not a time to plant such an extravagant vegetable, when the space required might be much more profitably planted with quick-growing crops—by so doing two crops could be taken from the same ground in the year. *Western Wight.*

DISEASE OF POTATOS.

A VERY valuable bulletin of the disease of the Potato known as *Spongospora subterranea* records the results of experiments made in America, and should be studied by all in this country who are interested in Potato growing.

This disease (corky scab), well known in the British Isles, has, as is the case here, a fairly definite geographical distribution in America.

By transferring infected soil to districts in which the disease is unknown the authors have shown that the absence of the disease in certain regions is due to climatic conditions which interfere with and prevent infection. Their observations lead them to conclude that infection is confined to those regions in which periods of rainfall, followed by cool, damp, cloudy weather occur during the growing season. They find, moreover, that certain types of soil are more readily productive of infection than others. The disease is not confined to the tuber, but occurs in the root system, and is manifest therein by numerous galls.

In addition to the Potato no fewer than seven other species of *Solanum* (including the Tomato) are susceptible to the disease, and when infected show root galls similar to those which occur on infected Potatos.

Treatment of "seed" by formaldehyde or by mercuric chloride reduces the amount of disease, and the reduction is greatest when the seed is steeped in hot solutions for a short time, e.g., formaldehyde, 2 parts to 30 of water, at a temperature of 46°-50° C. for 5 minutes, or mercuric chloride, 4 parts to 15 of water, at 44°-45° C. for 5 minutes.

Variety tests indicate that some kinds are less susceptible than others; among the more resistant is Eldorado, but it is not claimed that any varieties are wholly immune. The fungus which causes the disease is widespread in in-



FIG. 1.—LABILLARDIERE'S PLATE OF *OLEARIA STELLULATA* (*ASTER STELLULATUS*, O. LABILL.).

This plant has never been in cultivation, but several species have been grown under the name *O. stellulata*. Two-thirds natural size. (See p. 5.)

- Laelia Flaviviona, January 15, p. 53.
 Masdevallia deorsis, March 18, p. 154.
 Miltonia Frank Reader, June 3, p. 295.
 Orchis foliosa at Warley Place, November 4, p. 221.
 Odontioda Joan Fowler's variety, March 11, p. 149.
 Pleione yunnanensis, March 18, p. 161.
 Odontoglossum ardentissimum Memoria J. Gunney Fowler, May 27, p. 232.
 Odontoglossum crispum Leonard Perfect, June 10, p. 311.
 Odontoglossum The Czar, March 11, p. 150.
 Sophro-Cattleya Rex Orchidhurst variety, April 1, p. 137.
 Wilsonara insignis, June 10, p. 312.

(To be concluded.)

boxes, or place four around the edge of a 60-sized pot and plunge the latter in a hotbed. The chief dangers to avoid at this stage are cold draughts and an excess of water. Grow the seedlings close to the roof-glass to prevent their being drawn, and let the air circulate about them freely. Gradually harden the plants, and stand them outside on an ash bottom, under the shelter of a wall, for a few days before planting them in their permanent quarters. Before this operation is commenced give the ground a sprinkling of soot, and lightly rake it beneath the surface. Plant at a distance of 4 to 6 inches apart. As the bulbs begin to swell, water the roots pretty freely in dry weather, but on no account begin feeding them with strong nitrogenous

* *Spongospora subterranea* and *Phoma tuberosa* on the Irish Potato." By Messrs. Melhus, Rosenbaum and Schultz. *Journ. Agric. Research*, VII., 5, Dept. of Agric., Washington.

fected soils, and may persist for five years. No treatment has so far been discovered which rids the soil of the disease-producing organism, but sulphur, broadcasted at the rate of 600 lb. per acre, reduces the amount of infection by Spongospora.

WASTEFUL WAYS OF COOKING POTATOS.

USEFUL advice, particularly applicable to the present time, is contained in Special Leaflet No. 67* on Economy in Using Potatos. Having regard to the fact that less than 25 per cent. of a Potato is food and more than 75 per cent. water, it is specially important to make the most of the food substances contained in the tuber.

If pared, put into cold water and boiled, a large proportion of the flesh-forming constituents of Potatos is lost. On the other hand, boiling or steaming them in their jackets preserves nearly all the nutriment of Potatos. Baking also, if it be done slowly, results in the retention of the food substances.

OLEARIA GUNNIANA AND ITS ALLIES.

For a considerable time confusion has been prevalent in gardens regarding the correct nomenclature of various species of *Olearia*, which have been grown under the names *Olearia Gunniana*, *O. stellulata*, and *O. lyrata*. It has never been quite clear which particular forms should bear these names respectively, so at Mr. Bean's instigation the writer has undertaken an investigation of the taxonomy of this group of species, the results of which are set out in the following notes.

It may be remarked that the confusion at the present day in regard to the names of many garden plants, and Australian plants in particular, is often due to the excessive reduction or "lumping," if we may use a popular term, of species by certain authors. This is a constant source of trouble and delay to both horticulturalists and taxonomists, for the unravelling of the species can only be satisfactorily accomplished by the examination of actual types and of all specimens quoted, the latter, mostly preserved in various herbaria, not being always easy of access.

The species dealt with in the present paper are included by Bentham in the *Flora Australiensis*, Vol. III., p. 473, under the name *Olearia stellulata*, which, as the writer has endeavoured to show in the following lines, is a rather obvious example of an aggregate species. To be quite clear it will be as well to set out Bentham's treatment of this species as it stands in the *Flora*, which is as follows:—

"*Olearia stellulata*, DC., *Prodr.*, v., 272, with the following synonymy: "*Aster stellulatus*, Labill., *Pl. Nov. Holl.*, ii., 50, t. 156; *Eurybia fulvida*, Cass. [in *Dict. Sci. Nat.* xvi., 47]; *Hook. l., Fl. Tasm.*, i., 175; *Diplostephium stellulatum*, Nees, *Gen. et Sp. Aster.*, 187; *Aster phlogopappus*, Labill., *Pl. Nov. Holl.*, ii., 49, t. 195; *A. phlogotrichus*, Spreng., *Syst.*, iii., 525; *Eurybia quercifolia*, Cas. [in *Dict. Sci. Nat.*, xvi., 47]; *Diplostephium phlogotrichum*, Nees, *Gen. et Sp. Aster.*, 186; *Olearia phlogopappa*, DC., *Prodr.*, v., 272; *Eurybia Gunniana*, DC., *Prodr.*, v., 268; *Hook. l., Fl. Tasm.*, i., 175; *E. subrepanda*, DC., l.c."

Following the geographical distribution of the species, "Queensland, N.S. Wales, Victoria, and Tasmania," there are descriptions of three varieties with their synonymy as follows:—(1) "var. *canescens*;" (2) var. *lirata*—*Aster liratus*, Sims, *Bot. Mag.*, t. 1509; *Diplostephium lyratum*, Nees, *Gen. et Sp. Aster.*, 188; *Eurybia lirata*, DC., *Prodr.*, v., 267; *Hook. l., Fl. Tasm.*, i., 175, t. 45; and (3) var. *quercifolia*—*Aster quercifolia*, DC., *Prodr.*, v., 272; *Eurybia rugosa*, F. Muell. ex Archer in *Journ. Linn. Soc.*, v., 22."

From the above somewhat formidable array of synonymy it will be seen that the specific name *stellulatus* was first used by Labillardiere, and is the original of De Candolle's *Olearia stellulata*. Labillardiere gives an ample description and an excellent figure of his plant, a specimen of which is preserved in the Natural History Museum, South Kensington. A photograph of the illustration is reproduced in fig. 1, with the permission of the Director of the Royal Botanic Gardens, Kew, and a drawing of a typical leaf is shown in diagram (see fig. 3 (1)). It is a very different species from *Olearia Gunniana*, *Hook. l.*, of which a photograph of a typical specimen (dried) is here given, and a drawing of a typical leaf (see fig. 3 (8)). There are numerous specimens of *O. stellulata* in the Kew Herbarium, but no cultivated ones, and it seems certain that this species is not, and never has been, in cultivation in this country. The next synonym quoted by Bentham is *Eurybia fulvida*, Cass., but as this was merely a new name proposed by Cassini, with no apparent reason, for *Aster stellulatus*, Labill., it may be passed without further comment. As may be noted, Cassini's name was also used by Sir Joseph Hooker in his *Flora of Tasmania*, where the species were much more critically dealt with than in the *Flora Australiensis*. *Diplostephium stellulatum*, Nees, is only Labillardiere's plant under a different generic name. *Aster phlogopappus*, Labill., is again well-described and figured by Labillardiere, and is, I consider, a form of *Olearia Gunniana*, *Hook. l.* Sprengel preferred the name *A. phlogotrichus*, which accounts for the next synonymy. *Eurybia quercifolia*, Cass., is a new name for *Aster quercifolia*, Labill., another alteration of name for no apparent reason. *Diplostephium phlogotrichum*, Nees, and *Olearia phlogopappa* are merely other combinations for the respective species mentioned above. Then we have *Eurybia Gunniana*, DC., the description of which was founded on plants collected by Gunn and forwarded by Lindley to De Candolle. And the last name quoted by Bentham is *Eurybia subrepanda*, DC., another species described in De Candolle's *Prodrum*.

In the above synonymy of *O. stellulata*, as defined by Bentham, the writer considers that there are at least three distinct species of *Olearia* represented, *O. stellulata*, DC., *O. Gunniana*, *Hook. l. (Bot. Mag.*, t. 4638), and *O. subrepanda*, *Hutchinson (comb. nov.)*; whilst under the varieties there are perhaps four others, *O. canescens*, *Hutchinson (n. sp.)*, *O. lyrata*, *Hutchinson (n. comb.)*, *O. quercifolia*, DC. (non Cass.), and *O. rugosa*, *Hutchinson (comb. nov.)*. *O. canescens*, *O. quercifolia*, and *O. rugosa* are very distinct species indeed; the last two have separate geographical distribution, *O. quercifolia* being confined to New South Wales and *O. rugosa* to Victoria.

In order to establish the identity of the typical form of *O. Gunniana*, it was necessary to consult the Lindley Herbarium, and the writer is much indebted to Prof. Soward for the loan to Kew of the necessary type specimens from Cambridge. In the Lindley Herbarium, as at Kew, there are several different forms labelled *O. Gunniana*, but it is comparatively easy to fix upon the one described by De Candolle. He described the leaves as being toothed, about 1 1/4 inches long, and the pedicels (peduncles) long and slender. A photograph of what the writer takes to be typical *O. Gunniana* in the Kew Herbarium is here reproduced (see fig. 2), and it will be seen to correspond very well with De Candolle's description. If it be compared with the photograph of Labillardiere's figure of typical *O. stellulata*, the mistake of associating the two species will be evident. In the *Flora of Tasmania* Sir J. D. Hooker dealt very critically with the Tasmanian forms of *Olearia* (*Eurybia*) *Gunniana*, and he described no less than eight varieties. As only two of

these, var. *cana* and var. *lirata*, appear to be in cultivation, the remainder are dealt with in the systematic account given below. "Var. *cana*" is identical with *Eurybia subrepanda*, DC., and should for horticultural purposes be regarded as a distinct species. The leaves are much shorter and more rounded or obovate than in *O. Gunniana*, and they are nearly always densely canous-pubescent on the upper as well as the lower surface. *O. subrepanda* was grown in Veitch's nursery at Coombe Wood in 1884, and a dried specimen of one of their plants collected by Mr. G. Nicholson (No. 2915) is preserved in the Arboretum Herbarium at Kew. This may be the species figured in the *Gard. Chron.*, 1882, i., 732, fig. 113. "Var. *lirata*" is again a very distinct species, and should be known as *O. lyrata*, *Hutchinson*. It is usually extremely floriferous, with long, tapering entire leaves, the flower-heads being nearly always gathered into definite dense bunches at the ends of the lateral branchlets. *J. Hutchinson, Kew.*

(To be continued.)

TREES AND SHRUBS.

PROPAGATING SHRUBS.

OUR district is situated in the west of Cambridgeshire, about three miles from the sea. The climate, which is comparatively mild, cool and humid, has undoubtedly a great influence on the growth of the plants of which I am writing. I have found that there it is possible to propagate nearly all shrubs, with the exception of some of the Ericaceae, on an open border under a north wall. This border is 10 feet wide, and is sheltered from the east and west winds to some extent; very little sun reaches the border except in the morning and evening about the end of June.

In preparing the soil for the cuttings I placed a drain 2 feet deep by the edge of the border near the path, and then had the border double dug, taking care to make the subsoil more open by adding burnt earth and mortar rubble to the bottom of each trench. The surface soil was improved after the double digging by dressing it with large quantities of leaf mould and weathered coal ashes, and I think it is these ashes that have caused the development of such an abundance of roots as the rooted cuttings have. The double digging is only done about every three years, but the dressings of leaf mould and ashes are given each year. The work commences as soon as the previous year's rooted cuttings have been lifted, generally the last week in October; the border is dug over and allowed to settle before planting the cuttings about mid-November.

We generally prepare the cuttings during wet weather and heel them in until the soil is dry enough for planting. When preparing the cuttings we select well ripened wood and use strong shoots with two-year-old wood if procurable. With many species a heel to the base of the cuttings is made by pulling them off at a joint; this heel is of great importance, especially with plants having pith, such as *Roses*. Before planting, another dressing of weathered coal ashes is given to the surface of the border, which is then trodden down firmly. These ashes work in with the cuttings and encourage rooting. The cuttings are planted in short rows 1 foot apart, with the cuttings 6 inches apart and 4 inches deep. A bright, clean working spade is better than a dibber for this operation. As the work proceeds the cuttings are made quite firm by treading upon either side of the row, after which the surface of the soil is made loose with a Dutch hoe.

It is necessary to examine the cuttings from time to time, especially after frosty and stormy weather, and to tread them in firmly again, the final firming being done at the end of March. No other attention is necessary except the frequent hoeing and staking of the climbing *Roses*

* See *Journal of Board of Agric.*, XXIII., 3.

and such plants as *Buddleias*, and by the end of October the plants may be fitted for transferring to nursery beds.

It is surprising how rapidly the young plants develop while in the cutting bed, making, in the case of *Veronicas* and other similar plants, quite well formed bushes in the one season. The shrubs rooted in pots and wintered in cold frames cannot be compared with those rooted outside, and I find that we can get a much larger percentage of strikes of such plants as *Choisya ternata* and *Viburnum Tinus* in the open, and that the plants grow away freely and make shapely specimens.

By the way of further experiment I planted at the beginning of April last year a duplicate set of cuttings, the result being that there was a very good percentage of rooted plants, but their growth was not so strong.

It is necessary for me to warn readers as to the ashes they use for opening the soil when preparing the border. Stakehole ashes from coke are of no use; in fact, they may be harmful in binding the soil; and in the case of coal ashes they should be well weathered and contain no fine dust, which might cement together. If sand is used it should be quite sharp and clean, free from any binding substances such as iron or fine clay.

The following are some of the shrubs I have successfully rooted in the open. All the cuttings were taken from plants growing in the open:—*Atriplex Halimius*, *Aucuba japonica* var., *Azara microphylla*, *Berberis japonica* and other species, *Buddleia speciosa*, *Buxus*, *Cassia fulvida*, *Ceanothus*, *Choisya ternata*, *Cistus*, *Coronilla Emerus*, *C. glauca*, *Desfontainia spinosa*, *Eucalyptus*, *Fuchsia corallina*, *F. Riccartonii*, *Griselinia*, *Hydrangea hortensis*, *H. paniculata*, *Laurus nobilis*, *Lavandula*, *Leycesteria*, *Muehlenbeckia*, *Olearia Haastii*, *O. stellata*, *Ozothamnus rosarinifolius*, *Rhodotypos*, *Rosmarinus*, *Silya fruticosa*, *Skimmia*, *Spiraea arguta*, *S. media* (confusa), *Tamarix*, *Tecarium*, *Veronica Anderssonii*, *V. buxifolia*, *V. nummulariaefolia*, *V. salicifolia* and vars., *V. Traversii*, many garden varieties of *Veronicas*, and *Rambling Polyantha*, *Wickströma*, and *H.P. Roses*. *A. D. Turner*.

GARRYA ELIPTICA

This handsome Californian evergreen shrub (see *Gard. Chron.*, Vol. LX., pp. 254, 272) is much harder than is generally supposed, and training it formally against a wall robs it of every chance of showing its beauty. In Sir Harry Veitch's garden at East Burdham Park a fine group of *Garrya*—both male and female forms, I believe—occupies a position on the lawn near the house, where, judging by the size of the plants, they must have stood for many years. Near my old home at Hampton Hill a couple of trees in a lady's garden reaching 8 feet or 9 feet high had a lateral spread of at least 20 feet. On a slightly raised bank, and only separated from the road by a low palisade wall, they were in full view of all who passed by, and looked beautiful when laden with catkins. The site faced north-east, and the only protection the plants had was a thin screen of young *Sycamores* in a garden on the opposite side of the road. The only thing they suffered from during a score of years was a jolting gardener's pruning saw. A heavy snowstorm one winter bore them down, and the gardener, seizing the opportunity, sent in word to his mistress that they were "broken down and would never recover. Should he prune them?" In this way sanction—reluctantly given—was obtained. Within an hour or two they were sawn off at about 2 feet from the ground. Owing to the exceptional size of the wood, I secured a piece and placed it before the Floral Committee of the R.H.S. at the old Drill Hall many years ago. The circumstances of its growth interested the late Mr. Nicholson, and the piece of stem eventually found its way to Kew Gardens. *E. H. Jenkins*.

The Week's Work.

FRUITS UNDER GLASS.

By JAMES HUBSON, Gardener to LEOPOLD DE ROTHSCHILD, Esq., C.V.O., Gunnersbury House, Acton, W.

FORCING.—In writing of this department I shall not only mention such fruits as are now popular, but endeavour also to encourage the culture of others which might be advantageously grown. The absence in most gardens of the Pineapple nowadays is to be regretted. I have had nearly



twenty-five years' experience with this fruit, but now it seems almost superfluous to touch upon it. The growth of the Banana, too, has dropped out for the same reason, namely, that imported fruit has improved in quality.

Head gardeners have great responsibilities to bear in the present crisis, and that of fruit culture under glass is one of the most difficult with the very great shortage of labour. Fruit forcing, as we understood it before the war, no longer obtains in many gardens, yet it should not be entirely set on one side, for if this is done there will, in all probability, be an excess of fruit later in the season. What may be done in this direction is to give a rest to such as the first early vines and Figs, Peaches, and Nectarines. If any of these fruits show a tendency to exhaustion let them have a complete rest for one season. Let the vines be allowed to make more growth, not entirely to grow wild, but growth that will encourage increased root development. If it be possible give attention at the same time to the borders by top-dressing them with fresh loam and old mortar rubble, or its equivalent. Well-rotted farmyard manure would also be an excellent top-dressing. If any vines are still unpruned they should be treated at once.

LATE GRAPES.—The latest Grapes, such as the last of the crop of Muscat of Alexandria and the crop of Lady Downes and Gros Colman should now be cut and bottled, then placed in a dry, dark room where a minimum temperature of 45° can be maintained. Let the pruning of the vines be then proceeded with, and if there be any tendency towards bleeding dress the wounds with styptic. Take the earliest opportunity to remove any loose bark and then scrub the rods with warm water; water at a temperature of 150° will kill many of the insect pests and do no harm whatever to the vines. Next apply a dressing of such an insecticide as Liquid Gishurstine, or similar well-proved preparation. The object of following this dressing immediately upon the hot water is that it will have greater penetrating power. At the same time thoroughly cleanse the interior of each house and water all inside borders freely.

PEACHES AND NECTARINES.—In the case of these fruits take the first opportunity that may arise to thin out any exhausted wood. That is, in other words, lay in the wood thinner than usual, and give a rest to those trees that have been forced severely for some years past. In the case of these fruits do not employ the water solut for dressing the wood as in vines or Figs. Watch the trees narrowly, and keep the houses

close, or nearly so, as soon as the first symptoms of activity are seen in the flower buds.

FIGS.—In the case of trained trees that are still resting, a good opportunity may be afforded of resting them longer than usual, and somewhat severe pruning may in some cases be commendable. Follow out the same routine as advised for vines, but do not add any nitrogenous manure to the borders, for this would encourage excessive growth.

VINE AND FIG PROPAGATION.—If it be desired to raise vines from eyes this spring no time should be lost in preparing a gentle hotbed of fermenting material for the purpose. Avoid extremes of temperature, and err rather on the side of a dry atmosphere than of an excess of moisture. It is better to insert each eye in a thumb-pot than to pit several into a pan. With respect to Figs more may be accomplished by propagating a few plants every spring and growing them quickly when once rooted, than is usually done in private gardens. The Fig will luxuriate in a temperature that is congenial to the Melon. Figs now propagated in this manner will yield a few fruits by next September, and a good crop in pots the following year. I use the tips of the shoots—well ripened, of course—for this purpose, and make the cuttings about 3 inches in length. A good half dozen varieties for this purpose are Brown Turkey, White Marselles, Negro Largo, Bourjassotte Grise, Grosse Violette de Bordeaux and Violette Sepor.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHCOTE, Eastwell Park, Kent.

"MALMAISON CARNATIONS."—The best results with these charming flowers are obtained when the plants are kept practically dormant during winter. This is brought about by keeping them dry at the roots and in a comparatively cool house. Only sufficient fire heat is necessary to

keep the atmosphere from getting too damp, and to maintain a temperature of about 40°. Two-year-old plants should have all the growths neatly staked, using thin bamboo points, of the same shade of colour as the Carnation foliage. Pick off all decayed foliage, and lightly



stir the surface soil if it is becoming caked. If the rust fungus is prevalent, pick off all affected leaves and burn them. This operation makes the plants look shabby for the time being, but they quickly recover when growth recommences in spring. I am not in favour of spray specifics being used at this season of the year. The best preventive of rust is to keep the plants cool, and in a dry atmosphere, strictly avoiding a warm, close atmosphere. Young plants layered last autumn, if not already in their flowering pots, should be potted during the present month, for if they are left too long in small pots they are apt to become stunted, and incapable of growing away freely when potted. The first requisite is good drainage, and the potting compost may consist mainly of sweet turfy loam, pulled up roughly, with some charcoal, fine rubble, and sharp sand added, and a 6-inch potful of soot, or Carnation manure, to each barrowful of compost. Pot firmly and water sparingly until the plants are growing freely.

CINERARIAS.—The early plants are now developing their flower-spikes. When in this stage, and the pots full of roots, the plants must on no account suffer from lack of water, or the foliage will lose its freshness and colour, and the flower-

spikes become stunted. Give regular waterings with weak manure or soft-water, and occasional pinches of a good artificial plant food. The day temperatures should range between 45° and 50°, allowing the heat to drop to about 40° on cold nights. A high temperature for Cinerarias is harmful, and tends to encourage the spread of green fly and other insects. Fumigate the frame as often as necessary to keep the plants clean. Late batches of Cinerarias in frames can be kept cooler, admitting air daily in suitable weather.

HERBACEOUS CALCEOLARIAS.—These slow plants succeed under conditions similar to those given to Cinerarias. Two important points are never to allow the plants to suffer a check through becoming pot-bound in their early stages, and to avoid high temperatures. Shift the plants into larger pots as they require it, using a rich open soil. Stand the plants, if possible, on a damp bottom.

CLEANING PLANT HOUSES.—All plant houses should be thoroughly overhauled and cleaned during the winter months. Wash all glass and woodwork, both inside and out, limewash all walls under stages, and do any necessary repairs. Wash the fine gravel, or renew the material used on the stages, and see that all plants are clean before being brought in.

THE FLOWER GARDEN.

By W. J. GUNSE, Gardener to Mrs. DENESTER, Keele Hall, Staffordshire.

SHRUBBERIES.—The unfavourable weather has greatly delayed all work in the flower garden. Where the soil is very wet planting should be discontinued for a time, but every opportunity should be taken directly it is in a suitable condition to complete the work of planting deciduous trees and shrubs.



The plants in the shrubbery should be trimmed and regulated, using the knife freely on the common evergreens, especially where they are encroaching on choicer plants. A light forking of the soil is necessary directly the planting is finished, incorporating fallen leaves with the soil as the work proceeds. Vacant spaces in the back of shrubberies may be filled with surplus herbaceous plants. For these the ground should be trenched and liberally manured, removing old tree roots or stumps. Where flowers are grown in the foreground of shrubberies, the roots of the shrubs and trees quickly impoverish the soil, which should be trenched every year, or enriched with an abundance of manure, leaf-mould or old potting soil, and the opportunity taken to restrict the roots of the trees and shrubs. All rubbish collected should be burned and the ash distributed over the border.

DIGGING FLOWER BEDS.—It is not advisable to bring very heavy, retentive soil to the surface, especially where annuals are to be sown. In such cases take out a trench 12 inches deep and 3 feet wide. The bottom of the trench should be well broken up to a similar depth, mixing with it a quantity of sand, ashes, leaf-mould or decayed vegetable refuse. Next year the soil may be trenched 2 feet deep. The surface should be left as rough as possible until planting time.

SEEDS.—Home-saved seeds and any that remain from last season should be tested to ascertain their germinating qualities. Simplify the bedding schemes as much as possible, and use Antirrhinum, Larkspurs, Lupins, Lavateras, Godetias, Clarkias and Statice freely instead of the usual tender plants.

THE KITCHEN GARDEN.

By J. DESS, Foreman, Royal Gardens, Windsor.

EARLY PEAS.—A sowing of some hardy variety of Pea may be made as soon as the soil is sufficiently dry, on a warm south border which has been trenched and manured in early winter. Sow the seeds in shallow trenches, cover with 2 inches of fine soil, and keep a careful watch for mice and other pests.



EARLY CARROTS IN PITS.—A sowing of Carrots should be made with as little delay as possible, on a gentle hotbed made up in a brick pit; the hotbed may be trodden lightly together so that they may produce a mild and lasting warmth in the soil. Spread the soil over the bed to the depth of 3 inches. When it has become sufficiently warm and dry it should be made moderately firm with a wood rake. Sow the seeds carefully and cover lightly with fine soil. The surface of the bed should be lightly damped on fine days and the pit kept closed until the young plants appear through the surface, after which ventilation should be carefully given to keep them from becoming drawn.

LETUCES. A sowing of Lettuce seed should be made at once in boxes or pans, which may be placed in gentle heat until germination takes place. When the plants are well through the surface they may be removed to cooler quarters within a few inches of the glass and gradually hardened, so that they may be planted in cool pits as soon as large enough to handle. Golden Ball, Tom Thumb and May King are good varieties.

BROAD BEANS.—The Bean requires a good rich soil, and may be sown as soon as the ground is in suitable condition in a sheltered spot; sow in drills 3 feet apart and 3 inches deep. Broad Windsor and Beck's Dwarf Gem are suitable.

CALIFLOWERS. Plants raised in September should be freely ventilated during mild weather, and watered as often as necessary. On sunny days the lights should be removed from the pit. Any plants remaining in the seed bed should be potted up at once into 4-inch pots, and if the stock of autumn-grown Cauliflowers is short a sowing of some early variety should be made without delay. If placed in gentle heat until they are through the surface, and pricked off when large enough to handle, the seedlings should be ready for planting on a warm border early in April. Select such varieties as Magnum Bonum and Great Dane.

FRENCH BEANS. A sowing of Dwarf Beans should be made in 7-inch pots, and from this sowing pots should be ready to gather in six or seven weeks from the date the seeds are sown. Crook the pots carefully, and use a compost of two-thirds turfy loam and one-third rough leaf soil. Fill the pots three-parts full and leave the remaining space for earthing-up the plants when 6 inches high. A temperature of 65° with plenty of atmospheric moisture will suit them well. The Belfast and Osborn's Fencing are good varieties.

TOMATOS.—Make a sowing of some approved variety of Tomato to produce plants for fruiting in May. Sow the seeds thinly in pans of sifted soil and place in a temperature of 70°. As soon as the seedlings are large enough to handle they must be carefully potted into thumb-pots and placed near the glass in the same house until they become established, after which they may be removed to cooler quarters and ventilated to keep them stocky. These plants

should be potted as soon as ready, and never allowed to become stunted for want of root room. Tomato plants raised from seed in October intended to fruit in April should now be making good progress in 6-inch pots. Keep them as near the roof glass as possible.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. F. Davey Abbotts, Wood, Godalming, Surrey.

PLANTING OPERATIONS.—The weather has not been congenial for fruit tree planting recently, but with open weather any arrears can be got on with as soon as possible—especially so on light soil. The soil in this particular district is very light in texture, and after rain or frost has cleared for a few hours the ground can be easily worked. Any trees that have recently arrived from the nursery or other sources should be well covered with some frost-proof material, or laid in a trench and covered with soil. During inclement weather there are many things that can be done, such as preparing stakes, labels, and soils for planting. The mixing of soils cannot be done too thoroughly, especially those which contain manures. Draining operations can be pushed along, even in frosty weather. In heavy soils draining is requisite for the more tender fruits, such as Peaches, Nectarines, Apricots and Cherries. The drainage may consist of a good supply of rubble under each tree, or by putting in 2½-in. drain pipes; but if the land is drained the former plan is as practical as it is simple and effective. Many young fruit trees have been ruined through being planted in sour, waterlogged soil.



PROPAGATING. It is not too late to put in cuttings of Gooseberries and Currants, and it is always as well to have a small stock of these in order to fill gaps, or make new plantations, or to give away to the employees on the estate. Select straight shoots, or prunings, and rub away the basal eyes, or buds, and insert the cuttings about 6 inches apart in a trench chopped out about 6 to 8 inches deep. If a little lime rubble is at hand, a sprinkling after it has been passed through a 4-inch sieve can with advantage be sown along the bottom of the trenches. Be careful to propagate from clean and healthy bushes, and select only such varieties as do consistently well in the particular locality. Tread the cuttings in very firmly. The firmer they can be made the better will be the results.

ORCHARD TREES.—Orchards containing old trees can be attended to as opportunity occurs. Though it is difficult to obtain much labour this season, some of the old, well-pruned hands are still available, and with proper supervision are capable of good and useful work. The trees can be thinned and the centres opened up, which makes Apple and Pear gathering easier and quicker. Cut out all thin and weak wood; aim at taking all cross or crooked growth away, and all dead wood or decaying wood. If there is much dead wood the trees should be grubbed, and more profitable trees planted. Varieties which are not good or marketable should be headed back for grafting with good varieties in the season. This system is one which should commend itself to every grower, small or large, especially if the tree be vigorous and healthy. Prepare washes for fruit trees that require it, and on fine, still days, distribute them with a fine sprayer.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41 Wellington Street, Covent Garden, W.C.

Editors and Publisher Our correspondents would do well to obtain answers to their communications and save as much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to editorial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unasked communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturalists.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41 Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 37.9°.

ACTUAL TEMPERATURE:—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, January 4 (10.0 a.m.): Bar, 29.4"; temp., 48°. Weather—Sunny.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—Spring-flowering Bulls, Fruit Trees, Rhododendrons, etc., by Prothero and Morris, at 67.68, Cheapside, E.C., at 12 o'clock.

THURSDAY—Standard, Dwarf, and Climbing Roses, by Prothero and Morris, at 67.68, Cheapside, at 1 o'clock.

The Leaf Glands of Peaches.

The leaf glands of Peaches have been recognised for just over one hundred years, but it is curious that the name of their discoverer should be almost forgotten and apparently unknown to most writers who have dealt with this matter.

Like many other horticultural advances, we owe the recognition of these glands to an amateur, M. Desprez, a judge at Alençon, whose appointment in 1810 as deputy of the Corps Législatif brought him to Paris. The gardens of the Luxembourg were then a large nursery; and it was here that M. Desprez spent his spare moments studying the large collection of fruit trees, and here that he made his interesting discovery. It is remarkable that in the accurate and minute descriptions of fruits which had been made by previous French authors, no mention is found of these structures; but, once pointed out, their diagnostic value was recognised, and soon became the basis of all classifications of Peaches and Nectarines. As is well known to most gardeners, the glands are of two types, round and kidney shaped, and a re-

markable correlation exists between the presence of glands and the detailed structure of the leaf. Glandless leaves always have serrate margins, while those with glands have crenate margins.

The first paper of importance calling attention to these structures in this country was that of John Robertson on "The Classification of Peaches and Nectarines," published in the *Transactions of the Royal Horticultural Society*. Lindley, in a later paper in the same publication, made the glands or their absence the basis of a classification. In 1867 E. A. Carrière published a new system of classification, in which he pointed out the presence of intermediate types which are now generally recognised as "round to kidney shaped." The study of these characters had so far been entirely limited to their value as identification marks, and no careful study had been made as to their physiological characters and development. This, however, has now been rectified by a recent paper by Mr. C. T. Gregory,* in which pomologists and botanists alike will find points of interest. As in most detailed studies of this nature, we find that the rough distinction between "kidney" and "round" loses its desirable sharpness under close investigation. In the drawings of types which the author gives there are many that would puzzle an expert to class either in one division or the other, and it would seem possible to establish several clear types both of "kidney" and "round."

It is interesting to note that in the large number of varieties examined no serrated-leaved forms were found with glands, thus confirming previous observations. On the physiological side the author shows that the glands are modified leaf-spines, and after the secretory process is finished the upper part of the gland gradually disintegrates with the production of a corky layer which slowly extends downwards, so that in some cases it becomes entirely decomposed.

Peaches and Nectarines offer a fascinating problem to the student of genetics. The presence and absence of the glands, the large and small flowers, the reported susceptibility of the glanded varieties to Peach leaf blister and the glandless to mil-ew, present material for study of the greatest possible interest.

OUR ALMANAC.—The next issue of the *Gardeners' Chronicle* will include a sheet almanac for 1917 containing particulars of horticultural appointments up to the time of printing.

FOOD PRODUCTION IN SCOTLAND.—The Marquis of BREADALBANE, in a letter to the *Scottsman*, has described the success of his experiments in vegetable culture in his gardens at Taymouth Castle, which had been left almost without men in response to the calls to the Colours. By means of a Canadian plough—the Cocksbut—the land was double ploughed, with highly satisfactory results. The City of Edinburgh is taking up the question of allotments with great vigour, and an effort is being made to cultivate as much

land as possible in the parks, etc. Meetings are being held in different districts in the city, and Mr. J. W. M'HATIE, the City Gardener, has given addresses on the subject of allotments and vegetable growing. In Dundee the matter has also been under consideration, and a proposal to crop a large extent of land is likely to be adopted.

MINISTRY OF FOOD APPOINTMENT.—Captain CHARLES BATHURST, M.P., has, on becoming Parliamentary Secretary to the Ministry of Food, relinquished the post of Organiser of the Land Settlement Scheme for Ex-Service Men, which he has held under the Board of Agriculture and Fisheries in an honorary capacity for the last eight months. The duties have been taken over by Sir RICHARD WINFREY, M.P., Parliamentary Secretary to the Board of Agriculture and Fisheries.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The voting papers for the election of pensioners to this institution have just been issued. There are sixty-four candidates, and it is proposed to elect eighteen. The difference in these figures shows the increased amount of support required to enable the institution to relieve the necessitous cases that constantly arise amongst gardeners and gardeners' widows, for, it may be pointed out, the cases included in the list have all engaged the attention of the Committee, and each is recommended equally to the sympathies of the electors. The official notice of the meeting is as follows: The seventy-seventh annual general meeting of the members and subscribers of this Institution will be held at "Simpson's," 101, Strand, London, on Tuesday, January 23, 1917, at 2.45 p.m., for the purpose of receiving the report of the Committee and the accounts of the Institution (as audited) for the year 1916, electing officers for the year 1917, and for the election of eighteen annuitants on the funds. The chair will be taken by Sir HARRY J. VEITCH, treasurer and chairman of committee, at 2.45 o'clock. The poll will be open at 3 o'clock and close at 4 o'clock precisely, after which hour no voting papers can be received.

THE LATE MR. N. N. SHERWOOD.—The gross value of the estate of the late Mr. N. N. SHERWOOD, of the firm of HURST AND SONS, Houndsditch, and Prosted Hall, Kelvedon, Essex, has been returned at £514,949. Deceased left sums of £500 each to the Gardeners' Royal Benevolent Institution and the Royal Gardeners' Orphan Fund.

BEQUEST.—Mr. WILLIAM HESLITINE MUDFORD, formerly Editor and manager of the *Standard*, who died in August last, left to his gardener a sum of £1,500, and his guns, telescopes, etc.

ACORNS AND CHESTNUTS FROM VERDUN.—It will be remembered that Lord FRENCH, when at Verdun, gathered from the battlefields Sweet Chestnuts for planting in his garden, to form an avenue as a souvenir of the glorious city. Others having expressed a wish to obtain seeds for the same purpose, the Deputy Mayor of Verdun has forwarded a consignment of both Chestnuts and Acorns to the London and North-Western Railway Company, and the seeds will be sold in aid of the War Seal Foundation (L. and N.W.R. Section), which aims at providing cherry homus for L. and N.W.R. servants who may be totally disabled in the war.

MANGANESE AS A FERTILISER.—The divergence of opinion with respect to the value of manganese salts in effecting increased crop production appears to be explained by the results of recent experiments* by Messrs. SKINNER and REID. These authors find that whereas manganese, applied as manganese sulphate at the rate of 50 lb. per acre, is without beneficial

* *The Taxonomic Value and Structure of Peach Leaf Glands*, C. T. Gregory. Cornell University, Bulletin 365.

* *The Action of Manganese under Acid and Neutral Soil Conditions*. Bull. 141, U.S. Dept. of Agric., Washington.

effect on acid (sour) soils, it produces a markedly beneficial effect on those soils after their acidity has been neutralised by liming. Wheat, Rye, Beans, Maize and Cow Peas all give higher yields when the soil rendered alkaline by lime was treated with manganese sulphate.

A DEVICE FOR SENDING POLLEN BY POST.—In the course of a valuable account of his work in breeding the Sugar Cane in Madras Dr. BARBER, Government Sugar Cane Expert, mentions that a successful way of sending pollen by post is to enclose it in small gelatine capsules. This method, which we do not remember to have been described before, should be useful to plant-breeders generally.

MOROCCO.—The *Board of Trade Journal* states that H.M. Agent and Consul-General at Tangier (Mr. H. E. WHITE, C.M.G.) reports, under date November 27, that the Resident-General of the French Zone of Morocco has issued an Order appointing a Commission to study the question of colonisation and to suggest the best means of encouraging the settlement of colonists who will develop the agricultural riches of that region. It appears from the local press that steps are being taken by the Director-General of Agriculture for the grant of Maghzen (*i.e.*, State) land in small lots for the purpose of market gardening and in larger tracts for general agricultural purposes. An agricultural irrigation service has been formed for the purpose of scheduling the hydraulic resources of the country and at the same time of aiding colonists with technical advice on the irrigation of their lands.

AGRICULTURAL APPOINTMENTS.—The Right Hon. R. E. PROTHRO, M.P., President of the Board of Agriculture and Fisheries, has appointed Mr. A. W. MOSKOW to be his Private Secretary, and Mr. A. BARRETT to be his Assistant Private Secretary (unpaid).

THE "GARDENERS' MAGAZINE." We deeply regret to learn from a note published in the last issue of the *Gardeners' Magazine* that this journal has decided to suspend publication during the period of the war.

CALYX-SPLITTING IN CARNATIONS. The careful work carried out at the New Jersey Experiment Station* does not add very materially to our knowledge of the causes which bring about the splitting of the calyx in Carnations. Numerous countings of normal and split Pink Erecht reze show that whereas the former has an average of sixty-four petals, in the latter the number of petals ranges from 70 to 108, averaging about 84. Periods of dull, sunless weather increase the amount of splitting in flowers opening about a month after these periods, and hence it is to be inferred that lack of light during bud formation is one of the causes of splitting. The constitution of the plant also counts—for manifestly a flower which produces a mass of petals too great for the capacity of the calyx is bound to split. This is well shown when White Perfection and Matchless are compared. The former has a slender calyx and a relatively large number of petals; in the latter the calyx is large in relation to the number of petals which it contains. Perfection often splits, whereas Matchless grown at the New Jersey Experiment Station only 5 per cent. splits.

GASSING THE "PRICKLY PEAR" IN QUEENSLAND.—Opuntias, or "Prickly Pears," as they are popularly called, are a great pest to growers in Queensland, and various methods have been adopted to destroy the plants. After many months' experiments, the treatment of certain species of Opuntias with arsenic trichloride in a gaseous form has been proved to be effective, while the problem of manufacturing the trichloride in large quantities has also been successfully overcome

Trichloride is now obtainable in large quantities at a cost of £22 per ton. The place selected in Queensland for the experimental work was Delacca. This district contained some of the worst "Pear" growth in Queensland, ranging from 7 feet to 8 feet high, and of such a dense, impenetrable nature as to make spraying impossible. Areas that had been gassed some twelve months ago are entirely free from the pest. The gas is applied by means of an atomiser. Gassing is done with the best results after heavy dews or rainfall. The trichloride apparently has no effect upon other vegetation, because of their lower water contents, neither is there any danger in regard to stock.

FARMYARD MANURE.—Dr. RUSSELL estimates* that the amount of farmyard manure used

—The H.E. of the National Horticultural Society of France in the Rue de Grenelle, Paris, is a common meeting place of gardeners and nurserymen on leave from the Front. We learn that M. GUSTAVE CLAMANT was there a few days ago, probably on the usual leave to celebrate his being decorated, as announced in our issue of the 23rd ult.

—The current number of *l'Horticulture Française*, just to hand, contains the eighth list of honours, in which the names of French horticulturists who have fallen on the field of battle appear. Fifteen names are given, but they are practically unknown to English readers. The list of citations from Army Orders is headed by the name of Captain BALLET. In addition to previous honours, Captain BALLET has now received from



FIG. 2. OLEARIA GENIANA, TYPE FROM A DRIED SPECIMEN. (See p. 3)

annually in this country is 37 million tons, which, at 5s. a load, represents a yearly value of 9½ million pounds sterling. The value of artificial manures used annually is considerably less than this sum, probably not more than 6½ million pounds sterling.

WAR ITEMS.—We regret to learn that M. GEORGES TRÉFÉRET, of Versailles, is home on sick leave. He has many friends in England who will join us in expressing the hope that he may speedily be restored to health.

—Lieut. HENRI NONIN is undergoing treatment for his shattered right arm at the Hospital of the Grand Palais. Meantime, he is engaged as interpreter at the Statistical branch of the Labour Bureau.

the hands of the General commanding his division the Cross of the Legion of Honour.

Sergeant F. A. DONNER, formerly traveller for Messrs. JOSHUA BENTLEY, Ltd., Barrow-on-Humber, was recently found dead in a dug-out in the British lines. Sergeant DONNER went through the South African war; he enlisted again as a volunteer 23 months ago, and spent the first war winter in the trenches in Flanders. Later he was invalided home. He took part in the Loos offensive.

GERMINATION OF GRASS SEED.—The attention of those who have to carry out germination tests of grass seeds is directed to an article* on the effect of light on germination. Tests

* See *Florists' Exchange*, December 2, 1916.

* Presidential address, Agriculture, Ent. Assoc., 1916.

* *Agric. News*, Imp. Dept. of Agric. West Indies, XV.

carried out at the Agricultural Experiment Station, Minnesota, show that germination is better if a sunlight germinator is used. For some species light is essential. Furthermore, a change of temperature from 20° C. to 30° C. (20° C. for 18 hours and 30° C. for six hours) gives better results than are obtained by exposure of the seeds to a constant temperature of 20° C.

DESTRUCTION OF FLY LARVAE IN HORSE MANURE.—Messrs. COOK and HUTCHINSON have continued their investigations on the destruction of fly larvae—previously reported in these pages—and conclude that fly larvae may be destroyed by treating the manure heap with two-thirds of a pound of borax in 10 gallons of water. This amount suffices for 3 bushels of manure. Inasmuch as large quantities of borax have an adverse effect on plant growth, they recommend, where the manure is to be applied to the land, that powdered Hellebore be used instead of borax. For 8 bushels of manure half a pound of Hellebore mixed with 10 gallons of water makes an effective larvicide. Experiments made with a mixture of calcium cyanamid, acid phosphate and kainit—all of which substances have, of course, value as fertilisers—indicate that the larvae may also be destroyed by these substances.

A LETTER ON LAND TILLAGE PUBLISHED SEVENTY YEARS AGO.—A wealthy old farmer, who had for some time declined in health, perceiving that he had not many days to live, called his sons to his bedside. "My dear children," said the dying man, "I leave it with you as my last injunction not to part with the farm, which has now been in our family these three hundred years. For to disclose to you a secret which I received from my father, there is a treasure hid somewhere in the ground, though I never could discover the particular spot where it is concealed. However, as soon as the harvest is got in, spare no pains in the search, and I am well assured you will not lose your labour." The wise old man was laid in his grave, and no sooner had the time mentioned arrived than his sons went to work, and with great vigour and alacrity turned up again and again every foot of ground belonging to their farm; and the consequence was, that although they did not find the object of their pursuit, their lands yielded a far more plentiful crop than those of their neighbours. At the end of the year, when they were settling their accounts and computing their extraordinary profits, "I would venture a wager," said one of the brothers, "that this was the concealed wealth my father meant." How full of meaning, and how applicable at the present time, is the advice given in this fable, which I have quoted at length. The various reports of improvements which you give in your paper, and which are published elsewhere, all concur in showing that the land does contain a valuable treasure—that its resources are in fact unbounded. Look, for instance, at the report of Mr. MERRI's proceedings at Tiptree. He has diligently sought for the hidden treasure. He first removes the water which obstructs his search, and then he ploughs deeply, peradventure the share may reveal it. What is the result? The same that the fable discloses—an increased produce. The land, which was acknowledged to be some of the poorest in the country (the purchase money confirms this), now bears crops equal to the very best the country affords. He, it is true, has not found a bag of gold; but he has found wealth in an increase of crops. But this is not all; he is not the only one who finds or shares in the treasure—there are many sons. Ask his labourers. Look, again, at Earl DRETT's proceedings at Whitfield Farm. Poor land, whose treasures were lying hid under a load of water and neglect, has revealed its capabilities on being drained, subsoiled, and properly cultivated, and anyone acquainted with

the neighbourhood on walking over that farm and seeing the crops, must testify that the surrounding land has only to be similarly treated and an equal reward would await the treasure-seeker there. Look, again, at Sir JAMES GRAHAM's report in the 1st Vol. of *Agricultural Society's Journal*; he, it seems, has also inherited and acted up to the advice in the fable, for we find that land which was let at 4s. 6d. per acre has, after a search which cost him £6 18s. 4d., been re-let on a lease of fourteen years at 20s. These—at least, the two first—have no doubt not individually received the amount of treasure they were entitled to, as the expense of the search has absorbed the greater part of their share; but it must be remembered that they were pioneers, not so much looking to their own advantage as clearing the road for those who were to follow; therefore, all honour be to them. They had to search in the dark, and yet have not been disappointed. They have found where the treasure lies, or rather, the obstructions to be removed before we can grasp it, and our search is thus rendered comparatively easy; besides, the cost of removing these obstructions is now reduced at least one-half. Seeing, then, that there is a treasure in our farms, and that our father "Corn-Law," from whom we long received protection, is on his death bed, seeing that necessity is therefore now laid on us to work for ourselves, let us with vigour and alacrity drain, plough deep, and subsoil plough, turn up again and again every foot of ground, avail ourselves of the experience of those who have searched before us, and we shall not be disappointed. *T. C. M., Manchester, in "Gard. Chron.," January 9, 1847.*

WORCESTER CHRYSANTHEMUM SHOW.—The committee of the Worcester Chrysanthemum Society has forwarded the sum of £90, being the profits from the Society's exhibition in 1916, to the Worcester General Infirmary. The amount realised in 1915 was £60 (for Red Cross Funds), and in 1914 £37 10s. (for War Relief Fund), making a total of £187 10s.

PUBLICATIONS RECEIVED.—*Hints on the Cultivation of Early Potatoes under Glass.* Leaflet issued by the Experimental and Research Station of the Nursery and Market Garden Industries Development Society, Ltd., Cheshunt, Herts.—*"Live Stock Journal" Almanac for 1917.* Pp. 200. (Vinton & Co.) Price 1s.

NOTICES OF BOOKS.

"ANNUALS AND BIENNIALS."

In these days there is not much need to commend annuals and biennials for garden decoration. We err, probably, in limiting too much the number grown, and in confining the species to comparatively few. Yet a slight consideration will show that to a very large extent gardeners avail themselves of plants propagated annually from seeds. So much is this the case that the division of everyday plants into annuals, biennials, and perennials, has lost much of its sharpness, and to talk of growing perennials as annuals has become current in gardening speech. The authoress of this manual has recognised these facts, and while limiting—too strictly, as we think—the true annuals and biennials, she has included several perennials, though here, too, restriction is strikingly apparent. It is surely an oversight that plants so easy to produce from seeds and so indispensable as Legumes, Carnations, Lobelias of the *Cardinalis* type, *L. ramosa*, *Lychnis*, *Cornucopia*, *Lupinus polyphyllus*, hybrid *Delphiniums*, many *Primulas*, *Scabiosa caucasica*, *Lathyrus sativus*, *Cranthemum annuum*, the *Celsias*, annual *Calceolarias*, *Silene Armeria*, *Chelone barbata*, *Crocus grandiflora*, *Humea elegans*, *Verbena*

venosa and *Virginian Stocks* should have been excluded. None of these takes more than two years to produce flowering plants—the majority one year. A perusal of the volume reveals but very few slips. One, however, is that of assuming *Gilia coronopifolia* to be a recent introduction, whereas it was described and illustrated, though badly, by Billenius in 1732 by the name of "Quamoclit pennatum, erectum, floribus in thyrsum digestis."

Though the volume extends to about 170 pages, only some 80 contain letterpress; the rest are illustrations, and may provide a reason why the chapters on various aspects of gardening with these plants are so brief and the lists for various purposes so condensed. Mr. Jenkins contributes a chapter on raising annuals under glass and notes on the Sweet Pea. *B. P. R.*

"BRITISH-GROWN TIMBER AND TIMBER TREES."

This work by Mr. Angus D. Webster directs attention to various kinds of timbers produced in the British Isles, giving, in many instances, indications of the present value of such timbers and the uses to which they are put. The work is well illustrated by some fifty three photographs of woods. About fifty species are dealt with, and in the case of the more important ones a short description of the tree is followed by notes on its culture, average size, age at which the tree matures, appearance and quality of the timber, uses to which the wood may be applied, and its present price. Unfortunately, the number of really first-rate kinds of timber trees in the British Isles is comparatively small, for although numerous trees that produce excellent timber in other parts of the world are hardy here and grow into fine ornamental trees, they are never likely to be of commercial value from a timber standpoint. Sufficient notice does not appear to have been taken of this fact by Mr. Webster, for he has included many species that it would not pay to grow under silvicultural conditions, and the timber of which could not be procured in quantity were it required, his excuse for their inclusion resting on the fact that a few ornamental specimens blown down or removed during alterations have been accepted by a timber merchant. Almond, Albatus, *Cotoneaster frigidula*, Lilac and *Paulownia* are cases in point. Several specimens of *Catalpa bignonioides* are said to have been sold lately in London in company with other home-grown woods at 2s. per cubic foot, and apparently as an inducement for the extended cultivation of this tree we are told that "Professor Sargent says that the *Catalpa* offers peculiar advantages for economic planting, the timber being of excellent quality and known to have stood as fence posts for seventy five years and to be perfectly sound." As an ornamental tree for town or country, *Catalpa bignonioides* is excellent, but its value as a timber tree in this country is very problematical, whilst in America the Western *Catalpa* (*C. speciosa*), a larger-growing tree, is much more useful. There are few places in the British Isles where plantations of that species would be likely to give really good results. *Paulownia imperialis* may be dismissed at once as a possible timber tree for this country, as it is decidedly tender. On the contrary, the Tulip tree (*Liriodendron tulipifera*) is not mentioned by Mr. Webster, although it is one of the most promising of exotic broad-leaved trees for forest planting in the Midlands and South of England. It matures here at from ninety to 120 years of age, forming a tree in the open 80 to 110 feet high with a trunk diameter up to 3½ feet, producing excellent wood equal in quality to that imported from N. America. Mr. Webster has been unfortunate in his experiences of the timber of *Pinus Pinaster*, but the species ought not to be condemned altogether by reason of the quality of its timber for certain purposes, for it is an excellent species for planting on sand dunes in the South and West, and

* Bull. 405, by Messrs. Cook and Hutchinson, U.S. Dept. of Agric., Washington.

* *Annuals and Biennials*. By Gertrude Jekyll. Cultural notes by S. H. Jenkins. (London: Country Life Office, Price 7s. 6d.)

* *British-Grown Timber and Timber Trees*. By Angus D. Webster. (William Rider & Son, Ltd., London.) 5s. net.

of considerable economic importance in Western France for the production of turpentine. Moreover, many hundreds of thousands of tons of topped trunks are received annually in South Wales from Western France for use as pit-props. Why not put the tree to similar use here?

Except for a too free use of capitals in specific names, the scientific names throughout the work are fairly correct, the worst mistake, perhaps, occurring on page 106, where the common Spruce (*Picea excelsa*) appears as Spruce Fir (*Abies excelsa*). The combination of Spruce and Fir ought to be dropped everywhere, for it only tends to confuse generic names. W. D.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

OLD SEED AND PLANT CATALOGUES (see *Gard. Chron.*, Vol. LX., pp. 299, 309).—Mr. W. Roberts's literary contributions to the *Gardeners' Chronicle* are always brimful of interest. His reference to the popular florists' flowers of the thirties and forties and to the places round the metropolis where they were grown revives many memories. I have often wondered where the site of Maddock's famous nursery at Walworth, near London, is to be found. To-day Walworth is a densely crowded locality, and the place is undiscoverable. Mr. Roberts refers to Groom of "Wandsworth," the Tulip grower of great repute. Groom may have removed to Wandsworth, a famous place in its day for nurseries, but, speaking from memory, I think Groom was Maddock's successor at Walworth. The site of Chandler's nursery at Vauxhall is perpetuated by Camellia Street. The reference made to the Dahlia as a popular flower eighty years ago reminds me of many hours devoted to that subject. It is a very absorbing one to those interested in what may be termed the antiquarian aspects of floriculture, but the names of the Dahlia growers who issued catalogues and referred to by Mr. Roberts do not include some of the most eminent. I suggest by way of addition Mr. Dennis, of King's Road, Chelsea; Messrs. Whitely, Brames and Milne, of Fulham; Mr. Pamplin, of Wandsworth Road; Mr. Michael Brewer, jun., of Cambridge; Mr. Appleby, florist, Doncaster; Mr. Widnall, of Grantchester, Cambridge; Mr. Gaines, of Battersea. To these may be added the names of several whose Dahlia catalogues are reproduced in the *Annual Dahlia Register, 1856*, viz., Mr. Edward Bartlett, of New Bond Street, Bath; Mr. J. Bates, of Oxford; Messrs. T. C. and E. Brown, of Slough; Mr. Geo. Glenny, of Isleworth; Messrs. W. Heale and Son, of Calne, Wilts; Mr. Henry Skilman, of Marlborough, Wilts; Mr. Geo. Wheeler, of Warminster, Wilts. Even this addition does not include all the numerous dealers and raisers of the flower that was at that time called the "King of Autumn." C. H. P.

THE VALUE OF INTERCROPPING (see p. 307).—I do not agree with Mr. Bagg in his advice to plant Lettuces between Tripoli Onions. I plant these Onions in rows 10 to 12 inches apart, and they do well; if Lettuces were set between the Onions, the latter would be all neck and exposed to damage in planting and gathering the Lettuces. With regard to cropping Cabbage, Cauliflower and Turnips between Strawberries, our Strawberries are planted 2 to 2½ feet between the rows, and we do not get sufficient sun, as a rule, to ripen the berries; how would they ripen with these tall crops between? Lettuce and Spinach may succeed in new plantations of Strawberries. The method advised by Mr. John Bates, to grow Strawberries as annuals is a good one, but I would allow 18 inches between the rows to have room for placing the litter to protect the fruit, and also for gathering it. With regard to Mr. Bagg's advice to plant Dwarf Beans between Peas and Runner Beans, how far are we to plant the Peas and Runner Beans apart to get Dwarf Beans to succeed between them? During the past season our Dwarf Beans were not satisfactory planted in the front of greenhouses and under south walls; what results are we to expect if we adopt Mr. Bagg's method? I am keen on

intercropping, and desire to obtain as much as possible from the land while the war lasts, but if we put in one crop to spoil another, where does the economy come in? The practical gardener may be of great service to many during the present shortage of food by advising and instructing amateurs and allotment-holders on how to cultivate the land and crop it to the best advantage. This can only be done by a man on the spot who is well acquainted with the soil and situation. *Thos. B. Archer, The Hazels Gardens, Prescot, Lancs.*

TREATMENT OF STRAWBERRY BEDS (see pp. 279 and 312).—I suspect that most of us who have grown Strawberries largely will agree with Mr. J. A. Paice in that spring is the best time to apply mulchings to established beds, and this particularly applies to light soils, but ways

and the flavour left nothing to be desired. *L. C. Bottell.*

THE ORIGIN OF THE LOGANBERRY.—The Loganberry has for so long been accepted as a fertile hybrid, and its intermediate position between the Blackberry and Raspberry sections of the genus is so apparent, that the doubt expressed as to its origin by Mr. W. O. Backhouse (see p. 280) causes some surprise. The doubt seems to be largely based upon the small amount of segregation among the seedlings, but this is not necessarily conclusive, for Mendel, in his original essay, gave examples of hybrids that propagate themselves as truly from seed as pure species, and showed that one of them had been followed up to the tenth generation. Some evidence, however, is now given as to the occurrence of the Loganberry in a wild state, which sug-

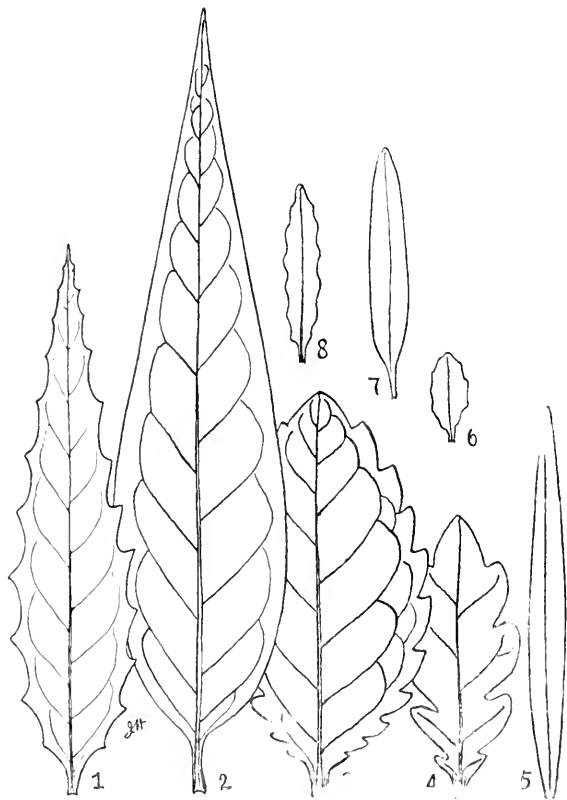


FIG. 3. LEAVES OF OLEARIAS.

- 1, *O. stellulata*; 2, *O. lyrata*; 3, *O. rugosa*; 4, *O. quercifolia*; 5, *O. Guiniana* var. *subciliolata*;
- 6, *O. subrepanda*; 7, *O. canescens*; 8, *O. Guiniana*. Nat. size.

(See p. 3.)

and means have to be considered in gardens at the present time more than ever before, and I imagine it better to make sure of the mulching during the winter than to run the risk of not being able to get the work done at the approved season. Besides this, wheeling the manure can be done with much greater labour economy during frosty weather, and for this reason it has been the general rule in gardens to transfer as much manure during frosts as possible. My experience with late Strawberries has been contrary to the generally accepted views on manuring, for I have found that a sprinkling of sulphate of ammonia—2 lb. per square rod—immediately the flowers are pollinated has greatly improved the crop. This has been especially noticeable with Waterloo and Frogmore Late Profite. There was a smaller percentage of "blind" flowers, the fruits were larger and of greatly improved colour,

gests a possible earlier history; unless, indeed, it is an escape from cultivation. More than one writer suggests that it may be a true species (one of them adds, "of comparatively recent origin"—whatever that may mean), but this is not borne out by either its history or characters. The origin of the Loganberry from self-sown seeds of the Auchinbough Blackberry has already been mentioned. It was supposed that the other parent was a Raspberry of the Red Antwerp type, which grew near, and it was originally remarked: "The Loganberry shows so clearly the mingling of both types that no horticulturist who studies the fruit has doubted that it is a true hybrid. . . . and shows in texture, in the easy slipping from the core, and partly in flavour, the Raspberry parentage." The free drupe is a character of the whole *Ilex* section of the genus, while in *Eubatus* the receptacle breaks away with the

dripes attached. In the Loganberry there is a curious compromise, for the top of the elongated receptacle breaks off and comes away with the dripes, leaving part of the core behind. The Anglinbaugh Blackberry is said to be a remote alle sport of the native *Rubus vitifolius*, which was found growing wild on the sandy peninsula of Alameda, California, by a pioneer, Anglinbaugh, who removed it to his garden and cultivated and disseminated it. He died in poverty, but his berry preserves his name from oblivion. It is described as "a beautiful vine, of trailing habit, like a Dewberry, but with much larger, darker leaves, and of extremely vigorous growth. Being pistillate, it does not bear well unless planted with other varieties. Properly fertilised, on good soil, and well trained on a fence or trellis, its bearing powers are often astonishing, and in quality it is very fine." The significance of the pistillate character will be seen presently. *Rubus vitifolius* is regarded by Focke as a variety of *R. ursinus*, a very variable species, which he isolates in a small subsection on account of its dioecious character, the stamens and pistils being borne on different plants. *R. ursinus* has been described as variable in growth, in leaves, and in many other particulars, and in rich, sheltered places it occasionally bears so heavily that people come for miles to camp in the berry fields and gather the delicious fruit. The fruits are described as oblong, sweet, and highly flavoured. There are ample dried materials of *R. ursinus* and var. *vitifolius* at Kew, but I find no wild specimens at all approaching the Loganberry. There are garden specimens, and so far as I can see their hybrid nature is borne out by comparison. This takes us back to the Anglinbaugh, and it is quite clear that unless there were staminate plants in or near Judge Logan's garden all the flowers fertilised would produce hybrids, which almost demonstrates the hybrid origin of the Loganberry. And only by hybridisation could a plant between the two sections of the genus be obtained, though whether the pollen parent has been correctly interpreted is more open to question, for it is said that "Raspberries of several sorts grew alongside, and, in fact, intermingled." Any doubt felt by the writer is chiefly due to the well-known acidity of the Loganberry, unless indeed that comes from the other parent. Confirmatory evidence of the hybrid nature of the Loganberry may be found in the fact that artificial hybrids have been obtained between Raspberries and Blackberries having its essential characters. It should likewise be an easy matter for anyone who has the Anglinbaugh to test the question. All that would be necessary would be to cut a few berries in bags (to prevent contamination) and pollinate them with the Red Antwerp, or an allied Raspberry. As the flowers are pistillate there would be no stamens to be first removed. If the Loganberries mentioned are not exactly their identity, we assume, is not in doubt, it would seem to be an independent and possibly real origin, in which case there would be a question whether the parentage has been correctly interpreted, and this would in turn involve the origin of the seedling found in Judge Logan's garden. This uncertainty makes it the more desirable that the experiment suggested should be carried out. It would also be interesting to secure dried materials of the wild plants mentioned. *R. F. Eloff*.

THE PLANTING OF IRISES.—After considerable experimenting, it has been my practice for the last two or three years to transplant Irises so far as possible during the first week in August, or thereabouts. Besides the unripeness of the rhizomes in June, I have been influenced by the supposition that at this time (immediately after the flowering) the embryo buds of the flower spikes for the following season were being formed, as is the case with Daffodils. These embryo buds are fully formed by September, and are visible to the naked eye, and do not appear to increase appreciably from then on to the end of the year. If this supposition is correct, since this period of embryo bud formation is, according to De Vries, one of extreme sensibility, it would largely account for the deficiency of the flower spikes of the June-planted Irises in the experiment, and it would be of interest to make a further trial between March and August plantings. But even if the March-planted Irises should

give more flower-spikes than August-planted, I think that August planting would still be preferable for the reasons Mr. Dykes gives, especially on account of the greater prevalence of adverse weather and soil conditions in March. My ground being open and exposed, March (or April) planted Irises have always suffered conspicuously, and have subsequently been more liable to disease. The drying off of the rhizomes when they are out of the ground for some time between taking up and replanting in August, though it causes loss of flower-spikes, appears to have a very good effect in checking the Iris disease. Out of the whole lot (900) replanted one year only one plant was found slightly attacked the following season. Though Irises are making roots throughout the season from spring on into autumn, it seems to me that they root intermittently rather than strictly continuously, being in this respect somewhat similar to *Potentilla Narciss*. Whatever may be the case with the original species, with these garden hybrids it appears to depend chiefly on the weather. During dry weather there is, if not an actual resting period, a pause or slackening in root formation, and as August is the driest month (drier than either July or September), it would seem also for this reason the best time for replanting. Since the number of the flowering spikes in the following seasons has been chosen as a test of comparison, it will be useful to note that though the time the rhizomes are out of the ground, even when pruned, does not injure the health of the plants in the least when they are replanted in August, it has a very direct effect on the flowering in the following season. At one planting (about 600 plants), when the plants were about a week out of the ground, only about one-quarter to one-third flowered. Another year the plants (about 900) were from a fortnight to three weeks or more out of the ground, and only about a dozen flowered, though the plants were strong and exceptionally healthy. Last year I transplanted a dozen plants, replanting them immediately, and all flowered freely this year, some even more freely than the duplicate plants left undisturbed. Since plants sent out by nurserymen must necessarily be out of the ground some time, I think it would be of interest, if the experiment made at Wisley can be repeated comparing the results of March planting with early August (instead of June) planting, to make it in duplicate, one lot of plants being replanted at once, and the other lot after an interval of a week or ten days. *J. J. Bliss*.

SOCIETIES.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

DECEMBER 21.—*Committee present*: The Rev. J. Crombelloholme (in the chair), Messrs R. Ashworth, A. G. Ellwood, P. Foster, A. R. Handley, J. Lupton, D. McLeod, W. Shackleton, S. Swift, H. Thorp, and H. Arthur (secretary).

AWARDS.

FIRST-CLASS CERTIFICATES

Laelo-Cattleya Anable var. Ashlandior (L. C. Escamilleux *albans* × *C. Warscewiczii Stanley*), a large flower with white sepals and petals and well-marked lip, from T. ASHWORTH, Esq.
Cypripedium Methen (*Gaston Butler* × *Euryopsis*), a flower of reddish-crimson colour; the dorsal sepal is very flat, from T. WARBURTON, Esq.

AWARDS OF MERIT.

Cypripedium Nigger (Mrs. Carey Batten × *Berkhoutii*), *C. Loretus* (*Cinnia Harfield Hall* × *Levanum Chibberghamum*); *Odontoglossum hadatum* var. *Amplexicium* (*ardantissimum* × *Waldenianum*), *O. crispum* var. *Red Monarch*, all from P. SMITH, Esq.
O. crispum var. *Madam Lavee*, from Mr. W. SHACKLETON.

CULTURAL CERTIFICATE.

To Mr. C. BRANCH (to, to W. R. Lee, Esq.), for a plant of *Odontoglossum crispum Annamit*, carrying a spike of 17 fine flowers.

LINNEAN.

DECEMBER 14. Sir David Prain, C.M.G., F.R.S., President, in the chair.

Mr. H. S. HOLDEN communicated and explained a paper by Miss Isabel McClatchie, B.Sc., entitled "Observations on the Root-System of *Impatiens Roylei*, Walp."

The primary root-system of *Impatiens Roylei* consists of a somewhat short tap root, a whorl of four robust lateral roots, and a number of accessory laterals. These soon become obsolete and are replaced by a large superficial root-system of adventitious origin derived from the lower half of the hypocotyl. In plants in which the first and subsequent nodes trail along the ground, additional roots are produced from these. Abortive roots commonly arise at the bases of lateral branches, and further development can be induced also in these by suitable manipulation. Various other factors, such as wounding, increasing the height of the soil, &c., also induce accessory root-formation. The primary root-system is characterised by a 4-arch or 5-arch solid xylem star, and by the early development of tyloses. The stout adventitious roots are poly-arch with a wide pith, and develop a superficial protective cork layer. They show, in common with the other parts of the plant, the tannin sacs and raphides characteristic of the genus.

Dr. ETHEL N. THOMAS communicated a paper "On the Distribution of Monococious Plants, and the Occurrence of Hermaphrodite Flowers in *Myrica Gale*, with Observations on Variations of Sex," by Miss A. J. Davey, M.Sc., and Miss M. Gibson, B.Sc., which was explained by the authors.

Myrica Gale, the common Bog Myrtle, is described as being typically dioecious, but mention has been made by several authors of the occasional occurrence of the monococious condition.

Observations during several successive years on a large area of *Myrica* in the peat moors of Somerset show that there is always a small proportion of monococious plants, which present all gradations between the normal pistillate and staminate types. Further, it has been found that the sex of a plant may vary from year to year.

The monococious plants may be grouped as follows:—

(a) Plants bearing both staminate and pistillate catkins of the normal type. These occur on different shoots, or they may be mixed on the same shoot. In the latter case, usually the lower part of the shoot is staminate and the upper part pistillate, but the reverse order may obtain. Staminate, pistillate, and mixed shoots may occur on the same plant, and the proportions of each vary considerably.

(b) Plants bearing androgynous catkins. Such catkins usually contain stamens below and pistils above, but the reverse arrangement is found also.

(c) Plants whose catkins consist of hermaphrodite flowers. These flowers (like the unisexual flowers) occur singly in the axils of the catkin scales. Each flower consists of a central ovary, surrounded by three or four stamens (less commonly two). Just below the insertion of these on the short floral axis, there are two small outgrowths, corresponding to the "bracteoles" or normal pistillate flowers. The pistillate flower consists of an ovary flanked by two "bracteoles" adnate to it, which enlarge and persist in the fruiting stage; the staminate flower consists of a group of stamens (commonly four), without bracteoles.

The hermaphrodite flowers are protogynous. They produce normal fruits, and their stamens are functional.

VARIATIONS OF SEX.—Among plants or shoots marked and examined in successive years, some showed progressive change from pistillate to staminate during several seasons; e.g., plants producing abundant fruit in 1915 showed mixed shoots in 1914, and in 1915 became almost entirely staminate. In 1916 several such cases showed indications of the reverse change.

Some plants appear to be continually fluctuating, while others remain stable for many seasons.

GENERAL BULB GROWERS' OF HAARLEM.

The following awards were made by the different Committees of the General Bulb Growers' Society of Haarlem during August, September and October, 1916:—

FIRST-CLASS CERTIFICATES.

Gladioli Flora, citron-yellow; *Insubide* (decorative), yellow and old gold; *Dahlia Parthus* (decorative), silvery-lilac and purple.

AWARDS OF MERIT.

Gladioli Chris, velvety-red, veined wine-red; *Corry*, light heliotrope, spotted sulphur-yellow; *General de Wit*, soft peach bloom; *Ulmus passable*, flesh colour, shaded apricot; *King of the Blues*, bluish-violet; *Muste Water*, purple; *Mr. Johan Spoor*, canary yellow; *Pride of Haarlem*, rosy-carmine; *Pride of Holland*, orange-scarlet, spotted white; *Amalinde Annette*, yellow, shaded apricot; *primulina Scarlett*, reddish-orange, shaded red; *Mrs. Gradlewans*, canary yellow; *Prosperity*, rose and carmine, shaded blue; *Parity*, white; *Rein van Knaumeland*, rose, spotted yellow; *Dahlia Barantale* (collected), dark purple, white, veined lilac; *Saats* (collected), orange and scarlet, yellow; *Samaritan* (cactus), ivory white; *Amantia* (decorative), dark amaranth; *Charles Brankovsk* (decorative), lilac and rose; *Evigne* (decorative), purple; *Frederik Badde* (decorative), silvery-lilac and white; *Joseph Roher* (decorative), ruby-red; *Nelson's Xanthin* (decorative), scarlet; *Perfection* (decorative), salmon-rose and yellow; *President Lincoln* (decorative), lilac; *President Washington* (decorative), rose and lilac; *Bois Gen* (decorative), soft rose and lilac; *Thomas Moore* (decorative), old gold and lilac; *Wainford* (decorative), white; *Creation* (Paeony-flowered), cherry-red and salmon; *Etna* (Paeony-flowered), dark scarlet; *Franz Ludwig* (Paeony-flowered), clear mauve colour; *Jhr. Barcol van Hoogland* (Paeony-flowered), yellowish apricot; *Mahony* (Paeony-flowered), dark red, shaded brown; *Merr. A. C. van Meenen* (Paeony-flowered), purplish-lilac; *Oriant* (Paeony-flowered, semi-double), yellow and scarlet; *L'ours d'Utrecht* (single), dark purple; *Vesuvius* (Paeony-flowered), orange scarlet; *Dictator* (single), orange-scarlet.

CERTIFICATE OF THE HAARLEM TRIAL GARDEN.

Dahlia Peace (decorative), white; *Autumn Chere* (decorative), amaranth, shaded violet; *Bambulet* XI. (decorative), pure yellow; *Koning Albert* (decorative), purple; *Wolfgang von Goethe* (cactus), orange shaded dark salmon; *Feronia* (cactus), violet and rose; *Mare Michal* (cactus), lilac and rose, with white centre; *Schone Hamburg* (decorative), golden yellow; *Samaritan* (cactus), ivory white; *Paul Crampel* (decorative), fiery-red; *Calixtena* (Paeony-flowered), canary yellow; *Jhr. Barcol van Hoogland* (decorative), apricot yellow; *Creation* (Paeony-flowered), cherry red and salmon; *Latum* (Paeony-flowered), yellow; *Salvator* (Paeony-flowered), carmine and rose; *Rose Gem* (decorative), soft rose and lilac; *Vesuvius* (Paeony-flowered), orange, shaded scarlet; *Sulphura* (decorative), sulphur yellow; *Red Ensign* (cactus), stone-red; *Centra* (Paeony-flowered), white and soft lilac; *E. F. Hours* (cactus), salmon rose; *White Ensign* (cactus), white; *White Pearl* (decorative), white; *Vondel* (Paeony-flowered), lilac; *President Washington* (decorative), rose and lilac; *Old Gold* (Paeony-flowered), copper yellow; *La Fichte* (Paeony-flowered), cream-white, with centre yellow; *Rosafer* (decorative), brownish-red; *Furbank* (decorative), scarlet and stone-red.

•• **NEW POSTAL RATES**—Contributors and correspondents are reminded that under the new postal rates, letters bearing a penny stamp must not weigh more than one ounce. The postal charge for letters exceeding one ounce, but not exceeding two ounces, is twopenne, and therefore at the rate of *qd.* every two ounces.

Obituary.

ANDREW BATTERS.—We regret to learn of the death, in his 42nd year, of Mr. Andrew Batters, youngest son of Mr. J. Batters, Gillingham, Norfolk. In early life he was engaged in the scholastic profession, which he abandoned some eighteen years ago for gardening, when he became assistant to his father, who was gardener to the late J. G. Kenyon, Esq., and Mrs. Kenyon, Gillingham Hall.

JOHN H. HERDMAN.—We regret to announce the death of Mr. John H. Herdman, who passed away on the 22nd ult., after a very short illness. Mr. Herdman was for over six years gardener and Orchid grower to Mr. G. Shorland Ball, Burton, Westmoreland. For a few years he was landscape foreman for Messrs. F. H. Mawson and Sons, Lancaster, and while in that position was engaged in important work in various parts of the country. Fourteen months ago Mr. Herdman was appointed head gardener at Elmick Park, Newcastle-on-Tyne, which position he held at his death. He was thirty-six years of age, and leaves a widow and two little daughters.

GEORGE SCHNEIDER.—We learn with deep regret that Mr. George Schneider died suddenly at his home, 17, Theld Road, Fulham, on Tuesday last, in his sixty-ninth year. For nearly fifty years this eminent French gardener served on his professional duties in this country, where he formed a connecting link between the gardening interests of his own country and the country of his adoption. He devoted himself to establishing and strengthening cordial relations between gardeners in the two countries, and in this connection founded the Société Française d'Horticulture de Londres, an association over which he presided until his death. Those who have attended the annual meetings of this society of French gardeners in England know that Mr. Schneider's enthusiasm and energy in the welfare of the movement were unbounded, and that he was looked upon almost as a father by the numerous members. His object was to establish an *entente cordiale* between British and French gardeners, and the good influence he exercised over the many thousands of young French gardeners who came under his notice here has borne good fruit, so that his name will long be honoured in the two countries. Schneider was connected with gardening all his life. He was born in Paris in 1843, and very early showed his aptness in his own country. After a short professional career in France he came to England in 1870, to take up an appointment with the firm of John Lang and Sons, Forest Hill. Subsequently he was employed by Messrs. Hugh Low and Co., of Clapton, and finally with Messrs. James Veitch and Sons, Chelsea, where he remained for thirty years. Many of our readers who remember the Chelsea exotic nurseries as they were a quarter of a century ago, will easily call to mind the fine collection of Ferns that Mr. Schneider had under his devoted care. His skill in cultivation was remarkable, so much so, that anyone who experienced difficulty with a newly introduced species or variety invariably sent Schneider a bit in the hope that he would discover its secret, and they were seldom disappointed. Since his retirement from Messrs. Veitch's nursery he has carried on a horticultural agency at Fulham. At one time Schneider was a frequent writer in the French and English horticultural Press, and he is the author of several excellent works, of which *The Book of House Ferns* is probably the best known. He also wrote another work on Ferns, entitled *Choix de Fernes for amateurs*, which had a wide sale. He published the *Cultivier de l'Orchidophile* in France, showing that his knowledge of plants was a wide one; indeed, he was regarded as an authority on indoor plants, and especially Ferns. Schneider's abilities and good work brought with them due reward. He was made Chevalier du Mérite Agricole in 1896, and an officer of the same Order in 1907. He was a corresponding member of the leading French and Belgian horticultural societies, and he was in the habit of adjudicating at most of the international shows in Europe.

MARKETS.

COVENT GARDEN, January 5.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate nearly from day to day, but occasionally several times in one day.—EWS.

Cut Flowers, &c.: Average Wholesale Prices.		s.d.s.d.	
Arums per doz.	6 0-7 0	Lilium longi-	s.d.s.d.
Azalea, white,	7 0-8 0	—florum, long	3 0-3 6
per doz. bun.	7 0-8 0	—lanceifolium	3 0-3 6
Bouvardia, white,	8 0—	album, long,	2 6-3 0
per doz. bun.	8 0—	— short ..	2 0-2 6
Camellias, white,	3 0-3 6	per doz. bun.	2 0-2 6
per doz. bins.	3 0-3 6	— short ..	1 6-2 0
Carnations, per		Mimosa (Acacia)	
doz. blooms,		best American	12 0-15 0
varieties ..	3 0-4 0	Narcissus, U.	
—Carola (crim-)		—Soliel d'ours,	
son), ex. large	4 0-5 0	Guesny, per	4 0-6 0
Chrysanthemum,		Orchids, per doz.:	
white, per		—Cattleya ..	12 0-15 0
doz. blooms,	2 6-5 0	—Cypripedium	2 0-3 0
—pink, per doz.	3 0-4 0	—Oncidium,	
—yellow, per		sum crispum	3 0-4 0
doz. blooms,	2 6-3 0	Pelargoniums, per	
—white, per		doz. bunches,	
doz. bunches	15 0-18 0	—coloured, per	12 0-15 0
—coloured, per		doz. bunches	15 0-18 0
doz. bunches	15 0-18 0	Roman Hyacinth	30 0-36 0
Daffodils, single,	24 0-27 0	Tuberose, per	
per doz. bun.	24 0-27 0	packet, 24	1 6-2 0
Gardenia, per		—double, per	1 6-2 0
box of 12 and	5 0-6 0	—single ..	2 0-2 6
—doz. blooms,		—ordinary ..	2 0-2 6
Heather, white,	12 0—		
per doz. bun.	12 0—		

Cut Foliage, &c.: Average Wholesale Prices.		s.d.s.d.	
Adiantum (Mai-	s.d.s.d.	Fern, Fern, per	
denhair Fern)		doz. bunches	0 6-0 8
best, per doz.	8 0-9 0	— common ..	3 0-4 0
Asparagus plum-		Honesty, per doz.	
osus, long		bun. ..	12 0-15 0
fruits, per	1 6-2 0	Ivy leaves, per	
—medium		doz. bun. ..	2 0-2 6
doz. bunches,	12 0-18 0	Mosses, gross	
—Springer ..	8 0-12 0	—English ..	15 0—
Autumn foliage		Myrtle, doz. bun.	6 0—
in variety, per		—French, per	
doz. bun. ..	6 0-8 0	doz. bunches	1 0-1 3
Broom foliage,	3 0-6 0	—Permetias in	
Carnation foliage,	4 0-5 0	variety, per	
doz. bunches	4 0-5 0	doz. bun. ..	8 0-9 0
Croton foliage,	12 0-15 0	Smilax, per bun.	
doz. bunches	12 0-15 0	of 6 trails ..	1 3-1 6
Cycas leaves, per	5 0-12 0		

REMARKS. Supplies of cut flowers are exceptionally low. Tulips are very scarce. A few bunches of scarlet tulips were filed off last week, but their quality was only second-rate. Chrysanthemums are almost finished, of the coloured blooms yellow and pink are the best, whilst of white varieties Mille, The Duke of Cambridge and the Duke of Devon have been blooming, and the Duke White (for sprays) are the only sorts obtainable. Carnations are still a limited supply, although their prices are easier at 5s. and 6s. per dozen. Because of Lilium longiflorum was fairly plentiful for Christmas, and New Year's trade, and their prices were not so high as was anticipated. There is a large supply of Lily of the Valley, and the prices for this flower are lower than for the other winter-flowering plants. The French flowers are very unreliable and arrival are uncertain. Several packages reached Covent Garden on Monday last after a journey of six to eight days, and some of the night was spent at the coast, so that they were practically unsaleable. No shipments from France reached the market on Tuesday last. There has been a great shortage of foliage during the past week. Adiantum Fern (Crested) and the Parisian variety are practically out of stock almost round prices.

Plants in Pots, &c.: Average Wholesale Prices.		s.d.s.d.	
Aralia Sieboldii,	s.d.s.d.	Erica gracilis ..	10 0-12 0
—dozen ..	5 0-6 0	—thumb pots,	
Aspidistra, plu-		—4 inches ..	4 0-1 6
mosus nanus,		—inlanthera,	18 0-21 0
per doz. ..	10 0-12 0	—thumb pots,	
—Springeri ..	8 0-10 0	per doz. ..	4 0-5 0
Aspidistra, per		—hyemalis ..	12 0-15 0
doz. green ..	24 0-36 0	—thumb,	
Begonia, Gloire		Ferns, 4 thumb,	4 0-6 0
de Lorraine,		per 100 ..	10 0-15 0
per doz. 48	12 0-15 0	—per 100, in	
—doz. 60	8 0—	small and	
Cacti, various		larger, per doz.	11 0-24 0
per doz. of 12	4 0—	—in 48s, per doz.	6 0-7 0
—tray of 12s ..	5 0—	—in 32s, per	
Chrysanthemum,		doz. ..	12 0-18 0
per doz. ..	8 0-12 0	—chrys., per	8 0-12 0
Coccoloba, Weddell-		—doz. ..	6 0-8 0
ana, 48s. per		—per doz. 48s.	8 0-12 0
doz. ..	18 0-30 0	Geonoma gracilis,	
—80s. per doz.	8 0-10 0	—80s. per doz.	2 6-7 6
Croton, per doz	18 0-30 0	—larger, each.,	2 6-7 6

Plants in Pots, &c.: Average Wholesale Prices.—*con.*

	s.d.s.d.		s.d.s.d.
Kentia Belmoreana, per doz.	4 0-8 0	Marguerites, in 4 8's, per doz.	12 0- —
— larger, per doz.	18 0-36 0	Pandanus Veitchii, per doz.	38 0-48 0
— Forsteriana, 60's, per doz.	5 0-8 0	Phoenix rupicola, each	12 6-21 0
Latania borbonica, per doz.	12 0-30 0	Roman Hyacinths, per box 24's.	8 0-10 0
Lilium longiflorum, per doz.	30 0-36 0	Solanum, 4 8's per doz.	10 0-12 0
— pictifolium rubrum	24 0-30 0	Spiraea, per doz.	12 0-15 0
— album	24 0-30 0		

REMARKS.—There has been practically no business in this department since Christmas. A few flowering plants, consisting of Chrysanthemums and white and pink Hydras are on sale. There is only a moderate display of foliage plants.

Vegetables: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Artichokes, Globe, per doz.	3 0-6 0	Lettuce, Cabbage and Cos, per doz.	2 0-6 0
— Jerusalem, per lb.	5 0- —	Mushrooms, per lb.	10 0-13 0
Asparagus, Paris Green, per bus.	2 6-3 6	Mustard and Cress, per doz.	1 0- —
Beetroot, per bus.	4 0-6 0	Onions, per bag 10-sprng.	18 0-22 0
Beans, Guernsey, per lb.	2 0-2 6	— doz. bun.,	4 0- —
Brussel Sprouts, per bus.	7 0- —	— doz. bun.,	4 0-6 0
Cabbages, per tally	5 0-9 0	Peas, per lb.	2 6- —
— Red, per doz.	3 0- —	Potatoes, new, per 100 lbs.	1 0- —
Carrots, per bag	9 0- —	Radiishes, per doz. bun.	2 0-3 0
Cauliflowers, per tally	10 0-25 0	Rhubarb, forced, per doz.	1 6-19 0
Celeriac, per doz.	2 6-4 0	Savory, per tally	6 0-10 0
Celery, per doz.	4 0-15 0	Seakale, per doz. punnets	21 0- —
Cucumbers, per doz.	8 0-15 0	Shallots, per hl.	0 5-0 6
— Double X	2 6- —	Spinach, per bus.	5 0- —
Endive, per bag	2 0- —	Swedes, per bag	4 0- —
Greens, per bag	2 0- —	Tomatoes, Tene-riffe, per bundle	18 0-24 0
Garlic, per cwt.	50 0- —	Turnips, new, per bag	4 6- —
Herbs, per doz. bun.	2 0-6 0	— Potatoes, per bag	4 0- —
Horseradish, per cwt.	42 0- —	Watercress, per doz.	3 0-5 0
Leeks, per doz.	3 0-5 0		

Fruit: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Almonds, per cwt.	65 0-70 0	Grapes, Almeria, per hl.	18 0-22 0
Apples—		— Alicante	13-2 0
— Californian		— Gros Colman, per lb.	1 4-3 0
— New to Wms, per case	12 0-12 6	— Canon Hall, per lb.	4 0-7 0
— English		— Muscats, per lb.	5 0-8 0
— Cooking, per bus.	10 0-11 6	— Kent Fruit, per case	18 0-20 0
— Nova Scotian barrels	29 0-35 0	— Kent Cobs, per lb.	16 0-19 0
— Oregon, per case	14 0-15 0	Lemons, per case	14 0-28 0
Bananas, bunch—		Nuts, Brazils, new, per cwt.	35 0-40 0
— Medium	11 0- —	— Coconut, per 100	25 0-31 0
— X-medium	13 0- —	— Oranges, per case	18 0-50 0
— Extra	15 0- —	Pears—	
— Double X	17 0- —	— Californian (Blocks)	14 0-20 0
— Red, per ton	225 0- —	— Keiffer, per barrel	33 0-36 0
Jamaica, per ton	118 0- —	Tangerines, per bag	16 0-7 0
Chestnuts, per bag	30 0-34 0	Walnuts, French, per bag	14 0-15 0
Cranberries, per barrel	19 0-20 0		
Dates, per doz. boxes	7 0-7 6		

REMARKS.—Home-grown and overseas Apples have arrived in sufficient quantity to meet all demands. The following varieties of Pears are now available: Boscain de Commerce, Easter Burrell, Glor Morden, and Keiffer. Apples, Pines and Apples are plentiful. Bananas have not been so scarce for many years past as they are today. Californian seedless Oranges are now on offer, and the supplies of Black Grapes are about equal to the demand. Muscats are not so plentiful as they have been. Forced vegetables available consist of English and French Asparagus, Channel Islands and English New Potatoes, Seakale, Mushrooms, Beans, Peas, and Cauliflowers. Forced Lettuce is not on offer. Ordinary vegetables and roots are fairly plentiful. E. H. R., Forest Garden Market, January 3, 1917.

Potatoes.

	s.d.s.d.		s.d.s.d.
Bedford	10 6-11 6	Lincoln— <i>con.</i>	s.d.s.d.
King Edward	10 6-11 6	Black Land	10 6-11 6
Arran Chief	10 6-11 6	Evergood	10 6-11 6
Lincoln	10 6-11 6	King Edward	11 0-12 0
Arran Chief	11 0-12 0	Queen	11 0-12 0

REMARKS.—Trade is still thin, and prices remain about the same as last week. Stocks in London are still small, and few tubers are being grown from the growers. E. J. Newbourn, Covent Garden and St Pancras, January 5, 1917.

DEBATING SOCIETIES.

WARGRAVE AND DISTRICT GARDENERS.—The last meeting of the winter season took place on December 20, and although the number of members was not large, there was much enthusiasm shown in the discussion which followed an interesting and practical paper on "Wall Fruit" given by Mr. J. Stephens, gardener at Calham Court, Hoxley-on-Thames. He dealt on the preparation of the soil in the borders, planting, training, pruning, tying-in, watering, feeding, disbudding, sheltering in bad weather, the enemies and pests of wall fruit trees, remedies for their eradication, and concluded with a list of these trees which do well in this district.

GARDENING APPOINTMENTS.

Mr. F. A. Hicks, as Gardener to Sir EVAN SPHERE, Blair House, Dunblow, S.E.
 Mr. Geo. W. Hagon, as Gardener to G. A. WILLS, Esq., Burwalls, Bristol, for the duration of the war.
 Mr. Geo. Martin, as Gardener to S. F. EDGE, Esq., Gallops Homestead, Ditchling, Sussex. (Thanks for 1s. for R.G.O.P. box.)
 Mr. JAC. JANTH, for the past 4 years manager in the nurseries of Messrs. JOSEPH ORR & SON, LTD., as Gardener to Colonel CODDINGTON, Oldbidge, Dog Bush.
 Mr. G. H. Grayer, as Gardener to W. W. BUCKLER, Hurst, East Highbury Park, Macclesfield.
 Mr. F. SNELL, for over 9 months Gardener to A. PHILLIP MORE, Esq., Willersey Hall, Ashby-de-la-Zouch, as Gardener to C. T. PARKER, Esq., Queen Lodge, Leightonborough, Leicestershire.
 Mr. THOMAS TINSON, until recently in service with Lord FRENCH at Nidd Hall, Harrogate, York-shire, and for 3 years previously Gardener to GREY HARBOROUGH, Esq. at Shimpling, near Beving, Berkshire, as Gardener to Mrs. NICHOLSON, Borden House, Borden, Hampshire, for the duration of the war.

CATALOGUES RECEIVED.

DEKSON'S, Chester SEEDS.
 HARRISON AND SOSS, Leicester.
 LITTLE AND BALANTYNE, Carlisle.
 ROBERT STEPHENS, LIMITED, Tenby Street, Birmingham.
 A. TOWERS, 400, King's Road, Chelsea.
 SITTON AND SOSS, Reading.
 DEKSON, BROWN AND TUTT, Manchester.
 JOHN K. KING AND SOSS, Coggeshall, Essex.
 EDWARD WELLS AND SONS, Weybridge, Southwark.
 STEWART AND CO., 15, South St., Andrew Street, Edinburgh.
 COOPER, TUBER AND CO., LTD., 90 and 92, Southwark Street, London (Cathedral). FOREIGN.
 SEUS AND GHOET, Enkhuizen, Holland—Beans.

SCHEDULE RECEIVED.

Royal Horticultural Society's Daffodil Show to be held on Friday, April 17, in the Drill Hall, Buckingham Gate, Westminster.

ANSWERS TO CORRESPONDENTS.

FILBERES AND CORNUTS: H. J. J., Washington, Can., In England, Filberes are not commonly grown on a large scale for market, as Cornnuts yield better and sell for higher prices. The Kentish Cob and Webb's Prize Cob are recommended. Basin-shaped trees, with stems 12 to 15 inches long, are commonly grown in Kent, where the Nut industry is considerable; but the pruning of these is very elaborate and expensive. Some growers allow the trees to keep their natural shape, with very little pruning. In that form they crop at least as well as in the artificial shape; but the Nuts are smaller. There are not nearly so many suckers from the trees of natural shape as from those trained in basin shape, to be dug up every year. Cobs should be planted 15 feet apart each way, and Gooseberries or Currants may be planted among them at 5 feet apart, to last for about ten years, or till the Cobs overshadow them. There are no satisfactory statistics as to yield, which varies enormously. We have heard of a phenomenal crop of two tons per acre, but half a ton is nearer the average from mature trees. Money returns per acre vary enormously, as do prices per lb. At present the unprocessed rates of 2s. 2d. to 2s. 4d. per lb. are quoted, as the crop in 1916 was nearly a failure and unprocessed nuts are scarce. Ordinary prices are 5d. to 6d. per lb. You should obtain "Fruit Farming for Profit," by George Bunyard, containing full directions for pruning, price 3s.,

including postage, from our publishing department.

FOXGLOVE WITH TERMINAL REGULAR FLOWER: P. J. B.—The occurrence of flower-spikes of the Foxglove bearing a terminal regular flower is by no means uncommon. The precise cause of the phenomenon is unknown, but it is due to some internal derangement of the normal growth. Plants which possess this peculiarity breed true to it. If crossed with the normal form the offspring all appear normal, though self-fertilised seed obtained from these apparently normal hybrids produces plants of which one in every four shows the abnormality. Although curious and interesting scientifically, the malformation is not a desirable acquisition in a garden.

GISHURST COMPOUND: Correspondent. For winter washing and cleansing vines use 8 ounces of Gishurst compound to 1 gallon of water.

NAMES OF FRUITS: D. H. Apples: 1, Broad End; 2, Newton Wonder; Pear: Bellissime d'Haiver.

POTATOES: Ignominous. The Potato tubers show no sign of injury by frost. You may sprout them in the greenhouse, covering them with mats, as you suggest, during times of frost. Make up the hotted with the Beech leaves, using a little stable-dung to promote fermentation. Use fresh leaves, not the leaf-mould, and make them in a heap, well trodden, about 3 feet deep. Your plan of treating the seedlings is suitable. We do not recognise the variety.

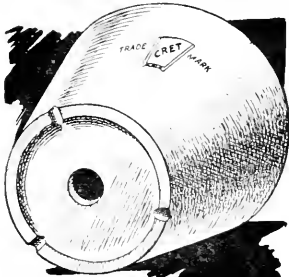
RABBITS AND FRUIT TREES: J. P. Smear gas tar very thinly on the bark of the trees not higher than 2 feet from the ground. If you apply a heavy coating of the tar the trees will suffer injury.

VEGETABLE CROPS: Hesser. You would require 5 oz. to 3½ oz. of Onion seed to sow one square rod of ground. Nine lbs. of Parsnip seed are required to sow an acre of ground, and you would require the same amount of Carrot seed. Butter Beans are eaten pods and all, and if they are kept for the winter must be lotted wet. Haricots can be grown for winter use dry. A suitable book for your purpose is *Commercial Gardening*, by John Weathers, in 4 vols., price 9s. per volume, from our publishing department.

VEGETABLE GROWING: C. J. W. The land in question, which, we take it, is old pasture, should be broken up at once by ploughing as deeply as possible, and left in this condition until the middle of February, when it should be cross ploughed and thoroughly harrowed. In the first or second week in April, drills should be ploughed to the depth of 4 or 5 inches, and the Potato sets planted, 18 inches apart in the rows, which should be made 3 feet 6 inches apart. The seed tubers should be purchased at once, and laid out thinly in a cool but frost-proof building, as extra care spent in this way will prevent immature growth and waste. King Edward is one of the best, and most popular varieties for heavy soils; failing this, Dobbie's Prolific or The Factor should be chosen. Immediately after the Potatoes are earthed up, plant a good strain of Brussels Sprouts between the rows, at 2 feet 6 inches apart. If the operations are properly carried out, there is no reason why the ground should not yield a good profit; the following season almost any vegetable crops could be grown successfully.

WILLOW FOR BATS: Lord L. The Willow that furnishes the best wood for cricket bats is known as *Salix caerulea*. It is a hybrid from the White Willow (*S. alba*) and the Crack Willow (*S. fragilis*), and can be obtained from nurseries in your own county.—Messrs. Daniels Bros., Ltd., Norwich. The hybrid is known to the trade as the Cricket Bat and Close-barked Willow, the latter term to distinguish it from one of the parents, the Open-barked or Crack Willow. A useful book is *British-grown Timber*, by A. D. Webster, just published, price 5s. 6d. post free.

Communications Received.—J. C. Richmond (Thank), will look it up.—W. W.-N. & R. G.—W. W. P. (Wine) S. L. W.—U.S.A.—H. S. T.—R. F. S., Bombay—S. L. W.—A. I.—H. L., Beaconsfield—G. M.—H. P., Froehage, S. Africa.—W. G.—J. G. B.—C. H. M.—E. M.



**Free Booklet
about the New Pot**

Every head gardener is invited to see the exceptional root room, porosity, and drainage of the new pot—the CRET. The

FREE SAMPLE and interesting Booklet with prices (and 5 Special Assortment Offers) will show you many advantages of Crets for all pot plants. Write for same to-day.

Two Specimen Prices—3½ ins., 5 - per 100; 7½ ins., 21-. Cret prices are all per 100, and include carriage on orders over 20-.

PETER BAILEY & SONS LTD.
Heaton Mersey Pottery, near Manchester.



YOUR LAWN.—To insure it against weeds and impoverishment in 1917, treat it in November or on October 25th.

VELVAS LAWN SAND.
112 lbs. 20. 50 lbs. 11. 25 lbs. 6. 14 lbs. 3. 8 lbs. 1. 6d. Obtainable from all Seedsmen.

Manufactured by
ROBINSON BROTHERS, LTD.
West Bromwich, Staffs.

**Extirminated by
"LIVERPOOL" VIRUS**

RATS

No Danger to Animals
NO SMELL.

In Tins baited for Rats 2 B and 8; for Mice 4 B.

Of all chemists, or write for particulars to—Dolph C.

EVANS, SONS, LESCHER & WEBB LTD.
22, Hanover Street, LIVERPOOL.

**ORDER OUR CELEBRATED
FORCING
ROOTS**

**Seakale, Asparagus,
Mint, Rhubarb, etc.**
Also Fruit Bushes.

Write for Illustrated Catalogue, containing
PRACTICAL NOTES ON GROWING AND FORCING.

ESTABLISHED 1857.

MANN & SONS,
Whitton Road, Twickenham.

**THOMSON'S
VINE, PLANT & VEGETABLE
MANURE**

Famous for over 30 Years.
Ensures success in your garden; so compounded from the finest ingredients procurable as to combine **STIMULATING** with **LASTING** effects, producing in every crop vigorous, healthy and fruitful growth.

The direct result of **LONG PRACTICAL** experience in gardening. Used by Amateur and Professional Gardeners the world over.

ALSO
**THOMSON'S SPECIAL
CHRYSANTHEMUM
AND TOP DRESSING MANURE.**

Prices:—Vine, Plant and Vegetable Manure, 1 cwt., 20/-; 56 lbs., 12/6; 28 lbs., 7/6; 14 lbs., 4/6; 7 lbs., 2/6; tins, 2/6, 1/-, and 6d. Carr. paid anywhere on 56 lbs. and up.

Special Chrysanthemum and Top-dressing Manure:—56 lbs., 20/-; 28 lbs., 11/-; 14 lbs., 6/-; 7 lbs., 3/6; tins, 1/- Carr. pd. anywhere on 28 lbs. and up.

Sold by all Seedsmen OR FROM

**SOLE
MAKERS**
W. THOMSON & SONS LTD. CLOVENFORDS, N.B.

**BUNYARD'S
FRUIT TREES**

**CATALOGUE
by RETURN**

GEORGE BUNYARD & CO.
Royal Nurseries, Ltd.
MAIDSTONE.

Ammanford and Pontyberem Collieries.

SOLE AGENT:
T. T. PASCOE,
York Chambers,
SWANSEA.

Tel. phone
grams : : : 1048 Central.
Pascoe, Swansea.

**Best Anthracite Large Coal for Horticultural
purposes and Cobbles for House Furnaces.**

Quick Despatch. Best Quality.
Lowest Prices.

FOREST TREES for TIMBER GROWING

Thousands of good stout plants, well transplanted off sandy loam, 1, 2 to 4ft.

ASH,	BIRCH,	CORSICAN,	LARCH, a fine lot,
BEECH,	CHESTNUT,	WHITE and other PINES,	SCOTCH,
	OAK,	DOUGLAS,	SPRUCE, &c., &c.,

and other leading Forest Trees.

Also a quantity, extra transplanted, 3, 4 to 6ft. and over. Very suitable for mending plantations.

Many of the larger sizes transplanted last year.

A large assortment of other Nursery Stock for Cover and Ornamental planting. Area under Nursery, 300 Acres.

LIST ON APPLICATION

WALTER C. SLOCOCK, GOLDSWORTH NURSERIES,
WOKING, SURREY.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two),
6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Intinals at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

THE UNIVERSITY OF LEEDS
DEPARTMENT OF AGRICULTURE.

APPLICATIONS are invited for the position of additional INSTRUCTOR IN HORTICULTURE. Salary, £350 a year.—Applications will be received up to January 21, 1917, and should be addressed to THE SECRETARY, The University, Leeds, from whom further particulars may be obtained.

WANTED, experienced hard-working HEAD GARDENER, house and 2 or 3 good wages.—Apply, WALKER, Ratcliffe House, Kingston, Leicestershire.

WANTED, HEAD GARDENER: take place one called up, used to Vinay, Peach house, Vegetables, accommodation provided; Lady Gardener would be accepted. A. P., Box 27, 41, Wellington Street, Covent Garden, W.C.

WANTED, HEAD GARDENER of 2, with occasional help, must be thoroughly conversant with Glass and hard-out work.—Apply, FRY, Rosslyn House, Othlands Park, Weybridge.

WANTED, HEAD WORKING GARDENER, thoroughly experienced in all branches, wages 50s. a week, with cottage and coal.—Apply, with references, to M. F. DIXON, Rydal Estate Office, Ambleside.

WANTED (end of January), WORKING HEAD GARDENER, thoroughly experienced in all branches, Inside and Out.—Apply, THOS. E. LEWIS BOWEN, Chiswick, Boncath, Pimlico-keelsire.

WANTED, HEAD WORKING GARDENER, married only, must be single and intelligible.—Write, FRANK SCHUBB, Esq., The Hill, Bay, Berkshire.

WANTED, HEAD WORKING GARDENER, some knowledge of glass necessary, cuttage, light, and coal found. Write giving all particulars as to experience, age, wages required, &c., to REGINALD ASHLEY, Campden Beauchamp, Stroudham, Berks.

WANTED, good HEAD-WORKING GARDENER for Hampton, very good house. Write all particulars to MRS. JEFFREYS, She-wicks, Wainfield.

WORKING HEAD GARDENER required where 4 or 5 are kept, one who is 18 years round to a chalk soil, a good gardener, good at Vines, Peaches, Not a few Cucumbers, Melons, Potatoes, Sweet Plants, and all outdoor Fruits, Flowers, and Vegetables.—Write full particulars as to age, experience, and salary required, with good cottage, coal, and light, to W. A. JOHNSTONE, Kearsney Court, Dover.

WANTED, MAN to take charge of Vines and Peach houses, wages 25s.; Botchy, milk, and vegetables, intelligible. CANNON, The Gardens, Clonsilla, Tipperary, Bucks.

WANTED, SINGLE-HANDED GARDENER, help given, married (no family); intelligible; 25s. and lodge. VAN HATTEN, Washington House, Ash-horn.

WANTED, GARDENER (SINGLE-HANDED), post only no Glass, no cottage; help kept, good wages to thoroughly reliable man.—Apply, with particulars of wages and past experience, to R. WOOD, Elm Cottage, Bexhill, Dorking.

WANTED, GARDENER (SINGLE-HANDED), with help of boy, wages 25s. a week, and good house, little Glass, excellent cottage, good wages, must understand and look after fish chickens. Apply by letter only, C. H. R. S., Albany Park, Chiswick, Kent.

GARDENER wanted, intelligible (SINGLE-HANDED), 15 years' L.K. in Garden and Green house; 25s. and a cottage. Write, MRS. BIRD, "Glenora," Cuckham, Berks.

WANTED, a SINGLE-HANDED GARDENER (ineligible or discharged man) for mixed Garden of about 10 acres, one Greenhouse; no cottage.—MRS. DAVISON, Woodlands, Alton Road, Bognor.

UNDER GARDENER required (Second of Five) State full particulars to W. A. JOHNSTONE, Kearsney Court, Dover.

WANTED, GARDENER, ineligible, with experience of Flower and Kitchen Garden, small Holloway, Vinery and Conservatory; no cottage; wages 30s. to 35s., according to age and experience.—Write, giving references, to MRS. BARKER, Grove House, Southgate.

WANTED, GARDENER (experienced) Working help given. Vegetables, Fruit, some Glass.—Write all particulars, COLE, Rhos, Colwyn Bay.

WANTED, GARDENER, during war, experienced, capable man, very pretty place, Devonshire, State terms—B. & C. 14, c/o W. H. SMITH & SONS, 8, Kingsway, London, W.C.

WANTED, immediately, for a gentleman's residence, a WORKING GARDENER, help given; must be ineligible for the Army or over military age; cottage found.—Apply, stating wages required, to MR. MAIRICE PRICE, Estate Agent, Tetbury, Gloucestershire.

WANTED, Two or Three GARDENERS, either sex; under Head; experienced, Inside and Out.—Apply, with references, Earham, Chichester, to G. BROWN, The Gardens, Earham, Chichester.

WANTED, LADY GARDENER, to take entire charge of charming old-fashioned Garden, wages and post experience, R. WOOD, Elm Cottage, Box Hill, Dorking.

GARDENERS (2 Ladies, HEAD and UNDER) Wanted at once, for duration of the war, expert experience in Vegetable and Outdoor Fruit essential, small quantity Glass and Pleasure Gardens; 2 labourers (1 of 4 named cottage); good wages—R. G. UPTON, Hon Hatch, Buntingford, Essex.

WANTED, LADY GARDENER (SINGLE-HANDED), 10 miles North of London, 25s. to 30s. Wage, BERTON, The Old House, Totteridge, Herts.

WANTED, LADY GARDENER, to teach women and girls Vegetable growing and to work with ladies, 10 acres of ground, 1 Glass-house.—State experience, fully, salary required, age, &c., to L. M., Box 6 41, Wellington Street, Covent Garden, W.C.

WANTED, Two LADY GARDENERS, with some experience, chiefly Inside.—Particulars and wages expected to W. CHAPLIN, Froggall Gardens, Sunninghill, Ascot.

LADY GARDENERS are required for (1) English, as second of three, about 4 acres of ground, understand Fruit and Vegetables; (2) Wills, as Head Gardener, with man and boy as under; (3) Bucks, as Under Gardener, must have knowledge of all-round plant gardening; (4) Isle of Wight, as Head Gardener, where there are three Under and boy kept, good size Kitchen Garden, large Pleasure Grounds, Greenhouses, and Flowers. Lady Gardeners are suited entirely free of charge. MRS. HUNT, Ltd., 89, High Street, Marylebone. No engagement, no fee.

WANTED, good practical WOMAN GARDENER for the Glass Department, under Foreman; also one for the Rock Garden and 1 Herbaceous Borders, &c.; good wages; Botchy and usual perquisites.—ARTHUR FRESHWATER, Head Gardener, Pains Hill, Cuddham, Surrey.

WANTED, good practical WOMAN GARDENER for the Glass Department, under Head Gardener, also one for the Rock Garden and Herbaceous Borders.—Apply, stating wages, to MISS INSOLE, The Court, Lambalf.

WOMAN GARDENER, with some taste and experience for floral decoration, and to be useful in Orchard and Plant Houses.—State what reference, experience, and wages expected, to C. GAYTON, Clombe House Gardens, Kingston Hill, Surrey.

LADY GARDENER and a PROJECTIONS wanted.—Apply by letter in first instance, stating experience, wages required, &c., to MRS. HENTLEY, Head Gardener, Oak Hill, Bockhurst Hill, Essex.

WANTED, experienced FOREMAN, for Inside, wages 20s. per week, Botchy, &c.; if married, no cottage.—Apply, Inside JOURNEYMAN, 22s. &c., duty 2s.—State full particulars, A. BENNETT, Sibleton Hill Gardens, Ashbourne, Debits.

WANTED, FOREMAN, also a JOURNEYMAN, for all-around work; Botchy and girl wages to men with experience.—Apply, HEAD GARDENER, Poles, Ware, Herts.

WANTED, Two JOURNEYMEN, one Inside, one Outside; experienced men required, wages 25s. and Botchy, &c.; duty third week, send copies of testimonials and full particulars to J. L. MARWOOD, Bishopbridge Gardens, Godalming.

WANTED, JOURNEYMAN, for Inside work; good wages, Botchy, milk, &c.—Apply, with references, G. HUNT, Ashstead Park Gardens, Ashstead, Surrey.

WANTED, for small estate in Middlesex.—WOODMAN (ineligible).—Write, stating age, experience, and wages now received, to Box 965, Charles Taylor & Co's Advertising Offices, 30, Fleet Street, London, E.C.

WANTED, near London, MARRIED COUPLE (man must be ineligible); total abstinence preferred; man to work in garden, wife to milk and attend two cows; very comfortable cottage.—Write, stating age, experience, and wages now received, with full information respecting man's discharge from Army, to Box 108, Charles Taylor & Co's Advertising Offices, 30, Fleet Street, London, E.C.

WANTED, at once, good MAN, for Kitchen Garden, with experience; state wages.—Apply, J. W. LACY, The Gardens, Balton Park, near Rugby.

WANTED, MAN (discharged soldier or ineligible), with knowledge of general work Outside, and able to take duty; wages 25s. and Botchy, duty extra. Also good strong YOUTH as Improver; 18s. and Botchy.—Apply, T. STEVENSON, Wolburn Place Gardens, Aylesstone.

WANTED, Two YOUNG WOMEN, for Glass department; must have some experience; one to act as Forewoman; 20 d. Botchy.—State vegetables, to JOHN FODMORE, Manor Gardens, Little Berkhampton, Hertford.

WANTED, IMPROVER (OUTSIDE), with some experience, about 17 years of age; wages 18s.; good Botchy; war bonus 1s.; Sunday duty paid; 1 shod Saturdays.—Send references to J. S. KELLY, Clatnont, Eber.

WANTED, strong YOUTH, for Garden; wages to commence 15s., Botchy, &c.; Sundays extra; Saturdays, 1 pm.—J. HOWARD, Bennam Park Gardens, Newbury.

WANTED, YOUTH, age 15, Inside the Houses and Outside; wages 15s. weekly and Botchy.—E. MORGAN, Wassyand Hall Gardens, Hull.

WANTED, Two GARDEN LABOURERS, 24s. a week and Botchy—GEO. FIGGIS, Warren House Gardens, Kingston Hill, Surrey.

WANTED, a PORTER and HANDY-MAN, to live out.—Apply to the SECRETARY, Hertford County Hospital.

TRADE.

WANTED, capable WORKING MANAGER for Market Nursery, mainly Grapes, Tomatoes, Chrysanthemums, &c.; good wages; permanency.—H. MAXSHALL, Barnham, Bognor.

45/- Weekly and Bonus offered for WORKING FOREMAN for Market Nursery; 1½ acre Glass, Cucumbers and Tomatoes; State age, experience, with copies of references, and when despatched, B. R., Box 15, 41, Wellington Street, Covent Garden, W.C.

WANTED, WORKING FOREMAN, to take care of Landscaping work, and look after and look with his men's store age, wages required, references, and previous experience.—A. W., Box 26, 41, Wellington Street, Covent Garden, W.C.

EXPERIENCED CHARGE HANDS wanted for Palms, Ferns and Vines; wages 50s. per week and 6d. per hour overtime; Sunday duty extra.—THOMAS ROCHFORD & SONS, LTD., Turford Hall Nurseries, near Broxbourne, Herts.

WANTED, GROWER of Perpetual Carnations; ineligible for Army; good wages to a reliable man. Send copies of references and state wages required.—GEO. CLARKE, Carnat on Nurseries, Heath Road, Lechlinton Buzzard.

GARDENERS waiting for Situations can obtain employment; good wages.—JOHN RUSSELL, Devonshire Nurseries, Haverstock Hill, Hampstead.

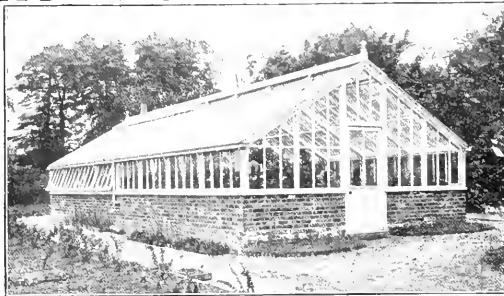
WANTED, at once, an ineligible, practical, active Man as Propagator and Grower of Soft-wooded Plants and Chrysanthemums.—Apply, with copies of testimonials, stating wages required, to JAS. HOLDER & SON, Crown Nurseries, Reading.

WANTED, MEN, ineligible, for Soft-wooded stuff, Chrysanthemums, Tomatoes and Cucumbers, &c.—G. BENNETT & SON, Hanwell, W.

WANTED, YOUNG MAN (ineligible), for 10-acre garden and small take-herd; take lead and execute own orders.—State age, wages, and mark envelope "Private."—G. F. LETTS, Nurseryman, Hadleigh, Suffolk.

SEED TRADE.—WAREHOUSEMAN, with a good general knowledge of Farm and Vegetable Seeds wanted, to take charge of Seed Stores.—Apply, with full particulars, to J. C. WHEELER & SON, LTD., Seed Growers, Gloucester.

W. RICHARDSON & CO., DARLINGTON.



**HORTICULTURAL BUILDERS
and HEATING ENGINEERS.**

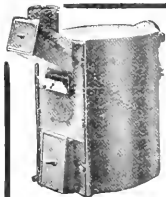
PLANS and ESTIMATES prepared free of cost.

REPRESENTATIVES sent to any part of the Kingdom to advise and take particulars.

LARGE CATALOGUE of photographic views of Horticultural Buildings free on application.

GARDEN FRAMES, GARDEN SEATS, &c., supplied from stock.

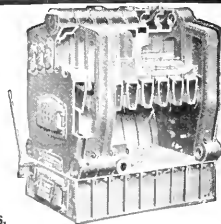
LONDON OFFICE: BELGRAVIA CHAMBERS,
VICTORIA STREET, S.W.



The "Horseshoe" Boiler.
R.H.S. GOLD & SILVER MEDALS.

List on Post Free. Phone: Hop 372.

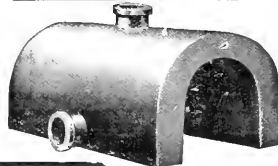
C. P. KINNELL & CO., LD.,
65a, SOUTHWARK ST., LONDON, S.E.
(Close to Hop Exchange.)



BOILERS.

For House and Greenhouse. ::
Sectional, Saddle and other Patterns
for Replacement, &c. ::

FROM STOCK.



SANKEY'S FAMOUS GARDEN POTS
The **BEST** and **Cheapest**.
State quantity of each size required and name. Carriage paid on quotation (Carriage frequently amounts to half value of goods), or write for Price List, free.
SPECIAL POTS of all descriptions. Bulb Bowls and Fern Pots from 2d. each.
RICHARD SANKEY & SON, LTD.
Bulwell Potteries, NOTTINGHAM.

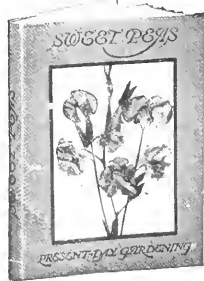
ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties.
STOVE and GREENHOUSE PLANTS of ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1 6 net
per
Volume.

Each Volume is written by an Expert. Illustrated
with Eight Plates Reproduced from Colour Photo-
graphs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H.,
Secretary of the Orchid Committee of the
Royal Horticultural Society.

APPLES and PEARS. By GEORGE
BUNYARD, V.M.H., late Chairman of R.H.S.
Fruit Committee.

ANNUALS HARDY & HALF-HARDY By
C. H. CURTIS, late Hon. Sec. of the National
Sweet Pea Society.

CHRYSANTHEMUMS. By THOMAS
STEVENS JN., with Chapters by CHARLES
SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with
preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD
FARRER, with preface by Dr. J. BRET-
LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON,
V.M.H.

IRISES. By W. R. DYKES, M.A., with preface
by Prof. BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT,
late Secretary and Chairman of the National Sweet
Pea Society. With Chapter on "Sweet Peas for
Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By
WILLIAM CUTHBERTSON, V.M.H., and R.
HOOPER PEARSON.

RHODODENDRONS and AZALEAS.
By W. WATSON, with preface by Sir F. W.
MOORE, M.A. (the only volume published on
this subject).

ROSES (double volume 2/6). By H. R.
DARLINGTON, Joint Secretary of the
National Rose Society.

CLIMBING PLANTS. By W.M. WATSON
with introduction by W.M. ROBINSON,
Author of "The English Flower Garden."
(Double volume 2/6.)

ROOT and STEM VEGETABLES. By
ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB,
Chairman of Committee of the Midland
Daffodil Society. With preface by Rev.
W. WILKS, M.A.

CARNATIONS and PINKS. By T. H.
COOK, Head Gardener at Sandringham;
JAMES DOUGLAS, V.M.H., and J. F.
McLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

Each Volume 1 10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No. 3968

No. 1568. VOL. LXI. {THIRD SERIES} SATURDAY, JANUARY 13, 1917.

{Registered as a Newspaper.} PRICE 30.

{Post-free, 3d.

SUBSCRIPTION—Inland, 15-; Foreign, 17/6 [22fr. 10c.] [\$4 28c.] per annum. Entered at New York Post Office as second-class matter. Postal Address—41, Wellington Street, Covent Garden, W.C. Telegraphic Address—"GardChron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 13.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes, 1s., 3s., and 10s. 6d. each, by Dealers in Garden Sundries. Wholesale—**PIKE'S PATENT CANDLE CO., LTD.**, Battersea, London, S.W.

WATERER'S GOLD MEDAL RHODODENDRONS—We cordially invite you to come and select any plants you require. We have over 60 acres, comprising the finest collection in cultivation. Catalogue free.—**JOHN WATERER, SONS & CRISP, LTD.**, The Nurseries, Bagshot, Surrey.

NOW IS THE TIME TO PLANT

KELWAY'S PERFECTLY GLORIOUS PAEONIES. Kelway's beautiful blue Delphiniums. Kelway's brilliantly coloured Phloxes. Kelway's Colour Borders, over in bloom. Kelway's new and choice hardy perennial plants of all kinds.

NOW IS THE TIME TO ORDER for Spring planting Kelway's famous Gladioli. Kelway's many coloured Pyrethrums. Kelway's gay Galanths.

NOW IS THE TIME TO SEND for particulars to **KELWAY & SON,** Retail Plant Department, LANGFOLD, SOMERSET.

COWAN'S NEW ORCHID MATERIAL. The best and much the cheapest. Full particulars on application to **JOHN COWAN & CO.**, Gateacre Nurseries, Gateacre, Liverpool.

NEW PHLOXES.

A GRAND STOCK of these Brilliant Flowers in all shades, now ready for delivery. For lists, with full particulars, apply **GUNN & SONS**, Otton, Warwickshire.

BARR'S SEED GUIDE, now ready, free. Vegetable and Flower Seeds of finest Selected Strains and Tested Growth at moderate prices. **BARR & SONS**, King Street, Covent Garden, London.

DOBIE & CO., ROYAL SEEDSMEN. EDINBURGH, will send a copy of their 1917 Catalogue and Guide to Gardening, 160 pages, nearly 150 illustrations, free, if this paper is mentioned.

WELLS' Catalogue of Chrysanthemums and Perpetual Carnations now ready, post free on application.—**W. WELLS & CO.**, Merstham, Surrey.

JAMES GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineer, Danvers Street, Chelsea, London, S.W. Wire, 201, Western, London. Telephone: 201 Western.

SECURE YOUR SUPPLIES OF THE FOLLOWING BEFORE STOCKS ARE EXHAUSTED. ORDER AT ONCE.

SUTTON'S EARLY GIANT PEAS (per pint) 1s. 6d. each. **AVON**, per pint 1s. 9d. **SUTTON'S EXHIBITION LONGPOD BROAD BEAN** (per 4 lb. sack) 10s. 6d. each. **LONGPOD**, per 4 lb. sack 11s. 6d. **SUTTON'S MASTERPIECE HAWK BEAN** (per 4 lb. sack) 10s. 6d. each. A fine strong variety, per pint 2s. 6d.

SUTTON & SONS, The King's Seedsmen, LEADING.

BATH'S SELECT SEEDS—New Hias French Collection of Choice Vegetables and Flower Seeds, with full particulars, sent free, and will be sent post-free on application. (Dept. A), R. H. BATH, LTD., The Fossil Farms, Washburn.

WATERER'S ROSES & FRUIT TREES. Grand stocks of the best varieties. Lists free. **JOHN WATERER, SONS & CRISP, LTD.**, The Nurseries, Bagshot, Surrey.

FIDLER'S NEW ILLUSTRATED CATALOGUE—LARGE OF CHOICE GARDEN SEEDS will be sent, post free, to any address on receipt of post-paid "Money Order" for 1s. 6d. It may be purchased for 9d. per copy on receipt of seed list this season. **FIDLER & SONS**, Royal Exchange Buildings, Reading.

GREENHOUSE PAINTING & GLAZING—A large and experienced White Lead Paint, 15-penny per gallon. Finest glass panes, 12s. per pair. For particulars, apply to **W. CHERSON & SONS**, Glass Works, Faversham. Agents throughout the country.

ORCHIDS FOELIOSA, "The Madeira Orchid." The finest form of this beautiful Orchid, 21 to 24 inches high, with 6 to 8 inch solid spikes of rose-purple flowers. Strong roots, 2s. 6d. each, 27s. 6d. per dozen. **T. SMITH**, Dossy Hill Nursery, Newry.

FRUIT TREES, true to name, my special treated stock, in well-grown, extensive nurseries, at the following prices: **Canon**, Pear, Grape Vine, Orange Tree, Fig Tree, in pots, for planting. Catalogue—**WILL TAYLER**, Hampton, Middlesex.

ROCK GARDEN PLANTS, Whose and In "What Soils to Plant Them," with Catalogue, free on application. Special selections, 12, 3s. 6d.; 25, 6s. 6d.; 50, 12s. 6d.; 100, 25s. All different, named, strong stock. **G. R. PHIPPS**, Alpine Nursery, Barnham, Hogon.

200 CAMELIAS in variety, 2½ to 3ft., bushy and bushy, 10s. each; 250 large *Dracema* indivisa, 4ft., 5s. each.—**SMITH, Fernery**, Loughborough Junction, London, S.W.

PRIVET O-LEAF—Beautiful colour, bushy and well rooted, 2ft. to 3ft., 5s. 100, 3ft. to 4ft., 8s. 100. **HINTON BIOS, LTD.**, Watwick Nurseries, Warwick.

20,000 GOOSEBERRY and CURRANT TREES, 2 and 3 years, Whomham Industry, Crown Hill, Early Kent, Berry Early, May Duke, 4s. dozen, 15s. 100, Fox's Frolic Red Currant, 3s. dozen, 10s. 100; Baskop Giant Black Currant, 3s. dozen, 10s. 100; Apple Trees, Plums, and Pears, 12s. dozen, 12s. 100. Lists free.—**W. HORSE & SONS**, Chiff, near Rochester, Kent.

For Advertisement Charges see page vii.

SANDER AND SONS, Orchid Growers, St Albans.

LAXTON'S SEEDS AND FRUIT TREES. New Catalogues of the above now issued gratis. Grand New Early Peas, Laxton's Superb, &c., Fruit Trees. A fine stock to offer—may still be safely planted. Pamphlet on Cultivation on receipt of stamped envelope. **LAXTON BROTHERS**, Nurserymen, Bedford.

DICKSON'S HORTICULTURAL MANURE and other high class Fertilisers, also Dickson's Improved Mushroom Spaw. Printed circulars free on application to **DICKSON'S**, Royal Seed Waterhouses and Nurseries, Chester.

PEEDS' SEEDS FOR RICH CROPS. You want exceptional results from your garden this year. Write for our 1917 Seed List. We can give you the record crops you want.

JOHN PEED & SON, The King's Seedsmen and Nurseries, WEST NORWOOD.

WM DUNCAN TUCKER & SONS, LTD., Lawrence Road, North Tottenham, Co. Essex, Winter Gardens, America, Dutch Houses, Portable Buildings, &c. Catalogue gratis.

100,000 LARGE GARDEN FERNS, Dracenas, Roses, Ericas, Gloxinias, Lilies, Hydrangeas, &c.; catalogues free.—**J. E. SMITH**, London Fern Nurseries, Loughborough Junction, London, S.W.

STANDARD WEEPING ROSES, All the latest and best varieties, in good strong trees, with stems from 4½ to 7 feet, on English Briar stock, 4s. each upwards.—**HINTON BIOS, LTD.**, Warwick Nurseries, Warwick.

BERBERIS DARWINI and STENO PHYLIA (new Dossy Hill hybrid)—A complete collection of these, including many dwarf and compact growths, suitable for the Rock Garden, will be found in our Tree and Shrub Catalogue. Free on application.—**T. SMITH**, Dossy Hill Nursery, Newry.

FERNS! FERNS! Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns; catalogues free.—**J. E. SMITH**, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, 1,000 Large ASPIDISTRAS, good plants suitable for stock; cash or exchange. See other advertisements; catalogue free.—**SMITH**, London Fern Nursery, Loughborough Junction, London, S.W.

VIOLET LEAVES wanted, sent fortnightly. Prices and quantities to **GIBBINS**, 16 Carpenter Road, Edgworth, Birmingham.

ORCHID PEAT, 5s. and 7s. 6d. per sack; Brown Peat, 10s. 6d. per yard in trucks, in bags 2s. each, 2s. dozen; Oak and Beech Leaf Mould, Yellow Loam, Stacked and Fresh Cut, Silver Sand; 4 ton lots for 45s.; C.N. Fibre, 18s. dozen bags; best tree, **J. HANDSCOMBE, F.R.H.S.**, Feltham, Middlesex.

SALES BY AUCTION.**WEDNESDAY NEXT.**

Consignments of thousands of Spring Flowering and other Bulbs, Choice Hardy Herbaceous Plants, Rock Plants, Rhododendrons, Border Carnations, Fruit Trees, &c., &c.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

On Wednesday, January 17th, at 12 o'clock.
On view morning of sale and catalogues had.

SPECIAL TRADE SALE.

Wednesday next at 2 o'clock.

Large quantities of Narcissus of sorts, late-flowering Tulips, early flowering Gladioli, and other spring-flowering Bulbs, followed at 3 o'clock by

1,300 cases of Japanese Lilies.

Comprising

95,500 Liliom Longiflorum Giganteum.

45,000 Liliom Speciosum Album.

15,500 Liliom Speciosum Rubrum.

12,000 Liliom Speciosum Rubrum magnificum.

6,500 Liliom Henryi.

together with Liliom Tigridum fl. plenum, L. auratum and L. auratum album vittatum.

On view morning of sale and catalogues had.

ROSES.

THURSDAY NEXT.

MESSRS. PROTHEROE & MORRIS will sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on Thursday, January 18th and every succeeding Thursday at 1 o'clock, consignments of well-grown ROSES, especially listed to suit all buyers.

On view morning of sale and catalogues had.

**STANMORE NURSERY COMPANY.
PARK NURSERY, STANMORE.**

Cleaner Sale of the Erections of 8 Greenhouses, Pits, Offices, Sheds and other Buildings, Hot water Pipes and Boilers in suitable Lots.

MESSRS. PROTHEROE & MORRIS will sell the above by AUCTION at an early date.

Catalogues are being prepared, and will be forwarded on application.
Estate Offices, 67 and 68, Cheapside, London, E.C.

BUNTINGFORD.

Two days' Sale of General Nursery Stock, comprising Prætor, Scotch and Spruce Firs, Laurels, Handsword Box, Abies, Cupressus and Thuja, Standard Ornamental Trees, Standard and Bush Apples and Pears, Flowering Shrubs, &c.

MESSRS. PROTHEROE & MORRIS have been instructed by Messrs. G. Bolton and Son to sell the above by AUCTION at The Aspenden Nursery, Buntingford.

On Monday and Tuesday, January 22nd and 23rd, at 12.45 o'clock each day.

On view Catalogues had on the premises and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges,
AND
Orchard House Trees.

A LARGE AND SELECT STOCK
ALWAYS ON VIEW.

ILLUSTRATED AND
DESCRIPTIVE CATALOGUE
POST FREE.

THOMAS RIVERS & SON

Sawbridgeworth, Herts.

STATION: HARLOW, G.E.R.

BUSINESSES TO LET.

NURSERY TO LET; commanding position; five minutes from rail and road; 5300 ft. Glass, 14 acres land, house, &c.—MILES, Royal Hotel, Sheerness.

BUSINESSES FOR SALE.

FLORIST'S and SEED BUSINESS FOR SALE, near London; fine Greenhouses and Shop, house on premises, just renovated; good position in main street, in go. £180. Write, E. F., Box 17, 41, Wellington Street, Covent Garden, W.C.

A SPLENDID OPPORTUNITY occurs for acquiring a well-established Market Nursery, 10 acres, half Fruit, and sloping south; extensive range of Glass and pits, all heated, stock at valuation; low in go. Also high-class Floral and Seed Business, illness side range of retouching.—A. R., Box 21, 41, Wellington Street, Covent Garden, W.C.

OFFERS wanted for Jobbing connection; small nursery; stock and tools, low price, offer having to join up. BEALMAN, 61, Fenny Hill, Colford.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

PRIVATE.

T. DOWN begs to thank all applicants for Head Gardener's situation which is now filled.

GLAMORGAN COUNTY COUNCIL.

Notification of the appointment of an Advertiser to the GLAMORGAN COUNTY COUNCIL invites applications for the appointment of a HORTICULTURAL DEMONSTRATOR and ADVISER for assisting the occupiers of Cottage Gardens, Allotments and Small Holdings in such areas as will, from time to time, be selected within the Administrative County of Glamorgan.

Applicants must possess an Examination Certificate of the Royal Horticultural Society, and have served as apprentices to Gardeners, and have held situations in which they were in charge of and responsible for Flower, Fruit, Vegetable, and Hot-house work.

Experiences as demonstrated in Vegetable Gardens will be deemed an additional qualification.

Applicants must provide and be able to refer to a verified copy of their work with an estimate at the rate of 25 per annum, in addition, for the upkeep of a bicycle.

The appointment will be for one year, subject to one month's notice on either side, and will be renewable annually.

The person appointed will be required to give his whole time to the service of the County.

Applications, stating previous experience and age, with copies of three recent testimonials, must be received by the Chief Education Officer, Glamorgan County Hall, Cardiff, on or before 10 a.m. on the 27th day of JANUARY, 1917.

T. MANSELL FRANKLIN
Clerk of the County Council
Glamorgan County Hall, Cardiff
13th January, 1917.

THE UNIVERSITY OF LEEDS
DEPARTMENT OF AGRICULTURE.

APPLICATIONS are invited for the position of additional INSTRUCTOR IN HORTICULTURE. Salary, £150 a year.—Applications will be received up to January 21, 1917, and should be addressed to THE SECRETARY, The University, Leeds, from whom further particulars may be obtained.

HOME-GROWN FOOD.
THE BUNTON LIME FIRMS COTTAGE GARDENS ASSOCIATION.

WANTED, a thoroughly competent MAN, to direct operations and supervise the work of wood growing in the Association.

About 1,000 allotments and about 100 acres extra for Potato land.

The man appointed must be fully qualified and possess satisfactory references.

He will be required to advise in the purchase of seeds, plants and implements, and instruct, direct, and lecture on food-growing and storing, and also on poultry and pig raising, &c., by cottagers on economic and organised lines.

Reply, stating age, experience, qualifications, and salary to

T. RYAN,
Managing Director,
The Bunton Lime Firms Co., Ltd., Buxton.

HEAD GARDENER—Wanted on May 28 next, for Bromley, HEAD GARDENER, must be thoroughly qualified in all departments pertaining to a large Garden, particularly in the cultivation and marketing of all kinds of Garden Produce, ineligible for service.—Applications, with testimonials, to CHARLES W. KALSTON, Chamberlain, Pabton Thornhill, Dumfriesshire.

HEAD GARDENER on semi-public estate, wanted in North-Western suburb; one capable of advising as to tree planting laying out and maintaining open spaces, &c., and taking entire charge of staff of Gardeners.—C. L., Box 11, 41, Wellington Street, Covent Garden, W.C.

WANTED, HEAD MAN, for good private Vegetable Garden.—Apply personally or by letter to MRS. PENTON, Lyndhurst, Hants.

WANTED.—Can any Gentleman recommend HEAD WORKING GARDENER for Orchard, near Tamworth? At present two men under him, good cottage supplied.—Write, stating full particulars and wages, to HON. W. H. GOSCHEN, 47, Cadogan Gardens, S.W.

WANTED (end of January), WORKING HEAD GARDENER, thoroughly experienced in all branches, Inside and Out.—Apply, THOS. E. LEWIS-BOWEN, Clunifew, Boncath, Pembrokeshire.

WANTED, February, experienced HEAD WORKING GARDENER (ineligible), usually 2 kept; may be single-handed during war; house, coal and vegetables found.—Write, age, family, wages, and copies of testimonials, PRESCOTT, Highlands, Woldingham.

WANTED, HEAD WORKING GARDENER, thoroughly experienced, trustworthy; Vineyard, Orchard House, Vegetables, cool Conservatory; cottage.—Write, with particulars, age, wages, experience.—E. H. BATES, Horbin, Newton Sarumville, Yeovil.

WANTED, HEAD WORKING GARDENER, experienced Inside and Out; capable and obtaining good house and usual allowances.—Apply, stating wages, when free, to GUBBINS, Swallowcliffe Park, Banbury.

WANTED, HEAD WORKING GARDENER of 4; must be over military age or ineligible and thoroughly experienced; good cottage found; state wages and full particulars.—SIR JOHN BELL, Bart., Framley, Stoke Poges, near Slough.

GARDENER (HEAD WORKING) wanted; 2 kept; 10/6 per week, 30s. week and cottage.—H. DIGMORE, Glastonbury Hall, King's Lynn.

WANTED for Cheshire, from the middle of February, a good all-round WORKING HEAD GARDENER, must be a married man and over military age; good cottage and coal supplied.—Reply, stating wages, to BOLT, SON & MAPLES, 5, Cook Street, Liverpool.

WANTED, A MAN to take charge of Vineyard and Peach-houses; wages 25s. per week and Board.—Apply, C. ALLEN, Estate Office, Worth Park, Crawley, Sussex.

WANTED, AGED MAN, to take charge of Garden; must be well up in Fruit; good wages to a suitable man.—Apply, HEAD GARDENER, Greenlands, Henley-on-Thames.

WANTED, GARDENER (SINGLE-HANDED); practically no glass; no cottage; boy kept, good wages to thoroughly reliable man.—Apply, with particulars, wages required, and past experience, R. WOOD, Flint Cottage, Box Hill, Dorking.

WANTED, good all-round SINGLE-HANDED GARDENER; ineligible since a gentleman's place; 30s. per week.—Letters, WILEY, 16, UX bridge Road, Ealing.

WANTED, good SINGLE HANDED GARDENER; regular help given; experienced in all branches, particularly Orchids, Chrysanthemums, and Carnations; cottage, coal, &c.; ineligible.—Write particulars, stating wages required, experience, and copies of references to S. SAMPTON, Prospect House, near Alfreton, Derbyshire.

GARDENER (SINGLE-HANDED), ineligible for over military age, LADY GARDENER with good experience of Vegetables, Fruit and Flowers, willing to learn the working of small electric light plant; no cottage, wages, 35s. to 40s., according to experience; at once.—Apply, ROSSENDALE, The Manor Cottage, Gutteridge Cross, Bucks.

WANTED, GARDENER (SECOND), for hot Garden, Flowers, General Work; also LAD, Proposer, Orchids, Peaches, Vines.—Apply, HEAD GARDENER, Bonshill, Presbury, near Macclesfield.

WANTED, SECOND GARDENER; either sex, to assist Head Gardener with the Inside work of Garden. Apply, with copy of testimonial and wages required, to A. HIDD, Farrant's Gardens, Bickley, Kent.

NORTH RIDING ASYLUM, YORK.
WANTED, SECOND GARDENER (INSIDE); experienced Fruit and Flowers; wages 30s. weekly, 12 o'clock Saturdays.—Apply, stating age, married or single, full particulars of experience, to THE MEDICAL SUPERINTENDENT.

UNDER GARDENER required (Second of five). State full particulars to W. A. JOHNSTONE, Kearsney Court, Dover.

WANTED, GARDENER, experienced; some help; Inside and Out; thorough knowledge; ineligible; state age, wages, and experience.—THOS. H. SOUTHON, "Gaulburn," Clungtford, Essex.

SITUATIONS VACANT continued on page vi



Webb's Exhibit at the R.H.S. Vegetable Exhibition, 1916, which obtained THE ONLY GOLD MEDAL awarded at this Show. *Gardeners' Magazine*—A very fine display and greatly admired. *The Gardener*—"A magnificent exhibition of exceptional quality."

— THE —
ROYAL HORTICULTURAL
 — AND —
ROYAL AGRICULTURAL SOCIETIES'
GOLD MEDALS
 awarded to
WEBB'S
VEGETABLES
 — IN 1916. —

WEBB'S ILLUSTRATED CATALOGUE of

VEGETABLE SEEDS
 SEED POTATOS
 FLOWER SEEDS
 LAWN SEEDS
 GARDEN MANURES.



Post free on request

WEBB & SONS, Ltd.,
The King's Seedsmen,
STOURBRIDGE.

WEBB'S COLLECTIONS of VEGETABLE SEEDS.

Fines: Quality and Best Value.

- 76 Collection contains 33 varieties.
- 126 Collection contains 47 varieties.
- 157 Collection contains 49 varieties.
- 217 Collection contains 65 varieties.
- 426 Collection contains 91 varieties.
- 626 Collection contains 131 varieties.

CARRIAGE FREE Contents on application.

WEBB'S COLLECTIONS of MARROWFAT PEAS.

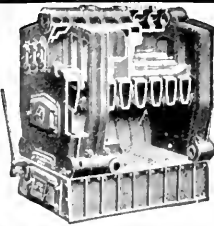
To Produce a Successional Supply.

- 24 quarts of Peas, 14 fine sorts 28/-
- 12 quarts of Peas, 12 fine sorts 22/-
- 6 quarts of Peas, 10 fine sorts 18/-
- 12 pints of Peas, 14 fine sorts 12/6
- 6 pints of Peas, 10 fine sorts 6/6
- 4 pints of Peas, 8 fine sorts 4/-

CARRIAGE FREE One shilling.



The "Horse Shoe" Boiler.
 R.H.S. GOLD & SILVER MEDALS.



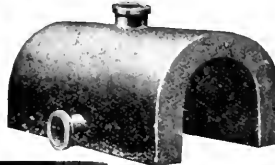
List & Post Free. Phone: Hop 372

C. P. KINNELL & CO., LD.,
 65a, SOUTHWARK ST., LONDON, S.E.
 (Close to Hop Exchange.)

BOILERS.

For House and Greenhouse. ::
 Sectional, Saddle and other Patterns ::
 for Replacement, &c. ::

FROM STOCK.



ORDER OUR CELEBRATED

FORCING ROOTS

Seakale, Asparagus, Mint, Rhubarb, etc.
 Also Fruit Bushes.

Write for Illustrated Catalogue, containing PRACTICAL NOTES ON GROWING AND FORCING. —Mann.

ESTABLISHED 1857.

MANN & SONS,
 Whitton Road, Twickenham.



Food Production on Farms & in Gardens.

To obtain the best results sow
Dicksons Seeds
 which are all carefully selected from the finest and most productive strains, and are always reliable.
 Prices moderate. Catalogues free.
Dicksons Seed Growers, Chester.

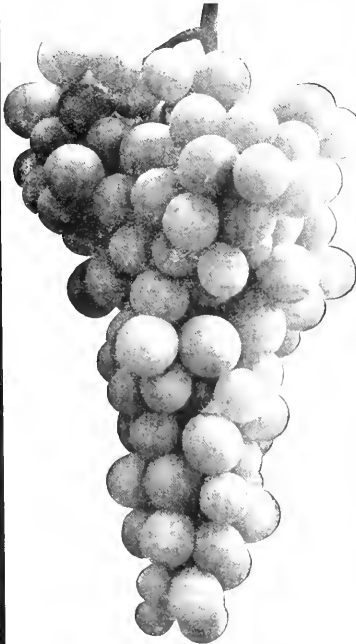
CLIMBING PLANTS

(Present Day Gardening Series)
 By **WILLIAM WATSON.**
 (Introduction by William Robinson.)

A Practical Handbook on the Treatment of Climbing Plants, both hardy and tender species. Illustrated with 24 full page plates, 8 of which are reproduced in colour.

Price 2/10 post free from:
 The PUBLISHING DEPT.,
 "GARDENERS' CHRONICLE" OFFICES,
 41, Wellington Street, Covent Garden, W.C.

BULL'S FOOD FOR PLANTS, FRUIT & VEGETABLES.



CANNON HALL MUSCAT

Grown with Bull's Food for Plants at Menpes Fruit Farm.

MENPES FRUIT FARM, LTD.

18 Nov., 1916.

Dear Sirs,
For many years we have exclusively used your "Food for Plants" for our Vines, and the results have invariably been all that could be desired.
Please repeat our last season's order and oblige.

Yours faithfully,
For Menpes Fruit Farm, Limited,

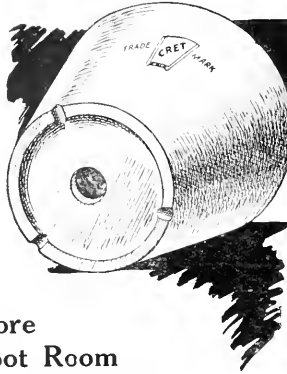
J. E. Peters
Manager.

Sole Manufacturers:

BULL'S PLANT FOOD CO.,
536, King's Rd., Chelsea, London

SANKEY'S FAMOUS GARDEN POTS

The **BEST** and Cheapest.
State quantity of each size required and have "carriage and packing" quotation ("carriage" frequently amounts to half value of goods), or write for Price List, free.
SPECIAL POT'S of all descriptions. Hole Bowls and Fern Pots from 2d. each.
RICHARD SANKEY & SON, L.T.D.
Bulwell Potteries, NOTTINGHAM.



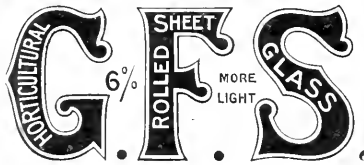
More Root Room

on the same amount of staging. That is one advantage Cret Pots offer. Add the exceptional porosity, perfect drainage, uniformity, cleanliness, and "healthiness" of Crets and—you'll write now for

FREE SAMPLE "Cret" Pot, with interesting Booklet giving all prices per 100, and 5 Special Assortment Offers.

Two Specimen Prices—2½ ins., 4½ per 100
11 ins., 75/-. Carriage Paid on all order; over 20.

PETER BAILEY & SONS, LTD.,
2, Heaton Mersey Pottery, near Manchester.



A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 3/8 in. or equal to stout 21 oz. in thickness. Can be supplied to buyers sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of
GENUINE WHITE LEAD PAINT.
"BLACKFRIARS BRAND"

Mixed ready for use. In 14lb. tins and 1 cwt. wide neck cans.

BEST AND LINSEED OIL PUTTY.

Complete Price List of
Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITNFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.



FLORY & BLACK, ORCHID NURSERY
(Late Messrs. JAS. VEITCH'S Hybrid Establishment).
SLOUGH.
STOCK VARIED AND FINE.
Catalogue on application.

ORCHIDS,
Clean, well-grown and cheap; also Many Rare and Choice Varieties
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

TURF LOAM.
Very Fibrous Yellow Turf Loam
FOR VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.
Quotations Carriage Paid or Delivered.
A. B. JOHNSTON,
New Park, Cranleigh, SURREY.



YOUR LAWN.—To insure it against weediness and impoverishment in 1917, treat it in September or October with
VELVAS LAWN SAND.
15lb. 3d., 30lb. 11s., 60lb. 6s., 140lb. 3s. 6d.; tins, 1/-, 6d. Obtainable from all Seedsmen.
Manufacturers:
ROBINSON BROTHERS, LTD.
West Bromwich, Staffs.

BUNYARD'S FRUIT TREES



CATALOGUE by RETURN

GEORGE BUNYARD & CO.
Royal Nurseries, Maidstone, Kent.

EVERY GARDENER KNOWS THAT

Clay's gets there and makes the Garden gay all the year round.

Sold everywhere in TINS at 6d. & 1s., and in BRANDED & SEALED BAGS: 7 lbs., 2s. 6d., 14 lbs., 4s. 6d., 28 lbs., 7s. 6d., 56 lbs., 12s. 6d., 112 lbs. 20s. Or direct from the Works, Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON. Manure Mfrs & Bone Crushers, STRATFORD, LONDON, E.



IT IS THE STANDARD FOOD FOR PLANTS.

JANUARY 13, 1917.]

THE
Gardeners' Chronicle

No. 1568.—SATURDAY, JANUARY 13, 1917.

CONTENTS.

Board of Agriculture agricultural, municipal, food production	16
Castlewellan, co. Down .. .	17
Clubbing in Brassicas .. .	20
Food production .. .	16, 18
Forcing with hotbeds seventy years ago .. .	17
Forests, to re-establish allies .. .	18
Galloway garden, notes from a .. .	13
Gardener-soldier in India, a .. .	15
Garry elliptica .. .	14
Hemley, Dr. W. Botting .. .	15
Horticultural Directory .. .	26
Intercropping, the value of .. .	19
Loganberry, origin of the .. .	19
Market gardening .. .	20
Obituary— Thompson, William .. .	20
Olearia Gunniana and allies .. .	23
Pigs, poultry and rabbits, The keeping of .. .	14
Potatoes on freshly-turned land .. .	20
Potato prices for 1917 .. .	20
Schneider, the late George .. .	28
Societies— National Rose .. .	16
Royal Hort. .. .	16
Soil ventilation .. .	16
Strawberries .. .	19
War tents .. .	15
Week's work, the— Flower garden, the .. .	14
Fruits under glass .. .	15
Hardy fruit garden, the .. .	15
Kitchen garden, the .. .	14
Plants under glass .. .	15

ILLUSTRATIONS.

Castlewellan, co. Down .. .	17
Caryanthemum at an Indian flower show .. .	14
Cranes, portrait of Sergt. .. .	18
Indian flower show, an .. .	19
Olearia lyrata .. .	14

NOTES FROM A GALLOWAY GARDEN.

FEW recent papers in the *Gardeners' Chronicle* have given so much pleasure to general readers as the Notes from a Cotswold Garden, by Mr. H. J. Elwes. It is possible that some interest, were it only from the contrast in conditions of soil and climate, may be found in occasional notes from a garden in the extreme south-west of Scotland. Here, instead of the high elevation, rigorous winters, hot summers and cretaceous soil of Mr. Elwes's garden, we are within a mile of the sea, about one hundred feet above it, with a mild but blustery climate, and without a trace of lime in the soil. The mention of lime reminds me that last summer I found a characteristic limestone plant *Orchis pyramidalis* growing in pure sea sand a few yards inland from high-water mark. Being very fond of terrestrial Orchids I transplanted it to the flower garden, where it remained a long time in bloom. I have been able to find only two instances recorded of the occurrence of this species in Scotland, one near the Mull of Galloway, on the side of Luce Bay opposite to us, the other in the island of Colonsay. The geological formation of the whole district is lower Silurian sandstone with intrusive igneous rocks and overlaid with boulder clay. It appears as if the extremely minute seeds of this Orchid had been waterborne from the chalk of Antrim or the limestone of Cumberland, and that there is a sufficiency of comminuted shell in our sea sand to meet its requirements in the matter of lime. The percentage of lime, however, must be slight, for we use the same sand successfully, mixed with peat, for raising *Rhododendrons* from seed.

The winter, so far, has been remarkably mild and dripping here, no frost except two or three sharp nips which ex-

tinguished *Hydrangea hortensis*. Nevertheless, nearly everything is a week or a fortnight later in flowering as compared with former seasons, and this was the case throughout the spring, summer and autumn of 1916. For instance, *Hamamelis mollis*, now (5th January) in full beauty six and eight feet high, opened its first bloom on 23rd December, the dates in the previous five years ranging from 13th to 18th. This is undoubtedly one of the very best flowering shrubs introduced of recent years. It never fails to blossom in the utmost profusion during the dark days, and its flowers, like those of its less brilliant congener, *H. arborea*, and unlike those of *Jasminum nudiflorum*, pass unscathed even in severe frost. As both these species of Witch-hazel are often supplied as grafts on stocks of the inferior *H. virginica*, special attention should be given against undesirable suckers.

Like so many plants from Southern Chili, *Lardizabala bitermata* simply revels in our western humidity. The difficulty is to keep it within bounds and to prevent its smothering less robust growths with its glossy evergreen foliage. It has been in flower on the wall of our laundry for the last two months. The hanging racemes of the male flowers, though much hidden by the mass of foliage, are very beautiful in a vase. The six white stamens, monadelphously united, so as to simulate a style, stand boldly out, well relieved against the broad, fleshy sepals of intensely dark purple. The smaller petals serve to enrich the flowers, which smell like vinegar. They last a long time, so that all the blossoms on the spike—a dozen or more—remain open at once.

Some plants seem rash in the way they expose their flower-buds to winter cold; yet they do it with impunity. *Tricuspidaria lanceolata*, which we have 10 and 12 feet high, no sooner finishes flowering in June than the buds for the following June are displayed. *Viburnum rhytidophyllum*, a handsome evergreen, despite the disparagement it has received from some critics, is equally bold; and *Chianthus pumiceus* is now hung with innumerable green tassels, which I trust may burst into scarlet flame next May.

Rhododendrons, like everything else, are late this season. Only *R. daluricum* has flowered as yet; *R. parviflorum* will be next, I think, unless *R. Nobileanum* makes a spurt. The latter began on 1st November in 1913-14 and is seldom without flowers on New Year's Day. *R. przewalski* does not often open blooms before February. I have lately made the unwelcome discovery that this beautiful hybrid does not share the immunity from attack by hares and rabbits which distinguishes most species of this genus. A dozen plants which we put out in the woods in the autumn of 1915 were eaten bare in no time, although the winter was exceedingly mild, and although hares are very scarce and rabbits not very numerous.

For caprice and obstinacy in choosing to put forth its flowers commend me

to the Common Snowdrop, whereof there is great abundance in the woods here. One should suppose that the warmth and wet of the present season would have brought it forward early; but there is not a single blossom to be seen, although my notes show that in the twelve past years we have four times gathered the first Snowdrop in December. *Adonis autumnalis* has beaten it this year, for its flowers are now half-open. *Herbert Moorei*, *Monreithi*, *Wigtownshirei*.

OLEARIA GUNNIANA AND ITS ALLIES.

(Continued from p. 3.)

SUMMARY.

THERE are in cultivation three distinct species of this group of *Olearia*: (1) *O. Gunniana*, DC., with linear-oblong bluntly-toothed leaves about 1½ inch long and long, slender, more or less leafless peduncles; (2) *Olearia subrepanda*, Hutchinson, with small more or less obovate leaves hairy on both surfaces, and short leafy peduncles; and (3) *Olearia lyrata*, Hutchinson, with long tapered, lanceolate, entire leaves 4-5 inches long, and extremely floriferous shoots. *Olearia stellulata* is not in cultivation.

KEY TO THE SPECIES AND VARIETIES INCLUDED BY BENTHAM UNDER OLEARIA STELLULATA, AND DEALT WITH IN THE PRESENT PAPER.

- Leaves quite entire or the margins very slightly and obscurely undulate:—
 - Leaves lanceolate, acuminate, 8-15 cm. long; flower-heads collected into definite dense bunches—(1) *O. lyrata*
 - Leaves linear or oblong-linear, 5 cm. long or less:—
 - Leaves less than 1 cm. broad, more or less pointed, whitish-canus when dry; achenes hairy:—
 - Leaves up to 2.5 cm. long, obtuse or sub-obtuse; flower-heads crowded—(6*a*) *O. Gunniana*, var. *angustifolia*.
 - Leaves mostly 4.5 cm. long, acute; flower-heads crowded—(6*a*) *O. Gunniana*, var. *salsii* folia.
 - Leaves 2.45 cm. long, obtuse or sub-acute; flower-heads solitary or few together—(2) *O. ruscifolia*.
 - Leaves 1.15 cm. broad, obtuse, yellowish-tomentose when dry; achenes glabrous—(3) *O. flavescens*.
 - Leaves repand-dentate, coarsely crenate or lobulate;—Peduncles long and slender, leafless, usually overlapping the leaves:—
 - Leaves oak-like, rounded at the apex, oblanceolate, very coarsely crenately lobed (4) *O. quercifolia*.
 - Leaves coarsely repand-dentate, lanceolate, acuminate, 7.9 cm. long—(5) *O. stellulata*.
 - Leaves undulately dentate, linear-oblong or oblong, obtuse, 2.5 cm. long—(6) *O. Gunniana*.
 - Peduncles short and often leafy, more or less overtopped by the leaves:—
 - Leaves elliptic or ovate lanceolate, scabrid above, bullate when dry, 3.45 cm. broad, coarsely repand-serrate—(7) *O. rugosa*.
 - Leaves much smaller and narrower than in the preceding, never scabrid or bullate:—
 - Leaves more or less obovate, 1 cm. long or less—(8) *O. subrepanda*.
 - Leaves more or less oblong or linear-oblong, usually well over 1.5 cm. long:—
 - Flower-heads nearly 2 cm. in diam. across the rays:—

Peduncles very short and leafy with the flower-heads nearly hidden amongst the sub-entire leaves—*Gunniana*, var. *brevipes*.

Peduncles longer, the flower-heads with distinct peduncles exerted from the coarsely dentate leaves—*Gunniana*, var. *phlogopappa*. Flower-heads only about 1 cm. in diam. across the rays—*Gunniana*, var. *microcephala*.

1. *Olearia lyrata*, Hutchinson (comb. nov.).

[*Aster lyratus*, Sm. *Bot. Mag.*, t. 1509 (1813); *Diplostegium lyratum*, Nees, *Gen. et Sp. Aster*, 189 (1852); *Emyldia lyrata*, D.C. *Prodr.*, v. 267 (1857); Hook. f., *Fl. Tasman.*, i. 175, t. 45 (1866); *Olearia atkinsii*, Hook. f., in *Lond. Journ. Bot.*, vi., 109 (1847)]

by the subsending leaves, the individual peduncles usually very short and slender.

Grown in Knight's Nursery in the King's Road, Chelsea, in 1815.

2. *Olearia canescens*, Hutchinson, new sp.*

[*O. stellulata*, var. *canescens*, Benth., *Fl. Austral.*, iii., 475 (1866).]

Distrib.—New South Wales: Apsley River, ravines, tall shrub 6 feet high, Fraser 213; near Tennerfield, C Stuart.

Branchlets ascending, sparingly leafy; leaves oblong-linear or almost linear, obtuse or sub-acute, minutely subacute at the base, 2.45 cm long, 3.6 mm broad, quite entire and densely tomentulose with stellate hairs on both surfaces; lateral nerves sharply ascending; flower-



THE KITCHEN GARDEN.

By J. DENN, Foreman, Royal Gardens, Windsor.

SEED POTATOS.—Select and place in single layers all seed-tubers necessary for next season's Potato crop. Moderate-sized tubers are best. Those for planting early should be carefully set up on end in shallow trays or boxes, and allowed to sprout in a moderately cool place before they are planted. Sprouting the sets has considerable advantages, for it ensures a better development of the plants and a greater weight of produce. It is advisable to procure a change of seed each season; at least half the quantity of tubers required for planting should be obtained from a distance. It is important that all tubers intended for planting be stored in a cool, well-ventilated place until they are required.

FORCING POTATOS IN HEATED PITS.—The first planting of Potatoes for forcing should be done as soon as possible. The surface of the bed should not be more than 2 feet from the roof-glass. Plant the tubers in rows made 2 feet apart, and allow a space of 10 inches between the sets in the row. Cover them lightly with soil, and earth up the plants when the haulm is a few inches high. *May Queen* is one of the best varieties for this purpose.

CUCUMBERS.—If not already done, make a sowing of Cucumber seeds singly in small, clean pots, and germinate the seeds on a well-prepared hotbed in a house having a temperature of 75°. Grow the seedlings near the roof-glass, with plenty of moisture, and a temperature of 70°. Plants in bearing should be lightly top-dressed whenever roots appear on the surface. Keep the foliage clean by frequent light syringings, and tie and regulate the shoots as it becomes necessary, leaving only sufficient fruit on the plants to furnish a regular supply.

SALAD PLANTS IN PITS.—Plants for salads grown in pits require careful attention during the winter. Let them have plenty of ventilation, raising the lights in a manner to prevent rain from wetting them. Stir the soil between the plants frequently, and do all that is possible to prevent damping. Chinery may be had throughout the winter without much trouble or expense. The roots should be lifted as required, and placed in a dark chamber with just sufficient heat to start them into growth, and where there is not much atmospheric moisture, as the leaves are liable to become discoloured from damp. If only a small supply is required, the plants may be grown in large pots, placing the roots close together, and filling the spaces between them with finely sifted soil, which should be made moderately firm. Cover the crowns with an inverted pot of a similar size, and force them in a Mushroom house or dark pit.

WINTER SPINACH.—As soon as the soil is sufficiently dry stir the surface with the Dutch hoe. Remove all decaying leaves, and give a light dusting of soot to plants of winter Spinach which have been affording supplies throughout the winter.

THE FLOWER GARDEN.

By W. J. GRISE, Gardener to Mrs. DEMPSTER, Keele Hall, Staffordshire.

THE ROSE GARDEN.—Exceptionally severe weather in this district has necessitated the suspension of work in the Rose garden. The heaviest snowstorm experienced in this district for some years past occurred on December 22, whilst 14° of frost were registered on the 25th of that month. Our soil is thoroughly saturated, making it impossible to do any planting, and unless favourable weather occurs soon it will be advisable to delay the planting of Roses until the end of February, or even into March, for the soil then will be much warmer, and the roots will respond better to transplanting. Rose plants



FIG. 4.—OLEARIA LYRATA, TYPE. FROM A DRIED SPECIMEN.

Distrib. Victoria: Yarra, Mueller; near Melbourne, Adamson. New South Wales: Twofold Bay, Mueller. Mossman. Tasmania: York Town, Oct., 1845. Gunn 386; Larnneston, Oct., 1841. Gunn 496. Circular Point, Nov., 1837. Gunn 496; Formosa Nov., 1843. Gunn 496. Port Dalrymple, R Brown 2,010, without definite locality. Lawrence 114.

According to Gunn, this species, when it occurs in wet places in good soil, attains a height of 7-10 feet.

Branchlets arranged in long racemes and very densely flowered; leaves elongate-lanceolate, acuminate, 8.15 cm long, 1.5-5 cm broad, entire or with slightly crenately undulate margins, glabrous or nearly so, and impressed reticulate on the upper surface, mody tomentulose below, with prominently looped lateral nerves; flower-heads collected into dense leafless clusters overtopped

heads solitary or few together in the leaf-axils; peduncles long and slender, leafless. *J. Hutchinson, Kew.*

(To be continued.)

**Olearia canescens*, Hutchinson; sp. nov. (*O. stellulata*, var. *canescens*, Benth.); frutex altus, ramulis ascenduntibus parce foliatis (orbibus cam-tomentellis, lobis oblongo-linearibus vel fere linearibus, apice obtusa vel subacuta, basi cuneato-subacuta, 2.45 cm longa, 3.6 mm lata, chartacea inversa, utrinque pubes stellata dense tomentella, costa infra prominens; nervi laterales intravescens 6-7, ascendentes infra prominentes, petioli 2.3 mm longi); capitula axillaria, solitaria vel 3-3-rata, longe pedunculata, vixiter 1.2 cm diametro; pedunculis bracteis, 3-4 cm longis, tomentellis; involucri bractearum 4-5-seriatae, lineares, acutae, extra dense tomentellae, ab extremo sensim longiores usque ad 5 mm longae; apicibus nigrescentibus; flores radii numerosissimi, achenia dense adpressae pubescentia; pappus stramineus, 4.5 mm longus.

received from the nursery should have their roots immersed in water, eventually holding them in on a sheltered leyder. The names on paper labels are soon obliterated by rains, and such labels should be replaced by wooden ones as soon as convenient. A few of the plants may be placed in pots, plunging them in ashes or leaf mould. They will be useful to replace failures later in the season. In some gardens Rose-beds are heavily mulched at this date, but I do not recommend the practice, especially in cold, wet districts, preferring March, or directly after the work of pruning is finished, for this work. Established plants may require a little attention in slightly shortening extra long growths to prevent injury by winds.

DAHLIAS AND OTHER ROOTS.—Examine the stools of Dahlias and remove any decayed parts with a sharp knife. Begonias, Gladioli and similar plants should be inspected, removing any tubers or corms that show signs of decay.

BORDER CHRYSANTHEMUMS.—An abundance of strong, stocky shoots for cuttings should be available now, and onwards, from plants that were lifted in the autumn and placed in cold frames. Insert the cuttings in sandy soil, in pots or boxes. If preferred, the old roots may be divided and potted. Place the plants near the roof glass in a close, cool frame or pot, and afford them protection in frosty weather.

SOILS AND MANURES.—Where plenty of decayed leaves are available, these, together with decomposed vegetable matter and ash from the garden fire, should be well incorporated with the manure heap. The soil free of old Chrysanthemum stools and old potting soil generally, with a little sand and leaf-mould added, will make a suitable compost for various bedding plants, and should be stored in an open shed. Supplies of fresh lime, soot, sand, leaf-mould, wood-ash, and manure from spent Mushroom beds should also be placed under cover.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcliffe, Eastaun Park, Kent.

RICHARDIA AFRICANA.—The early plants of *Amn. Filices* are flowering well, and should receive copious supplies of water and liquid manure and soft water twice a week. When a constant supply of blooms is required, grow the plants in a light house, where the temperature ranges from 55° to 60°, with a rise of 10° by sunlight. Plants required to bloom at Easter should be grown in a considerably lower temperature, and ventilated freely to keep the foliage strong and sturdy. Do not crowd the plants, as this would cause the foliage to become drawn and the stems and flower stalks grow weak.

CYCLAMEN. Plants of *Cyclamen* raised from seed sown about fifteen months ago are blooming freely. Apart from the many strains of the ordinary type, there are several beautiful named varieties, including *St. George*, *Mrs. Graves*, the *fimbriated Mrs. Beckton*, and others of shades of salmon and scarlet. Keep the atmosphere of the house fairly dry, and ventilate freely in favourable weather. Do not allow the soil to become dry. Feed with weak manure-water at intervals. Two-year-old plants are later in blooming, but they produce an immense number of blooms, and provide a pleasing succession to the young plants.

SEEDLING CYCLAMEN.—Seedling *Cyclamens* growing in shallow boxes or pans will soon require shifting into small 60-sized pots. Use a light, sandy compost, pot loosely, and when potted place the plants on a shelf near the glass. Maintain a fairly brisk temperature in order to keep the plants growing freely. To have *Cyclamens* in flower in from 12 to 16 months from the time of sowing, it is necessary to grow them quickly in heat for the first half of the period. The seedlings should be sturdy little plants by now, each bearing several leaves. Spray them daily, keep their surroundings moist, and fumigate the house or pit lightly every three weeks.

CHRYSANTHEMUMS.—The main batch of large flowered varieties intended for blooming in November and December should, if the cuttings are not inserted already, be propagated now. Fill the cutting pots with a light, sandy compost, strike the cuttings in a moderate temperature and close atmosphere. As soon as they are well rooted, place the cuttings on a shelf, and gradually accustom them to more sunlight and air. Afterwards pot them singly, returning them to the shelves or stages near the roof glass. The newer varieties of singles are amongst the most satisfactory plants for decorative purposes of all kinds, and should be grown extensively.

THE SEED ORDER.—Overhaul the seed drawers and make a note of all seeds in stock, in order that the list for the seed-man may be sent without further delay. Many seeds are scarce, and it is probable that late comers will be disappointed, hence the necessity of ordering early.

FRUITS UNDER GLASS.

By THOMAS HENSON, Gardener to George and Mrs. Henson, Esq., C.V.O., Gunnersbury House, Acton, W.

EARLY FORCING.—In my opinion, fruits have been forced in many gardens to an undue extent, the return not being commensurate with the labour and expenditure involved. I refer especially to forcing commenced late in the autumn, when the days are shortening, and there is little assistance from fine sunny weather. The high cost of fuel makes it almost prohibitive now, and early forcing should be discouraged. The shortage of labour is another factor that must be considered in this matter. By surveying events, forecasting the future and readjusting labour in a corresponding manner, British gardeners will be equal to any emergency.

FRUIT TREES IN POTS.—Our *Peach* and *Nectarines* in pots are still dormant, and we do not intend to start them until the swelling of the buds makes it imperative. Not until the flower-bud of our early *Peach* and *Nectarines* shows colour will the temperature in the houses be raised slightly, and then only to prevent injury from frost. In this way I often get having one fruit early in June with no undue amount of forcing. But it is considered necessary to commence forcing earlier, as a start may be made now. I have noted during the past two winters that trees that have formerly been started early to produce one fruit by the first week in May will start even in a cold house of their own accord, and this is a case of trees trained to "believe." Thence onwards it is safer to encourage the progress of the blossom, and not to run any risk.

CHERRIES.—The *Cherries* in pots are still resting in a cold house. Most of the trees have been forced for several years, hence they will not remain dormant much longer. No fruit grown in pots requires so well the time and labour involved as the *Cherry*, and trees in pots are infinitely better for supplying early fruit than those planted out, hence more under control.

FIGS. The best first early variety is the *St. John and Pingo de Mel*. The two are almost, but not quite, identical, the second crop of the latter being distinct from that of the former. These varieties give good results when lightly forced as pot trees. To plant them out, however, is to court failure, as their growth is far too luxuriant. Late *Figs* in pots, such as yielded crops last autumn, need attention if they have not already been seen to. The collar or ring of top-dressing will be removed carefully from our trees, and any roots that have grown in it carefully preserved. Afterwards some of the surface soil will be removed, the exposed roots placed in position and covered with fresh soil. Trees that need re-potting will be attended to at the same time. The trees will then be placed in a house from which the frost is just excluded. The soil I use for growing *Figs* is a fibrous, calcareous loam mixed with old mortar rubble and manure from a spent Mushroom bed, sufficient of the last two materials being used so that their presence may be noted easily. Good

against root-potting, and so that the pots are well drained. At Gunnersbury House we have large numbers of trees. No large main party, but the fully ripened fruit, odd in 12-inch pots.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Rev. Arthur J. Davis, Abbot's Wood, Godalming, Surrey.

AMERICAN BLIGHT.—Any trees infested with this disease should be carefully gone over with a hard brush used with an insecticide, but in the case of very old trees that are improbable it would be better to root them up and burn every scrap, and also the soil in which the roots have grown.

PRUNING. Make an effort to finish the work of pruning, taking advantage of mild, open weather to do as much as possible, and even utilising cold, windy days to do the lee sides of walls. Almost every tree has its peculiarity, and in pruning this must be studied. The character of the varieties must also be taken into consideration. Always bear in mind that it is wiser to practise summer pruning, and especially in the case of stone fruits, than to do much winter pruning. Where the shoots were shortened in summer all those not required for extension should be cut back to about three buds, making clean cuts. Plums on walls should be attended to first. The fruit spurs will be readily seen, and these require little or no pruning. The other shoots should be pruned to not more than two or three eyes. Tie in the main shoots with tarred string and leave room for the branch to swell, as the string lasts, as a rule, two seasons. If spurs and nails are used do not use very wide shreds, as these offer breeding places for insects. Train the shoots of fan trees straight from the base, and do not train the main branches closer than 8 to 10 inches apart.

ROOT-PRUNING. It is not too late to root-prune unfruitful trees, that are making very rank growth. The need for root-pruning is generally due to the growth of a tap root or other roots into the subsoil, and to get at these it is necessary to open a trench about 3 or 4 feet from the tree and remove the soil from the base of the tree with a fork. As the grass-growing roots are found they should be severed. It is a good plan to rock the tree from side to side to ascertain where the anchor roots are growing; indeed, this method is often effectual in breaking such roots. In refilling the trench take care to place the fibrous roots in position and ram the soil firm as the work of filling in proceeds.

VINES ON WALLS.—Vines in the open may be pruned now, and the earlier the work is done the better. Nail or tie in the long growths for extension and prune the laterals or spurs to one strong bud. If the vines have suffered from mildew they should be painted with flowers of sulphur mixed with a little milk and petroleum to cause the sulphur to adhere to the wood. If the roots require attention the present is a suitable time to see to them, making use of the opportunity to add a little lime rubble and bone meal to the soil. Hardy vines, whether grown for fruiting or the embellishment of walls and pergolas, do not usually receive the attention their merits deserve.

BUSH FRUITS. It is not too late in the season to make new plantations of bush fruits. Let the ground be prepared thoroughly, trenching it if possible. If the ground for planting has recently carried fruit trees collect all roots and burn them and thoroughly sterilise the soil. It would be preferable to choose a fresh site and crop the old fruit quarters with vegetables. Some of the bushes may be grown as cordons. All kinds of bush fruits may be grown on old spaces on walls as cordons or in gridiron shape. Some should be planted against a north wall to give late fruits to furnish a long succession. The work of planting Raspberries should be finished as soon as possible. The canes in old plantations should be tied in position, the ground cleaned and made free from weeds.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher—Our correspondents would expedite delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are mis-directed.

Illustrations—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents—The Editors do not undertake to pay for any contributions or illustrations or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, JANUARY 15—

National Dahlia Soc.'s Annual Meet. at Hotel Windsor, at 4 p.m.

TUESDAY, JANUARY 16—

Royal Hort. Soc.'s meet. at London Scottish Drill Hall, Buckingham Gate, Westminster, Nat. Rose Society's Annual Meet. at Hotel Windsor, at 3 p.m.

THURSDAY, JANUARY 18—

Manchester and N. of England Orchid Soc.'s meet.

AVERAGE MEAN TEMPERATURE for the ENSUING WEEK (deduced from observations during the last 51 years at Greenwich, 38.3°).

VACUUM TEMPERATURE:

Gardens' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, January 11 (10.0 a.m.): Bar, 29.3°, temp. 41°. Weather—Snow.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—

Bulbs, Herbaceous Plants, Rhododendrons and Fruit Trees, at 12 o'clock; Narcissus, late-flowering Tulips, Gladioli, at 2 o'clock; 1,500 cases of Japanese Lilies, at 3 o'clock, at 67 and 68, Cheapside, by Prothero and Morris.

THURSDAY—

Roses, at 67 and 68, Cheapside, by Prothero and Morris, at 1 o'clock.

Soil Ventilation.

It is curious how the discoveries of the scientific agriculturist confirm the accepted practice of the gardener. The most recent illustration of this fact consists in the recognition that ventilation, that is to say aeration, is a factor of first importance to the growth of field crops. The deep and thorough cultivation as practised by gardeners, the constant stirring of the soil, the incorporation with the soil of gritty material, all serve among other things to supply plenty of air to the roots of plants.

There is evidence that this abundant supply of air is beneficial in numerous ways. Firstly, of course, because roots, like all other parts of plants, require oxygen for their growth. It is a commonplace experiment to place seeds of Barley in water and to observe that if the water be stagnant but poor growth occurs, whereas if it be kept running the Barley develops for a time quite normally as a submerged plant. Secondly, a constant circulation of air allows of the escape of the carbon-dioxide given off by the roots,

Here, again, it appears to be well-established that an excess of carbon-dioxide in the soil results in a check to the growth of roots. Indeed, roots seem to be peculiarly susceptible to injury from carbon-dioxide; for example, if the soil space contains too much of this gas the roots fail to perform the normal growth movements and curvatures which enable them to find their way about the soil.

Thirdly, it cannot be doubted but that a good supply of air favours the activity of beneficial soil bacteria. As gardeners, therefore, we may continue to cultivate our soils deeply and assiduously with the satisfaction of knowing that, as Whistler said of Nature that she was "creeping up to Art"—so the art of Agriculture is creeping up to that of Horticulture.

It is, of course, evident that deep cultivation has other advantages as well as that of providing "root ventilation." It increases the water-holding capacity of the soil, improves drainage, and helps to liberate larger stores of plant food. Anything, therefore, which helps to induce the agriculturist to practice more widely a system of deep tillage is bound to be to his benefit and to the benefit of the world at large.

Increasing Food Production.

We are glad to see that in a recent speech the President of the Board of Agriculture expressed the intention of enlisting the services of schoolmasters and children in the increased production of vegetable food.

A month or so ago, when a deputation of the Royal Horticultural Society waited on the officers of the Board of Agriculture and laid before them the outline of a scheme for organising the increased production of food throughout the country, the deputation urged in addition to the carrying out of its scheme the institution of school gardens in connection with all rural schools; and, wherever possible, suburban schools as well. The deputation pointed out that the standard of cultivation in many school gardens is high, and that by devoting the ground of the school garden to the cultivation of vegetables a considerable increase of food crops would be forthcoming. They suggested, further, that since it is essential that the school garden must be directed by competent persons, where the schoolmaster or mistress does not possess horticultural experience, the services of a local gardener should be secured. We hope that Mr. Prothero's speech means that these suggestions are to be carried out. The larger proposal of the Royal Horticultural Society involved the use on a national scale of the voluntary services of gardeners as advisers and instructors in the areas within which their work lies. We are convinced that if these suggestions were adopted the standard of cultivation would be raised high above the level at which it is bound to stand if cultivation is carried out without their expert aid. We are

aware that the Board of Agriculture is working against time and that the major part of its energies must be directed to securing the adequate and extended cultivation of farm land; but, at the same time, it is greatly to be desired that the fullest provision should be made for the intensive cultivation of crops on a horticultural scale.

NEW ISSUE OF THE HORTICULTURAL DIRECTORY AND YEAR-BOOK.

—We much regret that the publication of the Horticultural Directory and Year Book for 1917 has been delayed by unforeseen and unavoidable circumstances. First, the difficulties in regard to printing and paper supplies have increased greatly of late; and secondly, the number of corrections that have to be made this year is altogether unusual, owing to the fact that so many gardeners have joined the Army. To those who have already sent us prepaid orders we offer our apologies for the delay, and assure them that everything that can be done is being done to expedite publication.

ALMANAC.—With the present issue we publish a Supplement containing the yearly almanac. As is inevitable, it is less full of events than usual. The Royal Horticultural Society's fortnightly meetings are to be continued, though it appears to be certain that the Chelsea and Holland House shows will be abandoned. The National Sweet Pea Society and other floral societies have the question of holding their shows under consideration.

ROYAL HORTICULTURAL SOCIETY.—The first fortnightly meeting and exhibition of the Royal Horticultural Society in 1917 will be held on Tuesday, the 16th inst., at the London Scottish Drill Hall, Buckingham Gate, Westminster.

BOARD OF AGRICULTURE AND MUNICIPAL FOOD PRODUCTION.—Since the publication of the leading article in our issue for December 23 last, the Board of Agriculture has decided to accept responsibility for the financial arrangements in cases where local authorities acquire land for the purpose of cultivation, as under the Board's own scheme for allotments. The City of Manchester has appointed a Foodstuffs Special Committee, and Mr. W. W. PETTIGREW, chief officer for the Manchester City parks, has been appointed chief officer of the Committee. In addition to acquiring land, the city intends to put several hundred acres of its own land under cultivation, but in this case the Board of Agriculture will not bear responsibility. The Board is receiving a very large number of offers of assistance. The carrying out of the various schemes of the Board of Agriculture will be entrusted to War Agricultural Committees in each county, and Mr. PROTHERO suggests, therefore, that all persons who desire to offer their services should communicate with the secretary of the local War Agricultural Committee at the offices of the County Council.

DR. HEMSLEY.—DR. W. BOTTING HEMSLEY, F.R.S., our old correspondent, who retired from the post of Keeper of the Kew Herbarium in December, 1908, and has since resided at Twickenham, is about to remove to Kew Lodge, St. Peter's Road, Broadstairs, which will hereafter be his permanent address.

NATIONAL ROSE SOCIETY.—A special general meeting of the National Rose Society will be held at the Hotel Windsor, Victoria Street, Westminster, on Tuesday, the 16th inst., at 2 p.m., for the purpose of: (1) Motion to rescind present rules relating to the society's constitution; and (2) Motion for adoption of new rules in place thereof. The special meeting will be

followed by the fortieth annual general meeting of the society.

CASTLEWELLAN.—Gardeners will regret to hear that the fine residence of the ANNESLEY family at Castlewellan, County Down, was partly destroyed by fire on Tuesday last. The fire destroyed the whole of the left wing, in which was the celebrated armoury. The estate lies four miles from Newcastle, a small watering-place situated at the foot of the Mourne Mountains, just where they dip into the Irish Sea. The castle is built of blue granite, and stands on a slight eminence at the extremity of a fine

simplicity and economy of tank-heated structures have been sufficiently proved, many find it expedient still to adhere to the old-fashioned dung bed for early forcing. This, when properly managed, is undoubtedly equal to the tank as to character of produce, more especially for Cucumber growing, if not commenced too early. The most important matter is to work the dung well—few work it enough. I need scarcely say that the oftener it is turned the better; for if it lays long without disturbance, it soon burns, and this, if permitted to a great extent, will so break down the texture as to render it almost

dry and pulpy. It should be of that character that water, whether from long-continued rains, or from processes within, cannot remain a moment. There is no real advantage in going below the ground level where beds have to be worked in the main by linings. In the case of later beds this is sometimes found expedient. Some practitioners from the first foot or more at the bottom with Brushwood, and good practice it is. If no Brushwood is at hand, any ordinary unfermented materials which possess no animal matters in them may be placed beneath; and in placing the well-wrought manure

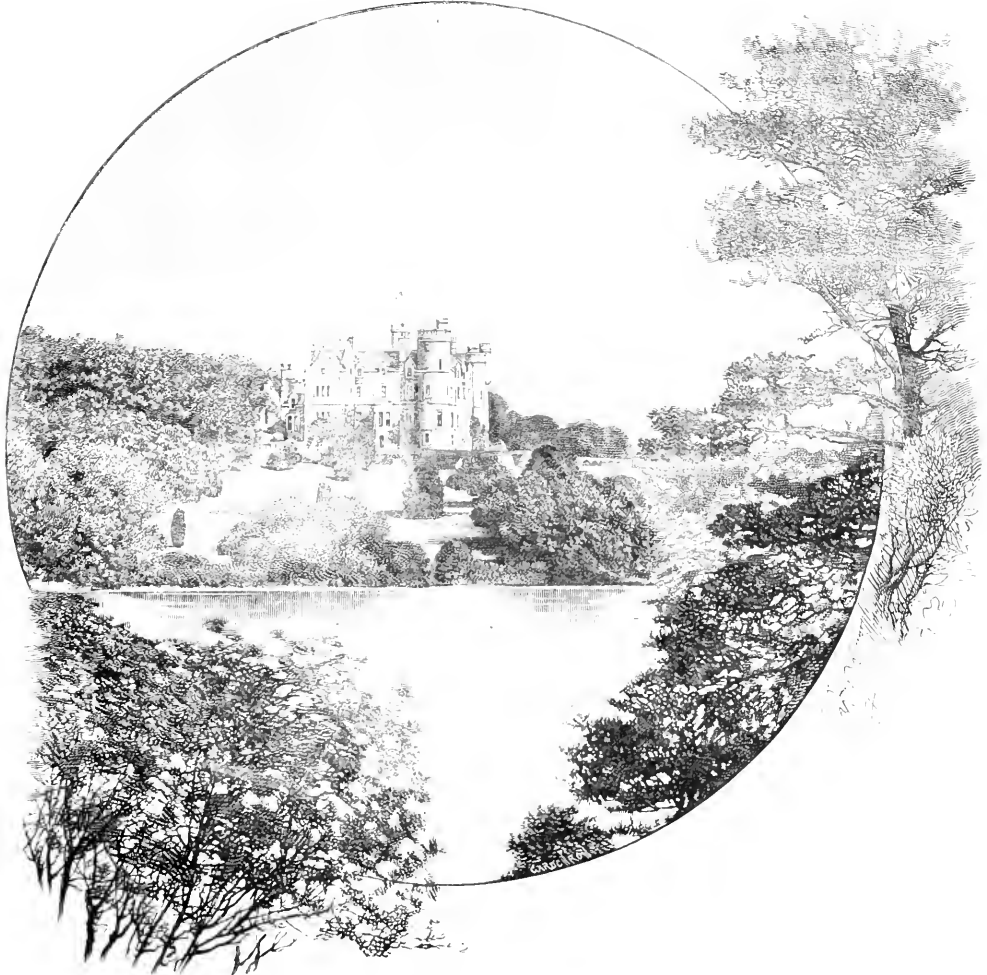


FIG. 5. CASTLEWELLAN, WHERE A SERIOUS FIRE OCCURRED ON TUESDAY LAST.

sheet of water. The gardens are amongst the most interesting in Ireland. They abound in rare sub-tropical plants, the most notable specimens being species of *Senecio*, *Pittosporum*, *Podocarpus*, *Bambusa*, *Eucryphia*, *Lomatia*, *Osmanthus*, *Daphniphyllum*, *Latic Kaempferi*, *Aciphylla squarrosa*, *Japanese Acer*, *Eriobotrya* and *Eucalyptus*. Several of the more notable species have been illustrated in these pages, accompanied by descriptions by the 4th Earl of ANNESLEY, who has an enthusiastic gardener.

FORGING WITH HOT BEDS SEVENTY YEARS AGO.—Notwithstanding that the much greater

impenetrable by the heat of the linings. At this period it should receive four distinct turnings, which may be about four or five days apart, the middle of the heap being each time exchanged for the outside. Water must be applied at each turning, provided the least symptoms of dryness or "burning" is perceived. When cutting winds prevail it is often necessary to use a cover or lining of long litter to the heap undergoing fermentation; for it is with this, with a bonfire, the wind has a tendency to drive the power to one side, leaving a portion of the material unoperated on by the heat. In building a hotbed, always secure in the first place a

in the corner of building, depend rather on a skilful placing of the material than on hard beating with the fork, always keeping the front part rather in advance of the back, in order that the bed may not incline too much and topple over. As soon as built, our practice is to apply a strong lining as high as the edge of the frame at top, in order to force the bed to the extreme point, taking care to water it less or more every day. In a few days, by this treatment the heat will be slightly on the decline; a portion of the lining may then be dispensed with, and if for Cucumbers or Melons holes made in the centre of each light for the

reception of the killocks. These may be opened three parts the depth of the bed, and plenty of raw, half-chopped turf thrown into the bottom. On this the killock may rest, and if there be danger from burning, a thick turf may be placed horizontally under each bill of soil. The main thing to be avoided is too much bottom heat—more especially under the killock, the heat to which should be received immediately from the rest of the bed, or rather from the linings. *Gardeners' Chronicle*, January 16, 1847.

THE KEEPING OF PIGS, POULTRY, RABBITS, &c.—The increase of pigs in this country is the quickest possible way of adding to our meat supplies. If people would, either individually or in combination, undertake the keeping of pigs in the present crisis, the stock of pigs in this country could be, within a few months, greatly increased. Quantities of valuable pig-fodder are wasted every day in our towns and villages. If arrangements could be made for collecting the waste from butchers, poulterers, fishmongers, fruiterers, greengrocers and dairies, from the hotels and boarding-houses as well as from other dwelling-houses, this daily loss would not only be prevented but turned into the gain of valuable meat.

It is important, wherever practicable, to allow pig-keeping in the neighbourhood of towns and villages to save the cost of transport of material. The question arises how far this would be hampered by restrictions contained in the by-laws of local authorities.

In many rural districts there are no by-laws on the subject at all. In others the by-laws only require that the places where pigs are kept shall be clean and wholesome. In most urban districts, however, and in a few rural districts, a by-law is in force which provides that pigs shall not be kept within a prescribed distance of dwelling-houses. A regulation is about to be made giving power to sanitary authorities to grant permission for the keeping of pigs, either generally or in particular cases, notwithstanding the provisions of any such by-law, subject to the observance of any directions of the authority in the interests of public health. If persons intending to keep pigs alive in places where such by-laws are in force they should inform the local authority, with a view to obtaining their permission. It will be necessary for keepers of pigs to obey such conditions as to clean and wholesome maintenance as the local authority may impose.

We intend to bring this matter to the notice of the sanitary authorities, and to suggest that, subject to any advice given to them by their Medical Officer of Health on grounds of public health, a Council should not hesitate to consent to waive its by-laws in suitable cases, or, where circumstances permit, to give a general dispensation under the powers conferred by the new regulation. We shall also suggest that the Councils should do what they can to facilitate co-operative efforts for the collection of waste and for the keeping of pigs.

Householders unable to undertake the keeping of pigs may do admirable service by keeping poultry or tame rabbits in order to add to the nation's food. They may also assist by setting aside edible house refuse to be collected for the feeding of the stock of other people. *Blondie (President of the Local Government Board)*, *R. E. Prothero (President of the Board of Agriculture and Fisheries)*, January 4, 1917.

TO RE-ESTABLISH ALLIES' FORESTS.—The Royal English Arboricultural Society are co-operating with the Agricultural Relief of Allies' Fund in inquiring whether it is possible to render help to our Allies in re-stating the woods and forests which have been destroyed. Inquiries made in France, Belgium and Serbia show that the tree of the greatest value is the Scotch Pine (*Pinus sylvestris*), which readily adapts itself to varying soil and climate. Large quantities of these trees are now being cut in

Scotland, and it is a comparatively simple matter to save and store the cones for the distribution of the seed required. The cones are rapidly approaching the stage most suitable for the purpose, as later on they swell and the seed is disseminated by the winds. The Serbian Government has asked for 4,000 lbs. of this seed, which they can immediately utilise, and the French Minister of Waters and Forests has outlined a scheme asking for a supply of seed for the coming spring to be followed next autumn by a further quantity and later on by a supply of young plants of Oak, Beech, Pine, etc. It is possible also that the rich forests of Douglas Pine in Canada may be drawn upon by the Canadian branch of the Allies' Committee in order to contribute their quota to what would form a permanent memorial of British sympathy.

WAR ITEMS.—We regret to learn that JOHN DIVERS, nephew of Mr. W. H. DIVERS, and sub-foreman in the Heriaceous and Alpine Department, Kew, is reported missing and believed killed. Mr. DIVERS commenced his gardening career at Roath Park, Cardiff, and he served later at Belvoir and Kew.

—LANCE-CORPORAL CRAME, who was employed in Messrs. STUART LOW AND CO.'S BUSINESS before the war, has been awarded the D.C.M.



SERGEANT CRAME, AWARDED THE D.C.M. AND RUSSIAN MEDAL OF ST. GEORGE.

and the Russian Medal of St. George, 3rd Class, for the following act of gallantry, as officially recorded: "This N.C.O. led his section in the attack on a German strong point in the most gallant manner. In the first attack he was wounded in the foot, but, after having had his foot dressed, returned to take command of his section, which he again led to the attack. He was wounded a second time, but, after having had his wound dressed, he again returned to his section. Wounded a third time, he again returned to his section after his wound had been dressed. He remained with his section until it was relieved, and even then refused to leave it until ordered to do so by his officer." CRAME has since been promoted Sergeant.

THE FOOD PROGRAM.—The War Emergency Committee of the Royal Agricultural Society, under the chairmanship of Mr. ADKINS, has decided to make the following representations to the Board of Agriculture: (1) That, Potato seed being so scarce, it is advisable, with a view to the greatest production, that so far as is possible all available seed should be concentrated on the land which is likely to grow the best crop per acre. If a price for Potatoes is to be fixed the price for early Potatoes and that for the

main crop should be differentiated, and in view of a likely shortage in June and July of 1917, it is desirable to encourage the growing of early Potatoes. The date when the early crop ends and the main crop begins might be taken to be August 15; (2) that as spring Wheats are being sold for milling purposes, steps should be taken to retain a sufficient quantity of suitable varieties for spring sowing; (3) as all work of cultivation is frequently suspended during threshing, owing to scarcity of labour, adequate soldier labour should be made available to travel with and assist in working threshing machines; (4) as spring sowing is imminent, information should be given without delay with regard to the terms and conditions under which the crops are to be grown; especially with reference to the fixing of prices and the supply of manures; (5) that the Board should provide funds for the purchase by War Agricultural Committees of tractor ploughs and other necessary agricultural implements.

—With the approval of the King, SIR ALFRED MOXD, the First Commissioner of Works, has given instructions for the grounds of the Convalescent Home for Officers of the Navy and Army at Osborne to be planted with Potatoes.

POTATO PRICES FOR 1917.—The prices for main crop Potatoes have been fixed by the Food Controller as follows: For quantities of not less than six tons, free on rail or free on board, 115s. per ton for delivery, from September 15 to January 31; 120s. per ton for delivery in February and March; 150s. per ton for the remainder of the season. The prices in each case are for produce of first quality delivered, as required, in sound marketable condition. In fixing the maximum price for Potatoes at 115s.—150s. per ton, the Board has taken the most effective means in its power to discourage the widespread planting of Potatoes. We should be glad to know whether that is the object of the Board, and, if so, how it can be justified. There is an admitted shortage in the world's food supply. The Board has recently taken steps to induce allotment holders and small cultivators generally to increase food production. It has now fixed a price calculated most effectively to discourage the growing of the chief crop which such cultivators would have undertaken to produce.

PUBLICATIONS RECEIVED.—*Tropical Agriculture*. By Earley Vernon Wilcox, A.M., Ph.D. (New York and London: D. Appleton & Co.) Price 10s. 6d. net.

A GARDENER-SOLDIER IN INDIA.

LIKE many other gardeners I joined his Majesty's Forces under the Derby scheme. After training in England we set sail for India. The voyage occupied about six weeks, the first stop being Gibraltar, the sight of which makes an Englishman feel proud. In marching round the town we saw several interesting gardens, and many plants that require greenhouse treatment in England were here growing and flowering profusely. *Plumbago capensis*, *Bougainvillea scabra*, *Ipomoea rubro-coerulea* and *Nerium Oleander* may be mentioned as examples.

At Malta again the floral subjects attracted attention. *Hibiscus*, *Mesembryanthemum*, Palms, and Cactuses were noted, and Grapes were procurable at a reasonable price. This was the only fruit at Malta, but at Gibraltar Grapes, Figs, Apples, Pears, Apricots, Peaches and Pomegranates were obtainable.

During the voyage I discovered several gardeners abroad, notably Gunner J. Thompson, gr. to Barrow Cadbury, Esq., J.P., Cropwood, Blackwell, Bromsgrove; Gunner A. J. Jarrett, gr. to Capt. Hon. C. Dorner, Grove Park, Warwick; Gunner E. F. May; Gunner F. L. Weston, gr. to Mrs. Palmer, Marlston House, near Newbury; and several

others whose addresses I have forgotten. These are now stationed in various parts of India, and probably I shall not meet them again in India.

At Bombay the Bananas are of excellent quality, and can be purchased at the rate of four for one anna (1d.).

Crotons, Hibiscuses, Musas, and Palms thrive

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE ORIGIN OF THE LOGANBERRY (see p. 9).—In the *Cottage Gardeners' Dictionary*, published in 1852, under the heading "Raspberry," it is stated that "Mr. Rivers, of Sawbridgeworth, has a new variety from America

at least the name, possibly J. S. Maiden, see *Orchids, Cabbages, Straws*."

STRAWBERRIES. The earliest Strawberry plants that were started some few weeks ago are sending up their turesses of flowers. At that stage the plants should be removed to the light, east and most airy part of the house, as being favourable to the setting of the fruit. Admit fresh air from the time the plants are introduced into heat until the fruits begin to swell. Pollinate the flowers when pollen is plentiful with a camel's hair brush. Care in watering is of the utmost importance. Fumigate the house lightly at short intervals prior to the opening of the flowers. Fresh batches of plants should be prepared for forcing, and placed in shallow pits, firmly filled with fermenting leaves. Plants for late fruiting cannot be kept too cool at present, but they should be plunged in a bed of suitable material and protected from very severe frosts. J.

GARRYA ELLIPTICA.—The idea that *Garrya elliptica* is only suitable for sheltered positions in the South is probably due to the fact that, although introduced so far back as 1818, it has never been widely planted. Its hardiness, now even is beyond question, as I have seen it flourishing in an exposed position so far north as North. In the gardens at Brougham Hall there is a well-developed plant 10 or 12 feet high in the shrubbery border. The position is a severe test of hardiness, as it faces east and is open to the high winds which sweep across the country from the Pennine Range. I had believed the plant to be tender before going North, and was surprised to find so good a specimen in this position, but during the five years that I was there it never failed to produce a full crop of its beautiful catkins, and was never disfigured by cold winds. There is a plant in these gardens planted in 1809 which has already attained a height of 22 feet, so that it would appear that not only has its hardiness been underestimated, but also its vigour. W. Wilson, *Pierrefort Court Gardens, Woking*.

THE VALUE OF INTERCROPPING.—With reference to my advice on intercropping, I must apologise to Mr. Archer and other readers that the article did not read as I had intended. It should read, "To put early Lettuces between Onions and Strawberry plants, and Spinach, Cauliflower, Cabbage, Turnips or dwarf Beans between rows of Peas and summer Beans." Taking Onions first, they should be put out 15 inches between the rows and the space between each row filled with Lettuces; any Cabbage variety that was sown in August to withstand the winter being suitable. Both the Onions and the Lettuces may be planted at the same time, and there could be no danger of damaging the Onions if the rows were planted alternately as the space is filled. Strawberries in rows 2½ feet apart could be planted in a similar manner, with Cabbage Lettuces, or if preferred with Cos varieties. I have myself grown the Cos variety Winter White



FIG. 6.—POT CHRYSANTHEMUMS AT AN INDIAN FLOWER SHOW.

exceedingly, the somewhat moist atmosphere being suitable for this class of plant.

I was eventually transferred to Allahabad, Weiron to Ferozpoor (near Lahore), and May remains at Bombay. The country is very flat around Allahabad, and here the rivers Jumna and Ganges meet.

Kew men are all over the world, and I was not long in finding out an old Kewite, Mr. W. Head, superintendent of the Government Gardens and Parks, Allahabad, who is giving me every assistance in finding out gardens of interest. So far I have had opportunity to visit any gardens, but the district can boast of a host of enthusiastic amateur gardeners, as the recent flower show testified.

This show was held on December 2, 1906, and the principal flower shown was the Chryanthemum. Mr. Head, the hon. secretary, five or six groups, and several groups of special varieties which he had been giving a trial. The single varieties are great favourites with Mr. Head, and one group consisted entirely of single sorts, which were raised in the Park Gardens. The pink and yellow shades were very good, several being worthy of a name. Competition was very keen in nearly every class, and except a few good blooms of the following were noted:—Oriental, Mrs. T. Stevenson, Queen Mary, Bob Pulling, William Vert, Rosamund, Mrs. A. Herbert, Daily Mail, Prince of Wales, Ethel Thorpe and J. Lock.

In the classes for Coleus and Crotons there were numerous entrants; both the Crotons and Coleus were well grown and highly coloured, and Mr. Head raises annually a large number of the latter from seed, which he saves from selected plants. The show was held on the hockey ground in Alfred Park, Allahabad, and amid picturesque surroundings.

The general condition of the plants shown did credit to the exhibitors. The summer and rainy periods are both detrimental to the well-being of the Chrysanthemum, and only diligent care and attention could bring them to such perfection. Another show will be held in February.

The judges were Gunner W. E. Conybeer (ex. Canon Langford, Southbrook, Devon), Bom Langdon (of Messrs. Blackmore and Langdon), and Gunner T. W. Bresse (ex. to R. Lysaght) T. W. Bresse, Allahabad.

which is a hybrid between the Raspberry and the Blackberry, as Mr. Rivers called "the Blackberry Raspberry." However, it is



FIG. 7.—CHRYSANTHEMUM EXHIBITED AT AN INDIAN FLOWER SHOW.

sure that, although a hybrid, it may have been even spontaneously introduced from America.



FIG. 8.—THE GOVERNMENT GARDENS, ALI AHABAD.

with great success, the heads turning the soil at three and three-quarter points, and I also had a good crop of Strawberries. In cropping between rows of Peas, I prefer to sow the Peas in rows 5 to 6 feet apart and to plant a single row of cabbage, Cauliflower, or dwarf Beans between them, or to sow two rows of either Turnips or Spinach. With reference to Mr. Archer not succeeding with dwarf Beans sown in front of greenhouses or under a south wall, this goes to show that dwarf Beans dislike a dry, sunny border. I should like him to try my method of planting this crop between rows of Peas. The partial shade of the Peas seems to suit their requirements, and such soil is doubtless more moist than a sunny south border. The dwarf Bean requires plenty of moisture, hence the usual practice of growing them in the humid atmosphere of a vinery for an early crop. A distance of 6 feet should be allowed between the rows of runner Beans, and the same remarks apply to this crop as to Peas. I do not agree with Mr. Archer that the instruction of amateurs can only be done by one on the spot. Many useful things may be learned from "The Week's Work" in the *Gardeners' Chronicle*. L. F. Bagg, Holmwood.

THE LATE GEORGE SCHNEIDER. (see p. 11).—The remains of George Schneider were interred on Friday, the 5th inst., at East Sheen Cemetery. They were followed to the grave by the members of his own family, who were joined by a few personal friends and one or two members of the French Horticultural Society. We noticed by the graveside Mr. and Mrs. W. O. Heble; Mr. and Mrs. Peavot (Mme. Ripard and her husband are in France); Mr. Otto Hehle, M. Binot, Mr. D. Inguanelli, Mr. Thos. Bevan, Mr. John McKersher, Mr. Tivey, Mr. John Heal, V. M.H., M. Guillaud, M. J. Bittner, M. Meilli, M. Wynys, and Mr. Harman Payne. Floral tributes comprised some beautiful wreaths of Mme. Abel Chateaux Rose, with which the coffin was adorned, and also wreaths from most of the mourners already named. In addition there was a very striking one from the Société française d'horticulture de Londres, with its broad band of tricolor ribbon, and others from Sir Harry Vetch, Mr. Edward Sherwood (Hurst and Sons), Mr. R. Percy Kaye, and Mme. Schneider, the widow, who was too unwell to be present at the ceremony. A slight error crept into your note in your last issue. Although deceased for nearly lived for many years at 17, Field Road, Fulham Road, at the time of his death he had been residing for some time at 3, Meredyth Road, Barnes, S.W. C. Harman Payne.

FRESHLY-TURNED LAND AND THE POTATO.—Very much has been, and is being, written to-day in the gardening and daily Press upon this dual subject; but seldom is there any mention of the particular food required by the Potato-potash. In prepared manural form this fertiliser is admittedly difficult to obtain, but we have it in a rougher degree in old leaves and wood ashes obtained from burnt prunings. What is of paramount importance just now is the fact that quite near to much of the land to be broken up are quantities of these old leaves in ditches, among trees, and lying alongside fences. May I advise those having the above work to superintend or who are breaking it up themselves to seize what is to be had of such material and work it in the trench as digging or trenching proceeds? The wood ashes can also be applied now likewise or scattered over the surface freshly dug or, as I prefer, kept back until the spring and scattered over the ground just before cropping time. C. Turner, *Widgobol*.

TRADE NOTE.

MESSRS. ALEX. DICKSON & SONS' NEW PREMISES

MESSRS. ALEX. DICKSON AND SONS, LTD., seedsmen and nurserymen, have removed the headquarters of their business from Royal Avenue, Belfast, to new premises at the corner of Royal Avenue and Garfield Street, and in future the firm's address will be Hawkhawk Buildings, Belfast.

Obituary.

WILLIAM THOMPSON.—We regret to record the death of this well-known horticulturist, which took place at his residence, Walton Grange, Stone, Staffordshire, on the 22nd ult. Mr. Thompson, who attained his 84th year in September last, was for many years a prominent personality in the locality in which he resided and a strong supporter of horticulture and the gardening charities. For many years and until quite recently he was a member of the Orchid Committee of the Royal Horticultural Society, and he was one of the judges at the International Horticultural Exhibition of 1912. Orchids were his chief hobby, and for over forty years he continually added of the best to his extensive collection, and raised many hybrids, especially in *Odontoglossum* and *Cypripedium*. The records of the Orchid Awards of the Royal Horticultural Society include a large number of the late Mr. Thompson's fine varieties, his favourite class of blotched *Odontoglossum* beginning with a First-class Certificate for *Odontoglossum crispum* Thompson's variety, April 12, 1887, and following with a dozen other varieties, the last being *O. crispum Perfect Gem*, June 8, 1915. His hybrid *Odontoglossum*, which are among the most beautiful ever raised, have been recorded in these pages. *Cypripedium mirum*, for which a Gold Medal was awarded by the Manchester Orchid Society on November 27, 1915, was a fine example of the Walton Grange strain, and took part in the production of many of the handsome seedlings since raised there. Mr. Thompson, who had been married sixty years when his wife died in May last, leaves one son, Captain A. E. Thompson, and four daughters.

ANSWERS TO CORRESPONDENTS.

A GARDENER'S NOTICE. J. T. It is customary for a head gardener to give and receive a month's notice to terminate an engagement.

CURTIS. J. H. Write to Mr. H. Ellison, nurseryman, 5 and 7, Bull Street, West Bromwich.

FERTILISING IN BRASSICAS. W. P. H. Dress the soil with quicklime and sulphur, applying the lime now at the rate of 15 cwt. per acre and the sulphur in the spring, using 5 cwt. to the acre. A correspondent in *Hardy China*, August 8, 1914, p. 118, states that if the seed is covered with red lead this will prevent attacks of clubbing. The seeds must be just damp and rolled in the lead, for if too much water is used there will be a difficulty in sowing the seed. You might also adopt the old-fashioned method of puddling the roots of seedling Brassicas in a mixture of clay, soot and lime, before planting them. Do not grow plants of the Carbage tribe, which includes Turnips, on the same ground two seasons in succession.

DESCRIPTIONS OF ERYSIUM AND MATTHIOLA. A. and B. The distribution of the species you mention is as follows: *Erysimum altaicum*, Altai Mountains; *E. arkansum*, a variety of *E. asperum*; *E. asperum*, North America; *E. bulgaricum* (we cannot trace this name); *E. hylcicum*, a narrow-leaved variety of *E. ochroleucum*; *E. kotschyannum*, Asia Minor; *E. ochroleucum*, Europe; *E. peroffskianum*, Caucasus; *E. pulchellum*=*rupestre*; *E. pumilum*, Switzerland; *E. purpureum*, Annonia; *E. rupestre*, Asia Minor, Matthiola Islands, Greece and Asia Minor; *M. Fenes-tralis*, Crete; *M. pedimontana*, a form of *M. varia* from the Piedmont; *M. tristis*, South Europe ("Night-scented Stock"); *M. valisneri*, Switzerland.

FERTILISERS. Common. We do not recognise the names, which may be proprietary fertilisers.

MARKET GARDENING. W. H. Before deciding on the crops to grow you should consider your market. The one-acre kitchen garden and three vineries, although presumably the latter are heated, are not sufficient to enable you to send to a market the regular large supplies which the salesmen prefer, and which are more profitable.

For this reason it would be well to ascertain the probabilities of selling your produce locally, as then smaller quantities could be disposed of at remunerative prices. You would also save expenditure on packing, carriage and commission. We do not think it wise to clear the vines from all three vineries, and advise you to leave the roots in one house, if possible, of such varieties as Black Hamburg, Marlband, Sweet Water, Gros Maroc and Foster's Seedling, as they may be grown with a minimum of fire-heat. If the other vineries are light, Tomatos could be grown in them, but provision for abundant ventilation is essential. Unless you already have sprouting tubers of such early Potatos as May Queen, Sharp's Victor, Myatt's Ashleaf, or Eclipse, we doubt if a crop of early Potatos could profitably precede the Tomatos, but you could experiment with one house, and if you correctly anticipate the lifting of the crop and have the Tomatos planted without delay they should yield a fair return. Last year late Tomatos paid well. As to the advisability of following Tomatos with Chrysanthemums lifted from the open, this is purely a matter of conjecture at present. The demand for cut flowers fluctuated exceedingly towards the end of last year, and it is well within the possibilities that requirements in the near future will be small, so in this you must form a decision after ascertaining local possibilities. The best sorts for the proposed method are: Mid-season varieties—Batchelor's White, Black Prince, dark red, Freda Bedford, bronze, H. W. Thorp, incurved white, Hortus Tolosanus and Jessie, golden bronze, Josephine Bernier, deep pink, Mrs. W. Kerr, deep yellow, Romance, rich yellow, and Wells' White; late varieties—Baldock's Cimon, Champion Exe, white, December Pink, Lord Brooke, orange-yellow shaded bronze, Nagoya, deep yellow, Pink Exe, Yellow Queen of Exe (both are sports from Queen of Exe), Tuxedo, bronze, and Yellow Brooke. As to other crops which you might grow profitably, we feel that it would not be wise to attempt to compete with the large growers of the commoner vegetables, but rather to confine yourself to those choicer vegetables of which you already have experience and knowledge. For instance, you might consider the possibility of specialising in salads and determine to supply these in regular, if at times small, supplies all the year round. There also is money to be made by selling seedling vegetables at the various seasons. At the moment you could start by sowing Onions, Leeks, Cauliflowers, Brussels Sprouts and Lettuce in gentle heat. Tomato plants in small pots, and also pricked off in boxes, usually find a ready sale from the latter part of April and throughout May. For the market garden side of your establishment you would require the whole-time help of a man and a boy and at least another man to keep the flower garden tidy.

NAMES OF PLANTS. C. B. P. 1, *Cypripedium Spiciferum*; 2, *Cypripedium Littleham* (*Lavreocanum* × *Davayum*); 3, *Cypripedium Bossianum* (*tonsum* × *barbatum*); 4, *Cypripedium Lecanum* (*insigne* × *Spiciferum*); 5, *Cypripedium actaeus* (*insigne* × *Lecanum*); 6, *Cypripedium Lander* (*Lecanum* × *villosum*).

PEAS FOR DRYING. Wessle. Suitable varieties for the purpose are Fillbasket and Bountiful. The amount of seed required per acre is three bushels.

Poultry MANURE. H. L. Poultry manure is a rich fertiliser; it should be dried thoroughly, mixed with fine soil, and applied as a surface dressing, lightly forking it in. Apply it to the Asparagus bed just before growth commences in the spring.

SOFT PORTING SOIL. W. P. H. The softness is due to acidity, which may be corrected by mixing lime freely with the compost. Besides sweetening the soil the lime will supply a valuable plant food.

Communications Received. G. S. Wollstley Farm, Mass.; H. D. G. M.; W. S. M.; Bombay; R. E. S.; Bombay; H. Graves; Est. J. E. Str. H. F.; de U. B.; Patig—B. H. W. T.—J. F. G.

MARKETS.

CUT FLOWERS.

Table listing various cut flowers such as Arums, Azalea, Bouvardia, Camellias, Carnations, etc., with prices in s.d. and s.d.s.d.

Table listing cut foliage such as Ailanthum, Asparagus, Carnation foliage, etc., with prices in s.d. and s.d.s.d.

Table listing French flowers such as Anemone, Lilac, Mimosa, etc., with prices in s.d. and s.d.s.d.

Remarks: This was an excellent day for cut flowers and foliage during the week as work on the scenery has been up to the (P) level, meaning inland prices for cut flowers are rising. The home trade and industry of Florists have given the market an advance in some spots. The main shipments of Lily of the Valley, Rock-rose, Anemone, and Mimosa have come out from the demand and white and pink Lilac foliage are most plentiful in the home market. It is considered a very high price for quality foliage, but it is still a limited supply and their prices remain firm. A few bunches of these plants have arrived from Canada, also, but they are not of the quality of the first shipment of France for the season and the market on Monday Day from Germany, the flowers were very good. White and pink Azalea are still in good supply, but they are not of the quality of the first shipment, especially Asparagus and Mimosa (Maidenhair). The latter plants are being received in good quantities. White and many colors are being received in good quantities.

Table listing plants in pots such as Aralia, Asparagus, Aspidistra, etc., with prices in s.d. and s.d.s.d.

Plants in Pots, &c.: Average Wholesale Prices

Table listing plants in pots such as Ferns, Liatris, Liliaceae, etc., with prices in s.d. and s.d.s.d.

Remarks: Trade is fairly good, but prices are not very high. The market of the above plants is very active.

Vegetables - Average Wholesale Prices.

Table listing various vegetables such as Artichokes, Asparagus, Beans, etc., with prices in s.d. and s.d.s.d.

Fruit - Average Wholesale Prices.

Table listing various fruits such as Almonds, Apples, Grapes, etc., with prices in s.d. and s.d.s.d.

Remarks: The market for fruit is very active, but prices are not very high. The market of the above fruits is very active.

Table listing various fruits such as Apples, Grapes, etc., with prices in s.d. and s.d.s.d.

THE WEATHER.

The 12th of January was a very cold and abundant day, with a heavy snowfall. The temperature was very low, and the wind was very strong. The weather was very cold and abundant, with a heavy snowfall. The temperature was very low, and the wind was very strong.

DEBATING SOCIETIES.

BATH GARDENERS. The 29th session of the Bath Gardeners' Society was held on Monday, the 9th inst., with a lecture by Mr. F. R. Jones, Horticultural Officer at Reading University College. Mr. Jones dealt with the subject of the soil, and the effect of the soil on the growth of the plants. He recommended that the soil should be well prepared, and that the plants should be well watered. He also recommended that the soil should be well prepared, and that the plants should be well watered.

CATALOGUES RECEIVED.

Various catalogues received from different nurseries and garden centers, including lists of plants and flowers for sale.

THE FOOD PROBLEM.

The earliest crops will prove of the greatest value.

SOW NOW.

PEAS.		
Sutton's Pioneer.	The largest podded Dwarf Pea.	Per pint 2/-
Sutton's World's Record.	One of the earliest marrowfat's	Per pint 2/-
BROAD BEAN.		
Sutton's Mammoth Longpod.	The earliest Broad Bean	Per pint 1/6
DWARF BEAN.		
Sutton's Evergreen.	A continuous cropping variety	Per pint 1/8
BEEF.		
Sutton's Globe.	Valuable for frame sowing	Per pkt. 1/-
CARROT.		
Sutton's Champion Scarlet Horn.	Valuable for frame sowing	Per pkt. 1/-
CAULIFLOWER.		
Sutton's Magnum Bonum.	Solid pure white heads	Per pkt. 1/6
CUCUMBER.		
Sutton's Every-day.	An all season's variety	Per pkt. 2/-
LETTUCE.		
Sutton's Commodore Nutt.	A compact early variety	Per pkt. 1/6
Sutton's Golden Ball.	Excellent for frame culture	Per pkt. 1/-
ONION.		
Sutton's Selected Ailsa Craig.	The heaviest cropper	Per pkt. 1/6
TOMATO.		
Sutton's Best of All.	Big cropper and tree setter	Per pkt. 1/6

Catalogues Post Free.

SUTTON & SONS, THE KING'S SEEDSMEN, READING.

(Continued from page ii.)

WANTED, GARDENER, for institution; good all round man, abstemious, intelligible. Apply, stating age, experience, and wages required to **SUTTON'S**, Turpin's Court, near Wallingford, Berks.

WANTED, good GARDENER, intelligible for Army, as third man, married preferred, no family—Apply, stating age, &c., to **C. CUTLER**, The Gardens, 19, Leigham Court Road, Streatham.

WANTED, unmarried GARDENER, intelligible, during war. Vegetables, Vinery, &c., some flowers; boy helps. Particulars and wages required to **W. TAYLOR**, Trydell, East Peckham, Kent.

WANTED, immediately, for a gentleman's residence, a **WORKING GARDENER,** help given, must be intelligible for the Army or over military age; cottage found—Apply, stating wages required, to **MR. MAURICE PRIDE**, Estate Agent, Tollymore, Gloucester Square.

WANTED, GARDENER, during war; experienced, cap ble man, help given, very pretty place, Devonshire. State terms. Box 14, c/o **W. H. SMITH & SON**, Kingsway, London, W.C.

WANTED, GARDENER, intelligible; assistance given. State age, wages asked, experience, and if married. **REV. A. PHILLIMORE**, Witlesey Hill, Ashby-de-la-Zouch.

WANTED, a good all-round WORKING GARDENER, must have thorough knowledge of Fruit growing—Apply, **AGENT**, Bishoak Hall, The pincham, Rutland.

WANTED, WORKING GARDENER; cottage, coal, or 12/-; Apply, **W. ROBINSON**, House, good, Kingsdon Vale, Putney.

WANTED, strong UNDER GARDENER, 25 acres, THWATES, Claines Lodge, Clonave Road, Clapham Park.

WANTED immediately, an UNDER GARDENER Apply, stating age, experience and wages required, with references, to **CLAUDE BARTON**, Ingleborough Estate Office, Clapham, Lancaster.

WANTED, a strong, active Young Man (intelligible) as **UNDER GARDENER**; no duties on Botley; chiefly for Vegetable Gardens and Pleasure Grounds, wages 25s per week. Apply, with full particulars, references, &c., to **MR. WILCOCK**, Gardener to Le Col. Park, The Gardens, Aldborough Hill, Post Budge, York.

WANTED, MARRIED COUPLE of FAMILY, in a moderate time, a man good working Gardener, with son (intelligible) as Under Gardener and attend to chickens and pigs, wife and daughter of competent might be cook and house-keeper; cottage, 4 or 5 and vegetables free; house-keeper would sleep in house. Apply, stating number in family, ages, experience, and wages with copies of testimonials, **SURLEY**, Box 16, 41, Wellington Street, Covent Garden, W.C.

LADY GARDENER, to take entire charge of planning and tending Garden; day to assist, no wage. Apply, with particulars, wages, and past experience, to **WOOD**, Elm Cottage, Box Hill, D'Uring.

WANTED, Two LADY GARDENERS; some experience, chiefly inside—Particulars and wages expected, with botley, to **H. FOSTER**, Understable, Hookley Heath, Warwickshire.

WANTED, LADY GARDENER, to grow Flowers for market. Midlands, live with family. State experience and salary to **H. S.**, Box 13, 41, Wellington Street, Covent Garden, W.C.

WANTED, WOMAN GARDENER, for Glass, in Large Gardens, to work under experienced Head Gardener, and live in Botley—Apply, stating experience and wages required, to **HEAD GARDENER**, Buntford, Piddham, Lancashire.

WANTED, Two WOMEN GARDENERS, with some experience, outside chiefly; Botley, fire and light; no attendances—Apply, stating wages, &c., **GARDENER**, Blank-some Tower Hotel, Bournemouth.

WANTED, Two WOMEN GARDENERS (Under), for general work, chiefly outside, some experience preferred. Apply, with particulars, references, wages expected, &c., to **MR. EDWARD CABBREY**, Westholme, Solly Oak, Birmingham.

WANTED, good FOREMAN (INSIDE), experienced in all abouting; wages 20s per week with good Botley, milk and vegetables. Apply, with full particulars, to **H. PRINCE**, The Gardens, Poleston Leys, Dorking.

WANTED, FOREMAN, for inside and out, married or single, not under 30 years of age, intelligible; good Botley or cottage, must be a thoroughly experienced man—Apply, with references, stating wages required, to **ESTATE OFFICE**, Bellwell Park, Hatfield, Herts.

WANTED, FOREMAN for Plant and Fruit Houses; intelligible—Full particulars, stating wages required, with Botley, milk and vegetables, overtime paid, **W. KINGSWOOD**, The Gardens, Norman Court, Salisbury.

WANTED, FOREMAN, also a **JOURNEYMAN**, for a good Garden; Botley and good wages to men with experience—Apply, **HEAD GARDENER**, Poles, Ware, Herts.

WANTED, a JOURNEYMAN for the Houses; good wages paid to experienced man; Botley and veg. tables; dirty and overtime paid—**BASTIN**, Buscot, Faringdon, Berks.

ORCHIDS—Wanted, **JOURNEYMAN** or good **IMPROVER** for Orchard department; lodging found—State what reference, experience if any, and wages required, to **H. G. ALEXANDER**, Westonbirt Gardens, Tetbury, Glos.

WANTED, MAN to assist in Orchard and other Houses; must be intelligible for the Army; wages 35s per week; also Handy Labourer for Garden work, wages 20s per week—**E. ROWE**, The Gardens, Bridge Hall, Bury, Lancs.

WANTED, a good MAN (discharged soldier, intelligible or over military age), with good knowledge of general outside work; good wages and Botley; if married, cottage; able to take duty—Apply, **H. FISHER**, Kitchburgh Court, Hereford.

WANTED, IMPROVER (INSIDE); wages, 18s per week, good Botley; 1s war bonus; Sunday duty paid; half-day Saturday; must have some experience. Apply, **J. S. KELLY**, Clarendon, Esher.

WANTED, strong YOUTH, for Houses; 18s, Botley, &c.; Sunday duty paid; Saturday, 1 pm.—**H. PAGE**, Stoke Place Gardens, Slough.

WANTED, a YOUTH for the Houses; wages 15s, Botley and Veg. tables; duty paid—**BASTIN**, Buscot, Faringdon, Berks.

WANTED, YOUTH, age 15, Inside the Houses and outside, wages 16s weekly, with Botley—**E. MORGAN**, Wassend Hall Gardens, Hull.

WANTED, Strong YOUTH, about 16 years, chiefly for Kitchen Garden; take duty alternate days; 15s, Botley and vegetables—Apply, **J. ATKINSON**, Attinham Gardens, near Shrewsbury.

WANTED, experienced COWMAN; assist in Garden; wages 21s, and good cottage—Apply, **J. M. COLLETT**, Wainstone Place, Brookthorpe, Gloucesters.

WANTED, COWMAN; experience with Jersey cows and dairy work; good wages. Apply with full particulars, MISS R. CRAWSHAY, The Sewlands, Hitchin, Herts.

TRADE.

WANTED, for the South Coast, experienced WORKING FOREMAN or ASSISTANT MANAGER, for Landscape and Jobbing Gardening Department; must be practical and able to estimate. Apply with all particulars, to Z. "Gardeners' Chronicle," 41, Wellington Street, Covent Garden, W.C.

WANTED, FOREMAN GROWER, with Inside and Out experience, for market growing, house and requisite help found, ineligible, good wages, within 20 miles London.—Address, with full particulars, B. 130, Mount Street, London, W.

WANTED, FOREMAN GROWER, to take charge of Greenhouses; experienced in growing Tomatoes, Cucumbers and Bedding Plants; good house found on place, and vegetables, good wages, and war bonus.—MANAGER, Co-operative Farm, North Hykeham, Lincoln.

MAN wanted for a small Nursery in suburbs of London to take entire charge of Landscape and Jobbing Work.—MAHOOD & SON, Putney Nurseries, Putney, S.W.

EXPERIENCED CHARGE HANDS wanted for Palms, Ferns and Vines; wages 30s. per week and 6d. per hour overtime; Sunday duty extra.—THOMAS ROCHFORD & SONS, LTD., Tarnford Hall Nurseries, near Broxbourne, Herts.

WANTED, GROWER of Perpetual Carnations; ineligible for Army, good wages to a reliable man. Send copies of references and state wages required.—GEO. HARRÉ, Carnation Nurseries, Heath Road, Loughton Buzzard.

WANTED, GARDENER; well up in Farming, Window-boxing, &c.; also YOUNG LADY, experienced for Floral Work, Making up. Are good references.—Apply, M. & B. CHILTON, Florists, &c., 29 and 31, Craven Road, Baywater, W.

GARDENERS waiting for Situations can obtain employment; good wages.—JOHN RUSSELL, Devonshire Nurseries, Haverstock Hill, Hampstead.

WANTED, MEN, ineligible, for Soft-wooded Staff, Chrysanthemums, Tomatoes, and Cucumbers, &c.—G. BENNETT & SON, Hanwell, W.

WANTED, YOUNG MAN (ineligible), for Rose department of mail order trade, take lead and execute own orders. State age, wages, and mark envelope "Private." G. F. LETTS, Nurseryman, Hadleigh, Suffolk.

SEED TRADE. Wanted, SHOP ASSISTANT, ineligible, permanent situation, good wages. Give references and salary required. FRANK YATES, Seed Merchant, 22, Pelham Street, Nottingham.

FLORIST Wanted; must be competent. Make up, one with knowledge of Fruit and Seeds preferred. Write, N., Box 1, 41, Wellington Street, Covent Garden, W.C.

WANTED, FLORIST, Male or Female (Working), to take charge of first-class Dublin shop; must have sound business training, state salary, age, and if any knowledge of Nursery sales. H. K., Box 18, 41, Wellington Street, Covent Garden, W.C.

WANTED, for large establishment in the Midlands, Two or Three BOYTES, about 16, for Inside Work; good wages and Bother to smart lads. Apply, in the first place, to JOHN FEED & SON, The King's Sewlens and Nurserymen, West Norwood.

SITUATIONS WANTED.

Twenty-six words for 1,6, and 6d. for each succeeding Eight words or less.

PRIVATE.

GARDENER and BAILIFF in good establishment, 15 years' excellent reference, life experience in all branches of Farming and Gardening, married, over military age, disengaged. — H. WOOD GATE, Highfield, Shoreham, Sevensands, Kent.

MR. EVERETT, age 46 years, Nurseryman, Withold, offers his services to lady or gentleman requiring practical man to manage estate. Experience gained in well-known private gardens, including 7 years Head Gardener and Bailiff to J. F. Schwinm, Esq., Wimbledon Common, giving up business on account of wife's death.

GARDENER and STEWARD (Scottish) requires a position of trust, thoroughly experienced in all-round Gardening, well up in extensive and busy garden, 9 years present, married, age 45; 3 children.—Apply, Box 15, 41, Wellington Street, Covent Garden, W.C.

ADVERTISER, age 50, seeks Permanent Position of responsibility and national importance as ESTATE STEWARD, GARDENER BAILIFF, &c.; thoroughly experienced in all branches of Gardening, Farming, and Estate Management; capable organiser and controller of Labour, highest references; disengaged end of January.—Please state full particulars of requirements to X, Box 19, 41, Wellington Street, Covent Garden, W.C.

A. F. BASSETT, Esq., of Telydy, Cambridge, (formerly of London) has personally recommended as HEAD GARDENER in a large and well-kept establishment his present Head Gardener, F. J. CLARK, who is thoroughly experienced in all branches of Horticulture, good manager of men, exemplary of conduct, and in every way dependable; age 46; widower with one grown-up daughter.—Apply, F. J. CLARK, as above.

GARDENER (HEAD) permanency, seeks re-employment in good establishment, life experience gained in large Gardens, 10 years in present situation as Head, age 48, married (4 boys); thoroughly recommended.—BALDWIN, Cynfield Gardens, Bonchurch, South Wiles.

HEAD GARDENER seeks Re-employment in good establishment, first-class cultivator of all Fruits, Vegetables, Flowers, &c.; used to growing large quantities for Pleasure and Profit, energetic, good organiser, would undertake management with depleted staff. A. 157, Holmshale Road, Bromley, Kent.

GARDENER (HEAD), disengaged; for 20 years Head Gardener at Nohbury Park, normal staff 12 men; through duty of employer seeks re-employment, awarded cups, medals, &c., at R.H.S. meetings for Fruit, Vegetables, Plants, and Flowers; highest references.—GEO. KENT, age 50, 15, Pabson Lane, Parking.

GARDENER (HEAD); life experience gained in good Gardens, including Eaton Hall, Chester, thoroughly practical in all branches; successful cultivator of all crops, takes oversight small stock; highest references for ability and industry.—TURNER, 5, Kenwood Road, Highgate.

GARDENER (HEAD), where several are employed, life experience of benches, 5 years head, 2-7, married (the family), excellent reference, disengaged from Army. M. PECK, The Golf House, Berkhamsted, Herts.

GENTLEMAN highly recommends his GARDENER (HEAD WORKING), where several are employed, to any lady or gentleman requiring a thorough practical man, most successful in raising of all Flowers, including Delphiniums, Pinks, and Agapanthus. 15 years as Head, age 45, 25, Highgate (13 years). A. WINTER, 31, Dekker Road, Dulwich Village, S.E.

HEAD WORKING GARDENER thoroughly experienced in all branches of Gardening, including orchards, ineligible for Army, highly recommended. Apply to KEELING & SONS, West 20th Hill, Bradford.

GARDENER (HEAD WORKING); experienced in all branches, Inside and Out, age 46, married (one family) 17 years as Head. P. HEATH, Hatfield, Broad Oak, Harlow, Essex.

GARDENER (HEAD WORKING); life experience of all branches, Fruit (Inside and Out) a specialist, 22 years present situation, leaving through piece being sold, over military age, married (no family), best dressed and highest of references. MILAM, Ighite Wood, Great Road, Crowthorne, Berks.

GARDENER (HEAD WORKING), where several are kept, experienced, Inside and Out, Fruit, Flowers, Vegetables, age 39, married (no family), returned from Army C. 2, excellent references. F. WICKS, 10, Robinson Avenue, Bushey, Herts.

GARDENER (HEAD WORKING of good SINGLE HANDED, with help, life experience Inside and Out, age 41, married, destination, State wages, near London port of 4. CURD, Rowington, Warwick.

GARDENER (HEAD WORKING, or good SINGLE HANDED, with help seeks permanent position, life experience in all branches, married (age 40), ineligible, excellent references; highly recommended. GARDENER, Bone House, Bishop's Stortford.

GARDENER (SINGLE HANDED), permanent, experienced, married, age 46 (3 boys), 25 years present position, 15 years previous, disengaged 12 months.—HEAD, Laxton Cottage, Gindrook, Bucks.

GARDENER seeks Permanent Situation; experienced (thoroughly chiefly), by strong, active man, married, over military age, first-class references past and present employers. COLE, Pant Glas, Oswestry, Salop.

GARDENER (WORKING) requires permanent situation, accustomed to Vines, Flowers, Vegetables, and Lawns, 21 years' reference, leaving through death, married, over military age. W. CODD, Claxby, Lincoln.

REQUIRED, Post, Two WOMEN GARDENERS as Head and Under, or both Under, cultivated, 3 years' trained; Glass, Fruit, Vegetables. Are kept or Subseq. preference furnished cottage.—GILBERT, 19, Munster Road, W. Hampstead.

LADY GARDENER, 2 years' training, desires post, under good Head if possible; kindly give full particulars when writing.—R., Box 27, 41, Wellington Street, Covent Garden, W.C.

LADY GARDENER (short training, wishing to gain experience), seeks post under Head Gardener (man), where several others are kept.—G. W. HEATHCO, Hillfield Avenue, Hounslow, N.

TWO LADIES, excellent experience, Inside and Out, Vines, Peaches, Tomatoes, Cucumbers, and Intensive Vegetables, Plants, &c., require situation at once under good Head.—R. A., Box 25, 41, Wellington Street, Covent Garden, W.C.

FOREMAN seeks Head Situation of 2 or 3; life experience in good establishments, age 30; certified ineligible. J., Box 9, 41, Wellington Street, Covent Garden, W.C.

MAN, 46, married, son 14, want situations, (Garden, Fruit, poultry, &c., handy with tools.—FRANK, 1, Hoxton Road, Tottenham.

TRADE.

SEED TRADE.—ADVERTISER is open for immediate engagement as MANAGER, where knowledge of all classes of Nursery stock as well as of Fruit and Garden seeds would be appreciated; industrious, good salesman, free from military duties, good wages required.—Write, A. B., Box 19, 41, Wellington Street, Covent Garden, W.C.

TAKE Charge, small place; married; life experience Market and General Nursery Work, Inside and Out; house preferred.—H. 32, Siddons Road, Croydon, Surrey.

FOREMAN (WORKING), age 54; life experience Cucumbers, Tomatoes, Vines, &c.—5, Ecken Road, Bruce Grove, Tottenham, N.

WORKING FOREMAN desires situation; thoroughly capable as propagator and grower of all kinds of Market Nursery stock, in all departments; qualified to undertake the responsible position; satisfactory references; good wages required, over military age.—Address, H. WILLIAMS, 4, St. Mary's Road, Garston, Liverpool.

ADVERTISER, well up Tomatoes, Cucumbers, Grapes, Chrysanthemums, &c., seeks situation as FOREMAN, age 42, please state wages.—W., Box 14, 41, Wellington Street, Covent Garden, W.C.

STOCKTAKING.—ADVERTISER, familiar with all stock, quick and reliable, is prepared to start work immediately. Write, R. S., Box 20, 41, Wellington Street, Covent Garden, W.C.

The Gardeners' Chronicle
SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach the PUBLISHER not later than WEDNESDAY, 5 p.m.

Ordinary Positions	per page	£	s.	d.
Facing matter and Back Page	..	12	12	0
Half and quarter pages, column and half column spaces, per rata.	..	8	4	0
4 line space not exceeding 20 words	..	3	0	0
Per inch, single column	..	7	0	0
Per inch, across 2 columns	..	14	0	0
Per inch, across 3 columns	..	1	1	0

Front page (no display allowed) 1/ per line space. (Headline counted as two lines.)

For discounts apply to address below.

SITUATIONS WANTED.
26 words, 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.
THE UNITED KINGDOM 15s. per annum.
ABROAD 17 6 ..

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.
41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C.
Telegrams: 1543 "GARDENERS, RABD, LONDON."
Telephone: 1543 GERRARD.

Books as Presents

There is nothing so helpful to a young gardener as carefully selected books written by successful cultivators in the various branches of gardening.

- Annuals, Hardy and Half Hardy.** By Charles H. Curtis. Contains 8 Coloured Plates. 1s. 10d.
- Apples and Pears.** By George Bunyard, V.M.H. With 8 Coloured Plates. 1s. 10d.
- Bulb Book, The.** A Practical Work on Cultivation, Propagation, etc. By John Weathers. Illustrated. 15s. 7d.
- Bulbons Plants, Beautiful.** By Jno. Weathers. 5s. 4d.
- Bulbs and their Cultivation.** By T. W. Sanders. 2s. 10d.
- Bulbs, The Book of.** By S. Arnott. Illustrated. 2s. 9d.
- Carnation Culture, Commercial.** Edited by J. Harrison Dick. A collection of treatises by the best modern cultivators. Illustrated. 7s. 4d. (\$1.50).
- Carnations, Perpetual Flowering.** By Laurence J. Cook. A Practical Manual with Details of Cultivation. Illustrated. Paper, 1s. 3d.; cloth, 1s. 9d.
- Carnations and Pinks.** By T. H. Cook, Head Gardener at Sandringham; James Douglas, V.M.H.; and J. F. McLeod. Contains 8 Coloured Plates, reproduced from colour photographs. 1s. 10d.
- Chemistry of the Garden.** By D. R. Edwardes-Ker. A course of practical work designed for the use of Teachers and Students of Gardening. 1s. 8d.
- Chrysanthemums.** By Thomas Stevenson. With Chapters by Charles E. Shea and C. Harman Payne. Contains 8 Coloured Plates. 1s. 10d.
- Chrysanthemums for Garden and Greenhouse.** By D. B. Crane. Edited by T. W. Sanders. Illustrated. 2s. 10d.
- Climbing Plants.** By W. Watson, A.L.S. With Introduction by W. Robinson, author of "The English Flower Garden." 2s. 10d. and 3s. 10d.
- Daffodils.** By the Rev. Joseph Jacob. With Preface by the Rev. W. Wilks, M.A. A full treatise on their culture for private and Exhibition purposes. With 8 Coloured Plates. 1s. 10d.
- Dahlias and their Cultivation.** By J. B. Wroe. 1s. 2d.; cloth, 1s. 8d.
- Dahlias.** By George Gordon, late President of the National Dahlia Society. Contains 8 Coloured Plates. 1s. 10d.
- English Flower Garden, The.** An Illustrated Dictionary of the Plants Used, and Directions for their Culture and Arrangement. By W. Robinson. With numerous Illustrations. 15s. 7d.
- Ferns, The Book of British.** By C. T. Drury. Illustrated. 3s. 10d.
- Ferns, Choice, for Amateurs.** For the Garden, Conservatory, and Stove. Illustrated. With full directions for their Cultivation, and Formation of Ferneries, Rockeries, etc. By George Schneider. New Edition. 3s. 11d.
- Fern Culture.** By A. Hensley. Well illustrated. 2s. 9d.
- Ferns and Fern Culture.** By J. Birkenhead. New Edition, revised by F. Patsons. 1s. 3d.
- Fertilisers and Manures.** By A. D. Hall, F.R.S. 5s. 5d.
- Floral Decoration, British.** By R. F. Felton. Containing 26 full-page Illustrations (12 in Colour). 4s.
- Flower Garden, The.** By T. W. Sanders. The Formation and Management of a Garden, and the Culture of Outdoor Flowers and Plants. 450 pages. 104 Illustrations. 8s.
- Fruit Culture, Practical.** A Treatise on Planting, Growing and Storage of Hardy Fruits for Market and Private Growers. By J. Cheal. Sixth Edition. Illustrated. 2s. 9d.
- Fruit Farming, Practical, for Commercial Fruit-growers and others.** By Cecil H. Hooper. 3s. 10d.
- Fruit Farming for Profit.** By George Bunyard. A practical treatise on all the more profitable Fruits. Sixth Edition. 2s. 9d.
- Fruit Garden, The.** By George Bunyard and Owen Thomas. 15s.
- Fruit Trees, The Scientific and Profitable Culture of.** From the French of M. Du Breuil. Fifth Edition, carefully Revised by George Glenny. With 157 Woodcuts. 3s. 9d.
- Garden Beautiful, The, for Home Woods and Home Landscape.** By W. Robinson. Illustrated. 7s. 10d.
- Garden Planning and Planting.** A Guide to the Laying out and Designing of Flower Beds and Borders. Illustrated. Paper, 1s. 3d.; cloth, 1s. 9d.
- Garden, Chemistry of the.** A Primer for Amateurs and Young Gardeners. By Herbert H. Cousins, M.A. 1s. 2d.
- Garden Designs, The Book of.** By Charles Thonker. 2s. 10d.
- Garden Series (edited by R. Hooper Pearson).**
- My Garden in Spring.** By E. A. Bowles, M.A., Chairman of Scientific Committee of Royal Horticultural Society. With Preface by Reginald Farrer. 320 pages. Contains 16 Coloured Plates and 24 Half-tones. Price, 5s. 6d.
- My Garden in Summer.** By the same author as above. Price 5s. 6d.
- My Garden in Autumn and Winter.** By the same author. Issued 1915. Price 5s. 6d.
- Gardener's Assistant, The.** New Edition by William Watson, Curator, Royal Gardens, Kew. 6 vols., cloth, 8s. 5d. each. Also in 2 vols., Roxburghe binding, 52s.
- Grafting and Budding, Art of.** By Charles Ballet. With Illustrations. 2s. 9d.
- Iris.** By W. R. Dykes, M.A. With Preface by Prof. Bayley Balfour, F.R.S. Contains 8 full-page Coloured Plates. 1s. 10d.
- Johnson's Gardeners' Dictionary.** New Edition. 9s. 6d.
- Landscape Architecture, The Art of.** By Samuel Parsons. A practical and authoritative work. Illustrated. 18s.
- Lilies.** By A. Grove. With Preface by H. J. Elwes, F.R.S. Contains 8 Coloured Plates. 1s. 10d.
- Orchids and their Cultivation.** By James O'Brien, V.M.H., Hon. Sec. of the R.H.S. Orchid Committee. Contains 8 full-page Coloured Plates from Colour Photography. 1s. 10d.
- Orchids: Their Culture and Management.** By W. Watson (Curator, Royal Botanic Gardens, Kew) and H. J. Chapman. Illustrated with 189 Engravings and 20 Coloured Plates. 25s. 8d.
- Pansies, Violets and Violets.** By W. Cuthbertson and R. Hooper Pearson. With 8 full-page Coloured Plates from Colour Photography. 1s. 10d.
- Peach, The Book of the.** By H. W. Ward. A Practical Handbook on the Cultivation of Peaches and Nectarines under Glass and Out-of-doors. 2s. 10d.
- Rhododendrons and Azaleas.** By W. Watson. With Preface by Sir F. W. Moore, F.L.S. (The first popular volume published on this subject.) 8 full-page Coloured Plates. 1s. 10d.
- Rock Gardens** by Reginald Farrer. With Preface by Dr. J. Bretland Farmer, F.R.S. Contains 8 Coloured Plates. 1s. 10d.
- Root and Stem Vegetables.** By the late Alexander Dean. Contains 8 full-page Coloured Plates. 1s. 10d.
- Roses.** By H. R. Darlington. Contains 8 full-page Coloured Plates. 2s. 11d.
- Sweet Peas, The Modern Culture of.** By Thomas Stevenson. Fully described and illustrated. With Coloured Plates. Paper edition, 1s. 3d.; cloth, 5s. 4d.
- Trees and Shrubs, Hardy, Ornamental Flowering.** By A. D. Webster. Third Revised and greatly Enlarged Edition. 3s. 10d.
- Tulips.** By the Rev. Joseph Jacob. Illustrated with 8 Coloured Plates. 1s. 10d.
- Vegetables for Home Consumption and Exhibition.** By E. Beckett, V.M.H. Useful for every Gardener, and indispensable to Exhibitors. New Edition. 5s. 6d.
- Vegetables and Flowers, the Culture of, from Seeds and Roots.** By Sutton & Sons, Reading. New Edition. 5s. 6d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C.

3d. WEEKLY. Postage 5d.

THE GARDENERS' CHRONICLE

15s. YEARLY. Post Free.

Published every Friday at 41, Wellington Street, Covent Garden, London, W.C. (Telegrams: GARDCHRON, RAND, LONDON. Telephone: GERRARD 1543.)

The dates, etc., herein given, supplied by the respective Secretaries, are as complete as circumstances will allow, but some appointments are not made at the time of publication, and others are liable to alteration.

* During the operation of the Daylight Saving Bill the times given for Astronomical and other matters must be altered accordingly.

JANUARY.		FEBRUARY.		MARCH.		APRIL.	
1	M. Southampn in Roy Hort. Soc. Van meet	1	Th. Manchester and N. of England Orchard Soc. meet	1	S. Palm Sunday.	1	S. Palm Sunday.
2	W. G. A. Executive Com. meet.	2	F. <i>Gravelly</i> .	2	M. Sun sets 6h. 32m.	2	M. Sun sets 6h. 32m.
3	W. G. A. Executive Com. meet.	3	F. High water at London Bridge 11h. 26m.	3	F. <i>Gravelly</i> .	3	F. <i>Gravelly</i> .
4	M. V. C. meet. Land N. of England. Hort. Soc. meet.	4	S. High water at London Bridge 11h. 26m.	4	W. B. G. A. Executive Com. meet.	4	W. B. G. A. Executive Com. meet.
5	F. <i>Gravelly</i> .	5	S. <i>Gravelly</i> .	5	Th. <i>Gravelly</i> .	5	Th. <i>Gravelly</i> .
6	F. <i>Gravelly</i> .	6	M. Sun rises 7h. 33m.	6	F. <i>Gravelly</i> .	6	F. <i>Gravelly</i> .
7	S. 1st Sunday after Epiphany	7	W. Sun sets 6h. 30m.	7	S. Full moon 9h. 48m. aft.	7	S. Full moon 9h. 48m. aft.
8	F. <i>Gravelly</i> .	8	W. Sun sets 6h. 30m.	8	M. B. G. A. Executive Com. meet.	8	M. B. G. A. Executive Com. meet.
9	F. <i>Gravelly</i> .	9	W. Sun sets 6h. 30m.	9	M. B. G. A. Executive Com. meet.	9	M. B. G. A. Executive Com. meet.
10	W. Sun sets 6h. 30m.	10	S. The London Hort. Soc. meet.	10	W. Sun sets 6h. 30m.	10	W. Sun sets 6h. 30m.
11	W. Sun sets 6h. 30m.	11	F. Roy Hort. Soc. (Urban) and Hort. Soc. meet.	11	S. 2nd Sunday in Lent.	11	S. 2nd Sunday in Lent.
12	F. <i>Gravelly</i> .	12	F. <i>Gravelly</i> .	12	M. B. G. A. Executive Com. meet.	12	M. B. G. A. Executive Com. meet.
13	S. 2nd Sunday after Epiphany.	13	S. <i>Gravelly</i> .	13	W. Sun rises 7h. 33m.	13	W. Sun rises 7h. 33m.
14	W. Sun sets 6h. 30m.	14	M. B. G. A. Executive Com. meet.	14	Th. <i>Gravelly</i> .	14	Th. <i>Gravelly</i> .
15	W. Sun sets 6h. 30m.	15	W. Sun sets 6h. 30m.	15	F. <i>Gravelly</i> .	15	F. <i>Gravelly</i> .
16	F. <i>Gravelly</i> .	16	F. <i>Gravelly</i> .	16	F. <i>Gravelly</i> .	16	F. <i>Gravelly</i> .
17	W. Sun sets 6h. 30m.	17	M. B. G. A. Executive Com. meet.	17	Th. <i>Gravelly</i> .	17	Th. <i>Gravelly</i> .
18	Th. <i>Gravelly</i> .	18	W. Sun sets 6h. 30m.	18	W. Sun sets 6h. 30m.	18	W. Sun sets 6h. 30m.
19	Th. <i>Gravelly</i> .	19	M. B. G. A. Executive Com. meet.	19	M. Sun rises 7h. 33m.	19	M. Sun rises 7h. 33m.
20	S. 3rd Sunday after Epiphany.	20	S. <i>Gravelly</i> .	20	F. Sun rises 6h. 4m.	20	F. Sun rises 6h. 4m.
21	W. Sun sets 6h. 30m.	21	M. B. G. A. Executive Com. meet.	21	S. 3rd Sunday after Epiphany.	21	S. 3rd Sunday after Epiphany.
22	M. B. G. A. Executive Com. meet.	22	W. Sun rises 7h. 33m.	22	M. Sun rises 7h. 33m.	22	M. Sun rises 7h. 33m.
23	M. B. G. A. Executive Com. meet.	23	W. Sun rises 7h. 33m.	23	W. Sun rises 7h. 33m.	23	W. Sun rises 7h. 33m.
24	W. Sun sets 6h. 30m.	24	M. B. G. A. Executive Com. meet.	24	M. Sun rises 7h. 33m.	24	M. Sun rises 7h. 33m.
25	W. Sun sets 6h. 30m.	25	M. B. G. A. Executive Com. meet.	25	M. Sun rises 7h. 33m.	25	M. Sun rises 7h. 33m.
26	Th. <i>Gravelly</i> .	26	W. Sun rises 7h. 33m.	26	W. Sun rises 7h. 33m.	26	W. Sun rises 7h. 33m.
27	S. 3rd Sunday after Epiphany.	27	M. B. G. A. Executive Com. meet.	27	M. Sun rises 7h. 33m.	27	M. Sun rises 7h. 33m.
28	W. Sun sets 6h. 30m.	28	W. Sun rises 7h. 33m.	28	W. Sun rises 7h. 33m.	28	W. Sun rises 7h. 33m.
29	Th. <i>Gravelly</i> .	29	M. B. G. A. Executive Com. meet.	29	M. Sun rises 7h. 33m.	29	M. Sun rises 7h. 33m.
30	Th. <i>Gravelly</i> .	30	W. Sun rises 7h. 33m.	30	M. Sun rises 7h. 33m.	30	M. Sun rises 7h. 33m.
31	W. Sun sets 6h. 30m.	31	M. B. G. A. Executive Com. meet.	31	M. Sun rises 7h. 33m.	31	M. Sun rises 7h. 33m.

Love & Bateman, Ltd., Printers, New Street, High Holborn, London, W.C.

HORTICULTURAL DIRECTORY

(58th Year.)

For 1917.

(58th Year.)

AN UP-TO-DATE
WORK OF
REFERENCE.

The Publishing Dept.,
"GARDENERS' CHRONICLE," Ltd.,
41, Wellington St., Covent Garden, London, W.C.
INDISPENSABLE TO EVERY NURSERYMAN AND PROFESSIONAL GARDENER.

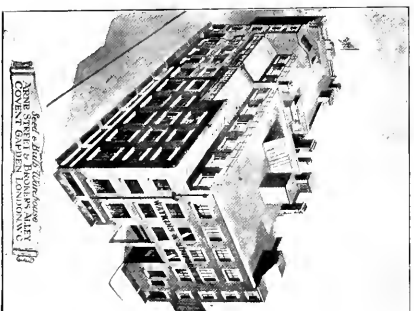
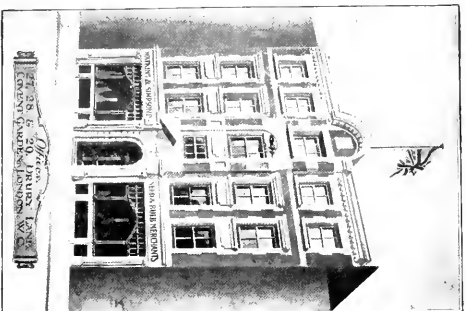
PRICE
1/-

POST
FREE
1/4

WATKINS & SIMPSON LIMITED

27, 28, & 29 DRURY LANE, LONDON, W.C.

Wholesale Seedsmen and Growers.



TO THE TRADE.

TO THE TRADE.

We are now installed in our new premises
27, 28, & 29 DRURY LANE,
COVENT GARDEN, LONDON
to which address all communications should be sent.



A portion of our Book Selection, *Illustrated Edition*, *Flowers*, *Vegetables*.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No. 3969

No. 1569. VOL. LXI. (THIRD (SERIES)) SATURDAY, JANUARY 20, 1917.

{Registered as a Newspaper, {PRICE 3d. POST-FREE, 3d.

SUBSCRIPTION—Inland, 15-/- Foreign, 17/6 (22fr. 10c.) [\$4 26c.] per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C.

Telegraphic Address—"Gardchron, Rand, London."

Telephone—Gerrard 1543.

For CONTENTS see page 21.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

A GARDEN REMINDER!

To obtain the Finest Crops it is essential to sow the Finest Seeds

WEBBS' HIGH-CLASS VEGETABLES Celebrated for quality and productiveness. Awarded the ROYAL HORTICULTURAL SOCIETY'S and ROYAL AGRICULTURAL SOCIETY'S GOLD MEDALS (Highest Honour) in 1916. For the finest strains of Vegetable and Flower Seeds, Potatoes, Lawn Seeds, Fertilisers, etc. See WEBBS' GARDEN CATALOGUE for 1917, post free on request. WEBB & SONS, LTD., The King's Seedsmen, Stourbridge.

BATH'S SELECT SEEDS. New Illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application (Dept. A), R. H. BATH, LTD., The Floral Farms, Walsch.

PEEDS' SEEDS.

PEEDS' SEEDS FOR RICH CROPS. You want exceptional results from your garden this year. Write for our 1917 Seed List. We can give you the record crops you want.

JOHN PEED & SON, The King's Seedsmen and Nurserymen, WEST NORWOOD.

DICKSON'S HORTICULTURAL MANURE and other high class Fertilisers, also Dickson's Improved Mushroom Spawn—Fruited circulars free on application to DICKSON'S, Royal Seed Warehouses and Nurseries, Chester.

LAXTON'S SEEDS AND FRUIT TREES—See Catalogues of the above now issued gratis. Grand New Early Pea, Laxton's Superb, &c., Fruit Trees. A fine stock to offer may still be safely planned. Pamphlet on Cultivation on receipt of stamped envelope.—LAXTON BROTHERS, Nurserymen, Bedford.

SANDER AND SONS, Orchid Growers, St. Albans.

GREENHOUSE PAINTING & GLAZING—"Vitrolite," superior to White Lead Paint, 15s. per gallon. "Plasone" superdurable putty, 18s. per cwt.—John Waterer, Sons & Crisp, Ltd., Grove Works, Battersea. Agents throughout the country.

FIDLER'S NEW ILLUSTRATED CATALOGUE OF CHOICE GARDEN SEEDS will be sent post free to any address on receipt of postcard. Write at once for a copy. It may help you to save 50 per cent. on your seed bill this season.—FIDLER & SONS, Royal Berkshire Seed Stores, Reading.

WATERER'S ROSES & FRUIT TREES. Grand stocks of the best varieties. Lists free. JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Twyford, Berks.

SECURE YOUR SUPPLIES OF THE FOLLOWING BEFORE STOCKS ARE EXHAUSTED. ORDER AT ONCE

SUTTON'S EARLY GIANT PEA—A popular first early variety, per pint 1s. 9d.
SUTTON'S EXHIBITION LONGPOD BROAD BEAN—Pods of six foot long, length, per pint 1s. 9d.
SUTTON'S MASTERPIECE DWARF BEAN—A first class early variety, per pint 2s. 6d.

SUTTON & SONS, The King's Seedsmen, READING.

WELLS' Catalogue of Chrysanthemums and Perennial Carnations now ready, post free on application. W. WELLS & CO., Merchants, Surrey.

DOBIE & CO., ROYAL SEEDSMEN, EDINBURGH, will send a copy of their 1917 Catalogue and Guide to Gardening, 160 pages, only 150 illustrations, free, if this paper is mentioned.

BARR'S SEED GUIDE, now ready. Free. Vegetables and Flower Seeds of finest selected strains and Tested Growth at moderate prices. BARR & SONS, King Street, Covent Garden, London.

JAMES GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineer, Danvers Street, Chelsea, London, S.W. Wire, 201, Western, London, Telephone 201 Western.

JOHN McKEICHAN has posted his Illustrated Seed Catalogue for 1917 to all customers. Another copy will be forwarded to any who have not received their copy. 35, Goshawk Road, Upper Holloway, London, N.

100,000 LARGE GARDEN FERNS. 20, 100, Palm, B. centas, Crotons, Dracaenas, Roses, Eucalys, Gloxinias, Lilies, Hydrangeas, &c., catalogues free. J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

200 CAMELLIAS in variety, 2s. to 3ft., bushy and bushy, 10s. each; 250 large *Dracaena polytricha*, 4ft. to 5ft., each. SMITH, Fernery, Loughborough Junction, London, S.W.

BERBERIS DARWINI and **STENO-PHYLLA** (new Daisy Hill hybrids). A complete collection of these, including many dwarf and compact growers, suitable for the Rock Garden, will be found in my Tree and Shrub Catalogue. Free on application.—T. SMITH, Daisy Hill Nursery, Newry.

ORCHIS FOLIOSA, "The Madira Orchid." The finest form of this beautiful Orchid, grows 18-20 inches high, with 6-8 inch solid spikes of rose-purple flowers. Strong roots, 2s. 6d. each, 27s. 6d. per dozen. T. SMITH, Daisy Hill Nursery, Newry.

FRUIT TREES, true to name, my speciality. Trained trees, in self-growing, cultivated specimens, with Blarney, rods, Gordon Pear, Grape Vines, Orange Trees, Fig Trees, in pots, for fruiting. Catalogues.—WILL TAYLER, Hampton, Middlesex.

ROCK GARDEN PLANTS, where and in what soils to plant them, with Catalogue, free on application. Special selections, 12, 3s. 6d.; 25, 6s. 6d.; 50, 12s. 6d.; 100, 25s. All different, named, strong stock.—G. R. PHIPPS, Alpine Nursery, Barnham, Bognor.

For Advertisement Charges see page iii.

WM. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham. Conservatories, Winter Gardens, Amicras, Coach houses, Portable Buildings, &c. Catalogues gratis.

GOVERNMENT LAND SCHEME. Kelway's grow Vegetable Seeds of all kinds on the largest possible scale, which are, however, only supplied to seedsmen; we shall be glad to recommend seedsmen to any private person or organisation requiring the finest selections under the above scheme. Land and labour are too valuable at present to waste on inferior stocks. Enquiries will receive prompt attention.

RELWAY & SON, Wholesale Seed Growers, Langport.

NEW PHLOXES.

A GRAND STOCK of these Brilliant Flowers in all shades, now ready for delivery.—For lists, with full particulars, apply GUNN & SONS, Old, Warwickshire.

WATERER'S GOLD MEDAL RHODODENDRONS. We cordially invite you to come and select any plants you require. We have over 60 names, comprising the finest collection in cultivation. Catalogue free.—JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Bagshot, Surrey.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes, about 1lb., 3lb., and 12lb., by Dealers in Garden Sundries. Wholesale: PRICES' PATENT CANDLE CO., LTD., Battersea, London, S.W.

20,000 GOOSEBERRY and CURRANT TREES, 2 and 3 years, Windham Industry, Crown Bob, Early Kent, Berry Early, May Duke, 4s. dozen, 15s. 100; Favs' Profile Red Currant, 3s. dozen, 16s. 100; Boskop Giant Black Currant, 3s. dozen, 10s. 100; Apple Trees, Plums, and Pears, 12s. dozen. List free.—W. HORNE & SONS, Cliffe, near Rochester, Kent.

ENGLISH YEW The cleanest and best headlight lot in England; every plant a perfect specimen and splendidly rooted. 2ft. to 2 1/2ft., 60s. per 100; 2 1/2ft. to 3ft., 90s. per 100; 3ft. to 3 1/2ft., 120s. per 100; 3 1/2ft. to 4ft., 150s. per 100; 4ft. to 4 1/2ft., 24s. per doz.; 5ft., 30s. per doz.—HINTON BROS., LTD., The Warwick Nurseries, Warwick.

FOR SALE, 12 pots *Encharis Amazonica*, good flowering; 18 pots *Panicum fragrans*; 16 pots *Anthurium*, various; 21 pots *Maidenhair*, and *Nephrrolepis*. Ferns, low pots various. Stone Plants and *Joe Paines*, 6 pots. 144 Standard *Hydrangeas*, 4 feet high, various Greenhouse and Bedding Plants. Reasonable offer accepted; inspection any time.—Old Mill House, Cowley, Oxford.

ORCHID PEAT, 5s. and 7s. 6d. per sack; Brown Peat, 10s. 6d. per yard in trucks; in bags 2s. each, 24s. dozen; Oak and Beech Leaf Mould, Yellow Loam, Staked and Fresh Cut, Silver Sand; 4-ton lots for 45s.; C.N. Fibre, 18s. dozen bags; 16s. free.—J. HANDSCOMBE, F.R.H.S., Feltham, Middlesex.

GENTIANE OLD YORK STONE PAVING for Rose Walks, Terraces, Lily Ponds, &c.; rectangular or crazy; delivered in large or small quantities. H. BLOOM, Quarry Owner, 40, Valley Road, Streatham, S.W.

SALES BY AUCTION.**WEDNESDAY NEXT.**

Consignments of thousands of Spring Flowering and other Bulbs, Choice Hardy Herbaceous Plants, Rock Plants, Rhododendrons, Border Carnations, Fruit Trees, Roses, &c., &c.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

On Wednesday, January 24th, at 12 o'clock.

On view morning of sale and catalogues had.

SPECIAL TRADE SALE.

Wednesday next, at 2 o'clock.

Large quantities of Narcissus of sorts, late-flowering Tulips, early-flowering Gladioli, and other spring-flowering Bulbs, followed at 3 o'clock by

Several hundred cases of Japanese Lilies.

Comprising

Lilium Longiflorum Giganteum, Lilium Speciosum Album, Lilium Speciosum Rubrum, Lilium Speciosum Rubrum Magnificum, Lilium Henryi, Lilium Tigrinum fl. plenum, L. auratum and L. auratum rubro vitatum.

On view morning of sale and catalogues had.

IN PRIZE.

To be sold by Public Auction by Order and for Account of the Marshal of the Admiralty by

MESSRS. PROTHEROE & MORRIS at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

On Wednesday, January 24th, 1917, at 3 o'clock.

250 CASES LILY-OF-THE-VALLEY,

ex ss. "Ada."

Samples seen are in splendid condition. The goods will be sold subject to Government restrictions as to export. Catalogues and further particulars on application to the Auctioneers as above.

ROSES.

THURSDAY NEXT.

MESSRS. PROTHEROE & MORRIS will sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on Thursday, January 25th and every succeeding Thursday at 1 o'clock, consignments of well-grown ROSES, especially lotted to suit all buyers.

On view morning of sale and catalogues had.

FRIDAY NEXT.

Established Orchids for cool, intermediate and hot houses, comprising a selection of *Apocynums*, also choice Hybrid *Laelias* and *Laelia* Catalogues from the collection of Mrs. John Holland, of Wotton, Bampton, Devon, and other sources, also Orchids in flower and bud.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

On Friday, January 26th, at 1 o'clock.

On view morning of sale and catalogues had.

BUSINESSES TO LET.

NURSERY TO LET; commanding position; five minutes from rail and trams; 330ft. Glass; 14 acres land, house, &c.—MILES, Royal Hotel, Sheerness.

BUSINESSES FOR SALE.

LONDON, N. Market Nursery, near Station, to be let; 11 Greenhouses; total length 710 feet; all well heated; rent £52; no stock; immediate possession.—Particulars of PROTHEROE & MORRIS, 67, Cheapside, E.C.

NURSERY FOR SALE; leasehold; low rental. 8 acres, southern aspect, 3 large Glass-houses and Bungalow.—Write, R. Box 241, c/o 97, Tresham Street, E.C.

OFFERS wanted for Jobbing connection, small nursery, stock and tools; low price, owner having to join up.—BEARMAN, 64, Perry Hill, Catford.

NOTICE.

PURSUANT to a Judgment of the Chancery Division of the High Court of Justice made by the Master of the Estate of William Henry Frettingham deceased and in an Action of Parr against Frettingham 1916 F. 1073, the Creditors of William Henry Frettingham late of Beeston, Nottingham, Nursery Gardener who died on the 1st day of March 1915 are on or before the 23rd day of February, 1917, to send by post prepaid to Mr. George Parr of Bank Chambers, Beestonmarket Hill, Nottingham, Solicitor a member of the firm of Messrs. Parr and Butlin of the same place Solicitor for the Plaintiffs their Christian and Surnames, addresses and descriptions the full particulars of their claims a statement of their accounts and the nature of the securities (if any) held by them or in default thereof they will be peremptorily excluded from the benefit of the said Judgment.

Every Creditor holding any security is to produce the same before Mr. Justice Younger at his Chambers Room No. 315 Royal Courts of Justice, Strand London on Wednesday the 7th day of March 1917 at 12.30 o'clock in the afternoon being the time appointed for adjudicating on the claims.

Dated this 15th day of January, 1917.

FIELD, ROSCOE AND CO.,

36, Lincoln's Inn Fields,

London, W.C.

Agents for Parr and Butlin, Nottingham.

Solicitors for the Plaintiffs.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, all plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

PLANTS, &c., FOR SALE.

FERNS, FEINS'—Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogues free.—J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

THE UNIVERSITY OF LEEDS
DEPARTMENT OF AGRICULTURE.

APPLICATIONS are invited for the position of additional INSTRUCTOR IN HORTICULTURE. Salary, £150 a year.—Applications will be received up to January 24, 1917, and should be addressed to THE SECRETARY, The University, Leeds, from whom further particulars may be obtained.

GARDENER Wanted (HEAD); good all-round man, not afraid of work, trustworthy and obliging; 4 to 6 kept; good wages and cottage; Herts.—Write, stating age, wages, and full particulars of last 10 years' service, S. L. c/o J. W. Vickers & Co., Ltd., 5, Nicholas Lane, E.C.

WANTED, HEAD GARDENER, for country gentleman's out; good references; essential—State experience, age, if single or married, and family, and wages (good cottage found), by letter to "GARDEN," c/o Goulds, 54, New Oxford Street, W.C.

WANTED, thoroughly experienced, active, energetic HEAD GARDENER, capable of keeping up a good supply of Fruit, Flowers and Vegetables (Chrysanthemums and Carnations a speciality); able to undertake charge of small electric light installation; good wages to a suitable man.—For further particulars write to D. E. Box 20, 41, Wellington Street, Covent Garden, W.C.

WANTED, HEAD GARDENER of 2, for duration of the war.—MISS CLARKE, 4, West Side, Wimbledon Common.

WANTED (end of January), WORKING HEAD GARDENER, thoroughly experienced in all branches, inside and out.—Apply, THOS. E. LEWIS-BOWEN, Clyffew, Boncath, Pembrokeshire.

WANTED, for Cheshire, from the middle of February, good all-round WORKING HEAD GARDENER; must be a married man and over military age; good cottage and coal supplied.—Reply, stating wages, to BOULE, SON & MAPLES, 5, Cook Street, Liverpool.

WANTED, experienced HEAD WORKING GARDENER for permanent position, starting early February; preference to one with son or wife able to act as Second, also look after Poultry and Pigs.—Write experience, age, family, wages, with copies of testimonials (house, coal and vegetables free), PRESCOCK, Highlands, Wellingham.

WANTED, for Kent, early February, good all-round WORKING HEAD GARDENER (ineligible); usually 2 and boy kept; cottage supplied; knowledge of Poultry required.—Write, stating experience, age, and wages, to A. E. N., 6, Egerton Terrace, S.W.

WANTED, a MAN to take charge of Vineries and Peach-houses; wages 25s. per week and Bathy.—Apply, C. ALLEN, Estate Office, Worth Park, Crawley, Sussex.

WANTED, good all-round SINGLE-HANDED GARDENER, ineligible; used to gentleman's place, 30s. and rooms.—Letters, WILLEY, 16, Uxbridge Road, Ealing.

WANTED, GARDENER (SINGLE-HANDED) for Manchester district; good all-round man, competent to take charge of Greenhouse collection; state full particulars of experience and wages required. W. Z., Box 15, 41, Wellington Street, Covent Garden, W.C.

WANTED, SINGLE-HANDED GARDENER (ineligible) for small Garden, with practical experience Inside and Out, and willing to make himself useful; good wages given.—Apply by letter, or in person, MRS. K., "Middlebeath," West Heath Road, Hampstead, N.W.

WANTED, competent SINGLE HANDED GARDENER of electricity preferred.—MRS. HYLTON FOSTER, Foxbury, Box Hill, West Dorset.

WANTED, good SINGLE-HANDED GARDENER, regular help given; experienced in all branches—particularly Orchids, Chrysanthemums, and Carnations; cottage, coal, &c. ineligible.—Write particulars, stating wages required, experience, and copies of reference to S. SAMFSON, Prospect House, near Alfrton, Derbyshire.

WANTED, for London suburb, a good all-round SINGLE-HANDED GARDENER; Vines, &c., wages 35s. to 40s. weekly.—Write, S. Box 17, 41, Wellington Street, Covent Garden, W.C.

WANTED, SINGLE-HANDED GARDENER; permanency. Flower and Kitchen Garden, Wall Fruit and orchard, no Glass; small cottage in garden, a new flat possible; second might be suitable if he thoroughly understands Fruit Tree Pruning and Vegetable cultivation.—Apply, CHARLES SOKRES, Herndon, Basingstoke.

WANTED, GARDENER (SINGLE-HANDED); 3 acre, no Glass; also to take out invalid in bath-chair.—State terms and references to STUYVEL, Estcourt, New Malden, Surrey.

GARDENER wanted, ineligible (SINGLE-HANDED); Flower and Kitchen Garden and Greenhouse, 25s. and a cottage.—Write, MRS. BRD., "Glenora," Cookham, Berks.

WANTED, GARDENER, ineligible; Vegetables, Lawns, Hardy Fruit; must have knowledge of Vines and Peaches; cottage found.—Apply, stating wages, &c., to LADY FEAT, Wykeham Rise, Totteridge, Herts.

WANTED, all-round GARDENER, for private institution.—Apply, stating age, and wages required, to MEDICAL SUPERINTENDENT, Northumberland House, Green Lanes, Finsbury Park, N.

WANTED, at once, GARDENER, over military age; thoroughly experienced in all branches; Greenhouses, no Vineries.—MRS. BOSANQUET, "Clanville," Muchehead, Somerset.

WANTED, GARDENER, for General Outside Work; good wages and Bathy; if married, cottage, &c.—Apply, with reference, and wages expected, to WM. BACK, Brogrynta Gardens, Oswestry.

WANTED, immediately for a gentleman's residence, a WORKING GARDENER, help given; must be ineligible for the Army or over military age; cottage found.—Apply, stating wages required, to MR. MAIRICE PRIDE, Estate Agent, Tetbury, Gloucestershire.

WANTED, reliable WORKING GARDENER; owner much away overlooking salt water estuary; some Vines and Peaches; good wages, cottage, and firewood.—Reference, age, family, to F. PARRY, Penquite, Par, Cornwall.

WANTED, good WORKING GARDENER; must thoroughly understand Vegetables and Flowers; state age and wages.—Apply, Wheatleaf Hotel, Virginia Water.

WANTED, GARDENER, for St. Albans; man or woman, thoroughly understanding Fruit, Vegetables and Flowers; cottage in garden.—Write, W. B. Box 36, c/o Willing's, 33, Knightsbridge, S.W.

WANTED, good KITCHEN GARDENER; must have good experience; wife to cook and attend to Bothy; combined wages £2 per week; good house near garden.—Apply, J. S. KELLY, Claremont, Esher.

WANTED, immediately, UNDER GARDENER at Rydal Hall, Ambleside; no Bothy.—Apply, stating age, experience, and wages required, to CLAUDE BARTON, Ingleborough Estate Office, Clapham, Yorks.

WANTED, a strong, active Young Man (single) as UNDER GARDENER, no Glass or Bothy, highly for Vegetable Gardens and Pleasure Grounds; wages 25s. per week. Apply with full particulars, references, &c., to MR. WILCOCK, Gardener to Lt. Col. Fife, The Gardens, Aldbrough Hill, Bors-Bridge, York.

WANTED, HEAD LADY GARDENER, for large Gardens of temporary military hospital in Kent, experienced, to take charge. 2 Under Gardeners (men) kept; 30s. a week and furnished cottage.—Write, L. B., Box 7, 41, Wellington Street, Covent Garden, W.C.

WANTED, experienced LADY GARDENER for Ireland; good salary, beautiful country.—Apply, E. 50, Borehamster Terrace, London.

WANTED, LADY GARDENER, to share house with another and work under Head Gardener, and also to take charge of Pottery, experienced. Please reply, stating experience and salary, to MRS. HART DYKE, Great Nact, Hyde, Hatfield, Herts.

WANTED, temporarily, for 3 months, fully trained LADY GARDENER, work under Head Lady; outside work only.—GREENE, The Hall, Berkhamsted.

WANTED, immediately, Two WOMEN GARDENERS, chiefly for Plants, furnished cottage, private roads and vegetables.—Particulars to MR. TURNER, Danbury Park gardens, Welwyn, Herts.

WANTED, Two WOMEN GARDENERS under Head, some experience Inside and Out. Apply, stating wages and particulars, to HEAD GARDENER, Earham, Chichester.

WANTED, Two LADY UNDER GARDENERS for Inside and Outside work, some experience necessary, Bothy, vegetables and attendance. Apply, stating full particulars of experience, wages required, &c., to W. WILCOCKS, Langley Park Gardens, Slough.

WANTED, Two WOMEN GARDENERS (EXPER.) for general work, some experience cottage and coal. Apply, with full particulars stating wages required, to MRS. CHAMRD, 69, Grosvenor Street, London, W.

WANTED, FEMALE UNDER GARDENER for Pleasure Grounds and take turn Sundays and week evenings, in charge of Glass-houses and fire, wages 15s. per week, light, coal, &c.; when in charge of House, 5s. extra, overtime 6d. per hour; Saturdays 1 o'clock, 7 in Bothy. Full particulars to H. R. WHITEHEAD, Hever Castle Gardens, Hever, Kent.

WANTED, for a Nobleman's Establishment, a First-class FOREMAN (eligible for the Army), wages 30s. per week, Bothy. Apply to GLEESON & CO., 41, High Street, Watford, Herts.

WANTED, FOREMAN, for Houses; good wages and house for suitable man.—CHAS. B. ELLIOTT, Blyth Hall, Rotherham.

WANTED, FOREMAN, JOURNEYMAN and a good IMPROVER for the House, also a good man to take the lead Outside; good wages and Bothy (or cottage to married men). Apply, H. FISHER, Rutchurch Court Gardens, Hereford.

WANTED, UNDER FOREMAN and Indoor Fruit and Plants. Wife carrying references and wages required, to F. H., Box 18, 41, Wellington Street, Covent Garden, W.C.

SITUATIONS VACANT continued on page vii.

ORDER OUR CELEBRATED

FORCING ROOTS

Seakale, Asparagus, Mint, Rhubarb, etc.
Also Fruit Bushes.

Write for Illustrated Catalogue, containing PRACTICAL NOTES ON GROWING AND FORCING.

ESTABLISHED 1857.

MANN & SONS,

Whitton Road, Twickenham.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

	£	s	d
Ordinary Positions per page	10	10	0
Facing matter and Back Page	12	12	0
Half and quarter pages, column and half column spaces, pro rata.			
4 line space not exceeding 20 words	3	0	0
Per inch, single column	7	0	0
Per inch, across 2 columns	14	0	0
Per inch, across 3 columns	1	1	0

Front page (no display allowed) 1s. per line space, [Headline counted as two lines.]

For discounts apply to address below.

SITUATIONS WANTED.

26 words, 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM	15	per annum.
ABROAD	17 6	"

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET,
COVENT GARDEN, LONDON, W.C.

Telegrams: 1543 "GARDENERS," RAND. DON.
Telephone: 1543 GERRARD, Lon.

SEEDS FOR 1917.

It is none too early for garden-lovers to think of seeds, but be sure the seeds you buy are seeds of quality. It is a gardening axiom that

RYDERS SEEDS

are the best, and despite the fact of a War Time price of 13d. per packet, orders for these famous Flower and Vegetable seeds are daily growing in volume. Seeds of quality cannot now be supplied, even by Ryders, in Penny Packets.

Ryders Illustrated Seed Catalogue Free.

Ryders 1917 Catalogue contains a large number of choice varieties not found in other lists.

- Novelties for 1917 include the New Pierce Sweet Peas (Pink, Pale Blue and Violet).
- A wonderful new strain of Hybrid Cinerarias. The "Asterum" in four lovely colours.
- New Cyclamen, Mauve Queen.
- New hybrids of Trollius.
- "Britain's Best" Tomato. The finest Tomato ever introduced.

- Ryders New Snow-tail Scarlet Radish, remarkable new Three-pedded Pea "Thousandfold."
- A splendid New Oval-shaped Beet.

Send a post card today for your free copy of Ryders Catalogue. Remember the one and only address and beware of imitators, no agents.

RYDER & SONS, Ltd., Seed Specialists, ST. ALBANS.

Grow Your Own Food by Sowing Ryders Famous Vegetable Seeds.

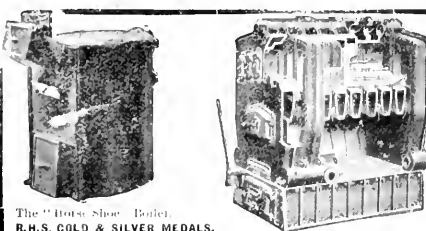
RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges,
AND
Orchard House Trees.

A LARGE AND SELECT STOCK
ALWAYS ON VIEW.

ILLUSTRATED AND
DESCRIPTIVE CATALOGUE
POST FREE.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.



The "Horse Shoe" Boiler.
R.H.S. GOLD & SILVER MEDALS.

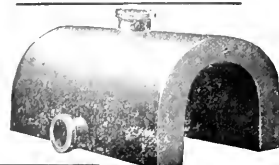
List of Post Free. Phone: 1100372.

C. P. KINNELL & CO., LD.,
65a, SOUTHWARK ST., LONDON, S.E.,
(Close to Hop Exchange.)

BOILERS.

For House and Greenhouse. . .
Sectional, Saddle and other Patterns . .
for Replacement, &c. . .

FROM STOCK.





THE
Gardeners' Chronicle

No. 1560. — SATURDAY, JANUARY 20, 1917.

CONTENTS.

Agricultural implements for France ..	27	Potato prices ..	26
American blight ..	27	Potato harvests of, in ..	26
<i>Azela Banksii</i> ..	27	Germany ..	27
Catalogues, old seed and ..	22	Rutheben Camp Horti- ..	29
Chelsea and Holland ..	29	cultural Society ..	29
House shows abandoned ..	26	Scotland, vegetable- ..	27
Crops, the world's ..	26	growing in ..	27
Farm crops, condition of ..	27	Seeds Government distri- ..	25
Leaf glands of Peaches ..	28	bution of, in America ..	25
and Sectaries ..	28	Societies ..	25
Market fruit garden, the ..	22	National Italia ..	31
Novelties of 1916 ..	24	National Rose ..	31
Obituary ..	32	Royal Horticultural ..	30
Houlston, William ..	32	Southampton .. Royal ..	31
Kirkpatrick, Robert ..	32	Horticultural ..	31
Olearia Gunniana and ..	25	United Horticultural ..	31
its allies ..	25	Benefit and Prov. ..	31
Orchid notes and glean- ..	22	Spring flowers, related ..	29
ings ..	22	Teaching ..	28
Peas under glass ..	32	Vanilla, varieties of ..	26
Pigs ..	27	Vegetables ..	28
Physiological work, a rare ..	30	Waste land, cultivation ..	26
Potato culture in the ..	21	of, seventy years ago ..	26
eighteenth century ..	21	Week's work, the ..	24, 25

ILLUSTRATIONS.

<i>Azela Banksii</i> ..	22
<i>Odontola Gratiariae</i> Brydii variety ..	22
Rutheben Camp Horticultural Society's rules ..	29
Vanilla plantifolia, fruits of ..	23

POTATO CULTURE IN EIGHTEENTH AND TWENTIETH CENTURIES.

THE daily newspapers are printing every day letters and articles on agriculture and horticulture, and the majority would be far better consigned to the wastepaper basket. It is sheer madness to suggest, as many of these writers do, that all that is required to be done is to dig up a lawn and plant Potatos or vegetables and Hey, presto! there will be a wonderful crop. I hope the Editors will reprint some remarks which I have taken from an old treatise on Potato growing. It shows clearly, and conveys a lesson, much needed to-day, that results can only be achieved, and may I add they only deserve to be achieved, as a result of thorough, understanding work.

I fear our new Food Dictator has made a most unfortunate start in his attempt to handle the Potato problem. Very many gardeners, as well as farmers, are interested in this crop as they have often to cultivate large areas outside their gardens. Will the prospect of £5 15s. per ton induce them to go heartily into the business of Potato growing? Never under present conditions. I know what we have to pay in the Lothians to get Potatos grown. Never less than £15 per acre to the farmer and we have to provide the seed and artificial manure. Now seed Potatos this year are worth to the farmer £12 to £15 per ton. Just figure

out £15 for land, labour, manure, straw and dressing, £5 for artificial manure, £15 for seed makes a total of £35. This means that the grower would require to get a crop of nearly seven tons of "first quality in sound marketable condition," to use the Food Controller's own words, before he would be able to meet his outlays. To obtain this a gross crop of something approaching ten tons per acre would have to be grown! Where is the inducement to embark on Potato growing! Where is the encouragement to the farmer to put down more land to Potatos! I fail to see it.

It is pleasanter to turn to the old treatise I refer to at the beginning.

"Hints for encouraging a more extensive and beneficial culture of that most useful of all roots, The Potato," is the title of an 8-page pamphlet. It is the report of a lecture delivered to the Right Honourable the Dublin Society in February 1771 by John Blackhall, Gent., of the County of Armagh. There is an introduction of 2 pages and two plans occupying one page.

In the introduction the writer hits out strongly against the lazy-bed system as follows: "But as is now well known, that the cultivation of Potatos in the Old, Irish, Lazy-bed way is so very slovenly and imperfect that it doth not yield above one-fourth Part of the Crop, which the Land under a spirited and rational Culture would produce; it is therefore most humbly recommended to this truly patriotic Society, to encourage the Culture of Potatos, upon the new and most improved Norfolk Plan, by the Dibble and Hand-hoe by the distribution of Premiums to each county."

What is termed the Norfolk Plan is a most thorough one and reminds one of the method practised by the growers in South Cornwall, who plant Potatos in finely prepared ground in February and raise good crops in June. Let me quote.

"To prepare the Land for the reception of Potatos in this way, the best and most effectual Method, would, no doubt, be trench digging, but that would be far too expensive and tedious upon a large Scale, plain digging also would be very beneficial, but attended with too much Expence to be adopted into general Use; the Method therefore, which from my own Experience, I would recommend to the Publick, would be as follows: In the Month of October draw out your Manure (the shorter and older the better) and spread it lightly, and as equally as possible on the whole surface of the ground intended for Potatos, and immediately Plough it in, as deep as you can, leaving it in high Fallows for the Winter; early in February, as soon as the Weather will permit, stir it again cross ways, as deep as before, and let lye for ten Days or a Fortnight, to catch the little Frosts, that are not then uncommon, then stir it a third Time from Angle to Angle (and if time will permit give it a fourth ploughing from the opposite Angles), between each of these Stirrings you are to Harrow it as level as possible with a

good, heavy, Two-horse-harrow; after this Plough it Lengthwise into broad Lands or Beds Sixteen Feet wide, observing to shape them in such a Direction as that the Water may have a fall by the Furrows, so as to drain off any superfluous Moisture; after this last Operation you are not to Harrow it because while the Land lies thus high and loose the Dibble will perforate with much more ease and expedition than when it has acquired a certain degree of Solidity from the treading of the Horse and Weight of the Harrows. Your Ground now being prepared get ready your Dibles." (Long dibles about 3 feet long with a foot-rest for purchase, such as are used to-day by allotment holders in the Eastern Counties of England.) By the use of these dibles the sets were planted in lines across the sixteen feet wide beds. Let me quote again. "If the Land hath been truly ploughed and not slovened over as is too frequently the Case, each Dibble being followed by a Boy to drop in the Sets as fast as Holes are made; so soon as the Lands or Beds are filled, give them a good Harrowing up and down to cover the Sets well; Eight Dibblers will in this Manner set with great Ease an Irish Acre in one Day. Nothing more is required 'till your Plants are all fairly above Ground than set in your Hoers, and see that they Hoe it deep and all equally alike so as to let the Ground lie as hollow and loose as possible. Every sort of Weed turned up by the Hoers should be carefully picked up by Boys following them, and cast off into the Furrows, and they should at the same Time be directed to cast off also the Stones, as by their gravity they condense and consolidate the Earth and prevent the Plant in a great measure from extending and spreading its tender Roots. If the Ground has been effectually ploughed so that the Sets had penetrated to a sufficient depth there will be no Occasion to draw up any mould to the Plants, otherwise a little Earthing may be useful. . . . The second Hoeting will give much Vigour to your Plants that by the luxuriance of their Branches they will keep down all fresh growth of Weeds and leave your Land as clean as an Hot-bed." Result: "Forty forkmen will be amply sufficient in one Day to dig and gather the Potatos of an Acre Plantation Measure and that Acre will be poor indeed, if you do not get Six Hundred Bushels from it, but it more probably will yield Seven, Eight or Nine Hundred Bushels. I have myself raised this year (1773) above Six Hundred Bushels (about 15 tons) from a bare English Acre, with this additional Advantage, there is no Part of it that would not grow Onions."

Such is a very condensed account of Mr. John Blackhall's methods, in the year 1773, in the County of Armagh.

We may smile at them, and at the quaint way of giving expression to them, and we may be certain he had no labour troubles such as we have at the present time, but nevertheless, there is certainly much food for thought in his written word. *W. Cathbertson, Duddingston.*

ORCHID NOTES AND GLEANINGS.

BRASSO-LAELIO-CATTELEYA RUMANIA.

A FLOWER of this remarkable large and beautiful new hybrid between *Brasso Cattleya Digbyi* and *Mossiae* var. *Queen Alexandra* and *Laelio Cattleya Canhamiana* alba is sent by Mr. Jas. Smith, Orchid-grower to the Duke of Marlborough, Blenheim Palace, Woodstock, where the Orchid collection has been prolific in pretty new hybrids during the past year. Both the parents are white forms, and the hybrid follows in that respect, the segments being pure white. The lip has a bright yellow disc, and at the base is a purple patch with yellow veining, which, with the outline of the front lobe, appears to be inherited from *C. Mossiae*. The long pedicel and ovary and the firm texture of the flower approach nearer to the primary parent *Brassavola Digbyana* than either of the parents. The flower is 9 inches across, and the lip well displayed and fringed at the margin. The plant is said to be in a 4-inch pot, and to produce such a flower in these circumstances augurs well for its future when grown into a large specimen.

vanilla, and are sometimes produced by plants in this country. Other species in cultivation are *V. Phalaenopsis*, *V. Pompona*, and *V. africana*. The plants are not difficult to cultivate, and may be grown in Palm houses, or trained along the roof of the warm Orchid houses, where the stems often attain a great length, rooting freely as they extend. The plants should be grown in a mixture of *Osmunda*-fibre, or peat, and *Sphagnum* moss, and a piece of bark may be used to give the plants a start. Throughout the growing period they need to be syringed freely, and the atmosphere kept fairly moist. During winter, when the roots cease to elongate, spraying should be discontinued, and the atmosphere kept drier. To secure seed-pods, the flowers should be pollinated, and until they are set, and the fruits swelling, no water should reach the upper part of the plant *B*.

ASTELIA BANKSII.

ASTELIA BANKSII (see fig. 9) is very rare in private establishments. The plant, which re-

able for table decoration, and the leathery character of the leaves should be resistant to the dry atmosphere of rooms. Mr. Dixon, the gardener, has been nursing the plant to its present size for some years. *J. P.*

THE MARKET FRUIT GARDEN.

MANY people in addition to myself rejoiced to see the end of the past year, which was a particularly unpleasant one during the greater part of its course. December, 1915, was one of the wettest on record (8.13 inches at my station), and we had the usual dismal weather in January, with rain on fourteen days, but not a great quantity—only 1.49 inch. February gave us rain on twenty-two days, amounting to 4.67 inches, with a good deal of snow in its last week. Rain fell on nineteen days in March, totalling 2.74 inches, and there was a regular blizzard on the 27th, with snow and frost to follow. April and May were the pleasantest months in the year, with more sunshine than we had in the first two summer months. Rain was measured on only twelve days in April and eleven in May, making 1.48 inch for the former month and 2.07 inches for the latter. June was an unseasonable month, with seventeen rainy days, contributing 2.65 inches. The nights were mostly very cold for the period of the year. The sky was overcast on most days in July; but there were only eight rain days, giving 0.85 inch—much less than any other month's total. The only spell of hot weather occurred in the last four days of July and the first three of August. In the latter month rain was measured on only nine days, the total fall being 1.63 inch. There was much cloudy weather in September, but only the moderate rainfall of 1.52 inch, measured on ten days. The weather of the rest of the year was generally allowable, rain being measured on twenty-one days in October, fourteen in November, and fourteen in December, while the totals were 5.47 inches, 4.88 inches, and 4.44 inches. The year's totals were 171 rain days and 33.90 inches of rain. The former total was equalled or exceeded only once in the fifteen previous years of my residence in my present place, namely, in 1903, when there were 181 rain days. The year's rainfall was exceeded in 1915, 36.50 inches; in 1909, 34.54 inches; and in 1903, 37.16 inches. My averages for sixteen years stand at 150 rain days and 29.86 inches. The fall has been annually above average for the last eight years in succession. I am longing for a period of sunny, warm, and comparatively dry years, and much more frost in the winters than we have had lately is desirable. Even drought is less harmful than flood in my district, as the former checks the fungous diseases of fruit trees which have been fostered to a disastrous extent by the last eight more or less wet years.

SHORTNESS OF LABOUR ON FRUIT FARMS.

SEVERAL results can hardly fail to be experienced in consequence of the shortness of labour in the orchards of this country. In many cases it will be impossible to do all the pruning that should be done, and fruit trees will suffer from the unavoidable neglect of this important work. Similarly, if the war lasts through the spring, the usual extent of what is called winter spraying will be impracticable. This is all the more to be regretted on account of the extraordinary development of moss on the trees, as the result of the prolonged period of very wet weather. Much of the usual digging, too, will necessarily be omitted. Half the members of my regular staff of men have been taken from me, and the extra hands for digging and spraying, usually available are lacking.

SEARCHING FOR APHIS EGGS.

Since my remarks on page 301 were written further searches for aphis eggs have been carried out in my orchards, with the help of a good lens; and, up to the time of writing, no eggs have

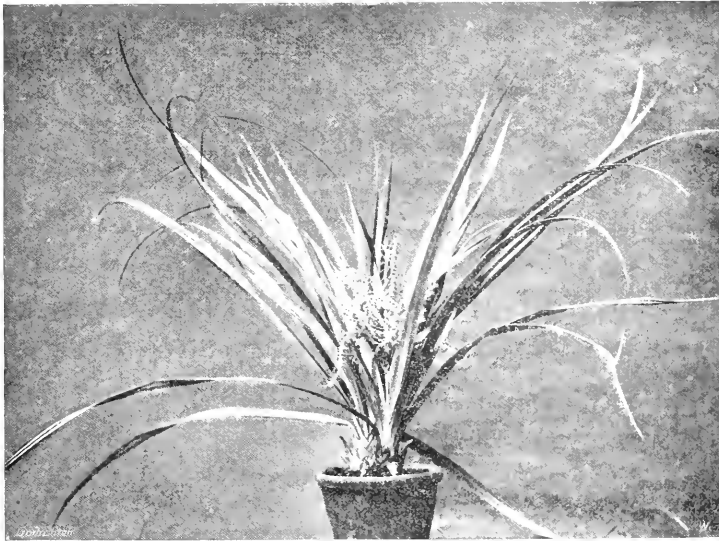


FIG. 9. *ASTELIA BANKSII* WITH MALE FLOWERS.

ODONTOGLOSSUM BRONLET

THIS new *Odontoglossum*, which was raised by C. J. Phillips, Esq., The Glebe, Oak Lane, Sevenoaks, between *Odontoglossum Nathanieli*, a richly colored hybrid of unrecorded parentage, bearing large, clear red flowers with white margins (see *Gard. Chron.*, August 31, 1912), and *Odontoglossum Jasperi*, was included in the list of hybrid Orchids published in these pages on December 23, page 500, as *Odontioda Bronletii*, and *Odi Jasperi* was given as one of the parents, instead of *Odontoglossum Jasperi*. The use of *O.* as an abbreviation, which might apply to either *Odontoglossum* or *Odontioda*, often leads to trouble in recording, and *Odm* and *Odi* for *Odontoglossum* and *Odontioda* respectively are much better. The seed from which *Odontoglossum Bronletii* was raised was sown on September 17, 1913, and the plant flowered on December 15, 1916. It is nearest to the finely colored *Odontoglossum Nathanieli*.

THE VANILLA IN HOT-HOUSES.

The fragrant, succulent fruits of *Vanilla planifolia* (see fig. 10) are the source of commercial

scabrous, rigid *Luzula*, belongs to the *Liliaceae*, and takes its place amongst native vegetation in New Zealand, much in the same way as *Luzula sylvatica* does in some parts of this country. It forms a great part of the undergrowth of wooded headlands along the sea coast of the northern half of the North Island, New Zealand, from sea level to an elevation of 2,500 feet. There the leaves vary in length from 2 feet to 6 feet, according to the fertility of the soil. It has flowered twice at Holland House, Kensington, namely, in November, 1915, and again in December last year. Grown in a pot, the leaves do not exceed 2½ feet, and, while densely arranged, assume a graceful, spreading or arching outline. The upper surface is dark green and shining, and the lower is covered with a thin silvery peltate. The illustration represents the middle form of the plant, bearing a large panicle of pale yellow flowers. The slender branches of the panicle are often flaccid owing to the shortness of the flower stem. The very short stem of the plant is triangular, but completely covered by the broad sheathing bases of the leaves. Young plants would be very suit-

been found except on the few trees of James Grieve Apples already mentioned. Many varieties of Apples have been examined, and two hours were spent in hunting for eggs on Monarch Plums (always the first to be infested) in two orchards, also with negative results. Mr. Blakey wishes to know if I have had forty years' training in searching for eggs. The reply, in House of Commons fashion, is "in the negative." But does he seriously contend that such plainly visible things as the black and shining eggs of the aphid cannot be found by anyone who has not had forty years' experience in looking for them? Could he not train in half an hour any intelligent person to search for these eggs? During the last two seasons two assistant pruners, young men with good eyesight, have been instructed to look out for aphid eggs, and they, like myself, have found the eggs in only extremely rare instances. Now, the existence of eggs on a tree or two among acres of trees does not account for the sudden and simultaneous aphid infestation frequently observed in my orchards, as the stem-mothers are wingless, and it is not in the slightest degree probable that they would walk long distances on the ground in order to ascend a tree far from the one on which they were hatched. More than once I have had a bad infestation of the Plum aphid a week after the trees had been examined carefully for eggs and stem-mothers, with entirely or nearly entirely negative results. This is a complete mystery to me, and I have no explanation to suggest. The only plausible explanation at present known is that an infestation arises from eggs laid on the trees, and yet I have had bad infestations on groups of trees upon which no eggs could be found in a careful and prolonged examination. In my recent searches multitudes of the tiny red eggs of the beetle mite, *Oribata lapidaria*, as well as great numbers of sucker eggs, were found on Apple trees, while the eggs of the red spider were seen to be extremely numerous on some Plum trees. Do not these facts prove that my failure to find aphid eggs on groups of trees usually attacked by that pest is not due to careless examination? *Southern Grower*.

This is a very distinct and constant species with oak-like leaves; its nearest ally is *O. stellulata*.

- 5. *Olearia stellulata*, DC., *Prodr.*, v. 272 (1836). Benth. *Fl. Austral.*, iii., 475, partly.
- Aster stellulata*, Labillard., *Fl. Nov. Holl.*, v., 50, t. 196 (1806); *Eurybia fulvula*, Cass., in *Diät. Soc. Nat.*, xvi., 47 (1820); *Diplostegium stellulatum*, Nees, *Gen. et Sp. Aster.*, 187 (1852).

Distrib.—New South Wales: alluvial woods near Port Macquarie; Backhouse, banks of the Hastings River, Fraser 214; Hunter's River, Herb. R. Brown, without definite locality; R. Brown 2008, 2011; Tasmania: shores of Macquarie Harbour, Cunningham 118 without precise locality; Bauer.

Leaves (> fig. 1) lance-ovate or linear-lanceolate, acutely acuminate, usually about 7.9 cm. long and 1.2 cm. broad, more or less rigidly but thinly chartaceous, coarsely repand-dentate, mostly somewhat shining and impressed reticulate on the upper surface, yellowish tomentose below; flower-heads either small in panicle-clusters at the ends of the branches, the peduncles slender and filiform.

Leaves and flower-heads almost exactly as in typical *O. Gunniana*, but the peduncles very short and leafy, and the heads somewhat hidden among the leaves.

- 6b. *Olearia Gunniana*, var. *philogoppappa*, Hutchinson, new var. comb.

Distrib.—Tasmania: Recherche Bay, Dec., 1838, Gunn 1144, Port Arthur, Oct., Hooker; Eagle Hawk Neck, Gunn 1152, "New Holland," Webb.

Aster philogoppappus, Labillard., *Nov. Holl.*, ii., 49, t. 195, A. (1806); *Eurybia openifolia*, Cass., in *Diät. Soc. Nat.*, xvi., 47 (1820); *O. philogotrichum*, Nees, *Gen. et Sp. Aster.*, 187 (1852); *O. philogoppappa*, DC., *Prodr.*, v., 272 (1836); *Eurybia Gunniana*, var. *philogoppappa* and *scabrifolia*, Hook. f., *Fl. Tasm.*, 176 (1890).

Leaves similar to those of the typical form, but broader and much more coarsely repand serrate; flower-heads and peduncles as in var. *brevipipes*.

In regard to the leaves, this variety approaches *O. stellulata*, but they and the peduncles are



FIG. 10. FRUIT OF *VANILLA PLANIFOLIA* (See p. 22)

OLEARIA GUNNIANA AND ITS ALLIES.

(Continued from p. 11)

SUMMARY.

- 3. *OLEARIA FLAVESCENS*, Hutchinson, new sp. *O. stellulata*, Benth., *Fl. Austral.*, iii., 475, partly. Distrib.—Mt. Barkly, 5,000 feet, Jan. F. Mueller. Leaves linear-oblong, obtuse, 2.5 cm. long, 1-1.5 cm. broad, green, and impressed reticulate above, glabrous, rather densely yellowish tomentose with stellate hairs below; flower-heads on long and rather stout peduncles arranged in leafless clusters. Closely allied to *O. Gunniana*, but with larger entire or subentire leaves, much stouter peduncles, and quite glabrous achenes.
- 4. *Olearia quercifolia*, DC., *Prodr.*, v., 272 (1836); *Aster quercifolius*, Sieber, ex Benth., *Fl. Austral.*, iii., 475, name only (1836); *Olearia stellulata*, var. *quercifolia*, Benth., *l.c.*, 473, partly. Distrib.—New South Wales. Blue Mts., Sieber 340 (type); boggy situations within the influence of the mist rising from the Campbell Cataract, Blue Mts., Cunningham 4, Pitt's Amphitheatre, Fraser; Australian Alps, F. Mueller. *Olearia flavescens*, Hutchinson, sp. nov., frutic., ramis bignoniis subterribus, minute tomentellis, foliis oblongo-linearibus, utrinque obtusis vel basi subacutis, 2.5 cm. longis, 1.1-1.3 cm. latis, rigide chartaceo-integris vel minus et remote denticulatis, supra glabris, siccis viridatis et aetate impresso-reticulatis, infra pilis stellatis dense flavo-tomentellis, costa supra impressa, infra valde prominente; nervis laterales infra breviter conspicuis, petioli 4.5 mm. longis; capitula longe pedunculata in corymbosis subsilencibus disposita, pedunculis usque ad 3 cm. longis, foliatis tomentosis, involucris bracteae 3-seriatis, linearis, extra parvo tomentellae; achenia glabra.

- Olearia Gunniana*, Hausskn., *Bot. Mag.*, t. 4658 (1852). *Eurybia Gunniana*, DC., *Fl. Atl.*, v., 263 (1836); Hook. f., *Fl. Tasm.*, 175, incl. var. *longipes*, Hook. f. (1860); *Olearia stellulata*, Benth., *Fl. Austral.*, iii., 475, partly (1836). Distrib.—Tasmania: Clifton Surrey Hill, Feb. 1837, Gunn 180; North Esk, Penzance, Nov., 1843, Gunn 26; Furness Garden, Nov. 1843, Gunn 26; without definite locality, R. Brown 2013. Flowering branchlets often corymbose; leaves more or less linear-oblong, the majority 1.5-3 cm. long, about 0.5 cm. broad, distinctly repand dentate or undulate-dentate, glabrous or nearly so and petiolate above, greyish-tomentose below. Flower-heads more or less corymbose on very slender leafless peduncles 2.5 cm. long, well overtopping the leaves; achenes, as also in all the following varieties, pubescent.
- 6a. *Olearia Gunniana*, var. *brevipes*, Hutchinson, new var. comb. *Eurybia Gunniana*, var. *brevipes*, Hook. f., *Fl. Tasm.*, 176, t. XIV, A. Distrib.—Numerous localities in Tasmania.

- much shorter than in that species; in some respects it is almost intermediate.
- 6b. *Olearia Gunniana*, var. *microcephala*, Hutchinson, new var. comb. *Eurybia Gunniana*, var. *microcephala*, Hook. f., *Fl. Tasm.*, 176. Distrib.—Tasmania: Eagle Hawk Neck, Oct., Hooker. Leaves as in typical *O. Gunniana*; peduncles as in var. *brevipes*, but flower-heads very small, only about 1 cm. in diameter when spread out.
- 6c. *Olearia Gunniana*, var. *angustifolia*, Hutchinson, new var. comb. *Eurybia Gunniana*, var. *angustifolia*, Hook. f., *Fl. Tasm.*, 176, t. XIV, B. Distrib.—Tasmania: Risdon, near Hobart, Oct., 1840, Gunn 1136. Leaves linear, 1.5-2.5 cm. long, 5 mm. broad or less, obtuse, entire or obscurely undulate; peduncles rather short, leafy to the apex as in var. *brevipes*.
- 6d. *Olearia Gunniana*, var. *salicifolia*, Hutchinson, new var. comb. *Eurybia Gunniana*, var. *salicifolia*, Hook. f., *Fl. Tasm.*, 174. Distrib.—Tasmania: York Town, Jan., 1843, Gunn 1,255.

Leaves elongate-linear, acutely acuminate, 4-5 cm. long, entire; peduncles long and slender and almost leafless as in the typical form.

7. *Olearia rugosa*, Hutchinson, comb. nov.
Eurybia rugosa, F. Muell. ex Archer in *Journ. Linn. Soc.*, v., 22 (1861); *Olearia stellulata*, var. *quercifolia*, Benth., *Fl. Austral.*, iii., 475, partly (1866).

Distrib.—Victoria: Victoria Ranges, Wilhelm in Herb. Oldfield; Wilson Promontory, without collector in Herb. Kew.

8. *Olearia subrepanda*, Hutchinson, comb. nov.
Eurybia subrepanda, DC., *Prodr.*, v., 268 (1836); *Eurybia Gunniana*, var. *rana*, Hook. f., *Fl. Tasm.*, 176, t. xlv., C; *Olearia stellulata*, Benth., *Fl. Austral.*, iii., 475, partly (1866).

Distrib.—Tasmania: sides of the Mts. 3,000 feet, Feb., 1888, 273; without precise locality, Hooker.

—J. Hutchinson, Kew.

NOVELTIES OF 1916.

(Concluded from p. 2.)

AN examination of the list of Awards made by the committees of the Royal Horticultural Society shows that there has been no falling off in general interest in the past year, though the plants have flowered and made their debut under exceptional conditions.

Carnations and Roses vie with each other for the position of first favourite amongst lovers of beautiful and fragrant flowers, and in the matter of the tiny over which they produce their flowers the Carnation, which has well earned its name of Perpetual-flowering, cannot be beaten. Scarcely any show throughout the year of any importance was without a display. The last and one of the best demonstrations of the year was at the Royal Horticultural Society on December 5 and 6, the latter date being that of the Perpetual-flowering Carnation Society's show.

Roses also as now grown have a much longer season than formerly, and most classes have been recruited with sterling novelties during the past year. As a favourite plant for garden cultivation the Rose excels all others in the wide range of variety which it presents, the range extending from the small but always pretty species through many grades leading up to the highly developed Hybrid Perpetual and Tea Rose of the florist, and that great beautifier of the garden, the Wichuraiana class.

Chrysanthemums and Dahlias worthily hold their votaries, who fail not with good novelties, although the old favourites in many cases are not deposed. The feature in these and other florists' flowers is the increased favour with which beautiful single forms, and unconventional decorative flowers, are regarded. This comes from the natural form being more appreciated by educated taste, and leaves one wondering where that taste was in the early days of Dublin-raising when nothing but the globular head would pass and the single and decorative seedlings were thrown away on flowering.

Stove and greenhouse plants, as collections both in nursery and private gardens, have not been so much in the public eye as formerly, except such kinds as grow well for decorative purposes. This is to be regretted, for batches of florists' plants can never be so interesting as a collection including species.

Narcissi and Irises are greater favourites than ever, for both are as acceptable in the cottage garden as in the more lavish displays in country estates. For the florist the Narcissus is one of the best and most profitable flowers.

New and rare shrubs have taken a strong lead during the past year, and acquisitions have been shown in the collections of the Hon. Vicary Gibbs at Aldenham, where he skillfully acclimatizes so many valuable kinds. The new importations from China, indeed, are now widely distributed in gardens.

Hardy herbaceous and rock plants, so attractively displayed in model rockeries at the R.H.S. shows, are among the most admired exhibits.

The following novelties and rare plants flowering under noteworthy conditions, have, amongst others, been illustrated in the *Gardeners' Chronicle* in 1916:—

Acacia Baileyana, April 29, p. 232.
Abies bracteata, January 15, p. 40.
 Apple Charles Ross, October 14, p. 180.
 Apple Lord Kitchener, July 22, p. 45.
 Apple Lord Hindlip, December 23, p. 500.
 Apple Orleans Reimetz, January 22, p. 52.
Aralia chinensis albo marginata, November 13, p. 245.

Aster Purdomii, June 24, p. 350.
Aster stactifolius wild in China, September 2, p. 116.

Begonia manicata crispata, March 11, p. 146.
Berberis rubrostilla, November 11, p. 236.
Bidens Beckii, June 10, p. 305.

Campanula acutangula, September 9, p. 120.
Campanula caespitosa alba, November 25, p. 257.

Campanula caespitosa Miss Willmott, November 5, p. 253.
Campanula Celsii, April 22, pp. 219-220.

Campanula persicifolia Telham Beauty, August 19, p. 89.

Campanula garganica var. W. H. Paine, September 9, p. 119.

Campanula Raddiana, September 9, p. 125.
Campanula Zovsii, June 24, p. 356.

Castilleja miniata, July 8, p. 10.
 Carnation Sweet Ann Page, June 5, p. 296.
Cephalotus follicularis, April 1, pp. 182-183.

Cestrum fasciculatum, June 24, p. 340.
Clematis Crimson King, June 5, p. 301.
Clematis, blue, in China, January 22, p. 40.

Colchicum Decaisneii, October 28, p. 204.
Colletia armata, November 4, p. 225.
Colletia cruciata, dimorphic, September 2, p. 109.

Collifolia infansta, September 16, p. 132.
Cotula myriophylloides, June 10, p. 305.
Cupressus obtusa, May 27, p. 278.

Cupressus pisifera, January 29, p. 58.
Cupressus thoides, August 19, pp. 84-86.
Crinum lineare, August 19, p. 91.

Dahlia coccinea, September 2, p. 108.
Dahlia E. Edina, September 2, p. 107.
Dibsanandra lanuginosa, October 28, p. 205.

Delphinium Ikiangense, September 9, p. 128.
 and September 23, p. 151.

Dipelta floribunda, July 22, p. 38.
Erigeron heteromorphus, June 10, p. 306.
Eucharis Dorend Sprengii, July 8, p. 17.

Eucharis Lowii, March 25, p. 175.
Fokienia Hodgkinsonii, February 5, pp. 72-73.
Garrya elliptica in fruit, November 25, p. 254.

Grape Cooper's Black, March 11, p. 142.
Grapes Trebbiano and White Nise, October 7, p. 177.

Houttuynia coriata, March 25, p. 170.
Isoopyrum grandiflorum, Feb. 5, p. 77.
Iris ensata (I. t. t.), April 3, pp. 194-195.

Iris Hoogiana, November 4, p. 216.
Iris Richard II., July 1, p. 5.
Iris Rosenbachiana, March 18, p. 155.

Iris umifolia, April 8, p. 196.
Kniphofia confusens, July 29, p. 56.
Kniphofia Northiae, July 29, p. 52.

Lilium giganteum vancouverense, July 29, p. 50.
Lilium Roelzii, January 22, p. 44.
Lobelia Gregoriana, March 4, p. 127.

Lobelia Teleki, March 4, p. 126.
Lonicera Griffithii, July 22, p. 43.
Meconopsis racemosa changing to *M. horridula*, February 12, p. 86.

Meconopsis simplicifolia Bailey's var., June 10, p. 313.
Megacarpus nolvandra, May 13, pp. 255-256.

Meliosma canifolia, May 27, p. 279.
Monocharis pardanthina, June 10, p. 314.
Montanoa bipinnatifida, March 11, p. 152.

Nuthallia macrophyllum, May 20, p. 265.
Olearia semi-dentata, June 24, p. 357, July 1, p. 1.

Pyraecantha crenulata var. *Rogersiana*, December 30, p. 312.

Pyraecantha Gibbsii, December 30, p. 310.
Pectis aquatica, June 10, p. 306.

Phlox Douglasii, January 29, p. 63.
 Plum, cross-bred (Laxton's), October 7, 169.
Primula blattariformis, May 13, p. 254.

Primula conspersa, May 27, p. 266.
Primula helodoxa, May 27, p. 291.
Primula nutans, May 13, p. 262.

Primula sibirica in China, January 22, p. 45.
Primula silvicola, June 17, p. 318.
Primula Zuleika, Dobson, April 15, p. 213.

Pyrus cataegifolia, fruit and foliage, January 1, p. 7.
Ribes Maximowiczii, May 20, p. 273.

Rosa sericea, July 15, p. 26.
 Rose Alexander Hill Gray, December 16, p. 288.

Rose Emily Gray, August 5, p. 62.
 Rose Janet, July 29, p. 58.

Rose Flame of Fire, August 12, p. 79.
 Rose Gladys Holland, August 12, p. 81.
 Rose C. V. Haworth, July 22, p. 39.

Rose Lord Kitchener, July 15, p. 53.
 Rose Lucy Williams, July 8, p. 12.
 Rose macrophylla Korolkowii, July 15, p. 28.

Rose Nellie Parker, July 8, p. 22.
 Rose Mrs. Bryce Allan, April 22, p. 223.
 Rose Princess Mary, November 18, p. 241.

Rose Hoosier Beauty, November 18, p. 247.
 Rose Queen Mary, February 19, p. 101.
 Rose Molly Bligh, May 27, p. 287.

Salvia Pitcheri, November 18, p. 243.
Silybia varlevisus, August 12, p. 78.
Saxifraga Rocheliana, March 4, p. 134.

Saxifraga Sumburmanii, April 1, p. 189.
Senecio laxifolius, November 11, pp. 228-229.
Stapelia Desmetiana, April 15, p. 211.

Streptocarpus cantabrigiensis, March 4, p. 131.
Streptocarpus denticulata, May 20, p. 271.
 Sweet Pea John Porter, July 8, p. 19.

Sweet Pea Old Rose, June 17, p. 523.
 Sweet Pea The President, July 15, p. 31.
Synthyris rotundifolia, February 19, p. 100.

Trollius pumilus in China, January 15, p. 30.



FRUITS UNDER GLASS.

By JAMES HUTTON, Gardener to LEOPOLD DE ROTHSCHILD, Esq., C.V.O., Gunnersbury House, Acton, W.

PLUM TREES IN POTS.—After some twenty years' experience with Plums in pots both for early forcing and in natural conditions, I have come to the conclusion that this phase of fruit growing has not received nearly the attention its merits warrant. Given the same temperature and other cultural details as are accorded to the Peach and Nectarine, the growing of Plums in pots is equally satisfactory, and the fruits form a welcome addition to the select list of choice dessert kinds. In ordinary times I have commenced the forcing of Plums in the first week in December by merely closing the house and syringing the trees. A little fire-heat was used in the first week in January, and by the end of that month the first flowers would be open. The earliest varieties grown in this way were Early Rivers (or Early Profit), which, if not of the very best quality, is valuable for the earliest fruits, and, following closely upon this variety, Early Favourite and Saint. Before these three sorts are well over, Early Transparent Gage—a dessert Plum of the very best quality—is available (from the third week in May onwards). For years past I have never failed to obtain a crop of this choice Plum; the fruits set with freedom, and the tree has a robust constitution. Following those named are Jefferson and

Kirke's, which carry the supply well into July. Thence onwards the cold orchard-house will yield a supply, and, in addition to those named above, may be added Golden Transparent, Count Althann's Gage, Coe's Golden Drop, and Oullin's Golden Gage.

STRAWBERRIES IN POTS.—Strawberry plants in pots that have been prepared for forcing may now be placed under glass, with every prospect of good results. I am well aware that with many the orthodox time for starting Strawberries is at about the New Year, but those forced from now onwards will not be three weeks behind them, whilst the yield will be much more satisfactory. I have experimented in many ways, but have never found any better place for these early batches of Strawberries than on a shelf in either an early vinery or a Peach house, close to the roof-glass. I have tried them plunged in leaves in a frame, but the large amount of atmospheric moisture has favoured a too vigorous leaf growth. Royal Sovereign is the first choice of many, but I still believe in Keen's Seedling, both for reliability in cropping and high quality. Let the pots be examined as to the drainage and then be washed. Afterwards dip each plant in a mixture of sulphur (preferably the black variety) and water; the plant should be held head downwards sufficiently low down in the pail to just wet the surface of the soil. This will be a safeguard later from both mildew and red spider. Guard against extremes in watering, and take especial care in this respect in the early stages of forcing.

THE KITCHEN GARDEN.

By J. DEXS, Foreman, Royal Gardens, Windsor.

PARSNIPS.—This crop requires a deeply cultivated soil, and if the work has not already been done the ground should be prepared at the earliest opportunity in order that the seeds may be sown early in February. Select rich, loamy soil that is free from stones, and let it be broken up to the depth of 2 feet. Do not use farmyard manure at this stage, but give a good dressing of wood ashes, incorporating the ash thoroughly with the soil as the work of trenching proceeds. When the ground has become settled and sufficiently dry make the surface fine and level and draw drills 18 inches apart and about 2 inches deep. Sow the seeds thinly, cover them with fine soil, and rake the surface lightly with a wooden rake. If extra fine roots are desired make holes 3 feet deep with a crowbar and fill them with fine sifted, rich soil. Sow a few seeds at each station and cover them with 1 inch of the same compost. Later the best plant may be allowed to grow, removing the surplus ones. Keep a careful watch for slugs.

ASPARAGUS.—Take advantage of dry or frosty weather to wheel manure for the purpose of top-dressing Asparagus beds. The manure should be thoroughly decayed and broken as finely as possible with a fork. The surface of the bed should be disturbed lightly with a digging fork previous to applying the top-dressing. The alleys should then be dug and 2 inches of the lightest soil placed over the surface in order to retain the moisture in the manure. About the beginning of April a dressing of salt may be applied with advantage, and the surface lightly stirred with the point of a digging fork. If an early crop of Asparagus is desired, and sufficient crowns are available, there is no difficulty in having stems for use within three weeks from the time the roots are placed in the forcing pit. The forcing may be done on a bed of leaves and stable manure in any brick pit. The materials for the hotbed should be turned once or twice, trodden moderately firm, placed in position, and the surface covered with a thin layer of thoroughly decomposed manure under 1 inch of sifted leaf-mould. Lift the roots carefully and place them close together on the surface. The temperature of the bed must not rise above 75°. A covering of fine sifted leaf-mould should be placed over the crowns and watered in amongst the roots with water warmed to 70° to 75°. No further covering should be applied until growth commences, but when the young shoots are showing freely a further covering of sifted leaf-mould should

be applied to the depth of 3 inches to cause the shoots to grow rapidly. No fire-heat is necessary provided sufficient covering material is at hand in times of frost. One bed of leaves will retain sufficient heat to force several lots of roots provided it is lightly stirred when each batch of roots is introduced.

SHALLOTS AND GARLIC.—As soon as the soil is sufficiently dry plant Shallots in lines made 1 foot apart; choose light, rich ground. Make the sets firm in the ground and draw soil lightly over them. Garlic should also be planted now, and should be allowed a little more space between the rows than Shallots.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to St. James's Palace, Bart., Grafton Park, Reigate.

SEASONABLE WORK.—Work in the Orchid houses now consists chiefly in maintaining the proper temperatures, providing suitable atmospheric conditions, and cleansing the plants and houses. The plants should be kept as dormant as possible, care being taken that they do not start into growth prematurely, which might result in decay of the pseudo-bulbs and rhizomes. The temperature of the different houses should be as follows: Cool house, day, 52° to 55°, rising to 60° with sun-heat; night, 50°. Intermediate house, day, 60° to 65°, rising to 68°, with sun-heat; night, 57°. Cattleya and Mexican house, day, 60° to 65°, rising to 68°, with sun-heat; night, 58°. East Indian house, day, 68° to 70°, rising to 75°, with sun-heat; night, 65°. These temperatures should be governed more or less by outside conditions; for instance, when it is extremely cold, a rather lower temperature will cause less harm to the plants than excessive fire-heat. The maximum temperature should be recorded at midday. Warmth from the water-pipes may be economised with advantage by utilizing protective coverings over the roof exterior, removing the covering as early in the morning as the conditions will permit. Maintain a buoyant, moist atmosphere in each house, damping the stages and floors once or twice each day; but in this respect be guided by the amount of fire-heat required to maintain the requisite temperatures. In gardens in low lying districts much less damping will be needed during the winter months than in those in higher exposed positions. The ventilation of the houses should receive careful attention at all times. Fresh air should be admitted each day, a stagnant atmosphere being injurious to the plants. Open the bottom ventilators on the leeward side of the house, in order that the cold air may pass over the hot water-pipes before it reaches the plants. The cleaning of the houses should be finished by the end of the present month. The woodwork and glass should be washed thoroughly inside and out, first removing the plants from the stages to prevent them being splashed with dirty water. When this operation is over sponge the plants with a suitable nicotine insecticide, taking care to remove all scale-insects that may be present on the leaves and rhizomes. Watering: Plants at rest will only require sufficient water to prevent the pseudo-bulbs from shrivelling, but those that are growing freely will require frequent applications of moisture. The compost should be allowed to become dry before watering again, which should be done on bright mornings. Careful watering is one of the main secrets of success in the cultivation of Orchids.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. Arthur J. DAVY, Abbots Wood, Godalming, Surrey.

RASPBERRIES. The pruning and tying of Raspberry canes may now be attended to. The growths are regulated in a variety of ways, but the best system, perhaps, is that of training them to horizontal wires, as by this method I consider there is, yard for yard, a greater supply of fruit. Wires strained between iron standards set with good feet or supports will last a considerable number of years. If the old canes were removed last autumn, the remaining rods should be well ripened, and the strongest and best developed canes should be tied in at regular distances of

about 8 inches, cutting out the small, weak canes. Shorten the shoots that remain to 5 feet. Afterwards clear the ground of weeds and rubbish. If manure from an old hotbed can be spared, this may be spread over the surface to feed the roots. It is not too late to make new plantations of Raspberries. The ground should be well trenched, and if heavy in texture lightened by adding old mortar rubble. Bone meal also may be added, for the Raspberry, if properly cared for, fruits well for a number of years. Good varieties are Norwich Wonder one of the best flavoured sorts; Superlative, a heavy cropper; Bannforth's Seedling, a good variety which often succeeds where others fail; and Yellow Antwerp. Belle de Fontenay is the best autumn-fruiting variety.

GENERAL PLANTING.—It is not too late to plant all kinds of fruit-trees, provided the work is done quickly. Apples should be got in on prepared sites, and, if necessary, every tree should be firmly supported by a stout stake, which should be made very firm in the soil. Fasten with a secure tie of tarred string, or, in the case of standards, use Beckett's patent band. Mulch with littery manure to prevent damage to the roots by frost. Pears, Peaches and all wall trees should be planted without further delay. In clay or very heavy soils it may be necessary to employ some dry lime rubble or fine soil. Fasten the trees to the walls lightly and leave them for a week or two for the soil to settle before finally tying them in position. Litter or light manure spread on the soil will be an advantage in keeping the roots warm. Label each tree in a prominent part. Labels of black letter on white enamel are efficient, durable, and inexpensive.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcote, Eastwell Park, Kent.

FORCING FLOWERING SHRUBS. It is not advisable to bring shrubs for forcing direct from the open into a warm house, but to start them in moderate warmth, and to raise the temperature gradually as growth develops. A good plan is to place the plants in a fruit house that has been closed for forcing, the small amount of extra warmth such houses provide being quite suitable for flowering shrubs. The shrubs may afterwards be moved into a forcing pit, and remain there until the flowers are well developed, when they should be accustomed gradually to cooler and drier conditions. Prevent sudden changes in the temperature and direct draughts of cold air. Spray the plants before the blooms develop several times daily, according to the weather, to promote a damp atmosphere.

AZALEA. Of Azalea sinensis hybrids there are many that are fine decorative subjects for indoors; Anthony Koster, W. E. Gladstone, Glory of Bockloop, Mme. A. Koster, G. Cuthbert and Florida are six sterling varieties of this class, and can be recommended for pot work. Unnamed seedlings may usually be purchased very cheaply, and these seedlings are valuable where large quantities are required for grouping. The variety J. C. van Tol has beautiful flowers of deep chartreuse colour, and is one of the best of the A. indica section. Alphonse Lavallée, Comte de Quincey and Brilliant are other excellent varieties, and with a few of the double-flowered A. indica and the Ghent Azaleas of which Fanny, Unique and Rose Marie are good examples, will furnish a good display of flowers until Azaleas bloom outside. A. indica is grown in large numbers for forcing, and the plants are cheap. There is a wide range of colours in this class, so that it is easy to select the varieties according to the shades desired. The very small plants are suitable for placing in small vases in dwelling rooms.

LILAC.—The Lilac is one of the best flowering shrubs for forcing. Charles X., Mme. Lemoine, Mme. Lagrange, President Grévy, Michael Bacher, and Souvenir de Louis Spohr offer a varied selection of good varieties for forcing.

RHODODENDRONS.—The showy varieties of Rhododendrons make a pleasing change in the conservatory, but these plants should never be subjected to hard forcing.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C. Editors and Publisher.—Our correspondents would oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to give any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JANUARY 23.—

Gardeners' Royal Ben. Inst. Annual meet. and Election of Pensioners at Simpson's Restaurant, Strand.

SATURDAY, JANUARY 27.—

Nat. Auricula Soc. (Northern Sect.) Annual meeting.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty days at Greenwich, 40.2°.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, January 11 (10.0 a.m.): Bar, 29.5°; temp. 38.5°. Weather—Dull.

SALES FOR THE ENSUING WEEK.

WEDNESDAY.—
Bulbs, Fruit Trees, Roses, Herbaceous Plants, &c., at 12 o'clock. At 2 o'clock, Narcissus, Tulips, Gladioli. At 3 o'clock, 250 cases of Lily of the Valley and Japanese Lily, received direct. At 6 and 8 o'clock, Cheapside, E.C., by Protheroe and Morris.

THURSDAY.—
Chimney Roses at 1 o'clock, at Protheroe and Morris's Rooms.

FRIDAY.—
Orchids, at 1 o'clock, at 67 and 68 Cheapside, E.C., by Protheroe and Morris.

Potato Prices.

We drew attention last week to the decision of the authorities to fix the price for this year's crop of Potatoes at 115-130 shillings a ton, and pointed out that this decision must have for its effect the discouraging of Potato growing. The experience of small growers may be added to that of large growers—as recorded on another page by a Potato expert and in the correspondence columns of the daily Press, that at this maximum price the risk of loss to the grower is a very real one. Without wishing to be unduly pessimistic, we must, we fear, be prepared for a light crop per acre in 1917, and this chiefly for two reasons—the lack of potash manures and the large amount of home-grown seed which will be planted. Yet it cannot be doubted that everything that can be done should be done to put land under this crop. Notwithstanding every effort, there may be a shortage of vegetable food during the coming summer. In these circumstances, and so long as the men who produce the crops are remunerated fairly for their work, a glut, should it unexpectedly occur, would be welcomed. With proper forethought, it would be possible, if the

Board of Agriculture really anticipates a glut, to provide for the State purchase and drying of the surplus for winter use. That provision—as a precautionary measure—ought to be made in any case. But for the reasons given already we fear that no such happy state of affairs as a surplus of Potatoes is likely to arrive. Therefore every effort to increase production should be made. We believe that the Milner report indicated a proper way whereby growers could be assured of a fair remuneration and profiteering be checked; a minimum price and a "call" price would secure these ends.

Into the question of the undue lowness of the maximum which has been fixed we need not go. It is manifest that the price will not encourage any experienced person to grow Potatoes for the market.

It is all very well for the authorities to fix the price of best seed at £12 a ton. This is too late in the day, and we are not unreasonably sceptical of what this "best" will be. Provident growers have been buying their seed already, and have had to pay more than this price. The "best" can only be what is left over, and it looks only too probable that not a little of the seed will be "ware," and that therefore it will not go so far, or will have to be cut, in which case the labour will be increased at once.

The time chosen for official intervention is as unfortunate as the manner thereof. It is within our knowledge that some months ago, when a shortage of Potatoes was already manifest, representations were made to the Board of Agriculture suggesting the advisability of their obtaining control of the crop at lifting time. These representations were ignored. Nothing was done until contracts had been made, and much of the "ware" and seed disposed of at high figures. Then came the intervention "too late," as usual—and its only effect has been to disorganise the market and discourage planting. To offer to sell the best seed at £12 a ton when the best has been sold already at far higher prices is not only to impose serious loss on those traders who hold stocks which they themselves have purchased at a higher price, but also to undertake what seems impossible of fulfilment.

We urge, therefore, that the orders be withdrawn, that a fair minimum price, and, if necessary, a "call" price be fixed for next year's crop, that traders be recompensed for bona-fide losses which the selling price of £12 a ton for seed imposes upon them, and that plant be provided in the Potato-growing districts for large-scale drying of Potatoes in order that the wastage of this year's crop may be reduced to a minimum.

CHELSEA AND HOLLAND HOUSE SHOWS.

We are informed by the secretary of the Royal Horticultural Society that the Council has had great anxiety in coming to a decision whether to hold these two large shows in 1917, and had at first decided to continue them, but, added to the trouble arising from the shortage of labour, the difficulties of transport, and the Government's desire to reduce travelling to the utmost possible

extent, it now finds itself confronted with a further difficulty that at the last moment the contractor has reported that he cannot guarantee to get up the tents. For all these reasons the Council has decided to abandon these shows. In arriving at this decision, after the most careful consideration of all the points both for and against it, the Council hopes it will have the support and approval of every Fellow of the Society. In the place of these two shows ordinary fortnightly meetings will be held at the London Scottish Drill Hall, Buckingham Gate, on the usual fortnightly dates, namely, May 22 and July 5.

ABANDONMENT OF SPRING ROSE SHOW.

We learn that the Spring Rose Show of the National Rose Society has been abandoned for the present year, by the decision of the council at their meeting held on the 16th inst., immediately after the annual general meeting.

NATIONAL CHRYSANTHEMUM SOCIETY.

The annual meeting of the National Chrysanthemum Society will be held at Carr's Restaurant, Strand, on Monday, February 5, at 6 p.m.

THE CROPPING OF WASTE LAND SEVENTY

YEARS AGO.—Having entered to the farm of Parkton, containing 70 acres of arable land, in 1838, after putting it into good order, my attention was directed to the improvement of a piece of waste land, which stretched in a continuous line along the north-east side of the farm, with the exception of a few patches to the south. I have altogether improved 50 acres, of which 30 acres have been brought under the plough during the last three years. The ground was formerly under Fir wood, which was cut and sold about twelve years since, with the exception of a few acres, which are still standing. The surface was generally covered with short stunted Heath, the pasturage on which was probably not worth more than 2s. per acre. The soil was a clayey gravel, in some places inclining to peat, on a subsoil of wet, clayey gravel. The ground was trenched 12 inches deep, with the exception of three acres, which were taken in with the plough, and about 25 acres were partially furrow-drained, at 18 and 24 feet apart, according to the retentive nature of the subsoil. Large open drains were made to subdivide the ground into fields. The expense of these improvements was as follows:—

Trenching 28 acres at £6 per acre	£168 0 0
Ploughing 3 acres and taking out roots	6 0 0
Clearing the ground of roots, stones, and levelling	62 0 0
3,355 yards of large covered drains at 2d. per yard	27 18 10
2,975 yards of large open drains at 1d. per yard	18 11 10½
20,593 yards of furrow drains at 1d. per yard	84 19 10
Total	£367 10 6½

Making an average cost of £11 17s. 1d. per acre. The first crop was taken in 1843 from about 10 acres, which were well limed, and manured with farmyard dung and sown with Barley, which yielded a pretty fair crop of about four quarters per acre. In the following year, 1844, this ground was pastured. In 1845 it was broken up for Oats, which yielded a very fair crop, probably five quarters per acre. The remaining 20 acres were prepared for Oats in 1844 by manuring and liming, and the crop was a fair one, at least five quarters per acre. In 1845, this portion was under Turnips and Potatoes, the Potatoes being a good crop, but the Turnips were below an average.—*Gardeners' Chronicle*, January 23, 1847.

THE VARIETIES OF VANILLA.—Of the four distinct Vanillas mentioned by Scheede as occurring in Mexico, Messrs. CONSTANTIN and BOIS,

— "Les Variétés de Vanille," *Comptes Rendus de l'Acad. d. Sci., Paris*, 183, p. 196.

in the course of their recent investigations recognise two—*Vanilla sativa* and *V. sylvestris*—as being the most important commercially. They represent two species. The former with oblong leaves and an ungrooved capsule is the best Vanilla. The latter has oblong-lanceolate leaves and grooved capsules. Messrs. CONSTANTIN and BOIS believe that of the Vanillas in Tahiti three forms belong to the *sylvestris* type.

GERMANY'S LACK OF POTATOS.—Touching Germany's Potato supply, the *Figaro* (Paris) states: "In certain localities each coupon of the Potatos card only gives the right to the half of the quantity indicated thereon. In Berlin, in spite of the seven coupons of the Potatos card, the holders can only obtain six pounds per week." On December 21 the Municipal Council of Mühlhausen dealt with the question of provisioning in Potatos. The Mayor has had the following declaration published in the *Mühlhäuser Tagblatt*:—"There has been assigned to the town the duty of affording provisioning, besides

can be applied easily by means of a slightly worn paint brush, and should be well worked into the crevices of the bark. The work should be done thoroughly in winter, and the trees closely watched the following spring and early summer for any pests that have escaped destruction.

Pigs.—All pig-keepers, notwithstanding the present high price of feeding stuffs, are urged by the Board of Agriculture to make every possible effort to maintain the supply of pigs. Sows with access to shelter will pick up a considerable part of the food they require out-of-doors. Where grass is scarce a few Swedes or Mangolds, together with a pound or two of Beans or finely-ground Palm kernel cake, will serve to carry most sows through till fattening time. For fattening pigs 8 lb. of Swedes, boiled, are equivalent to 1 lb. of cereal meal or offals. Small or bluish-tinted Potatos are twice as valuable as Swedes for feeding purposes, but these should be reserved for the later stages of

still, as was the case last month, nearly 15 per cent. less than in the corresponding date last year. The early sown Wheat is quite satisfactory, but that sown later is germinating very slowly, and, where it is above ground, it is often poor. Seeds are practically everywhere a good plant, healthy and vigorous, although the sharp weather at the end of the month checked their growth somewhat. Turnips and Swedes are generally keeping well; they are satisfactory crops. In many districts more of these roots are being left to be fed off in the ground than usual, and fewer have been lifted.

FRENCH NEEDS AFTER THE WAR.—A well known American manufacturer of agricultural implements, as quoted by *Gardening* (Chicago, December 15, 1916), has found on inquiry of the French Minister of Agriculture that among the equipments which will be required after the end of the war are 120,000 ploughs, 17,000 traction engines, 10,000 threshers, and so on. The American implement maker, in looking forward

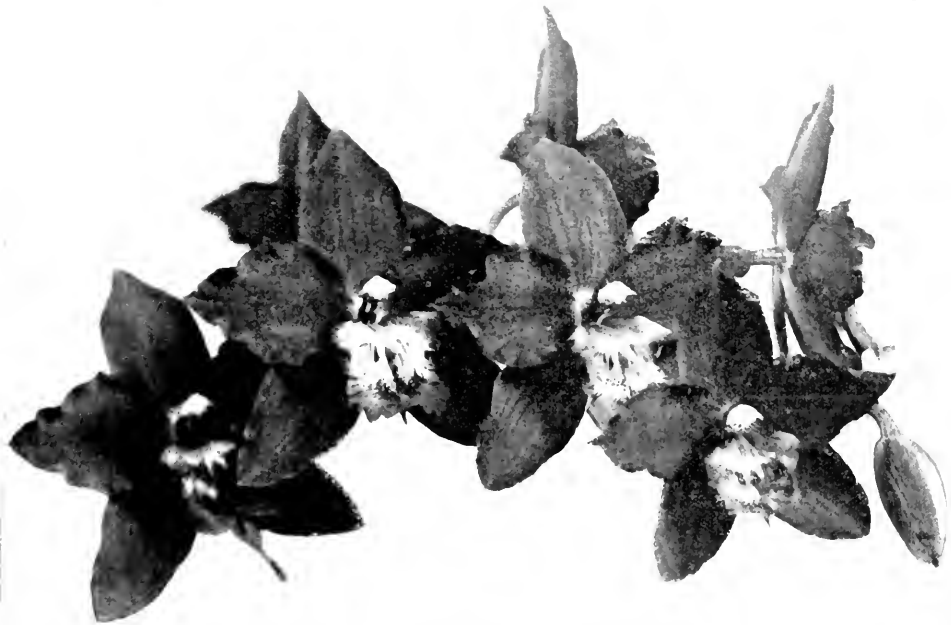


FIG. 11. GONNERBYA CAMBODIA BRINDLE VARIETY (See Awards, p. 10). (British Committee, p. 70.)

the *arrondissement* of Mühlhausen itself, for those *arrondissements* of Altkirch and Gelnau or Worms and Darmstadt had also to send supplements. However, from the outset the system has completely failed, through lack of Potatos. The administration of the town put itself in relations with the Prefect. The Mayor was of opinion that, since the peasants were keeping back their Potatos, it must come to military requisitions. It did come to that, in point of fact, but without sufficient result. We are lacking 560 vanloads to cover our needs up to April 15, 1917. Worms and Darmstadt, which owed us 1,700 vanloads, have not yet sent a pound to replace the Potatos we had to have large quantities of Kohl-Rabis. They are being delivered to us no longer. Add to that the fact that 600 vanloads of Potatos coming back to the Communal Union of Haute-Alsace have been taken for the provisioning of the Army."

AMERICAN BLIGHT.—Paraffin oil is a most effectual specific for destroying woolly aphid. It

fattening. To supplement roots, the cheapest and most suitable foods at the present time are finely-ground Palm kernel cake, Bean meal, Maize gluten food and dried grains. Later on Clover, Sainfoin and Lucerne will be available in place of roots, and smallholders should consider whether they can find space to add these to their crops. Edible domestic refuse should be reserved as far as possible for pig feeding.

THE CONDITION OF THE FARM CROPS. The Board of Agriculture and Fisheries monthly agricultural report states that the weather during December greatly hindered work on the land. In some districts the first fortnight was fine enough to allow of some progress being made, but in most parts the weather was too stormy for much to be done, and later there were frosts. Only a comparatively small area was consequently sown with Wheat, and it is estimated that by the end of the year little over two-thirds of the area intended for this crop had been got in; while the total area sown is

to provide the tools for French and Belgian harvests, hopes to reap a golden harvest of his own.

VEGETABLE-GROWING IN SCOTLAND.—The governors of George Heriot's Trust, Edinburgh, have agreed to place a considerable area of their vacant lands at the disposal of allotment holders. The Dundee Public Health Committee has decided to cultivate a considerable area of land at the public hospitals. Arbroath Town Council will grow vegetables and other crops on land belonging to the burgh and also utilise part of the Carnegie Park for the purpose. Ayr Town Council has appointed a committee to arrange for the cultivation of waste and other land with vegetables. Musselburgh Town Council is providing a number of allotments, for which numerous applications have been made. The Kilwinning Town Council has agreed to invite offers of land for allotments and to utilise some of the Public Park. Part of the lands belonging to the Town Council of Lanark is to be applied to allotments for the

cultivation of vegetables. As a result of the movement by the Dumfries and District Horticultural Society, the Dumfries Town Council re-mitted it to the Public Health Committee to consider the allotment question, and that body is now advertising for land and for intending allotment-holders. Hawick Town Council has resolved to let a field for allotments.

CONGRESSIONAL DISTRIBUTION OF SEEDS.—

The annual free gifts of flower and vegetable seeds which the Government of the United States of America makes, through the Representatives, is receiving a deal of opposition and criticism from various members of the House. It seems that there are available for distribution by each member to his constituents 20,000 packets of garden seeds, and that practically all avail themselves of the opportunity to "give a cheap sop for past loyalty" to the voters. The total cost to the country for purchasing and distributing these seeds during four consecutive years ending in the season 1912-13 is reported to have been 1,110,953 dollars, and the cost of postage, which is not charged, was a further sum of 467,759 dollars. In all, during the period mentioned, 43,563,801 packages were sent through the post. The criticism and opposition to the distribution, which has the sanction of custom, is twofold—the policy and the quality of the seeds. In a recent speech in the House of Representatives Mr. P. P. CAMPBELL, of KANSAS, asked "whether or not these seeds were purchased abroad, because it was hoped that the department (of Agriculture) would get a variety of seed that would be useful in introducing new plants into the United States, or whether it was done because a lot of miscellaneous and badly mixed seeds could be purchased cheaper abroad than in the United States. I know something of the character of the seeds sent out," he continued, "and they were a badly mixed lot of poor seeds. Cucumber seed and Cautoulepe seed were mixed indiscriminately; Water-Melon seed and Pumpkin seed were mixed in the same package; and six separate kinds of Lettuce were mixed in one small package, all marked some sort of special Lettuce, and yet there were six kinds in that little package—all poor."

THE WORLD'S CROPS.—If any man needs evidence of the importance of cultivating as much food as possible, he will find it in the statistics* of the world's crops. The Wheat crop of the United States is below the average and export will be reduced. The Argentine has produced little more than half its average crop. The yield from the Northern Hemisphere in neutral or allied countries, and in the Old and New Worlds, is about three-quarters of last year's crop, and somewhat under the average. Nor is the shortage of Wheat made good by increased supplies of other cereals. The Rye of the Northern Hemisphere is nearly 5 per cent. less than in 1915, Barley nearly 10 per cent. less. The world's Oat crop is about 14 per cent. less than last year, and Maize, so far as is yet known, has given a poor return. When it is remembered that armies are inevitable, and in spite of every precaution, extravagant food consumers, it will be evident that many people in the world will go hungry during this year, and that it is the duty of every man who has the use of ground to grow all the vegetable food he possibly can.

PUBLICATIONS RECEIVED.—*The Sweet Pea Annual*, Edited by J. S. Brunton. (National Sweet Pea Society.) Price 2s., post free.—*Quarterly Journal of Forestry*, No. 1, Vol. XI. (London: Loughton & Co., Ltd.) Price 2s.—*Parish War Societies: How they are Formed and Conducted*, By William Richard Boelter. Smallholders' Union Series. (London: Penny & Hull.)

* International Institute of Agriculture Bulletin of Agricultural Statistics, *The World's Crops for 1916 and 1916-17*.

VEGETABLES.

INTERCROPPING.

AMONG the many schemes which are being brought forward to increase the supply of food intercrops is probably one of the best, although I do not agree with Mr. Bagg (see p. 307) in planting Lettuce between Onions or Turnips and Spinach between Strawberries. As Mr. Archer (p. 9) states, the best system can only be devised by the man on the spot, as every observant gardener knows no two gardens can be worked to the best advantage on the same lines; knowledge and experience have to be adapted to soil, situation, and requirements. On these lines I offer the following suggestions for intercrops:—

(1) New Strawberry plantations may be successfully interplanted with Tripoli, or Onion sets and Shallots, placing the plants alternately between plants and lines. The preparation of the land for Strawberries renders it suitable for Onions.

(2) When Dwarf French Beans are sown, Radishes may be sown amongst the Beans, and in alternate lines; the Radishes will have two values—as a covering for the young Bean plant from late frosts and supplying a crop of food.

(3) Between Runner Beans and Peas possibly Turnips, or Turnip-rooted Beet, will give the best results. If Turnips are used give the space a good dressing of wood-ashes.

(4) Among bush fruits, and possibly Roses which are grown for cut flowers, a quick-growing Cabbage, such as First and Best, or Early London Cauliflower, should give a good return for labour.

(5) In many gardens there is a danger of Beet seedlings being damaged by a late frost. A few Radish seed sown among the Beet will often provide sufficient covering to protect the young Beet, and yield a little extra food.

(6) As labour is short and expensive it may be found a good policy in planting Potatoes to plant an early and a late variety in alternate lines, 2 feet or less between the lines; thus, a line of King Edward, then a line of Sharpe's Express. These may be planted at the end of March or beginning of April. Should the young plants appear before all danger of frost is past cover them with soil. The advantage of this method will be that the Sharpe's Express may be lifted in time to intercrop with Cauliflower, Kales, Brussels Sprouts and Broccoli, leaving the King Edward to mature for winter use. It is hardly necessary to state that late varieties of Potatoes may be planted until the first week in June, and that early varieties may be planted until the first or second week in July, with good hopes of a profitable return. This late planting will be found useful for filling spaces which have been occupied by other crops, and, on account of labour, the point to remember is, to estimate the quantity of seed which may be wanted, and, if available, to store the tubers in a cool place. J. E.

NOTES ON TRENCHING.

THE advantages gained by trenching heavy soil which has a hard, pan-like subsoil are many. First, the subsoil is made warmer owing to the admission of air, and naturally this is a great aid to plant growth, especially during the early spring months. Secondly, moisture is conserved in the soil longer during dry weather in the summer. Thirdly, deep trenching provides a free rooting medium, also it provides a quick percolation for water, thus avoiding stagnation about the roots, which is extremely important in the case of fruit trees. Even meadows and lawn turf dip beneficial effects where trenching has been done.

But there are soils that would receive no benefit from trenching—soil of a sandy character,

for instance, or that overlies closely a chalk subsoil. Soils that benefit most by trenching are those which have a hard pan of callus-like subsoil, not actually clay, but a near approach to it, and although it may be, as is often the case, freely mixed with flint stones, even these fail to give sufficient porosity for a rapid percolation of water from heavy rains. Even in gardens that have long been in cultivation and were properly trenched at the start the soil is rendered all the more suitable to plant life by repeated trenchings every fourth year.

There are two methods of trenching, bastard and deep trenching. The former is all too commonly practised, because it is easier than the more thorough method of moving the soil to a greater depth. Bastard trenching as I know it is thus: The top spit and the loose soil at the bottom of the first trench is taken out; the lower spit is deeply dug over instead of being taken out entirely.

The trenching I advocate, especially for new plots, is managed as follows: Mark out a trench 2 feet wide, wheel the whole of this soil to a depth of 2 feet to the opposite end of the plot. Break up the bottom of the trench to 1 foot deep. This extra moving of the subsoil will provide a more rapid water percolation. Another 2-foot trench is marked off and the top spit and loose soil is also wheeled to the opposite end of the plot, to be used in filling up the last trench. The second spit is thrown into the first trench and the top spit of the third trench completes the first. This method allows of every spit of soil being left in its original position. The surface soil naturally provides a better tilth than that which has never been exposed to the air or had the direct benefits of manuring.

If long, strawy manure or freshly gathered leaves is available, add them liberally to each trench as the trenching proceeds, reserving the shorter manure for the top spit. Roadside refuse, burnt earth, wood ashes, old potting soil and decayed vegetable refuse are useful additions to newly-trenched soil, improving the porosity. In February, if the weather is dry, a free sprinkling of quicklime spread over the surface will further improve the tilth, forking it lightly in.

I have been frequently told that the bottom spit should be brought to the surface, and the top spit placed in the bottom of the trench. If I could obtain sufficient good compost to cover the surface 1 foot thick in which to grow the first season's crop I should advocate that method of trenching, but knowing how impossible it is for the amateur residing on the outskirts of a town to obtain any of the ingredients mentioned above, I cannot recommend the practice. E. Molyneux.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE LEAF OF PEACHES AND NECTARINES (see p. 6).—Perhaps few of us really know what a kidney- or round-shaped gland on a Peach leaf is, and as for the different varieties of serrated edges and plain edges, these are matters that do not attract the eye of the general grower. To the initiated such details are of much importance, for the above types, together with the large or small size of the flowers, give to us at once the true and authentic names of the varieties. Of recent years I have not had the opportunity of studying the subject so much as I could have wished, but the reading of the interesting article on the subject revived a latent interest. A Peach grower has always noticed that glandless varieties were more prone to attacks of mildew, but with reference to Peach blister my own observations were that all types suffered. You suggest that Peaches and Nectarines offer a fascinating problem to the student of genetics. So I think they should be interesting to the propagator and grower of young stock, for I believe by double

working (budding) or budding on the stock that will impart vigour to the tree, blister and mildew may be overcome. I know full well many Peaches and Nectarines, through improper cultivation, will suffer from blister and mildew, but, nevertheless, those varieties which are constitutionally prone to it may be strengthened to resist the disease. The Mussel, Brussels, and Brompton stocks are used for budding Peaches and Nectarines in this country, and it is only in first-class nursery establishments that a defined rule as to the different varieties best adapted and suited to the different stocks is followed. Herein often lies the secret of productivity. *W. H. C., Hampton.*

GARDENING AT RUHLEBEN CAMP.—I append herewith a letter received from the Prisoners' Camp at Ruhleben, acknowledging the bulbs and seeds sent to the Royal Horticultural Society by its Fellows and friends for despatch to the Ruhleben Horticultural Society. The president and council wish to take this opportunity of thanking all those who so kindly identified themselves with this effort; they will be pleased to know that their parcels are arriving safely.—Yours faithfully,

W. WILKS, Secretary.

"Royal Horticultural Society,
London.

"Dear Sirs,

"I am in receipt of your letter of 12th October announcing that the Ruhleben Horticultural Society is affiliated to the Royal Horticultural Society, London, which was laid before my Committee.

"I am instructed to tender to you my heartfelt thanks for this kind assistance to the society's aims and also for the six cases and one parcel, containing bulbs and seeds, which have been duly received. These have, I am already planted, and a very successful start is now assured. They also beg to acknowledge, with many thanks, the receipt of the six pamphlets on gardening subjects and to inform you that a syllabus of lectures has already been commenced with great success. A copy of this syllabus, and also of the papers given, shall be forwarded in due course.

"On Friday last I received your letter of November 20, advising the despatch of eleven further cases of bulbs, etc., and for this I wish to express to you my warmest thanks and also to those friends who so kindly sent us gifts of bulbs through your medium. As soon as the eleven cases arrive I shall inform you thereof.

"Enclosed please find a few of our membership cards which I hope will be of interest to you.

"Again with many thanks and the best wishes to all for Christmas and the coming New Year.—I remain, Yours faithfully,

(Signed) T. HOWAT,

Hon. Secretary,

Ruhleben Horticultural Society.

Bar 5, Box 15.

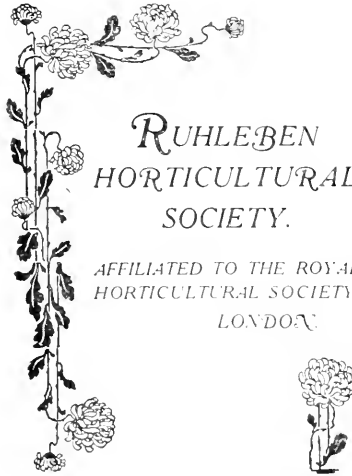
December 20, 1916."

OLD SEED AND PLANT CATALOGUES (see p. 9). In reading through the several numbers of seed and nursery firms in the interesting article that appeared in recent issues of the *Gardeners' Chronicle*, one prominent nursery seems omitted that in its day was, I believe, considered the first and foremost of its class. I have some recollection of it since 1866, and have on occasion interested myself in the wonderful and varied collections found there. I refer to Messrs. Rollison's, of Totting, Surrey. Although a youngster at the time, I remember the advent of Rollison's Telegraph Cucumber, the parent of so many varieties since, and its sale at that time at 1s. per seed. Whether the raiser—a small private gardener close by—was remunerated to any great extent, I don't know, but it certainly was a boon to the distributors. Messrs. Rollison's catalogue was of a bulky nature, and contained a wide and diversified collection of plants of all genera. Such a list is not, to my knowledge, published by any nurseryman at the present day. It is an interesting, valuable and thoroughly practical work, and a book of reference. My own copy was

handed me by its former owner, who had it interleaved with plain paper, for the purpose of recording notes as to the best means of propagation and cultivation. On many occasions I have found the notes of considerable assistance and importance. Where the site of the nursery is now I failed to discover the last time I was in that neighbourhood. *W. H. C., Hampton.*

—The mention by *C. H. P.* (p. 9) of Maddock's nursery at Walsworth brings to mind a conversation I had recently with

the 12th inst., there are no signs of the Winter Avonite pushing through the soil, yet we usually have some flowers open before this date, whilst in 1912-13 the blossoms were open on November 24, being the earliest date I have recorded. Avonite blanda, *St. reticulata* and *Crocus Imperati* are also backward. *Daphne Mezereum* and *Jasminum nudiflorum* are the only plants that have flowers open, with the exception of *Stembergia lutea*, which has lately developed a number of its bright yellow flowers, that usually



RUHLEBEN HORTICULTURAL SOCIETY
MEMBERSHIP-CARD

SEASON 1916-17.

PRESIDENT - Mr L. P. Warner
VICE PRESIDENT - Mr M. Pritchard
HON VICE-PRESIDENTS - Messrs. C. L. Bretneyer, Walter Butterworth J. P., W. S. Cohn, A. E. Dodd, G. F. Fisher, F. W. Hession, F. H. Lazarus, B. G. Levin, D. J. E. J. Legg, W. F. McKenzie, A. H. Mitchell, O'Hara Murray, F. Silbermann, E. Silbermann
CHAIRMAN - Mr L. P. Warner, Bar 8, Room 2
VICE-CHAIRMAN - Mr L. P. Roberts, Bar 5, Loft B
HON SECRETARY - Mr Thomas Howat, Bar 5, Box 13
ASSISTANT SECRETARIES - Messrs W. M. Harris and W. E. Mell
HON TREASURER - Mr T. Howat
COMMITTEE - Messrs J. Blackburn, W. Cayley, H. Cooper (10), W. R. Cooper (5), A. Hill, J. Lazarus, M. Pease, P. Soans, P. J. W. Simson, G. A. Wylie

MEMBER'S NAME - Mr

Bar. Box. Loft.

RULES AND STANDING ORDERS OF THE
"RUHLEBEN HORTICULTURAL SOCIETY"

Title of the Society. That the Title of the Society be the "Ruhleben Horticultural Society".

Aims of the Society. That the aims of the Society be to further the knowledge of Horticulture and give members an opportunity of studying this subject by assisting in the laying out and attending to the flower beds in the Camp.

Membership. That the Society be open to all interested in Horticulture and that the Membership Subscription be 1/1 per annum payable on entering. Application for Membership to be made to the Hon Sec. of the Society.

Privileges of Membership. That Members be entitled to attend all lectures and papers arranged for by the Society and perusal of any literary matter should such be obtainable.

Officers and their Election. That the Officers of the Society consist of a President, Vice-President, Chairman, Vice-Chairman, Secretary and Treasurer, who are to be elected at a General Meeting of Members.

The Committee. That the business of the Society be conducted by a Committee of not less than eight and not more than twelve members including the Vice-Chairman; these gentlemen to be elected at a General Meeting of Members. The period of office to terminate at the expiration of one year from date of appointment. The Hon Sec. to have full power to vote and together with five members of the Committee shall form a quorum.

The Chairman of the Meeting shall have power to vote and in addition have a casting vote. Nomination of Members to fill any vacancies which may occur during the year to be made at a General Meeting of Members. The Vice President shall be an ex-officio member of the Committee.
General Meeting. A General Meeting shall be held fortnightly when, if necessary, a short report of the work will be made to the members, followed by a paper on some Horticultural subject. All notices of Meetings are to be conveyed to members by means of a public notice board, which notice shall be considered sufficient.

Finance. That the Committee be empowered to purchase bulbs, seeds, implements or any other accessories out of the Society's funds and to carry out all financial business connected with the Society. That the Accounts of the Society be audited by an Auditor, not a member of the Committee, who shall be elected at a General Meeting of the Society.

Alteration of Rules. Alterations, amendments or additions to the Rules shall be made at any General Meeting, should such alterations, amendments, or additions be found necessary.

Appendix.
The Committee meet every Thursday afternoon from 3 to 5 p.m. in Mr Lazarus' Summer House behind Bar 6 & 7 where members may apply for information. Members wishing to assist in gardening are asked to hand their names to Mr Warner, Bar 8, Room 2. Requests for work parties will be posted on notice board, if possible, the day before going out.

FIG. 12. MEMBERSHIP CARD AND RULES OF THE RUHLEBEN HORTICULTURAL SOCIETY.

a relative living in Peckham Grove, who told me that he remembered a large nursery existing upon what are now back gardens to the Grove. There seems some proof of this, for there are still trees and shrubs growing such as one would hardly expect to find in a back garden. This is now the Camberwell district, but it is possible that at one time it was part of Walsworth, which it adjoins. *J. J. Edgar, Geygong Hall Gardens, Newport.*

SPRING FLOWERS.—Early flowers in the open are much later than usual this season. To-day,

appear in November. I am unable to account for this general lateness. December has been cold; in fact, the coldest December during the 23 years I have been here. The mean temperature was only 33.70° and this is 5.37° below the average. But November must influence the early growth of this Avonite, as it once flowered on November 24, and this season November was 0.78° above the average mean temperature; while October was 1.78° above. November also had 12 hours sunshine above the average, but I do not consider sunshine in November is the determining factor in

the case, because in 1912, when the *Aconite* flowered in November, the sunshine here was 553 hours below the average; in that year October was 28.9 hours above the average. Is the *Aconite* late everywhere this season? W. H. Divers, *Bolton Castle Gardens, Grantham.*

TREATMENT OF STRAWBERRY BEDS (see p. 9).—The drainings from the stable or farmyard, when used with care, cannot be surpassed as fertilisers for the Strawberry. Care must, however, be taken to dilute the manure, for it is highly charged with ammonia. Ordinary farmyard drainings from cowsheds, even when used in conjunction with that from stables, is less drastic in its action than from horses, and can therefore be used with greater safety. We depend upon annual plantations for furnishing dessert fruit, and in no case do we retain the plants after their second year. In forming a plantation we secure the earliest runners, treat them in the usual way, and plant out when they are rooted sufficiently, invariably upon ground that has carried early Peas. As soon as the plants root freely in the soil they receive a thorough application of liquid manure, and this treatment is repeated on occasions until growth ceases. But as soon as leaf growth again commences, and until the fruit begins to change colour, the roots are again fed with the liquid stimulant. *Thos. Coulter, The Hendri Gardens, Monmouth.*

A RARE POMOLOGICAL WORK.—In comparison with neighbouring countries Holland has produced but few books dealing with fruits. If we except the outburst of works on Oranges and other Citrus fruits in the seventeenth century, nothing of importance was published until the well-known *Pomologia* of Knapp in 1753. In more modern days there is but the *Nederlandsche Boomprij* of Oetlander and other authors published in 1863. The gap between these last two was filled by the *Pomologia Batava* of Van Noort, and it is to this work that I wish to refer. For many years I have accepted the existence of such a work on report only, repeated search in libraries in France, Holland, Germany, Belgium, and at home failed to discover it, and I began to fear it was one of those flying Dutchmen who are more talked about than seen. However, a copy has turned up at a sale in Holland, and through the kindness of a friend, combined with a happy intervention of fate, which prevented it from being sent on the mail boat captured by the Germans, it has come into my hands. The full title of the work translated is "*Pomologia Batava*, with plates and descriptions of several of Apples and Pears which are grown in the Dutch Country. All coloured and described from Nature by Mr. Mathieu van Noort. Leiden, 1550." The size is quarto, and forty-four plates of Apples and forty of Pears are given (twenty of each, as I stated in my *Guide to the Literature of Pomology*, on borrowed information). It was published, I believe, in parts, from 1530 to 1540. The plates are lithographed and probably considerably retouched by hand, and are very fair specimens of such work, delicate and restrained in tone, but not so fine an example of this process as may be found, for instance, in DeCaen's *Jardin Fruiter*. The descriptions are short and not particularly detailed. The preface is autographed, and the general appearance leads one to suppose that a very limited edition was produced. Batavia, it may be said, was an old name for Holland. As I believe no description of this work exists, I venture to place one on record for the guidance of collectors. *E. A. Bagnard.*

EARLY MELONS.—To obtain early Melons the plants should be raised from seeds sown now. In a few weeks there will be more sunlight, and growth will be more free. For the earliest crop I prefer Ringleader, a green-fleshed variety of first-class flavour, vigorous constitution, and a free setter. If only a small number of fruits is required I advise the growing of the plants in pots, which results in a saving of soil and labour. I have succeeded well with early Melons by raising them in small pots on shelves close to the roof glass. In this way a stocky growth is secured, and this is all-important. *H.*

SOCIETIES.

ROYAL HORTICULTURAL.

JANUARY 16.—The first of the R.H.S. fortnightly meetings for 1917 was held on Tuesday last in the Drill Hall of the London Scottish, Buckingham Gate, Westminster. Thus, after a lapse of thirteen years, the Society has reverted, for the present, to the place of its former activities, and although not comparable with its own spacious and well-lighted building, the Drill Hall will no doubt serve the purpose of the fortnightly meetings until the return of normal conditions.

The opening meeting of the year was not very successful, but this fact was due to inclement weather. A fall of snow added to the difficulties of transport, and many who intended exhibiting were compelled to withdraw at the last moment.

The principal exhibit was a collection of Apples, for which the Fruit and Vegetable Committee awarded a Silver-gilt Knightian Medal.

Carnations and Pelargoniums formed the only exhibits in the floral section, but two novelties received Awards of Merit from the Floral Committee.

There were good exhibits of Orchids, and the Orchid Committee recommended one First-class Certificate and three Awards of Merit to novelties.

Floral Committee.

Present: Messrs. H. B. May (chairman), W. J. Bean, G. Reuthe, John Heal, R. Hooper Pearson, J. F. McLeod, W. Howe, J. Jennings, A. Turner, John Dickson, C. Dixon, H. J. Jones, H. Cowley, C. E. Pearson, W. P. Thouson, E. H. Jenkins and R. C. Notcutt.

AWARDS OF MERIT.

Corylus Avellana contorta. A remarkable form of the common Hazel, in which all the shoots are contorted, frequently in a spiral manner. Mr. Bowles, in *My Garden in Spring*, states that the abnormality was first found in a hedge by Lord Duce, near Tortworth, Masters, in *Vegetable Pathology*, p. 316, states that "irregular twisting or bending of the shoots is by no means of uncommon occurrence, the inducing causes being often some restriction to growth in certain directions, or the undue or disproportionate growth in one direction as contrasted with that in another." The abnormality is found in other shrubs, including *Cataegus* and *Robinia*. Shown by the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. Ed. B. Beckett).

Cyclamen Crimson St. George. The special merit of this fine decorative plant is its handsome variegated foliage. The leaves have a silver-grey border about 1 inch in width, sharply defined from a dark, velvety-green centre, whilst the veins, of a tone midway between the pale and dark shades, extend towards the margin, giving a mosaic appearance. The flowers are a rich shade of crimson, large, well-formed, and equal generally to the best type of bloom in this popular winter flower. Shown by Sr. GEORGE'S NURSERY COMPANY, Harlington, Middlesex.

GROUPS.

Two Bronze Flora Medals constituted the only awards made to collections. They were awarded in each case for collections of Perpetual-flowering Carnations, shown by Messrs. STURAN LOW AND Co., Enfield, and Messrs. ALLWOOD BROS., Wivelsfield, respectively. Messrs. Low's group included a few other indoor plants—*Begonias* and *Colens thyrsoideus*.

The Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. Edwin Beckett) showed a novelty in a golden sport from the common Holly, named Golden Prince. The variegation is along the margins of the deep grassy-green leaves.

Messrs. H. CANNELL AND SONS, Swanley, exhibited bunches of zonal-leaved Pelargoniums, the best varieties being *The Scarlet*, scarlet; *Mrs. Jackson*, rosy pink; *Countess of Radnor*, Mrs. Lawson and *Sr. Thomas Hanbury*.

Fruit and Vegetable Committee.

Present: Messrs. J. Cheal (vice-chairman), W. Wilks, Owen Thomas, F. Perkins, E. A. Buiyard, James Gibson, F. Jordan, W. E. Humphreys,

O. D. Tackett, A. Bullock, A. R. Allan, H. S. Rivers, E. Beckett, W. Bates and A. Grubb.

Messrs. J. CHEAL AND SONS, Crawley, were awarded a Silver-gilt Knightian Medal for a collection of Apples. The fruits were exceptionally well coloured, and in splendid condition generally. The more notable varieties were Beauty of Stoke, Hambling's Seedling, Alfriston, Winter Queen, Lord Derby, Egremont Russet, Fearn's Pippin, Christmas Pearmain, Newton Wonder, Crawley Beauty, Mother, Gascoyne's Seedling, W. Crump, Chas. Ross, Cox's Orange Pippin, Warner's King, Prince Albert and Sandringham.

A Cultural Commendation was awarded to Mr. EDWIN BECKETT for Tomatos Early Sunrise and Golden Sunrise. He also showed his new long-keeping Onion, Autumn Triumph, a flatfish, golden-brown variety, that grows to a large size.

Messrs. SUTTON AND SONS, Reading, showed a collection of vegetables, including Christmas White Cauliflowers; Scarlet Horn, Early Gem and Favourite Carrots; Late Drumhead Savoy, Matchless and Dwarf Gem Brussels Sprouts, Drumhead Kale, Curled Kale, New Year Savoy and Couve Tronchuda.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Veitch, and Messrs. Jas. O'Brien (hon. secretary), W. Bolton, R. A. Rolfe, J. Wilson Potter, Pania Balli, F. J. Hanbury, T. Armstrong, A. McBean, J. E. Shill, J. Charlesworth, C. H. Curtis, W. H. White, S. W. Flory, C. J. Lucas, R. Brooman-White, and the Rev. J. Crombieholme (visitor, chairman of the Manchester and North of England Orchid Society).

AWARDS.

FIRST-CLASS CERTIFICATE.

Odontoglossum Felice (*Thompsinianum* × *crispum*). From Messrs. CHARLESWORTH AND Co., Haywards Heath. The flowers are nearly as large, and of the same form as those of *O. crispum*, but with the colours of *O. Thompsinianum*. The sepals and petals are heavily blotched with dark claret-red, the outer third parts of the segments being light rose-colour. The variety shows a distinct advance in size and form, while retaining the rich colouring, of *Odium Edwardii*, one of the parents of *Odium Thompsinianum*.

AWARDS OF MERIT.

Cypripedium Lathamianum var. *Cardinal Mercur* (*Specterium magnificum* × *velosum*), from the Rev. J. CROMBIEHOLME, Clayton-le-Moors. The finest *Cypripedium* of its section, and equal to any in its fine size and shape. The large, flat dorsal sepal is white, with the lower two-thirds densely flaked and tinged with rich rose-purple, the colour being carried feather-like into the white upper part. The broad petals and lip are honey yellow, tinged with mahogany red, the margin being primrose yellow.

Odontoglossum Comptoni (*Illustrissimum* × *crispum*), from Messrs. ARMSTRONG AND BROWN, Orchardstead, Tunbridge Wells. A grand *Odontoglossum* of fine form and substance. The ground colour is white, with a tinge of purple, obtained from the dark colouring of the reverse of the segments. The sepals and petals are densely blotched with reddish-purple almost over the entire surface, as seen in some of the best forms of *O. Jasper*.

Odontodia Gratixie Bryndar variety (*Odium amabile* × *Odium Charlesworthii*) (see fig. 11), from Dr. MICHEL LACROZE, Rechempton. A fine dark red *Odontodia*, for which an Award of Merit was given to Messrs. Flory and Black on May 2, 1916. The present award is thus a confirmation of that previously given. It was not stated whether the plant now shown was the same as that exhibited on May 2 last, or one of the same batch.

PRELIMINARY COMMENDATION.

Odontoglossum Peter (parentage unrecorded), from Messrs. FLORY AND BLACK, Slough. A promising seedling, flowering for the first time. The flowers are white, with the inner parts coloured deep claret-red.

CULTURAL COMMENDATION.

To Mr. W. H. White, Orchard grower to Pantia Hall, Esq., Ashted Park, Surrey, for a fine plant of the scarlet Odontodia Keighleyensis, bearing six tall, branched spikes.

GENERAL EXHIBITS.

Messrs. ARMSTRONG and BROWN, Orchidist, Tunbridge Wells, were awarded a Silver Flora Medal for a group of seedling Odontoglossums, Odontodas, Cypripediums and hybrid Miltonas. Specially noteworthy were Cattleya Clotho (Triane x Emid), with a perfectly-formed white flower tinged with rose, the front of the lip being violet-purple with a narrow white margin; C. Percivaliana alba, white, with orange disc; a finely-coloured form of Odontoglossum Victory; and a promising and richly-coloured variety of O. eximillus.

Messrs. CHARLESWORTH and Co., Haywards Heath, were awarded a Silver Flora Medal for a group rich in good Odontoglossums and Odontodas. Brasso-Laelio-Cattleya Truffautiana (B.C. Mrs. J. Leemann x L.C. humilis) had fine, light-rose flowers with yellow disc to the fringed lip, and forms of Laelio-Cattleya Momus were specially attractive. Among Odontoglossums we noticed O. crispum xanthotes and O. ardenssum xanthotes, which seem to be obtainable in flower all the year.

Messrs. J. and A. McBEAN, Cocksbridge, were awarded a Silver Bankian Medal for an attractive group, principally of forms of Cymbidium Schlegelii, C. Alexandri and C. Doris. Odontodia Diana, 7da, Bradshawia and Oda Charlesworthi gave bright colours, and among others noted were the largest and best forms of Laeinaeops Chamberlainium.

Messrs. HESSLE and Co., Southgate, were awarded a Silver Bankian Medal for a group of their new Cymbidium sylvicolum (Pam. 55) and C. Beatrice (Lovanian x Schlegelii), varying in form and tint, but always beautiful. With them were other Cymbidiums of good quality.

Messrs. SANDER and SONS, St. Albans, staged a group in which the white Cattleyas Mary Sander and Snowflake were arranged with Cymbidium Gottianum, C. Doris, C. Alexandri and an interesting selection of species of the "botanical" class.

Messrs. FLORY and BLAIR, Slough, staged a group of Cymbidiums, seedling Odontoglossums and other Orchids. Specially good were Cypripediums Plum Langley variety (Lovanian x Chikabiyam x Victor Hugo), with large, clear yellow flowers of good substance, marked with chocolate-purple on the petals and dorsal sepal, the upper part of which is white, and Cattleya Zephyr (Schroderae x Dowiana aurea), with well-formed light rose coloured flowers, with dark rose centre to the lip, which has cream-white lines from the base.

Messrs. SHEPARD LOW and Co., Jarvisbrook, Sussex, showed the handsome rose coloured Brasso-Cattleya Penelope (B.C. Mad. Chas. Mason x C. Falcata), Sophro-Cattleya Blackie and the scarlet Sophronitis grandiflora.

Mr. J. E. SHILL, The Dell Gardens, Englebold Green, showed flowers of Cypripedium Eurycades The Barness and C. Eurycades The Dell variety, two magnificent flowers of the C. Eurycades class, the dorsal sepal of C. E. The Barness being 3 1/2 inches wide, white, with rich carotene blotches, the yellow and red brown petals being over 2 inches wide; Mr. SHILL also showed the wh. to Cattleya Astron.

NATIONAL DAHLIA.

JANUARY 15.—The annual meeting of the National Dahlia Society was held on Monday last, at the Hotel Windsor, Westminster. Mr. Joseph Cheal presided. The Committee's report for 1916 was read by the secretary.

EXTRACTS FROM THE REPORT.

The following are extracts from the report:—The Committee has again the pleasure of recording a satisfactory year's work. The season, taken as a whole, was not satisfactory for Dahlias, for atmospheric conditions were not conducive to satisfactory growth, whilst early frosts destroyed all hope of a prolonged season. The membership of the Society remains satisfactory under the present conditions.

The Annual Exhibition was held at the R.H.S. Hall, Westminster, on September 12, and was well up to the average standard, though there were rather fewer entries than in the previous year. Exhibitors from traders were not so numerous owing to the difficulties of labour and lessened railway facilities. The Amateur Classes however, were keenly contested, and the exhibits reached a high standard of excellence.

The Floral Committee appointed to act as a joint committee with the Floral Committee of the R.H.S. met on four occasions, when a larger number than ever of seedlings were submitted in all classes than in any previous year. Forty four awards were granted to novices. The awards were distributed amongst most sections of the flower.

The competition for the Cory Cup was held on the same date, and was productive of three fine exhibits. The Committee trust by next season more competitors may find it possible to enter for this valuable trophy, which has for its object the demonstration of the value of the Dahlia as a garden decorative flower.

The Committee have deemed it advisable to discontinue the conferences and publication of the Year Book for the present. The new varieties and selections of the last sorts in 1915 were, however, compiled and published in the Supplement and Schedule for 1916.

The Balance-sheet was as follows:—

T. Balance 1915	£ 8 1
Subscriptions and special prizes	6 3 8
Share of gate-money	63 12 0
Advertisements	1 15 0
	13 16 2
	£85 7 3
CR	
By Prizes	50 0 7
Medals, engraving etc.	1 5 0
Printing report and schedule	12 10 0
Stationery, post, and circular	7 0 0
Hire of committee room	1 1 0
Chop-book	0 8 0
Postage	3 7 6
Balance in hand	14 0 9
	£85 7 3

Examined compared with vouchers and found correct.

GEO. DAVIDSON, Hon. Auditor.

The chairman moved the adoption of the report and balance sheet. The results, he said, were much more satisfactory than was anticipated at the end of last season; indeed, the Committee had made a stipulation in last year's schedule that, in the event of the income of the Society not being sufficient to pay the prize money in full, the winners would be paid less in equal proportion all round. Any reduction of prize money, however, was not necessary for when all claims were paid there remained a balance of £14. This balance was obtained by suspending the publication of the Year Book, and practising other economies. They had reason to be more than satisfied with the annual show of 1916, and the Committee was encouraged to go on with the activities of the Society, and to hold an exhibition in 1917. The report and balance sheet were adopted without further comment.

On the proposition of Mr. Jarrett, rule 4 was altered by making the date of the annual meeting January instead of November. It was explained that the later date would enable the Committee to present a complete report of the year's working, including a full statement of accounts.

Mr. D. B. Crane suggested that the special nurserymen's classes at the show should be open to all competitors, including amateurs, and the proposition was agreed to.

The meeting then proceeded with the election of officers. Mr. Reginald Cory was re-appointed president. It was explained that the president's absence from the annual meeting was unfortunately due to indisposition, and the chairman was asked to send him a letter expressing regret on behalf of the meeting. The vice-presidents were re-elected, and the names of Messrs. J. Cheal and J. A. Jarrett added to the list.

The committee was elected, and Messrs. D. B. Crane and H. P. Howard appointed new members to fill vacancies.

Mr. J. Cheal was re-appointed chairman, Mr. John Green, hon. treasurer, and Mr. J. B. Riding hon. secretary. The secretary was warmly thanked for his services, and asked to accept the sum of £10 as an honorarium from the Society. In returning thanks Mr. Riding stated that many foreign members were being admitted, and that American growers were keenly interested in the work of the Society. He could promise the meeting a large increase in the membership as soon as conditions were again normal.

SOUTHAMPTON ROYAL HORTICULTURAL.

JANUARY 1.—The annual meeting of the members of the Southampton Royal Horticultural Society was held at the Municipal Buildings. The Mayor presided. The statement of accounts showed that the increase for the year was £460 7s. 2d., of which £112 12s. 2d. was realised by the summer show and £38 10s. at a garden fête. The total expenses, including a small debt from 1915, amounted to £360 13s. 8d., and of this sum £207 13s. 7d. was expenses of the summer show and £27 16s. 6d. of the garden fête. The total cash assets amount to £54 3s. 6d., with liabilities nil.

Lord Swaythling was re-elected president, and the vice-presidents were also re-elected. Professor E. S. Lyttel, of the Hartley College, was elected chairman of the Council, and Mr. N. D. Desborough vice chairman. All the other retiring officers were re-elected, including the secretary, Mr. C. S. Fudge, who has held the office for forty-five years.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

JANUARY 8.—The monthly meeting of this society was held in the R.H.S. Hall on Monday, the 8th inst., Mr. C. H. Curtis in the chair. Two new members were elected. The sum of £88 9s. 1d. was passed for payment to the nominees of four deceased members, two of whom had fallen on the field of battle. The sick pay for the month on the ordinary side amounted to £80 18s. 1d., and on the State section to £24 16s. 6d., and maternity claims to £6. The financial statement was read by the treasurer and the trustees were empowered to invest £600 in the new War Loan. The new rules for the opening of a Juvenile Branch will be adopted at the next annual meeting.

NATIONAL ROSE. ANNUAL MEETING.

JANUARY 16. The fortieth annual meeting of the National Rose Society was held on Tuesday last in the Hotel Windsor, Westminster. There were about eighty present, and Mr. E. J. Holland presided.

The annual meeting was preceded by a special general meeting for the purpose of adopting new rules governing the constitution of the society, and these were accepted with a minor alteration as to the status of the auditors.

In opening the annual meeting the chairman stated that his first duty was to submit the annual report of the Council, together with the statement of accounts. The chief items in the report are as follows:—

EXTRACTS FROM THE REPORT.

The Council have again to report that the work of the Society has gone on successfully during the past year, and in view of the adverse war conditions the position of the Society must be regarded as highly satisfactory. Three Shows have been held, the Spring Show in the Horticultural Hall on April 14, the Summer Show at the Royal Botanic Gardens on June 30, and the Autumn Show on September 19 in the Horticultural Hall. Weather conditions prior to the Summer and Autumn Shows were not favourable, and the exhibits were hardly up to the usual standard either in number or quality, nevertheless, what must be regarded as fine collections of blooms were brought together on both occasions. The whole of the gate-money taken at the Summer Show, amounting to £76, was handed over to the British Red Cross Society.

No provincial show was found possible this year, but in order to give lovers of seedling Roses an additional opportunity of staging their production for the awards of the Society, the Council decided that, if it were possible, a special display should be held at the Horticultural Hall. The Secretary of the Royal Horticultural Society willingly co-operated, and generously arranged for ample table space at the fortnightly Show on July 18. The number of plants put on a great success, no fewer than 56 new varieties being staged, many of them of high merit.

During the year to date, nearly 320 new members have joined the Society, although for losses by death and resignation, the total number of members is now 437.

The total receipts for the past year, including a balance of £258 7s. 7d. brought forward, amounted to £5,325 12s. 4d., and the expenditure to £3,220 12s. 3d., leaving a balance at the Bankers of £1,105 0s. 1d.

With the deepest regret the Council have to record the death in September, 1916, of their President, Mr. Edward Marley. The Council desire to place on record their appreciation of his invaluable services and to

pay a tribute of affectionate regard to one whose name will always be held in high honour by the National Rose Society.

The Council have also to deplore the death of Mr. H. E. Molyneux, who for many years took an active interest in the affairs of the Society.

The Spring Show for 1917 has been provisionally fixed to take place on Friday, April 20; the Metropolitan Exhibition in the Royal Botanic Gardens, Regent's Park, on Friday, July 6; and the Autumn Exhibition on Tuesday, September 18; all these exhibits must be subject to the exigencies of the war.

The new combined "Official List of Names and Pruning Books" will be issued to members during January. The Rose Annual for 1917, containing a number of helpful articles interesting to amateur Rosarians generally, will be issued early in April next.

SUMMARY OF RECEIPTS AND PAYMENTS FOR THE YEAR ENDING DECEMBER 31, 1916.

CR.	£ s. d.	£ s. d.
Jan. 1, 1916—To Balance	238 7 7	
Loss Honourarium voted to the Honorary Secretary for 1915	100 0 0	
		138 7 7
Dec. 31—By Subscriptions		2,802 12 11
Proceeds of Shows—		
Spring	7 18 6	
Summer	75 19 1	
Autumn	6 6 1	
		90 4 1
Affiliated societies (including medals, &c.)		29 11 6
Advertisements in Society's publications		93 0 8
Sale of Society's publications		62 18 6
Special prize donations (exclusive of plate)		21 19 2
Interest (less tax), Consols		49 17 6
Interest on bank deposits		35 0 5
		£3,323 12 4
To Balance brought down		103 0 1
Reserve Fund, Consols 2½ per cent., £5,533 9s. 6d. Cost		£2,547 12s.
Dr.	£ s. d.	£ s. d.
Dec. 31, 1916—By Publications		563 18 7
Printing, stationery and advertising		183 4 10
Postages, telegrams and sundry expenses		326 8 11
Hire of rooms and expenses at meetings		21 13 6
Rent Secretary's office		80 0 0
Honourarium to Honorary Secretary		150 0 0
Salaries, Secretary's office		219 9 8
Auditor's fee, 1915		20 0 0
Expenses at Shows—		
Spring	4 14 6	
Summer	405 12 7	
Autumn	4 13 6	
		415 0 7
Royal Botanic Society		50 0 0
Flowers, Spring, Royal Botanic and Autumn Shows		529 10 0
Purchase of plate, medals, &c.		37 14 2
Donation to British Red Cross Society		76 0 0
Purchase of £1,000 Consol 2½ per cent.		547 12 0
Balance at bankers	95 12 4	
Cash in hand	7 7 9	
		103 0 1
		£3,323 12 4

The chairman, in moving the adoption of the report and balance-sheet, referred to the great loss the society had sustained in the death of the president, Mr. Edward Mawley, who had been connected with the society for forty years. The Council hoped when circumstances were more favourable to raise a suitable memorial to the memory of Mr. Mawley. They had also lost another valued member in Mr. Molyneux, who, at one time, held the office of treasurer. With regard to the society's work in 1916, Mr. Holland said that three shows were held as usual, and all were successful and worthy of the Society. The finances were satisfactory, especially considering the difficulties of 1915, for, after settling all outstanding accounts up to the end of December they entered the new year with a credit balance of £238 7s. 7d. Of this sum it was decided to present an honourarium of £100 to the hon. secretary, which would thus leave £138 7s. 7d. to the good. Subscriptions during the year amounted to £2,802 12s. 11d., which showed a falling off of £250, compared with 1915. Nevertheless, said Mr. Holland, only in two former years have the subscriptions been higher than in 1916.

The total income from all sources amounted to £3,323 12s. 4d. Economies have been effected in

* This has since been abandoned—see paragraph on p. 26.

various items of the expenditure, with the result that, notwithstanding a reduction in subscriptions, the Council has been able to purchase £1,000 Consols, 2½ per cent., at a cost of £547 12s.

Mr. C. E. Shea, seconded the adoption of the report and accounts. He did so, he said, with extreme pleasure, for the finances were splendid for such a time as the present. In no respect had the activities of the society failed in 1916. They had expended a sum of £1,000 less on the management than in the previous year, and had purchased £1,000 Consols. It was true that there was a smaller balance than in the preceding year. Yet they had no fear, for they had one great asset, comparable to what the painters described as "the under colour," and that was the great love of the rose to be found in all parts of the country. He was confident that the society would go on increasing and increasing.

The Rev. J. H. Pemberton asked whether the shows for 1917 would be held as arranged. In reply the chairman stated that the matter would be decided by the council later in the afternoon. The meeting then proceeded with the election of officers: Mr. E. J. Holland was elected president; Mr. H. R. Darlington, vice-president; Mr. S. A. R. Preston-Hillary, hon. treasurer; Mr. Courtney Page, hon. secretary; and Mr. Charles Braman, auditor. The vice-presidents and council were also appointed, the whole of the names as issued in the balloting list being elected.

Obituary.

WILLIAM HOULISTON.—We regret to state that Mr. William Houliston, curator of the gardens and museum of the Dumfries and Maxwelltown Astronomical Society at their Observatory and museum, Maxwelltown, died on January 9, after a protracted and painful illness. The deceased gardener, who was a son of the late Mr. Houliston, gardener, Carruchan, gained experience at important gardens in the South of Scotland and elsewhere. For a considerable number of years he was gardener to the late Colonel and Mrs. Blackett at Arbigland, Kirkcubrightshire, and while there was highly successful and was of great assistance in promoting the cause of horticulture in the locality. Some years ago he received his appointment at the Observatory, Maxwelltown, and fulfilled the duties there in an admirable manner, to the full satisfaction of his employers and of the public who visited the place. Mr. Houliston, who was 68 years of age, is survived by a widow and several sons and daughters. Some of the sons follow their father's occupation, and those at present in the Army, one of whom was recently severely wounded, occupy good positions.

ROBERTSON KIRKPATRICK.—*The Florists' Exchange* announces the death of Mr. ROBERTSON KIRKPATRICK, forester of the Park Commission, and landscape gardener of Nashua, U.S.A., who died on Dec. 20, aged 55 years. Mr. KIRKPATRICK was a native of Glasgow, and settled in America 33 years ago.

ANSWERS TO CORRESPONDENTS.

There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to inquire, or from not knowing of whom to make the inquiry, they too often fail to obtain the information they are in want of. And let no one be alarmed lest his questions should appear trifling, or those of a person ignorant of that which he ought to know. He is the worst man who is conscious of his ignorance; for how little do the very really know—except that they know little. If one man is unacquainted with a fact however common, it is probable that hundreds of others in the same position as himself are equally in want of similar information. To ask a question, then, is to consult the good of others as well as of one's self.—*Gardeners' Chronicle*, Nov. 7, Vol. 1, January 7, 1851.

ADDRESS: D. M. VILMORIN, ANDRÉOUX et Cie., 4, Quai de la Mégisserie, Paris.

BIRDS AND FRUIT: *Gaulth*. The only effective method of keeping birds from ripe fruit is to place nets over the trees. Scaring with a gun will do much to keep the birds away, but you would

need to be amongst the trees very early in the morning and until nightfall. Failing the net or gun you must rely on the old-fashioned bird scarer, of which there are several types. Write to one of the horticultural sundriesmen. The pots for Peas should be drained.

GRAPE ROT: W. H. Dissolve ¼ lb. of iron sulphate in ½ gallon of water, and soak the rods thoroughly with the specific, which may be applied with a brush. If you add a few drops of sulphuric acid to the iron sulphate before mixing it with the water it will be an advantage. One pint of sulphuric acid is sufficient for 50 gallons of water and 25 lbs. of iron sulphate.

LICENCE FOR GARDENERS: W. G. A licence has to be taken out for practically every man-servant who is employed for private (as distinct from business) purposes. A licence is therefore necessary for gardeners permanently employed in a private garden; the cost is 15s. per annum for each man.

NAMES OF PLANTS: J. H. S. *Cyrtodeira fulgida*, a Gesneraceous plant, native of New Grenada.

PEAS UNDER GLASS: *Igorunus*. Assuming that you mean edible Peas, you will do well, considering the circumstances, not to attempt to grow this vegetable under glass in flowerpots, but rather to utilise some of your unheated pits for their cultivation, selecting dwarf varieties. You may either raise the seedlings in small pots—sowing five seeds in each 3-inch pot—and in due course plant them in the pits, or which would perhaps be the most satisfactory plan, sow direct in the pits. The essentials for success are a firm and not too rich soil, careful watering, and abundant ventilation whenever outside conditions permit.

The latter detail is especially important during the flowering period. If you can obtain clean shenders or fine gravel it would be better to place a layer 1 inch thick on the boards you mention rather than to attempt to grow plants on the bare boards, which exert an undesirable drying influence on the atmosphere. You might well make a hotbed in one half of your 30-foot-long pit, provided the remainder is boarded off. Beech leaves alone would furnish sufficient bottom heat to raise vegetable seeds such as Cauliflowers, Cabbages, Brussels Sprouts, Onions and Leeks, though the addition of straw manure would secure a more lasting heat. Whatever method you adopt, care should be taken to guard against over-heating before the seed is sown. Otherwise failure is certain. For the hotbed the trodden material should be at least 2 feet thick, and 3 feet would be better. Vegetables may well be raised in boxes in a cold frame, but in this case you should defer sowing until February at the earliest. The other frames could be utilised as you suggest, for pricking off the seedlings raised on the hotbed after they have been accustomed to the temperature of the unheated frame, and from thence you can safely transfer them to the cropping quarter. In these frames if the boards mentioned are close-fitting, it would be wise to make holes with an auger to provide drainage.

SALSAFY: M. E. I. M. This vegetable requires a light, rich soil which has been manured for a previous crop, so that no fresh manure need be applied. It is a deep-rooting plant, therefore the soil should be trenched to the depth of 2 feet and thoroughly pulverised, all stones being removed, so that the roots may not be retarded in their growth downwards. Sow the seeds in shallow drills early in May, allowing a distance of 15 inches between the rows. Thin the seedlings to 9 inches apart as soon as they are large enough for handling, and keep the ground well stirred with the Dutch hoe during the summer. Water the plants liberally in dry weather.

Communications Received.—*Emmer*—C. T. F. Young, Birmingham; A. B. J. E. H. E. A. W. H. J.—H. Potts; W. P. J. P. A. D. Russ; A. D. R. J. F. P. P. D. S. Bombay; A. S. M. Bombay; C. O. Collins; W. B. C. F. A. B. E. S. O. T. E. M.—W. H. A. (many thanks); A. G.—F. N. E.—H. K. H.—J. P. W. H. and S.—W. H. W.—C. H. G.—Rev. C. B. S.—W. C.—J. J. D.—C. D.—E. Cross—G. G. J.—J. A. P.—W. M.—C. E. P.

SECURE YOUR SUPPLIES

Of the most popular and serviceable vegetables.

PEAS.

- Sutton's Early Giant. A popular first early variety Per pint 1/9
- Sutton's Centenary. A standard second early pea Per pint 2/-
- Sutton's Peerless. A splendid cropper. Per pint 2/-

RUNNER BEANS.

- Sutton's Best of All. The longest podded Scarlet Runner Per 1/2 pint 1/9
- Sutton's Prizewinner. Of superb table quality Per 1/2 pint 1/9

DWARF BEAN.

- Sutton's Selected Canadian Wonder. A favourite variety Per pint 1/3

BEET.

- Sutton's Globe. Valuable for early crops Per pkt. 1/-

CARROT.

- Sutton's New Red Intermediate. The standard variety for general culture Per pkt. 1/-

CAULIFLOWER.

- Sutton's Early Giant. Beautifully white, close and delicate in flavour Per pkt. 1/6

LEEK.

- Sutton's Prizetaker. The largest and heaviest cropping variety Per pkt. 1/6

LETTUCE.

- Sutton's Peerless (Cos). Flavour all that can be desired Per pkt. 1/-

ONION.

- Sutton's Selected Ailsa Craig. The heaviest cropper Per pkt. 1/6

PARSNIP.

- Sutton's Tender and True. Of the finest quality with clear smooth skin Per ounce 10d.

TURNIP.

- Sutton's Early Snowball. The earliest white round turnip for garden use Per ounce 6d.

SUTTON & SONS, THE KING'S SEEDSMEN, READING.

SANKEY'S FAMOUS GARDEN POTS
 The BEST and Cheapest.
 State quantity of each size required and have carriage paid or quotation ("carriage" frequently amounts to half value of goods), or write for Price List, free.
 SPECIAL POT'S of all descriptions. Rust Bowls and Fern Pots from 2s. each.
RICHARD SANKEY & SON, L^{TD}.
 Bulwell Potteries, NOTTINGHAM.

THOMSON'S VINE, PLANT & VEGETABLE MANURE

Famous for over 30 Years.
 Ensures success in your garden; 60 lb. casks or 100 lb. casks. The best ingredients procurable as to combine with MULCHING with ASTIN effects, producing in over-crop vigorous, healthy and fruitful growth.
 The direct result of LONG PRACTICAL experience in gardening. Used by Amateur and Professional Gardeners the world over.
 ALSO
THOMSON'S SPECIAL CHRYSANTHEMUM AND TOP DRESSING MANURE.
 Prices: Fine Plant and Vegetable Manure, 1 cwt., 0/-; 2 lbs., 12 s.; 25 lbs., 7 s. 6 d.; 14 lbs., 4 s. 6 d.; 7 lbs., 2 s. 6 d.; 20 lb. cask, 10 s. 6 d. Carr. paid anywhere on 25 lbs. and 100 lb. Special Chrysanthemum and Top Dressing Manure—4 lbs., 20 s.; 25 lbs., 11 s.; 14 lbs., 7 s. 6 d.; 7 lbs., 3 s. 6 d.; 1 lb., Carr. p.l. anywhere on 25 lbs. and 100 lb. Sold by all Seedsmen OR FROM
SOLE MAKERS
W^{OS} THOMSON & SONS L^{TD} CLOVENFORDS, N.B.

BENTLEY'S WEED DESTROYERS :

Liquid: Concentrated Strength 1 to 80.
 Double Strength 1 to 50.
 Patent Powder: 1 to 25.

BENTLEY'S DAISY KILLER

(LAWN SAND).

BENTLEY'S INSECTICIDES.

BENTLEY'S FUNGICIDES.

BENTLEY'S FUMIGANTS.

BENTLEY'S MANURES.

Catalogue on application.

JOSEPH BENTLEY, Ltd.,
 Chemical Works,
 Barrow-on-Humber, HULL.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
 Kindly send for Catalogue.

JAMES CYPHER & SONS,
 Exotic Nurseries, CHELTENHAM.

GARDENING CHARITIES.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

GEO. J. INGRAM, Sec.,
 92, Victoria Street, S.W.
 Telephone—Victoria 614

BUNYARD'S FRUIT TREES



CATALOGUE by RETURN

GEORGE BUNYARD & CO.
 Royal Nurseries, Ltd.
MAIDSTONE.

MARKETS.

COVENT GARDEN, January 17.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—ENDS.

Cut Flowers, &c.: Average Wholesale Prices.

s.d.s.d.		s.d.s.d.	
Arums, per doz.	7.0-8.0	Lilium longiflorum, long	5.6-6.0
Azalea, white, per doz. bun.	7.0-8.0	— short	6.0 —
Camellias, white per doz. bunches	2.6-3.0	— lancifolium album, long.	2.6-3.0
Carnations, per doz. blooms, best American varieties	4.0-5.0	— short	2.6-3.0
— Carolina (large)	5.0-5.6	— short	1.6-2.0
Chrysanthemums, white per doz. blooms	3.0-5.0	Narcissus s. s.	
— pink, per doz. blooms	4.0-5.0	Grand Primo, per doz. bun.	4.0-6.0
— white, per doz. bunches	18.0-24.0	— Soleil d'Or, Guernsey, per doz. bun.	8.0-12.0
— coloured, per doz. bunches	18.0-24.0	Orchids, per doz.	12.0-15.0
Daffodils, single, per doz. bun.	18.0-24.0	— Cattleya	12.0-15.0
Eucharis, per doz. bloom	3.0-3.6	— Cypripedium	2.0-3.0
Freesia, per doz. bun.	3.6-4.6	— Od on toglossum crispum	3.0-4.0
Gardenia, per box of 12 and 60 blooms	6.0-8.0	Pelargoniums, per doz. bunches, double scarlet	12.0-15.0
Heather, white, per doz. bun.	12.0 —	Roman Hyacinths per doz. bun.	30.0-36.0
		Tulip, scarlet, per doz. bun.	12.0-15.0
		Violets, single, Princess of Wales	4.0-5.0

Cut Foliage, &c.: Average Wholesale Prices

s.d.s.d.		s.d.s.d.	
Adiantum (Maidenhair Fern) best, per doz. bunches	8.0-9.0	Cycas leaves, per doz.	5.0-12.0
Asparagus plumosus, long trails, per half-dozen	2.6-3.0	Fern, French, per doz. bunches	0.6-0.8
— medium, per doz. bunches	12.0-18.0	— common	3.0-4.0
— Sprengeri	8.0-12.0	Ivy leaves, per doz. bun.	2.0-2.6
Bronze foliage	3.0-6.0	Moss, gross bunches	9.0-10.0
Carnation foliage, per doz. bunches	4.0-5.0	Myrtle, doz. bun. small-leaved	6.0 —
Croton foliage, per doz. bunches	12.0-15.0	— French, per doz. bunches	1.0-1.3
		Smilax, per bun. of 6 trails	1.3-1.6

French Flowers, &c.: Average Wholesale Prices.

s.d.s.d.		s.d.s.d.	
Anemone, double, pink, per doz. bun.	3.6-4.6	Narcissus-con. Sol d'Or, per doz. bun. of 6	2.6-3.0
— single, mixed, per doz. bun.	12.0-15.0	Ranunculus, per doz. bun.	6.0-8.0
Lilac, white, per doz. sprays	4.6-5.0	— Carmine, per doz. bun.	6.0-8.0
Mimosa (Acacia), per doz. bunches	10.0-12.0	— white, per doz. bun.	12.0-15.0
Narcissus paper white, per doz. bun.	3.0-3.6	Violets, single, per doz. bun.	3.0-4.0

REMARKS.—The scarcity of cut flowers, both white and coloured, continues. Chrysanthemums are almost finished, and their prices are still higher. Richardias and Laburns are scarce indeed, there is a great shortage of all home-grown flowers. Contributions from Guernsey are gradually increasing. They consist chiefly of yellow and white Narcissus, Buff Lily, self-flowering Euphorbia splendens, and Smilax. A limited supply of French flowers is arriving daily, and the blooms are seen bought at high prices. Paper-white Narcissus, "Mimosa," Violets, and a few anemones find a ready sale.

Plants in Pots, &c.: Average Wholesale Prices.

s.d.s.d.		s.d.s.d.	
Aralia Sieboldii, dozen	6.0-6.0	Cocos Weddelliana, 48's, per doz.	18.0-30.0
Asparagus plumosus nanus, per doz.	10.0-12.0	— 60's, per doz.	8.0-10.0
— Sprengeri	8.0-10.0	Croton per doz.	18.0-30.0
Aspidistra, per doz. green	24.0-36.0	Erica gracilis	10.0-12.0
Cacti, various, per tray of 15's	4.0 —	— melanthera	18.0-24.0
— tray of 12's	6.0 —	— byemalis	12.0-15.0
		— byemalis, in thumbs	4.0-6.0

Plants in Pots, &c.: Average Wholesale Prices.—con.

s.d.s.d.		s.d.s.d.	
Ferns, in thumbs, per 100.	10.0-15.0	Lantana borbonica, per doz.	12.0-30.0
— per 100, in small and large 60's	14.0-24.0	Lilium longiflorum, per doz.	36.0-42.0
— in 48's, per doz.	6.0-7.0	— lancifolium rubrum	24.0-30.0
— in 32's, per doz.	12.0-18.0	— album	24.0-30.0
— choicer sorts, per doz. 48's	8.0-12.0	Marguerites, in 48's, per doz.	12.0 —
Geonoma gracilis, 60's, per doz.	6.0-8.0	Pandanus Veitchii, per doz.	36.0-48.0
— larger, each.	2.6-7.6	Phoenix rupicola, each	12.6-21.0
Kentia Palmeriana, per doz.	4.0-8.0	Roman Hyacinths per box 24's	8.0-10.0
— larger, per doz.	18.0-36.0	Spiraea, per doz.	12.0-15.0
— Forsteriana, 60's, per doz.	5.0-8.0		

REMARKS.—Trade in this department is very quiet. Winter-flowering Ericas are almost finished, and there is no new subject to take their place. There is no great demand for flowering or foliage plants, and the majority of the salesmen's stands remain empty.

Vegetables: Average Wholesale Prices.

s.d.s.d.		s.d.s.d.	
Artichokes, Globe, per doz.	3.0-5.0	Lettuce, Cabbage and Cos, per doz.	1.0-6.0
— Jerusalem	5.0 —	Mustard and Cress, per doz. punnets	1.0-1.6
Asparagus Paris Green, per bun.	4.0-4.6	Onions, per bag	20.0-23.0
Beetroot, per bus.	4.0 —	— spring, per doz. bun.	6.0 —
Beans, Guernsey, per lb.	3.6-4.0	Parsnips, per bus.	2.6-4.0
Broccoli, purple sprouting, per bus.	3.0 —	Peas, per lb.	2.0-2.6
Brussels Sprouts, per bus.	5.6 —	Potatoes, new, per lb.	0.6-0.8
Cabbage, per doz.	4.6-7.0	Radishes, per doz. bun.	1.6-2.6
— Red, per doz.	3.0 —	Rhubarb, forced, per doz.	1.3-1.9
Carrots, per bag	9.0 —	Savoy, per tall	5.0-8.0
Cauliflowers, per tall	10.0-20.0	Seakale, per doz. punnets	12.0-15.0
Celeriac, per doz.	0.6-5.0	Shallots, per lb.	0.5-0.6
Celery, per doz.	12.0-24.0	Spinach, per bus.	6.0 —
Cucumbers, per doz.	10.0-18.0	Swedes, per bag	4.0-4.6
Endive, per doz.	3.0 —	Tomatoes, Tene-riffe, per bundle	24.0-26.0
Fennel, per cwt.	44.0 —	Turnips, new, per bag	4.6-5.0
Herbs, per doz.	2.0-6.0	— Tops, per bag	4.0-4.6
Horseradish, per doz.	42.0 —	Watercress, per doz.	0.9-1.0
Leeks, per doz.	4.0-6.0		

Fruit: Average Wholesale Prices.

s.d.s.d.		s.d.s.d.	
Almonds, per cwt.	70.0 —	Grapes, Almeria, per brl.	18.0-25.0
Apples—		— Alicante	1.3-2.0
— Californian New Towns, per case	12.0-12.6	— Gros Colman, per lb.	1.4-3.0
— English Cooking, per bus.	11.0-12.0	— Canon Hall, per lb.	6.0-8.0
— Nova Scotian barrels	20.0-35.0	— Muscats, per lb.	9.0-12.0
— Oregon, per case	14.0-15.0	Grape Fruit, per case	18.0-20.0
Apricots, per box	4.0-6.0	Kent Cobs, per lb.	10.0-13.0
Bananas, bunch—		Lemons, per case	14.0-28.0
— X-medium	18.0 —	Nuts, Brazils, new, per cwt.	90.0 0
— Extra	20.0 —	— Coconut, per 100	25.0-31.0
— Double X	22.0 —	Oranges, per case	15.0-65.0
— Red, per ton	225.0 —	Peaches, per box	14.0-12.0
— Jamaica, per ton	£18 —	Pears—	
Chestnuts, per bag	20.0-25.0	— Californian	13.0-17.0
Cranberries, per case	19.0-20.0	— Keiffer, per barrel	35.0-40.0
Dates, per doz. boxes	7.0-7.6	Plums, per box	4.0-8.0
		Tangerines, per box	1.0-6.0
		W. I. B. s. s., per cwt.	56.0-80.0

REMARKS.—A number of English Apples are still obtainable, notably Braintree's Seedling, Dumbleton's Seedling, and Newton Wonder. Overseas varieties consist of several Nova Scotian kinds—King of the Pippins, Beauty and Blenheim Pippin. Shipments from California chiefly consist of Newton Pippins. A number of Californian varieties of Pears are available, including Winter Nells, Doyenne du Commerce, Glou Morceau and Easter Beurre. Cape fruits consist of Peaches, Plums and Apples. Black Grapes continue to be fairly plentiful, but supplies of Muscat of Alexandria are very limited. Apples of Ten-fold Tomatoes are also obtainable. Forest vegetables consist chiefly of Asparagus, Seakale, Mushrooms, Cumberes, Beans and Peas. Ordinary vegetables and roots are fairly plentiful for the time of year. E. H. R. Current Garden Market January 17, 1917.

Potatoes.

s.d.s.d.		s.d.s.d.	
Beiford	10.6-11.6	Blackland	10.6-11.0
King Edward	10.6-11.6	Evergood	10.6-11.0
Arran Chief	11.6-12.0	King Edward	11.0-12.6
Lincoln	11.6-12.0	Queen	11.0-12.0

REMARKS.—Trade is slow. Prices remain the same as last week. Supplies are moderate, and stocks in London are not very large. Edward J. Newborn, Covent Garden and St. Pauls, January 7, 1917.

CATALOGUES RECEIVED.

SEEDS.

R. H. BATH, LTDs., Wisbech, Cambridgeshire.
 BIRD AND SONS, King Street, Covent Garden, London.
 JAMES CARTER AND CO., Raynes Park.
 W. CUTBUSH AND SON, Highgate.
 MORRE AND CO., 150-155, Finchley Road, London.
 W. DEWINDT AND SONS, Ltd., 57, 58, Dawson Street, Dublin.
 J. R. PEARSON AND SONS, Lowham, Nottinghamshire.
 HYESTER AND SON, Ltd., St. Albans.
 RYDER AND SON, 152, Houndsditch, London. (Wholesale.)
 WILLIAM WATT, Edenside, Cupar.
 ALFISTON AND McLEAN, 89, Mitchell Street, Glasgow.

MISCELLANEOUS.

JESSE HAYES-COMBE, Fetham and Beiford, Middlesex.—Plant, leaf, and other specialties.
 CRAYFIS, LTD., 259, Gray's Inn Road, King's Cross, London.—Trucks, trolleys, ladders, barrows, &c.

GARDENING APPOINTMENT.

Mr. W. C. Foote, recently Gardener to C. W. HAY, Esq., Shandon Court, Cambridge Wells, and previously for 5 years Gardener to E. H. CARTWRIGHT, Esq., Myskyns, Titchester, Sussex, as Gardener to Lady MABEL LINDSAY, Burcote House, Abingdon.

THE HORTICULTURAL DIRECTORY AND YEAR BOOK.

We much regret that the publication of the Horticultural Directory and Year Book for 1917 has been delayed by unforeseen and unavoidable circumstances. First, the difficulties in regard to printing and paper supplies have increased greatly of late; and secondly, the number of corrections that have to be made this year is altogether unusual, owing to the fact that so many gardeners have already sent us prepaid orders we offer our apologies for the delay, and assure them that everything possible is being done to expedite publication.

GARDENERS' CHRONICLE, Ltd.,
 41, WELLINGTON STREET, COVENT GARDEN,
 LONDON, W.C.

(Continued from page iii.)

WANTED, JOURNEYMAN or good **IMPROVERS** for general Inside Work; good wages, with Botby, milk, &c.; duty and overtime paid.—Apply, stating wages and experience, to **WM. BARK**, Brognytn Gardens, Oswestry, Shropshire.

WANTED, MAN (discharged soldier or other, ineligible), with knowledge of general work outside, and able to take duty; wages 28s. and Botby, duty extra. Also good strong **YOUTH** as Improver; 18s. and Botby.—Apply, **T. STEVENSON**, Woburn Place Gardens, Aylesstone.

WANTED, a good MAN, for General Inside Work, also strong **YOUTH** for Outside take duty; no Botby, comfortable lodgings close to work; good wages and overtime 1 pm. Saturday.—Apply, stating wages and experience, to **J. M. RICHARDS**, Brockampton Park Gardens, Andover, Hants. Gos.

WANTED, at once 2 or 3 smart YOUTHS, ages 17 to 18, for Inside and Out.—Apply, stating age, experience, and wages required, with Botby, to **G. F. HALLETT**, Netherby Gardens, Carlisle.

WANTED, strong YOUTH, about 16, chiefly for Kitchen Garden, take duty; wages 17s. per week, Botby, and Vegetables, 1 clock Sat. days.—**J. A. MURFORD**, Morrival Hall Gardens, Aylesstone.

WANTED, YOUTH, age 15, Inside the House and Outside; wages 18s. weekly, with Botby.—**E. MORGAN**, Wassand Hall, Wexley, Hants.

WANTED, a LAD for Gardens (In and Out), about 16, or soldier discharged, formerly Gardener, Convent, &c.; liberal wages.—Apply, **BRATT**, London, Templeme.

TRADE.

WANTED, for the South Coast, experienced WORKING FOREMAN or **ASSISTANT MANAGER**, for Landscape and Jobbing Gardening Department, must be practical and able to estimate. Apply, with all particulars, to **Z. Gardeners' Chronicle**, 41, Wellington Street, Covent Garden, W.C.

WANTED, WORKING FOREMAN, to carry out Landscape work and look after work with his men; state age, wages required, references, and previous experience. **A. W. W.**, Box 26, 41, Wellington Street, Covent Garden, W.C.

EXPERIENCED CHARGE HANDS wanted for Palms, Ferns and Vines; wage 36s. per week and 6d. per hour overtime; Sunday duty extra.—**THOMAS RICHFORD & SONS, LTD.**, Tottenham Nurseries, near Brockbourne, Herts.

WANTED, for small nursery in suburbs of London, MAN to take entire charge of Landscape and Jobbing Work, **MAHOOD & SON**, Putney Nurseries, Putney, S.W.

WANTED, for large Millbank Nursery, an experienced Builder and Bratter, with a good knowledge of Rhododendron, Roses, and Fruit Trees; also two experienced **KNIFEMEN**. Apply by letter, stating age, references, and wages required, to **A. Box 21, 41, Wellington Street, Covent Garden, W.C.**

WANTED, a good PROPAGATOR and GROWER, one used to Roses, Clematis, Chrysanthemums, and General Nursery Stock. Apply with particulars wages, etc. to **THE DEVON ROSERY AND FRUIT FARM, LTD.**, Torquay.

WANTED, capable MAN, as **SECOND**, for General Nursery (incl. edd); usual duties. **THOMAS BUTHER**, The Nurseries, South Norwood, S.E.

WANTED, MEN, ineligible, for Soft-wooded stuff, Chrysanthemums, Tomatoes and Cucumbers, &c.—**G. BENNETT & SON**, Hanwell, W.

WANTED, good CUCUMBER GROWER, ineligible or discharged soldier; also **LADY GARDENER**—State wages, &c., to **MANAGER**, Clifton Fruit Growers' Co., York.

SEED TRADE.

MAIL ORDER HOUSE requires a smart **MAN** who knows the Seed Trade thoroughly, must be able to keep stock correctly and deal with minor correspondence; good prospects and permanency for a suitable man; give full particulars of experience, with references, state salary expected and when at liberty. **M. O.**, Box 13, 41, Wellington Street, Covent Garden, W.C.

CO-OPERATIVE HAND for Garden Seed Department wanted at once. Apply, stating age, experience, and wages required, and if ineligible, to **EDWARD WEBB & SONS**, (STORRHEADS), LTD., Royal Seedmen, Worsley, Stourbridge.

WANTED, FLORIST, Male or Female, first-class Maker-up.—Apply, stating experience and wages required, to **WILKS & SKEAR**, Royal Exotic Nursery, Onslow Crescent, South Kensington.

WANTED, for large establishment in the Midlands, Two or Three YOUTHS, about 16, for Inside Work; good wages and Botby to smart lads.—Apply, in the first place, to **JOHN FEED & SON**, The King's Seedmen and Nurseriesmen, West Norwood.

LADY SHORTHAND-TYPIST wanted: one who is familiar with the Seed Trade.—Give full particulars as to experience, references, wages required, and write to **T. Y.**, Box 14, 41, Wellington Street, Covent Garden, W.C.

SITUATIONS WANTED.

Twenty-six words for 1s. and 6d. for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

PRIVATE.

GARDENER (HEAD) or GARDENER and BAILIFF, **W. PETERS**, Great Gardens, Leatherhead, Surrey, re-engagement, as above; 29 years' experience, 20 of which in full charge of estate of 100 acres (including pedigree herd of Jersey) large garden and house, and dairy, reason for leaving, highest references, age 57, married.

GARDENER and BAILIFF in good establishment, 10 years' excellent reference, life experience in all branches of Farming and Gardening, carried out for 20 years, discharged, **H. WOOD GARD**, High 1/2, Shep-Tham, Swanwick, Kent.

SITUATIONS required for Two good men, one in good situation for first-class **GARDENER** or **GARDENER and BAILIFF**, (2) for good **SINGLE HANDED** or **HEAD** of 1 or 2, both age 24 to 31. Apply, **THOMAS BUTHER**, The Nurseries, South Norwood.

A. F. BASSSETT, Esq., of Tetbury, Cam. & Berks, is anxious to personally re-engage **BLAW GARDNER** in a large and well kept establishment of his private Head Gardener, **F. J. CLARK**, who is thoroughly experienced in all branches of Horticulture, good manager of men, exemplary of conduct, and whose services were dependable, age 36, withdrawn with one grown-up daughter. Apply, **F. J. CLARK**, as above.

MISS ANSON, Pusa House, Farnborough, Berks, highly recommends her **HEAD GARDENER** **J. JONES**, to any Lady or Gentleman requiring a thoroughly experienced Man as **HEAD** in large estate, small or large, who is well up as **HEAD** and has only 16 years of being employed, and certainly efficient planter and stock, if required, age 33, married. Apply, **J. JONES**, as above.

GARDENER (HEAD), **WALTER C. STOKES**, Godsworth Nursery, Welwyn, is in the past 10 years recommended of the foremost men of the day, capable with respect and knowledge of all kinds of trees and shrubs, experienced in Fruit, Kitchen Garden and Glass, accustomed to manage the upkeep of a good garden and surroundings.

GARDENER (HEAD), discharged; for 20 years as **Head** teacher at Nurbury Park, normal all 12 years; through death of employer seeks re-engagement, raised 1 cup, medals, &c., at R.I.S. 1892, 1893, 1894, 1895, 1896, 1897, as **Head** and has only 16 years of being employed, and certainly efficient planter and stock, if required, age 50, 16, Parkham Lane, Dorking.

GARDENER (HEAD) seeks re-engagement in good establishment, thoroughly experienced in all branches of good Gardening, age 39, 7 years present situation. **B. Box 23, 41, Wellington Street, Covent Garden, W.C.**

GARDENER (HEAD) or good WORKING (Head position), thoroughly practical all branches, successful cultivator; life experience gained in good gardens, including Eaton Hall, Cheshire; highest references for ability and integrity, 42. **TURNER**, 5, Kenwood Road, Highgate.

GARDENER (HEAD) or good SINGLE (Head position), thoroughly experienced in all kinds of general Gardening and Fruit Growing, age 39, married, excellent references, please state wages, Surrey preferred. **A. B. Box 19, 41, Wellington Street, Covent Garden, W.C.**

GENTLEMAN highly recommends his **GARDENER (HEAD WORKING)**, who is well up as **HEAD** in large estate, small or large, who is well up as **HEAD** and has only 16 years of being employed, and certainly efficient planter and stock, if required, age 35, 15 years.—**A. WINTER**, 31, Dekker Road, Dulwich Village, S.E.

GENTLEMAN giving up country house recommends his **GARDENER (HEAD WORKING)**; practical life experience; thoroughly capable and trustworthy; married; age 40, ineligible, near London preferred. **BARRETT**, Harford Bath, near Harlow.

GARDENER (HEAD WORKING) seeks re-engagement, thoroughly experienced in all branches, including Orchids, Carnations, Herbaceous and Alpines; 17 years **Head** in present situation; highly recommended; married; age 45.—**H. F. WARREN**, The Gardens, Highroad, Gainsborough.

GARDENER (HEAD WORKING) seeks situation; life experience Inside and Out; age 32, ineligible; married, one boy (7); please write fully. **GARDENER**, Colbury Gardens, Hill Street, Totton, Hants.

GARDENER (HEAD WORKING) requires permanent situation where 4 or 5 are kept; life experience in all branches, 5 years **Head**; married, no family, age 30; excellent references; discharged from Army, Hertfordshire or Bedfordshire preferred.—**HECK**, c/o The Golf House, Beckenham, Herts.

GARDENER (HEAD WORKING); over military age, married, one daughter, away; a thorough Grower of Stone and Greenhouses, Fruit, Orchids, Carnations, Fruits of all kinds; qualified to take entire charge of well kept Gardens; well up in Floral Decorations; 12 years London experience in growing—State wages and particulars to **TILDS**, **ABBOTT**, Oakover Gardens, Teichst, Sussex.

GARDENER (HEAD WORKING); thoroughly experienced in all branches of Gardening; age 46, married, Richmond, and neighbouring districts preferred, good references.—**F. P.**, 21, Station Road, Clagate.

GARDENER (HEAD WORKING); life experience of Inside and Out; **Head** of 7 for past seven years; ineligible, age 35, married.—**WM. WARREN**, 48, Radworth Road, Hemel-st.

GARDENER, good WORKING SINGLE (Head), well up in Gardening, thoroughly trustworthy; good references. Address, **GARDENER**, Box 10, 41, Wellington Street, Covent Garden, W.C.

GENTLEMAN seeks Situation as **LAND MANAGER** of an **WORKING GARDENER**; good knowledge of Fruit, Vegetables and Flowers in the open; grapes, Peaches, Apples, Flowers, &c., under Glass; 5 years' experience in working own garden. **D. R. B. Box 41, Wellington Street, Covent Garden, W.C.**

LADY GARDENER requires Post under **Head**, 6 months' experience, Indoor and Out, near London preferred. **E. A. Box 23, 41, Wellington Street, Covent Garden, W.C.**

LADY GARDENER (short training and experience) seeks Post, near **HEAD GARDENER** found, where others are kept. **R. W. HEATHCOTE**, Hill Field Avenue, Harnsey, N.

TRADE.

MANAGER wishes re-engagement, end of February, thoroughly conversant in details of an up-to-date Market Nursery; Foliage, Carnations, Lilacs, as special lines, also all varieties of Fruits mostly grown; many years' experience as above; excellent reference; married, age 36. Write, **S. R. Box 8, 41, Wellington Street, Covent Garden, W.C.**

FOREMAN or MANAGER Advertiser is open for re-engagement in established Nursery where Roses, Fruit and Flower are the chief and best; good organizer of labour and controller of men; 31 year of age; married, ineligible.—**GROWER**, Box 9, 41, Wellington Street, Covent Garden, W.C.

WORKING FOREMAN desires situation, thoroughly capable as propagator and grower of all kinds of Market Nursery stock, in all departments, qualified to undertake responsible position; satisfactory references; good wages required, over military age. Address, **H. WILLIAMS**, 4, St. Mary's Road, Garston, Liverpool.

WORKING FOREMAN, well up in Peaches, Grapes, Tomatoes, Cucumbers, Baking Plants, Chrysanthemums, Bulb Forcing, Vegetables, &c.; life experience, abstainer; married; excellent references; good wages required, over military age. **FAYLORNER**, Northumberland Nursery, Orpington, Kent.

FLORIST, as **MANAGERESS**, in high-class business; 22 years' reference, Replies to **H. T. 2, Arlington Villa, Penzance Road, Clifton, Bristol.**

DUTCHMAN (21), with 7 years' experience in Nurseries, seeks place on small Nursery (Cucumber grown); not much expert now; please state wages. **L. R. Box 22, 41, Wellington Street, Covent Garden, W.C.**

By Special Appointment to



His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY By C. H. CURTIS, late Hon. Sec of the National Sweet Pea Society.

IRISES. By W. R. DYKES, M.A., with preface by Prof BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHERTON, V.M.H. and R. HOOPER PEARSON.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

Each Volume 10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No 3970

No. 1570. VOL. LXI. (THIRD SERIES) SATURDAY, JANUARY 27, 1917.

{Registered as a Newspaper. {PRICE 3d. {POST-FREE, 5d.

SCRIPTION—Inland, 15/-; Foreign, 17/6 (22fr. 10c.) {34 26c.} per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C.

Telegraphic Address—"Gardchron, Rand, London."

Telephone—Gerrard 1543.

For CONTENTS see page 33.

SECURE YOUR SUPPLIES OF THE FOLLOWING BEFORE STOCKS ARE EXHAUSTED. ORDER AT ONCE

SUTTON'S EARLY GIANT PEA
A popular first early variety, per pint 1s. 9d.
SUTTON'S EXHIBITION LONGPOD BROAD BEAN
Pods six to eight inches long, per pint 1s. 9d.
SUTTON'S MASTERPIECE DWARF BEAN
A fine stringless variety, per pint 2s. 6d.

SUTTON & SONS, The King's Seedsmen, READING.

NOW IS THE TIME TO PLANT

KELWAY'S COLOUR BORDERS
A really pleasing and useful garden decoration of flowering plants, including annuals and perennials. Now that labor is scarce, the only way to secure a really fine display of color in your garden is to plant Kelway's Color Borders. They are easy to plant and bring the most satisfactory results. Plant a border now this year, and you will be able to enjoy its beauty for several years without any additional expense. Send the measurements of your beds or borders, and we will recommend a selection of plants suitable for your soil and position in your garden. Free of postage. **KELWAY & SONS, The Royal Horticulturists, LANGPORT, SOMERSET.**

WM. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham, Croydon, Surrey. Water & Gas, Amenities, Poultryhouses, Portable Buildings, &c. Central gas mains.

CYCLAMEN SEEDLINGS, for putting up in your choice strains. Giant White, Deepest Red Rose, Persian or MAJID, 2s. 10d. per doz., Salmon King, Cherry King 3s. 9d. per doz., post free. **STUART LOW & CO., Birch Hill Park, Middlesex.**

ORCHIS FOLIOSA, "The Madeira Orchid." The finest form of this beautiful orchid, grows 18-20 inches high, with 6-8 inch solid spikes of rosy purple flowers. Strong roots, 2s. 6d. each, 27s. 6d. per doz. **T. SMITH, Dixey Hill Nursery, Newry.**

ROCK GARDEN PLANTS, where and how to plant them, with Catalogue, free on application. Special sections, 12, 3s. 6d.; 2s. 6d.; 1s. 6d.; 10s. 2s. 6d. All different, named, strong roots; please state position and soil. **G. R. PHIPPS, Apice Nursery, Barkingham, Essex.**

200 CAMELLIAS in variety, 2s. to 311. lustrous and lardy, 10s. each; 250 large *Dracena indivisa*, 4fr. 5d. each. **T. SMITH, Fernery, Loughborough Junction, London, S.W.**

FERNS & FERNS, Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogue free. **J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

BUSH ROSES, 300 Fern Karl Druschke, 200 Mrs. A. Chabany, 200 Liberty; quantity good if you like. In large quantities, colored Buds for 10s. in roots or bushes. **WILLIAM GRAY, Rose Garden, Box, Chertsey.**

FRUIT TREES, true to name, by specialty. Trained Trees, in well grown, extra-sized specimens, with filiform roots. Gordon Pears, Grape Vines, Orange Trees, Fig Trees, in pots, for fruiting. Catalogues. **WILL TAYLER, Hampton, Middlesex.**

For Advertisement Charges see page 11.

DICKSON'S HORTICULTURAL MANURE and other high class Fertilisers; also Dickson's Improved Mushroom Spawn—Priced circulars free on application to **DICKSON'S**, Royal Seed Warehouses and Nurseries, Chester.

FIDLER'S NEW ILLUSTRATED CATALOGUE OF CHOICE GARDEN SEEDS will be sent, post free, to any address on receipt of postcard. Write it once for a copy. It may help you to save 50 per cent. on your seed bill this season.—**FIDLER & SOSS, Royal Berkshire Seed Stores, Reading.**

LANTON'S SEEDS AND FRUIT TREES. New Catalogue of the above now issued gratis. Grand New Early Peas, Lantons' superb, &c., Fruit Trees. A fine stock to offer may still be safely planted. Pamphlet on Cultivation on receipt of stamped envelope. **LANTON BROTHERS, Nurserymen, Bedford.**

GREENHOUSE PAINTING & GLAZING ("Vitrolite") superior to White Lead Paint, 15s. per gal. "Plastine" superdure putty, 12s. per cwt.—Full particulars from **W. CARSON & SONS, Grove Works, Battersea, Agents throughout the country.**

COWAN'S NEW ORCHID MATERIAL—The best and cheapest. Full particulars on application to **JOHN COWAN & CO., Glasgow Nurseries, Glasgow, Liverpool.**

BERBERIS DARWINII and **STENO-PHYLLA** (new Dixey Hill hybrids). A complete selection of these, including many dwarf and compact growers, suitable for the Rock Garden, will be found in my Tree and Shrub Catalogue. Free on application.—**T. SMITH, Dixey Hill Nursery, Newry.**

FOR SALE, 3 Meadowsfield Courts, 3 Black Hambro' Vines, 6 years, splendid roots, produced bunches last year 3 1/2 lb. to 5 lb.; 150 large clumps choice collection of Delphiniums (Blues only, all shades, florists' varieties); 50 large clumps Herbaceous Paeonies, cream, white, pink, large clumps of *Freonias*, *Phlox*, *Delphinium*, *Agrostis*, *Genium*. All entirely fitted.—Offers to **HEAD GARDENER, Clump Farm, Warwick.**

AMARYLLIS (Hybrids of Vittata). **MORLE & CO.** offer magnificent named sorts from Mr. W. Bull's celebrated Gold Medal prize collection—also Flowering Bulbs, cropped with named sorts, at half usual prices. List free—150 156, Finchley Road, N.W.

JAPANESE LILYBUNS, just landed in splendid condition, large, firm Bulbs, Longiternum giganteum, 3s. 6d., 6s. and 9s.; *Spectosum* Melbourne and magnificum, and *Album Katsura* (the best), 5s. 6d., 10s. and 10s.; *Aratum*, 6s. and 10s.; *Henry*, 4s. and 6s., all per dozen; also others. List free.—**MORLE & CO.** as above.

SEED POTATOS, Lincolnshire or Scotch, *Marti* A. 1, *Earl* *Belmont*, *Early* *Rose*, *Express*, *Royal* *Excelsior*, *Triumph*, *W. J. Elliott*, *Arran* *Chief*, *King* *Edward* and others, per bush or cwt. **MORLE & CO.** as above. Our Seed and Plant List sent on application.

ORCHID PEAT, 5s. and 7s. 6d. per sack; *Brown* *Peat*, 10s. 6d. per yard in trucks; in bags 2s. each, 24s. dozen; *Oak* and *Beech* *Leaf Mould*, *Yellow Loam*, *Stacked* and *Fresh Out*, *Silver Sand*; *Eton* *Bits* for 45s. C.W. *Fairfax*, 16s. dozen; *Pat* free. **J. HANDSCOMBE, F.R.H.S., Feltham, Middlesex.**

NOTICE TO ADVERTISERS.

Owing to the earlier despatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

DOBBIE & CO., ROYAL SEEDSMEN. EDINBURGH, will send a copy of their 1917 Catalogue and Guide to Gardening, 160 pages, nearly 150 illustrations, free, if this paper is mentioned.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes, 1s., 3s., and 10s. 6d. each, by Dealers in Garden Sundries. Wholesale: **PRICE'S PATENT CANDLE CO., LTD.,** Battersea, London, S.W.

BATH'S SELECT SEEDS. Now Illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, a new ready, and will be sent post free on application. (Dept. A), **R. H. BATH LTD.,** The Floral Farms, Wisbech.

WELLS' Catalogue of Chrysanthemums and Perennial Carnations now ready, post free on application.—**W. WELLS & CO.,** Merstham, Surrey.

WATERER'S GOLD MEDAL RHODODENDRONS. We cordially invite you to come and select any plants you require. We have over 60 acres, comprising the finest collection in cultivation. Catalogue free.—**JOHN WATERER, SONS & CRISP, LTD.,** The Nurseries, Bagshot, Surrey.

BARR'S SEED GUIDE, now ready, free. Vegetable and Flower Seeds of finest Selected Strains and Tested Growth at moderate prices. **BARR & SONS, King Street, Covent Garden, London.**

WATERER'S ROSES & FRUIT TREES. Grand stocks of the best varieties. Lists free.—**JOHN WATERER, SONS & CRISP, LTD.,** The Nurseries Twyford, Berks.

PEEDS' SEEDS FOR RICH CROPS. You want extra good results from your garden this year. Write for our 1917 Seed List. We can give you the record crops you want.

JOHN PEED & SON, The King's Seedsmen and Nurserymen, WEST NORWOOD.

A GRAND STOCK of these Brilliant Flowers in all shades, now ready for delivery.—For lists, with full particulars, apply **GUNN & SONS, Otton, Warwickshire.**

JAMES GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineer, Danvers Street, Chelsea, London, S.W. Wire, 201. Western, London. Telephone: 201 Western.

SANDER AND SONS, Orchard Growers, St. Albans.

SALES BY AUCTION.

WEDNESDAY AND FRIDAY NEXT.

Spring-flowering and other Bulbs, Hardy, Herba- ceous, and Rock Plants, Rhododendrons, Roses, Fruit Trees, Palms, Carnations, &c.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., at 12 o'clock each day.
On view mornings of sales and catalogues had.

SPECIAL TRADE SALE.

Wednesday, January 31st, at 2 o'clock.

Large quantities of Narcissus of sorts, late-flowering Tulips, early-flowering Gladioli, and other spring-flowering Bulbs, Grass Seed, followed at 3 o'clock by

575 CASES OF JAPANESE LILIES,

comprising

Lilium longifolium Giganteum, Lilium Speciosum Album, Lilium Speciosum Rubrum, Lilium Speciosum Rubrum Magnificum, Lilium Hon-yui, Tigridium fl. plenum.

MESSRS. PROTHEROE & MORRIS will sell as above at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

ROSES.

THURSDAY NEXT

MESSRS. PROTHEROE & MORRIS will sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on Thursday, February 2nd, and over, succeeding, Thursday at 1 o'clock, consignments of well-grown ROSES, especially suited to suit all buyers.
On view morning of sale and catalogues had.

FIRST ANNUAL SALE.

EYNSFORD, KENT.

Two days' sale of Fruit Trees, Shrubs and Herbaceous Plants, &c., comprising 3,200 Apples, 2,000 Peas, Cherries, Plums, Currant and Gooseberry Bushes, Nut- 6,000 Standard, Dwarf and Climbing Roses, Oval-leaf Fruit Laurals, Flowering Shrubs, Herbaceous and Rock Plants in great variety.

MESSRS. PROTHEROE & MORRIS are instructed by Messrs. Cannell & Sons to sell it's above by auction on the premises, The Nurseries, Eynsford, Kent.

On Thursday and Friday, February 1st and 2nd, at 11 o'clock precisely.

On view, Catalogues had on the premises and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

SHORTLANDS, KENT.

Unreserved Sale of well-grown Nursery Stock, comprising 2,000 Boulder Shrubs, Golden Privet, Standard Half-Standard and Dwarf Fruit Trees, also 30 Fowl- Plants, 1,000 Fruit Trees and Bushes, also 30 Fowl- 5 Greenhouses, Piping, and Sundries.

MESSRS. PROTHEROE & MORRIS are instructed by Mr. J. B. Bryant to sell the above by auction at the Nursery, Bromley Road, Short lands.

On Saturday, February 10th, at 12 o'clock.

On view, Catalogues on the premises and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

RICHMOND.

MESSRS. PROTHEROE & MORRIS are instructed by the Receiver to sell by au- tion at the Common Nursery, Richmond.

On Monday and Tuesday, February 5th and 6th, at 12 o'clock precisely each day,

large quantities of well-grown NURSERY STOCK com- prising Golden Privet, Variegated and Green Hollies, Standard Ornamental Trees, Evergreen and Flowering Shrubs, Roses, and a number of Clipped Yews in vari- ous shapes.

On view, Catalogues had on the premises, of P. Mason, Esq., the Receiver, 54, Gresham Street, E.C., and of the Auctioneers, 67 and 68, Cheapside, London E.C.

MARESFIELD, SUSSEX.

Unreserved Sale of Nursery Stock on certain land- where the tenancy expires on March 25th next, by order of Messrs. Wm. Wood & Son (Maresfield), Ltd.

MESSRS. PROTHEROE & MORRIS, in conjunction with Messrs. Wm. Wood, Son & Gardiner, will sell by auction on the premises, The Woodlands Nursery, Maresfield.

On Wednesday and Thursday, February 7th and 8th, at 12 o'clock each day,

large quantities of Nursery Stock, comprising 25,000 Conifers and Shrubs, 2,000 named and Portmoue Rhodo- dendrons, Fruit Trees, 8,500 Deciduous Trees, 10,000 quick-flowering Shrubs, Climbing Roses, Nut- ceous and Rock Plants and other stock.

May be viewed. Catalogues had on the premises, of Messrs. Wm. Wood, Son & Gardiner, Land Agents, Crawley, Sussex, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

BUSINESSES WANTED.

WANTED, in March, about 5 to 10 Acres of land and small house, with outbuildings and greenhouses for Market Gardening and Dairy Farming; or would take over farm and superintend garden of private place.—Apply by letter to B. J., Box 17, 41, Wellington Street, Covent Garden, London.

BUSINESSES TO LET.

NURSERY TO LET; commanding posi- tion; five minutes from rail and tram; 3500 ft. Glass; 1½ acres land, house, &c.—MILES, Royal Hotel, Shireness.

BARNES, SURREY.—To Let, NUR- SERY, 8 Greenhouses, 1000' long each, and 1 acre of land, low rent accepted to a substantial man.—Apply to MESSRS. RICHARDS & CO., 62, Church Road, Barnes, Surrey.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, 3 Large FIGS, in Pots, to plant in lawn to front, Grafts, size and price to WALTERS, Gardens, Chesham, Cheltenham.

PLANTS, &c., FOR SALE.

100,000 LARGE GARDEN FERNS. 205, 100' Palms, Begonias, Crotons, Aracaceas, Roses, Ericas, Gloxinias, Lilies, Hydrangeas, &c., catalogues free.—J. E. SMITH, London Fern Nur- series, Loughborough Junction, London, S.W.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than **WEDNESDAY, 5 p.m.**

	£	s.	d.
Ordinary Positions per page	10	10	0
Facing matter and Back Page	12	12	0
Half and quarter pages, column and half column spaces, pro rata.			

	£	s.	d.
4 line space not exceeding 20 words	3	0	0
Per inch, single column	7	0	0
Per inch, across 2 columns	14	0	0
Per inch, across 3 columns	1	1	0

Front page (no display allowed) 1' per line space, (Headline counted as two lines.)

For discounts apply to address below.

SITUATIONS WANTED.

26 words, 1s. 6d., and 6d. for every additional 3 words or fewer

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM	15	per annum.
ABROAD	17	6

Cheques and P.O.s 'to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C.

Telegrams: 1543 "GARDCHRON, RAND, LONDON." Telephone: 1543 GERRARD.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

WANTED, experienced, active, and energetic HEAD GARDENER for small property, Windsor, Maidenhead district, FEBRUARY; must be expert Orchids, Carnations, and Indoor Fruit; 5 to 6 p.p.; preference to one able overlook small head stock, good house and electric light, state wages Apply, MRS. PHILIP MARTINEAU, Hurst, near Taylorford, Berks.

WANTED, HEAD GARDENER, over military age, 2 other men kept; small Garden, Glass, Fruit and Vegetables, 28s. a week and cottage; found.—Tropney Priory, Maidenhead.

WANTED, good all-round WORKING HEAD GARDENER (married or single), intelligible; competent to take charge of Vineyard and Orchards; his lined attention, however, would be devoted to Shrubs, Trees, and Outside Gardening, 4 and boy usually kept; cottage pleasantly situated; electric light and vegetables free, Saturday, 1 o'clock; if so inclined, Gardener would be taught the working and management of electric light plant; good situation for competent man.—Write, stating wage required, family, and references, to MR W. ROSE, Highfield, Gainsborough, Lincs.

WANTED, good WORKING HEAD GARDENER; intelligible, thoroughly experienced in all branches, inside and out, cottage.—Apply, MRS. VAUGHAN DAVIES, sandhurst Lodge, Wellington Col- lege Station, Berks.

WANTED, GARDENER (HEAD WORK- ING), 2 or 3 kept, must be strong, active, and hard working; cottage found.—Reply, stating age, ex- perience, and wages required to E. A. C., Broomfield, Stammore, Middlesex.

WANTED, A MAN to take charge of Vinerias and Peach houses; wages 25s. per week and Botby, —Apply, C. ALLEN, Estate Office, Worth Park, Crawley, Sussex.

WANTED, GARDENER (SINGLE- HANDED); 3 acres, no Glass; also to take out 1000 lb. bark-chest.—State terms and references to STUYEL, Escourt, New Malden, Surrey.

WANTED, GARDENER, for Single- handed place, not much Glass; neighbourhood of Southport; wages 30s. Apply, Box 23, c/o T. B. Brown's Advertising Offices, 71, Market Street, Man- chester.

WANTED, at once, SINGLE-HANDED GARDENER (intelligible or over military age), or LADY GARDENER, strong and active, with long experience with Vegetables, Fruit and Flowers; willing to learn running of small electric light plant; ground 2 acres, no cottage; wages 25s. to 30s., according to ex- perience.—MRS. ROSSENDALE, The Manor Cottage, Berrard's Cross, Bucks.

WANTED, GARDENER (SINGLE- HANDED); small private garden, wages 30s. or 35s. and cottage.—Apply, The Lawn, Colnbrook.

SINGLE-HANDED GARDENERS re- quired for excellent places in all parts of coun- try: (1) Dorset, cottage provided, one small Green- house; (2) Hants, good wages, cottage, with garden and milk provided, knowledge of Vegetables, Grasses and Hedges necessary; (3) Kent, 30s., house and garden provided and 4 tons of coal a year; (4) Wals- live only; (5) Surrey, 30s., 1½ acre, look after Poultry, no Glass; (6) Sussex, 30s. and lodge; (7) Wals- live only; (8) W. Sussex, Fruit, Flower and Vegetables; (8) W. Middlesex, S.W., good wages.—MRS. JUNT, LTD., 86, High Street, Marylebone. No charge whatever to Gardeners. Don't miss our great offer of valuable pre- sents free.

WANTED, SECOND GARDENER, ineligible for Inside and Outside; also to assist with electric light plant; wages 28s, and light fuel. Apply, **ALFRED WILLIAMS**, Witleighby, Oxshott, Surrey.

WANTED, GARDENER, during war; experienced, capable man, help given; very pretty place, Devonshire. State terms.—Box 14, c/o **W. H. SMITH & SON**, Kingsway, London, W.C.

WANTED, a good all-round GARDENER, with knowledge of cows; good bungalow cottage on grounds—Apply, stating age, experience, and wages expected, to **F. C. MILLS, Esq.**, Stonewood, Limsfield, Surrey.

WANTED, reliable WORKING GARDENER, owner much work; overlooking salt water estuary; some vines and Peaches, good wages cottage, and firewood—Reference, age, family, to **F. PARKYN**, Penquite, Pen, Cornwall.

WANTED, a good WORKING GARDENER, in Glass, with good working cook-house-keeper, wages 30s, board wages 30s, each weekly, live in, coals, lights, vegetables, house washing.—Apply, **L. M. & C.**, Chesterfield Gardens, Mayfair, London.

WANTED, GARDENER or STEWARD, for small estate, 100 acres, near Sevenoaks, with thorough knowledge of stock and all Farm and Garden crops, Fruit, and board wages, 30s, each weekly, vegetables, &c.—Apply to letter to **DOWR, LADY COHEN**, 30, Hyde Park Gardens, W.

WANTED, GARDENER or ODD MAN, with good knowledge of Gardening, help given; over military age; good references.—**F. W. PARKER**, Market Stanton Hall, Lincoln.

WANTED, immediately, UNDER GARDENER at Rydal Hall, Ambleside, no Botchy—Apply, stating age, experience, and wages required, to **CLAUDE BARTON**, Ingleborough Estate Office, Clapham, Yorks.

WANTED, strong, active Man, as UNDER GARDENER, cottage found.—Reply, stating age and previous experience, to **E. A. C.**, Broadfield, Stannore, Middlesex.

WANTED, for Large Gardens in the Midlands, TWO LADY GARDENERS, one Inside and one Out, to work under Head, must be experienced, furnished lodgings, and 30s per week salary.—Write, to **H.**, Box 16, 41, Wellington Street, Covent Garden, W.C.

WANTED, TWO WOMEN GARDENERS, chiefly for Plants, near London, state wages and experience. **R. A.**, Box 23, 41, Wellington Street, Covent Garden, London, W.C.

WANTED, WOMAN GARDENER, for Glass, in large Gardens, to work under experienced Head Gardener and live in Botchy. Apply, stating experience and wages required, to **HEAD GARDENER**, Hinthroyd, Bathman, Lancashire.

WANTED, Two good practical WOMEN GARDENERS, one for the Glass Department under Forewoman, and one for the Herbaceous and Rock Gardens, &c.; good wages, Botchy, and the usual perquisites.—Apply, stating age and experience, to **A. FRESH WATER**, 10, St. Hel's Gardens, Clapham, Surrey.

WANTED, good practical WOMAN GARDENER for the Glass Department, under Head Gardener, also one for the Rock Garden and Herbaceous Borders.—Apply, stating wages, to **MISS INSOLE**, The Court, Llandaff.

WANTED, WOMAN GARDENER, Outside chiefly, Botchy, fire and light.—Apply, stating experience and wages required, to **HON. MRS. F. COLBORNE**, Nonsuch Park, Cheam, Surrey.

WANTED, WOMAN GARDENER for Inside Out and under Head Gardener, and one in Botchy; good experience required; 28s, milk and vegetables.—Apply, stating full particulars, to **HON. MRS. F. COLBORNE**, Nonsuch Park, Cheam, Surrey.

WANTED, Two WORKING WOMEN GARDENERS, experience necessary; one for Vegetable Garden and one for the Herbaceous, work and Flower Garden, under Head Gardener; good references; rooms and allowances and 20s. per week.—Apply, **HEAD GARDENER**, Kent Cottage, Chiswick House, Chiswick, W.

WANTED, Two YOUNG WOMEN GARDENERS one for Pleasure Grounds, the other for under Glass, wages 45s, Botchy, vegetables, coal, light, &c., 2s, duty and 6d. per hour overtime; 1 o'clock Saturdays, 7 in Botchy.—Full particulars, **H. R. WHITE-LAW**, Hever Castle Gardens, Hever, Kent.

WANTED, UNDER GARDENER (woman); to live in Botchy; chiefly Outside work.—**HON. MRS. HIBBERT**, Munden, Watford.

WANTED, Two WOMEN UNDER GARDENERS, Inside and Out; pumping and fires; Sunday duty alternately; Botchy, milk, fire, light, &c.—**F. MIMMS**, "Barvin", Potter's Bar, Herts.

EXPERIMENTAL AND RESEARCH STATION, TURNER'S HILL, CHESHUNT—WORKING FOREMAN or FOREWOMAN required at once to carry out experiments in the culture of Cucumbers, Potatoes, and Tomatoes under Glass, to the instructions of the Director; male applicants must be ineligible for military service—Apply to the DIRECTOR, giving full particulars of age, experience, wages required, when disengaged, &c., and enclosing a copy of a recent reference.

WANTED, for a Nobleman's Establishment, a First-class FOREMAN (ineligible for the Army), wages 30s. per week, Botchy &c.—Apply to **GLEESON & CO.**, 41, High Street, Watford, Herts.

WANTED, a FOREMAN GARDENER, for large Gardens in the Midlands, to work under Head; must be well up in Grapes, Peaches and Chrysanthemums, wages, 30s. per week and good Botchy.—Write, to **M.**, Box 19, 41, Wellington Street, Covent Garden, W.C.

WANTED, FOREMAN of good JOUBREYMAN for Inside, also strong YOUTH for outside, take duty; good wages and overtime paid; comfortable lodgings, close to work; hours 7 to 5, 1 p.m. Saturdays.—Apply, stating wages and experience, to **J. M. RICHARDS**, Brockhampton Park Gardens, Andover-road, Glos.

WANTED, an experienced FOREWOMAN for the Glass Department; also an ASSISTANT, with some experience; comfortable Botchy, good wages.—Full particulars to **J. G. WESTON**, Eastwell Park Gardens, Ashford, Kent.

WANTED, Single MAN, for the Fruit Houses, ineligible for over military age; to live in Botchy.—Apply, **J. ANSELL**, The Gardens, Denbies, Dorking, Surrey.

WANTED, at once, a Married MAN, over military age, for Garden work, one used to stable work preferred, and willing to make himself useful.—Apply, "GARDENER," Hill House, Little Summerford, Wilts.

WANTED, reliable MAN, above military age, used to Spade, Mowing, &c.; 30s. 5s. war bonus.—Apply, **W. WESKER**, Head Gardener, Burntwood Grange, Wandsworth Common.

SITUATIONS VACANT continued on page vii.

ORDER OUR CELEBRATED

FORCING ROOTS

Seakale, Asparagus, Mint, Rhubarb, etc. Also Fruit Bushes.

Write for Illustrated Catalogue, containing PRACTICAL NOTES ON GROWING AND FORCING.

ESTABLISHED 1857.

MANN & SONS,

Whitton Road, Twickenham.

RIVERS'

Fruit Trees, Roses, Vines, Figs, Oranges, AND Orchard House Trees.

A LARGE AND SELECT STOCK ALWAYS ON VIEW.

ILLUSTRATED AND DESCRIPTIVE CATALOGUE POST FREE.

THOMAS RIVERS & SON

Sawbridgeworth, Herts.

STATION: HARLOW, G.E.R.

CARTERS TESTED SEEDS

SOW VEGETABLE SEEDS

of the highest productive value.


"When it comes to production, every available square yard of land must be made to produce food".—*Mr. Lond George, Dec. 19, 1916.*

ILLUSTRATED CATALOGUE POST FREE.

Seedsmen to H.M. the King.

Raynes Park, LONDON, S.W.

Branches: 1237 and 238, High Holborn, W.C. 153a, Queen Victoria Street, E.C.



Burpee's Seeds Grow

THE truth of this famous slogan is proved by thousands of pleased and permanent customers. The Burpee Idea of Quality First, combined with efficient service has built the World's Greatest Mail Order Seed Business. Burpee's Annual, The Leading American Seed Catalog for 1917 is a bright new book of 204 pages, in colors, and a Safe Guide to Success in the garden. Mailed free. Write for it today.

W. ATLEE BURPEE & CO., Seed Growers,
Burpee Buildings, Philadelphia, Pa., U. S. A.



BULL'S FOOD FOR PLANTS, FRUIT AND VEGETABLES.



Photo by Gamber Reeks.

PHOTOGRAPH OF A SINGLE DAY'S CONSIGNMENT.

Used by all the leading Gardeners, Nurserymen and Market Growers throughout the Kingdom.

Sold by all Seedsmen and Nurserymen.

Per cwt., 20/-; 56 lbs., 12 6; 28 lbs., 7 6; 14 lbs., 4 6. Tins, 6d., 1/- and 2 6.

MANUFACTURED SOLELY BY

BULL'S PLANT FOOD CO.,
536, KING'S ROAD, CHELSEA, LONDON.



YOUR LAWN.—To insure it against weariness and improvement in 1917, treat it in one of the following ways:

VELVAS LAWN SAND.

12 1/2 lbs. 2/-, 25 lbs. 3/-, 50 lbs. 6/-, 100 lbs. 11/-, 200 lbs. 21/-, 400 lbs. 41/-, 800 lbs. 81/-, 1,600 lbs. 161/-, 3,200 lbs. 321/-, 6,400 lbs. 641/-, 12,800 lbs. 1281/-, 25,600 lbs. 2561/-, 51,200 lbs. 5121/-, 102,400 lbs. 10241/-, 204,800 lbs. 20481/-, 409,600 lbs. 40961/-, 819,200 lbs. 81921/-, 1,638,400 lbs. 163841/-, 3,276,800 lbs. 327681/-, 6,553,600 lbs. 655361/-, 13,107,200 lbs. 1310721/-, 26,214,400 lbs. 2621441/-, 52,428,800 lbs. 5242881/-, 104,857,600 lbs. 10485761/-, 209,715,200 lbs. 20971521/-, 419,430,400 lbs. 41943041/-, 838,860,800 lbs. 83886081/-, 1,677,721,600 lbs. 167772161/-, 3,355,443,200 lbs. 335544321/-, 6,710,886,400 lbs. 671088641/-, 13,421,772,800 lbs. 1342177281/-, 26,843,545,600 lbs. 2684354561/-, 53,687,091,200 lbs. 5368709121/-, 107,374,182,400 lbs. 10737418241/-, 214,748,364,800 lbs. 21474836481/-, 429,496,729,600 lbs. 42949672961/-, 858,993,459,200 lbs. 85899345921/-, 1,717,986,918,400 lbs. 171798691841/-, 3,435,973,836,800 lbs. 343597383681/-, 6,871,947,673,600 lbs. 6871947673681/-, 13,743,895,347,200 lbs. 13743895347281/-, 27,487,786,694,400 lbs. 27487786694481/-, 54,975,573,388,800 lbs. 54975573388881/-, 109,951,146,777,600 lbs. 109951146777681/-, 219,902,293,555,200 lbs. 219902293555281/-, 439,804,587,110,400 lbs. 439804587110481/-, 879,609,174,220,800 lbs. 879609174220881/-, 1,759,218,348,441,600 lbs. 1759218348441681/-, 3,518,436,696,883,200 lbs. 3518436696883281/-, 7,036,873,393,766,400 lbs. 7036873393766481/-, 14,073,746,787,532,800 lbs. 14073746787532881/-, 28,147,493,575,065,600 lbs. 28147493575065681/-, 56,294,987,150,131,200 lbs. 56294987150131281/-, 112,589,974,300,262,400 lbs. 112589974300262481/-, 225,179,948,600,524,800 lbs. 225179948600524881/-, 450,359,897,201,049,600 lbs. 450359897201049681/-, 900,719,794,402,099,200 lbs. 900719794402099281/-, 1,801,439,588,804,198,400 lbs. 1801439588804198481/-, 3,602,879,177,608,396,800 lbs. 3602879177608396881/-, 7,205,758,355,216,793,600 lbs. 7205758355216793681/-, 14,411,516,710,433,587,200 lbs. 14411516710433587281/-, 28,823,033,420,867,174,400 lbs. 28823033420867174481/-, 57,646,066,841,734,348,800 lbs. 57646066841734348881/-, 115,292,133,683,468,697,600 lbs. 115292133683468697681/-, 230,584,267,366,937,395,200 lbs. 230584267366937395281/-, 461,168,534,733,874,790,400 lbs. 461168534733874790481/-, 922,337,069,467,749,580,800 lbs. 922337069467749580881/-, 1,844,674,138,935,499,161,600 lbs. 1844674138935499161681/-, 3,689,348,277,870,998,323,200 lbs. 3689348277870998323281/-, 7,378,696,555,741,996,646,400 lbs. 7378696555741996646481/-, 14,757,393,111,483,993,292,800 lbs. 14757393111483993292881/-, 29,514,786,222,967,986,585,600 lbs. 29514786222967986585681/-, 59,029,572,445,935,973,171,200 lbs. 59029572445935973171281/-, 118,059,144,891,871,946,342,400 lbs. 118059144891871946342481/-, 236,118,289,783,743,892,684,800 lbs. 236118289783743892684881/-, 472,236,579,567,487,785,369,600 lbs. 472236579567487785369681/-, 944,473,159,134,975,570,739,200 lbs. 944473159134975570739281/-, 1,888,946,318,269,951,141,478,468,800 lbs. 1888946318269951141478468881/-, 3,777,892,636,539,902,282,956,937,600 lbs. 37778926365399022829569376881/-, 7,555,785,273,079,804,565,913,875,200 lbs. 75557852730798045659138752881/-, 15,111,570,546,159,609,131,195,754,400 lbs. 151115705461596091311957544881/-, 30,223,141,092,319,218,262,391,508,800 lbs. 30223141092319218262391508881/-, 60,446,282,184,638,436,524,783,017,600 lbs. 604462821846384365247830176881/-, 120,892,564,369,276,873,051,566,035,200 lbs. 1208925643692768730515660352881/-, 241,785,128,738,553,746,103,113,170,400 lbs. 2417851287385537461031131704881/-, 483,570,257,477,107,492,206,226,340,800 lbs. 4835702574771074922062263408881/-, 967,140,514,954,214,984,412,452,681,600 lbs. 9671405149542149844124526816881/-, 1,934,281,029,908,429,968,824,905,363,200 lbs. 19342810299084299688249053632881/-, 3,868,562,059,816,859,937,649,810,726,400 lbs. 38685620598168599376498107264881/-, 7,737,124,119,633,719,875,299,621,452,800 lbs. 77371241196337198752996214528881/-, 15,474,248,239,267,439,751,543,244,905,600 lbs. 154742482392674397515432449056881/-, 30,948,496,478,534,879,503,086,489,811,200 lbs. 309484964785348795030864898112881/-, 61,896,992,957,069,759,006,177,978,938,400 lbs. 6189699295706975900617797893848881/-, 123,793,985,914,139,518,012,355,957,876,800 lbs. 12379398591413951801235595787688881/-, 247,587,971,828,279,036,024,711,915,753,600 lbs. 247587971828279036024711915753688881/-, 495,175,943,656,558,072,048,423,831,507,200 lbs. 495175943656558072048423831507288881/-, 990,351,887,313,116,144,096,847,663,014,400 lbs. 990351887313116144096847663014488881/-, 1,980,703,774,626,232,288,193,695,326,828,800 lbs. 19807037746262322881936953268288881/-, 3,961,407,549,252,464,576,387,653,653,600 lbs. 3961407549252464576387653653688881/-, 7,922,815,098,504,929,152,775,307,307,200 lbs. 79228150985049291527753073072888881/-, 15,845,630,197,009,858,305,550,614,614,400 lbs. 158456301970098583055506146144888881/-, 31,691,260,394,019,716,611,101,228,228,800 lbs. 31691260394019716611101228228888881/-, 63,382,520,788,039,433,222,202,456,457,600 lbs. 6338252078803943322220245645768888881/-, 126,765,041,576,078,866,444,404,912,915,200 lbs. 126765041576078866444404912915288888881/-, 253,530,083,152,157,733,888,808,825,830,400 lbs. 253530083152157733888808825830488888881/-, 507,060,166,304,315,467,777,617,651,660,800 lbs. 507060166304315467777617651660888888881/-, 1,014,120,332,608,630,934,555,335,303,321,600 lbs. 10141203326086309345553353033216888888881/-, 2,028,240,665,217,261,869,110,670,606,643,200 lbs. 202824066521726186911067060664328888888881/-, 4,056,481,330,434,523,738,221,341,213,286,400 lbs. 405648133043452373822134121328648888888881/-, 8,112,962,660,869,047,476,442,682,426,572,800 lbs. 811296266086904747644268242657288888888881/-, 16,225,925,321,738,094,952,885,365,153,145,600 lbs. 16225925321738094952885365153145688888888881/-, 32,451,850,643,476,189,905,770,730,306,291,200 lbs. 324518506434761899057707303062912888888888881/-, 64,903,701,286,952,379,819,541,460,612,582,400 lbs. 6490370128695237981954146061258248888888888881/-, 129,807,402,573,904,759,639,082,921,165,164,800 lbs. 12980740257390475963908292116516488888888888881/-, 259,614,805,147,809,519,278,164,842,330,329,600 lbs. 259614805147809519278164842330329688888888888881/-, 519,229,610,295,619,038,556,329,664,660,659,200 lbs. 519229610295619038556329664660659288888888888881/-, 1,038,459,220,591,238,077,112,658,131,329,400 lbs. 10384592205912380771126581313294888888888888881/-, 2,076,918,441,182,476,154,225,262,662,658,800 lbs. 207691844118247615422526266265888888888888881/-, 4,153,836,882,364,952,308,450,525,325,317,600 lbs. 41538368823649523084505253253176888888888888881/-, 8,307,673,764,729,904,616,901,050,650,634,400 lbs. 830767376472990461690105065063448888888888888881/-, 16,615,347,529,459,809,233,802,101,301,268,800 lbs. 166153475294598092338021013012688888888888888881/-, 33,230,695,058,919,618,467,604,202,602,537,600 lbs. 3323069505891961846760420260253768888888888888881/-, 66,461,390,117,839,236,935,208,405,205,107,200 lbs. 6646139011783923693520840520510728888888888888881/-, 132,922,780,235,678,473,870,810,410,410,414,400 lbs. 132922780235678473870810410410414488888888888888881/-, 265,845,560,471,356,947,741,620,820,820,828,800 lbs. 265845560471356947741620820820828888888888888888881/-, 531,691,120,942,713,895,483,241,641,641,647,200 lbs. 531691120942713895483241641641647288888888888888881/-, 1,063,382,241,885,427,786,966,483,283,283,294,400 lbs. 1063382241885427786966483283283294488888888888888881/-, 2,126,764,483,770,855,573,932,966,566,566,588,800 lbs. 212676448377085557393296656656658888888888888888881/-, 4,253,528,967,541,711,147,865,932,113,113,117,600 lbs. 4253528967541711147865932113113117688888888888888881/-, 8,507,057,935,083,422,295,731,826,226,226,235,200 lbs. 8507057935083422295731826226226235288888888888888881/-, 17,014,115,870,166,844,581,463,652,452,452,470,400 lbs. 17014115870166844581463652452452470488888888888888881/-, 34,028,231,740,333,689,163,926,904,904,940,800 lbs. 340282317403336891639269049049408888888888888888881/-, 68,056,463,480,667,378,327,853,808,808,881,600 lbs. 6805646348066737832785380880888168888888888888888881/-, 136,112,926,961,334,756,654,707,616,616,617,200 lbs. 13611292696133475665470761661661728888888888888888881/-, 272,225,853,922,669,513,309,415,232,232,234,400 lbs. 27222585392266951330941523223223448888888888888888881/-, 544,451,707,845,339,026,618,830,464,464,468,800 lbs. 5444517078453390266188304644644688888888888888888881/-, 1,088,903,415,690,678,053,237,660,928,928,937,600 lbs. 108890341569067805323766092892893768888888888888888881/-, 2,177,806,831,381,356,106,475,321,857,857,875,200 lbs. 217780683138135610647532185785787528888888888888888881/-, 4,355,613,662,762,712,212,950,643,715,715,750,400 lbs. 435561366276271221295064371571575048888888888888888881/-, 8,711,227,325,525,424,424,901,287,431,431,500,800 lbs. 871122732552542442490128743143150088888888888888888881/-, 17,422,454,651,050,848,848,802,574,862,862,501,600 lbs. 1742245465105084884880257486286250168888888888888888881/-, 34,844,909,302,101,697,697,605,148,724,724,503,200 lbs. 3484490930210169769760514872472450328888888888888888881/-, 69,689,818,604,203,395,395,210,297,448,448,506,400 lbs. 6968981860420339539521029744844850648888888888888888881/-, 139,379,637,208,406,790,790,420,594,896,896,512,800 lbs. 1393796372084067907904205948968965128888888888888888881/-, 278,759,274,416,813,581,581,841,189,792,792,525,600 lbs. 2787592744168135815818411897927925256888888888888888881/-, 557,518,548,833,627,163,163,682,378,584,584,531,200 lbs. 5575185488336271631636823785845845312888888888888888881/-, 1,115,037,097,667,254,326,326,364,756,568,568,562,400 lbs. 1115037097667254326326364756568568562488888888888888881/-, 2,230,074,195,334,508,652,652,729,513,113,113,524,800 lbs. 2230074195334508652652729513113113524888888888888888881/-, 4,460,148,390,669,017,305,305,458,026,226,226,549,600 lbs. 4460148390669017305305458026226226549688888888888888881/-, 8,920,296,781,338,034,610,610,916,052,452,452,599,200 lbs. 8920296781338034610610916052452452599288888888888888881/-, 17,840,593,562,676,122,222,222,183,104,104,119,600 lbs. 1784059356267612222222183104104119688888888888888888881/-, 35,681,187,125,352,244,444,444,366,208,208,239,200 lbs. 356811871253522444444366208208239288888888888888888881/-, 71,362,374,250,704,488,888,892,416,416,478,400 lbs. 713623742507044888888924164164784888888888888888888881/-, 142,724,748,501,417,977,777,784,832,832,956,800 lbs. 1427247485014179777778483283295688888888888888888888881/-, 285,449,497,002,835,955,555,568,166,166,191,200 lbs. 2854494970028359555556816616619128888888888888888888881/-, 570,898,994,005,671,911,111,136,332,332,382,400 lbs. 5708989940056719111113633233238248888888888888888888881/-, 1,141,797,988,011,343,822,222,272,664,664,764,800 lbs. 1141797988011343822222726646647648888888888888888888881/-, 2,283,595,976,022,687,644,444,544,132,132,152,800 lbs. 2283595976022687644445441321321528888888888888888888881/-, 4,567,191,952,045,375,288,888,108,264,264,305,600 lbs. 4567191952045375288888108264264305688888888888888888881/-, 9,134,383,904,090,750,577,777,216,528,528,611,200 lbs. 9134383904090750577777216528528611288888888888888888881/-, 18,268,767,808,181,501,155,555,432,105,105,122,400 lbs. 18268767808181501155555432105105122488888888888888888881/-, 36,537,535,616,363,002,311,111,864,210,210,244,800 lbs. 3653753561636300231111186421021024488888888888888888881/-, 73,075,071,232,726,004,622,222,728,420,420,489,600 lbs. 7307507123272600462222272842042048968888888888888888881/-, 146,150,142,465,452,008,244,444,145,640,640,979,200 lbs. 14615014246545200824444414564064097928888888888888888881/-, 292,300,284,930,904,016,488,888,291,280,280,195,800 lbs. 2923002849309040164888882912802801958888888888888888881/-, 584,600,569,861,808,032,977,777,582,560,560,391,600 lbs. 5846005698618080329777775825605603916888888888888888881/-, 1,169,201,139,723,616,064,955,555,116,112,112,783,200 lbs. 11692011397236160649555551161121127832888888888888888881/-, 2,338,402,279,447,2

THE Gardeners' Chronicle

No. 1570.—SATURDAY, JANUARY 7, 1917.

CONTENTS.

Apple (Champion) and other varieties .. 13	Market fruit garden, the .. 13
Banks, notices of .. 14	Obituary .. 13
Sweet Pea Annual, the .. 19	Birdley, Lady .. 14
Palatines and fox .. 28	Pas, obituary .. 17
Campanula stansfieldii .. 29	Potato prices for 1917 .. 28
Catalpa, old seedling .. 29	Palatins .. 34
Claytonia .. 29	Racing, track with .. 34
Cluster Oak, the .. 31	See-Learning .. 37
Silverlake Forest .. 31	Societies .. 37
Cultural memoranda .. 31	Technical Institution, Gardeners' Royal .. 37
Egypt, gardening in .. 33	Royal Caledonian Horticultural .. 37
Farm, crop and stock on the home .. 43	Royal Scottish Arboretum .. 37
Garrya elliptica .. 43	Cultural .. 43
Insect powder plant, the .. 43	Sphacelium moss in sun .. 43
Johnie for wounds .. 43	Sweet pea trials about .. 43
Land, vacant, in municipal areas .. 44	Timber trade, the home, in 1916 .. 44
Law notes .. 44	University College, for .. 44
Delay in transit .. 44	Vegetables .. 44
Lectures on vegetable cultivation .. 44	War items .. 44
Manure, the "Austrian" .. 44	Wool, work, the .. 44
Iran grey .. 44	Wool, trials, the .. 44

Apple (Champion) and other varieties .. 13
Campanula stansfieldii .. 29
Dyers, Ralph-Molin, portrait of .. 40
Queen's jubilee at year, christata .. 43

THE HOME TIMBER TRADE IN 1916.

GENERALLY speaking, the post-war timber season has been one of the most prosperous that can be remembered. Not that all classes of timber have profited owing to the war, the main advances being in the price of pitwood, Ash of first quality, and wood suitable for the manufacture of boxes and rough packing cases. In the mining and manufacturing districts of England the home grown timber trade has been in a particularly flourishing condition, both demand and prices being generally spreading ahead of those reported twelve months ago.

Throughout the Midlands the trade has, to a greater or less extent, been affected by the war, both demand and price for particular classes of timber being abnormal. Transport, labour, shortage of boxes, and increased difficulties of transit generally have had an effect on the trade, and collieries, faced with a shortage of foreign timber, have fallen back on home supplies to an almost unprecedented extent. For the best selected Ash timber from 3s. to 3s. 4d per cubic foot was charged in one instance at least 4s. per foot was obtained while for prime Oak cuts the price was high, a goodly quantity having changed hands at from 2s. 6d. to 5s. 6d per foot. Selected Elm fetched as much as 1s. 6d. per foot, timber of smaller size about 1s. 3d. Beech sold well at all prices up to 1s. 6d per foot, and Spruce and Scots Fir 1s. 5d. for the best cuts. It should be remembered in conjunction with these seemingly high prices that they were for first class timber delivered at the various stations in Birmingham.

The war has materially affected the home timber trade in Yorkshire, and in the West Riding, where in colliery purposes vast quantities are required. The shortage of foreign supplies was early felt, and the demand for home grown timber was considerable. Fir poles, which in normal times could only be sold at 3d. per cubic foot standing in the woodlands, found a ready market at quite one third more. Alder and Birch have also benefited considerably, the prices ranging up to 1s. per foot for wood of best quality. Both are extensively used in the making of log sleds. Ash and Oak have been in demand, the former in particular being scarce on the market, and bringing good returns where plantation grown and fitted for carriage and other constructive purposes. Such timber of the best quality has increased in

price, and seasoned boarding has not been long on hand. For spool and bobbin making large quantities of timber have been required in order that heavy contracts for cloth might be carried out with expedition. In Berkshire and throughout Wiltshire generally there has been little advance in the price of home grown timber; at least any advance has not been general. Prices generally are low, good Elm fetching only 7d to 9d. per foot, Ash of prime quality 1s. 6d per foot, Larch 10d., and prime Oak 1s. 3d per foot. Public sales of timber in these districts have of late years largely given way to private dealings, and much of the produced timber is consumed within 50 miles of where it is sold.

In Norfolk there has been a demand in order to meet Government wants for shatts, and lumber wood, and material for packing munitions of war. Haulage of heavy timber has been much interrupted by the shortage of horses, and as Government supplies were required immediately, timber merchants have had a difficulty in coping with the unusual situation. Owing to heavy demands by the military authorities it has been found difficult to get timber conveyed by rail, and thus, with want of suitable labour, has considerably retarded deliveries. In Leicester some 700,000 ft. has been about as usual, and a log full of domestic timber, consisting principally of rough Oak, Elm, and Ash, changed hands at a price that would, a year ago, have been considered very good. In such cases it is difficult to state the selling price of individual timbers, but about 1s. 1d. per cubic foot was supposed to have been received. About 5,000 trees, principally Birch and Alder, fetched 7d. per foot in the woodland, and a small lot of Willow and Poplar, loggish trees about 50 feet each, sold well. They were evidently required for cutting into boarding for the despatch of war materials; the price obtained was 11d. per foot where felled fully convenient to a good road.

Around London and throughout the adjoining counties the home grown timber trade may be described as good, though the prices anticipated owing to the war have hardly been realised. Piprops at one time slightly advanced in value, and for really first class Ash timber good prices up to fully 7s. 6d per cubic foot were realised, but for other timber, excepting that for packing boxes, demand was not considerable. Larch has always a steady market in the Metropolitan area, and 1s. 3d. for that of big size and best quality was quite commonly paid. Owing to the scarcity of coal the demand for firewood was keen and prices good, and little was left on hand by the end of February. Egg-logs for lighting have gone up in value, and 3d. at a year ago sold at 3s. are now 3s. 6d per hundred. Coppice wood is about the old price, though charcoal for the troops has been in demand. Oak rails 4 from 1s. 6d. to 2s. 6d per cubic foot, the latter being largely used on the Thames for boat and barge building and repairing. The market for Elm was erratic, some parcels fetching 6d. and others only 1s. 5d. per foot. Some one hundred and twenty Apple trees, size 1, clean bolls, fetched 2s. 6d per cubic foot where approved.

Vast quantities of rough, home grown timber are being used in the manufacture of boxes and large packing cases for military and other uses. Scotch Pine timber, owing to its lightness and to its being procurable in good quantities, is largely used, but other light woods, such as Birch, Sycamore, Poplar, and Willow, are in demand. At Windsor, Scotch Fir of seventy years' growth was sold at 53s. per ton, free on rail three miles away, and 9 foot Sleepers (as such at railway stations). Of course, the larger and cleaner the timber, the more it is valued for such a purpose, and big Ellings of suitable materials have taken place in various parts of England. Willows for wicker baskets, in which shells are placed, are also in demand by the Government, but our home supplies are

except in a few special cases, rough and limited in quantity. The industry of basket making is an old one in this country, and it is pleasing to see it revived, though under unfortunate circumstances. The timber of the Poplar and Willow is particularly valuable for making certain classes of packing cases, owing to its tearing rather than splitting when subjected to rough handling, while for the sides and bottoms of carts that are to be used for the conveyance of heavy articles this timber is also in demand.

Quite recently large Poplar timber was sold at 1s. 4d. and upwards per cubic foot, and if a sufficient quantity could be got together of the black Italian and other species of the tree higher prices could no doubt be obtained for this wood. When we consider, too, that the Poplar is probably the fastest-growing tree that is cultivated in this country, producing, as it has been known to do, 2 cubic feet per annum for thirty years, the profits attached to a plantation of the species can be appreciated. Fortunately, too, dampish soils, where many other timber trees would not succeed, are eminently suitable for the production of the best class of Poplar timber. But there are other uses for which this timber is considered one of the best, notably in the making of railway brakes and weather-boarding. The grey or white Poplar produces excellent timber, even better than that of the black Italian; both, however, are by no means plentiful in any part of the country, a matter to be regretted when the price of the timber and ease with which it may be cultivated are taken into consideration. The Poplar is readily raised either from cuttings or seed, gives little trouble whilst under nursery management, is little liable to disease, and ripens the wood at the age of forty or fifty years. We would strongly advise those who have somewhat damp land to plant the Poplar for commercial uses.

In Scotland the past timber season is admitted to be one of the best that can be remembered. All classes of timber have not, however, profited by the war, the main demand being for pitprops and heavy timber suitable for the manufacture of rough packing cases. Ash for wagon build ing, too, has not been obtainable in the quantity required, and consequently the price has been steady, if not slightly in advance of that of the past few years. Firewood, such as Scotch Pine and Spruce, has been greatly in demand at prices which ranged from 6d. to 8d. per cubic foot, unfelled in the woodland; indeed, in Perthshire these prices were received for timber of the kinds specified at a distance of three miles from a railway station and double that distance from the consuming centre. In the same county the biggest and best Oak fetched up to 1s. 6d. per foot, though plenty smaller changed hands at from 3d. to 6d. per foot lower. Good, clean Ash fit for the best work brought in from 2s. to 2s. 5d. per foot, and the supply was limited and demand good. This was for white coloured Ash, that of darker graining only realising from 1s. to 1s. 3d. per foot.

Beech sold fairly well, the best cuts finding a market at varying figures up to 1s. 5d. per foot. Big Sycamore is always in demand, and bulky clean trees fetched 2s. 6d. per foot; extra clean round logs going even to 7s. 6d. Larch is about the same price as in England, namely, 1s. to 1s. 6d. for the largest and best trees, smaller ranging about 10d. per foot. For Wych Elm of large size 1s. to 1s. 2d. was accepted, but the logs were required to be over a foot square.

As showing the high prices ruling for home grown timber, Mr. Franco, of the Aberdeen Forestry Association, mentioned a case that he had come to his knowledge where a 10-acre plantation of Spruce trees of forty years' growth had been sold at the unprecedented price of £112 10s. per acre. Twenty miles from London I saw Spruce timber for which 1s. 4d. per cubic foot standing in the woodlands had been paid by one of our large railway companies. J. D. W.

THE CLUSTER OAK OF SAVERNAKE FOREST.

In November last I received from Mr. Arthur Yates specimens of a remarkable tree growing in Savernake Forest, Wiltshire, which, on account of its peculiar foliage, is locally known as the Cluster Oak. Only one tree of this kind has been noticed, and it is evidently a sport or mutation of the common Oak, which has arisen as a seedling, the cause of its abnormal characters being quite unknown. So far as can be ascertained, this sport has not been hitherto described by botanists, and may now be distinguished as *Quercus pedunculata* var. *cristata*.^{*} The leaves (fig. 13) are clustered together owing to the abbreviated growth of the shoot, and are twisted, very oblique, the midrib dividing the blade into two unequal parts, and much smaller in size than those of the species. In other characters, such as absence of hairs, two auricles at the base, and very short stalk, the leaves are normal. The acorns, usually only one developed on the peduncle, have a flattened apex with a depression containing the remains of the styles, and are quite glabrous. Acorns



FIG. 13. LEAF OF CLUSTER OAK, *QUERCUS PEDUNCULATA* VAR. *CRISTATA*.

from normal Oaks in Savernake Forest have a rounded apex surrounded by a zone of minute greyish tomentum, the terminal pit being absent or inconspicuous.

This peculiar form of sport has been noticed in other species of trees. The "screw-leaved" Holly (*Ilex aquifolium* var. *crispus*) is an example. The "cock's comb" Beech (*Fagus sylvatica* var. *cristata*, Loudiges), of which I have specimens bearing diminutive fruits from a tree at Durris, Kinross-shire, is very similar in appearance to the Cluster Oak. Loudon says that the wood of this variety, as shown in Savi's *Arborum Lignorum*, t. 3, f. 2, is quite different from that of the common Beech, being dark and curiously mottled and veined. There is also a similar sport of the Tulip tree (*Liriodendron tulipifera* var. *contorta*), of which there is a fine specimen at Fota, Co. Cork.

The Cluster Oak in Savernake Forest is a small, stunted tree (fig. 14), about 30 feet high, the stem measuring 5 feet 2 inches in girth at 5 feet above the ground. The tree generally comes into leaf later than the ordinary Oak. Mr. Yates says of some acorns of the Cluster Oak four years ago, but only obtained one seedling, which is exactly

* *Quercus pedunculata*, Ehrhart, var. *cristata*, A. Henry, vel *Quercus Robur*, L., var. *cristata*, A. Henry; *Quercus inaequalis*, F. v. p. var. *contorta*, obliqua; *Quercus glabra*, p. var. *depressa*. This sport, judging from the descriptions, is quite different from *Q. pedunculata* var. *crispus*, Kirchner or *Q. pedunculata* var. *heuteyi*, Zabel, forms with p. auricled leaves, which are sold by Continental nursery

like the parent in foliage and in slowness of growth. More acorns are being sown this year.

There are several points of interest to be noted. The Cluster Oak is a mutation, as it apparently comes true from seed. It is difficult to see how a mutation of this kind, which is an abnormality without vigour, could establish itself and become a new species. Most, if not all, mutations that occur in trees are similar bizarre forms. The coming true from seed is characteristic of many sports in trees. I saw last summer at Ashbourne, Co. Cork, three seedlings of the Cut-leaved Walnut, *Juglans regia* var. *laciniata*, which were identical in foliage with the parent tree at Stuttgart, from which the three nuts that were sown had been gathered by Mr. Beamish. Possibly in such cases true sexual reproduction does not occur. Parthenogenesis may be the explanation, fertile seeds being produced in the absence of pollen; and the offspring in consequence reproduce exactly the maternal parent. Such apogamic reproduction is not so rare in trees as is ordinarily believed. It is of common occurrence with the Wild Poplars, and often takes place when crosses are attempted in *Fraxinus*, *Juglans*, etc.

A. Henry

lime a dressing of lime at the rate of $\frac{1}{2}$ lb. to two square yards may be applied with advantage. Ordinary farmyard manure may be applied to average soils at the rate of 15 tons per acre (two good barrowloads per rod). Sulphate of ammonia and bone meal or superphosphate are suitable artificial manures. The sulphate of ammonia may be applied at the rate of $\frac{1}{2}$ lb. per rod; the bone meal or superphosphate at the rate of $\frac{1}{2}$ lb. per rod. Potash cannot be obtained at present, but any wood or plant ash which may be available should be applied.

PREPARATION FOR PLANTING.

The Potatoes to be used as seed should be placed in boxes or trays with the crown end uppermost. A compost consisting of leaf-mould, spent hops or ordinary soil mixed with some old well decayed manure, should be worked into the interspaces between the sets and over the top. The boxes should then be placed in a glass house or frame, where a night temperature of 60° to 55° F. can be maintained. The soil should be moistened with tepid water, and then shaded with bags or other suitable material for a few days. When the Potatoes have begun to sprout the shading material should be removed and the sprouts on each set reduced to two at the crown end. The leaf mould or soil will have the effect of encouraging the formation of white rootlets at the base of the sprouts, and care should be taken not to damage these in planting.

DISTANCE TO PLANT.

If the whole of the house can be devoted to the crop the Potatoes may be planted 12 inches apart in the rows and 12 inches between the rows; where it is desired to plant Tomatoes before the Potatoes are lifted, the distance between the rows should be 20-22 inches, and between the sets 6 inches. If possible, the seed should be about 2-ounce seed, or larger, but it may be that smaller seed will have to be used. From 15 to 22 cwt. of seed per acre (10 to 15 lb. per rod) will be required. If the seed has been well ripened it is advisable to cut a small portion from the base of the set immediately before planting. This ensures the decay of the seed, and seed tubers which decay after giving rise to plants usually produce stronger plants than seed tubers which do not decay. The rows may be made to run the length of the house or across, to suit the piping. The usual depth to plant is 4 inches. A trench should be made, the manures applied, the sets planted and covered over with some specially prepared soil. Old partially-exhausted potting soil is very useful for this purpose.

WATERING.

The usual custom is to saturate the soil thoroughly some days before planting. When it becomes workable, the sets should be planted at once, and no further water should be given until the soil shows unmistakable signs of dryness. Heavy waterings should not be given, but just sufficient to enable the tubers to swell. The water should be applied in the morning to allow as much of the moisture as possible to escape before closing the houses for the night. Ventilation should be given on every suitable opportunity. A night temperature of 50°-55° should be aimed at, with a rise during the day to 60°-65° with sun heat. Later, in spring, these temperatures will naturally rise with strong sun heat, but as much air as possible should be given during the day, to avoid a close, humid atmosphere inside the houses. Potato disease is very seldom troublesome, and no spraying is necessary.

GENERAL CULTIVATION.

The soil between the plants and rows should be kept as loose and friable as possible, and the stems should be earthed up as the plants grow; this encourages tuber production, helps the drainage and supports the haulm.

VEGETABLES.

THE CULTURE OF EARLY POTATOS UNDER GLASS.

THE following notes have been prepared by the Board of Agriculture and Fisheries for the guidance of those who may desire to grow a crop of early Potatoes under glass.

The following varieties are suitable:—

FIRST EARLIES.—Duke of York: A very early, kidney-shaped, yellow-fleshed variety. May Queen and Ninetyfold: Kidney shaped and white-fleshed. Epicure and Early Puritan: Round, white-fleshed varieties, the former being the heavier cropper. Sharpe's Express and Eclipse: Kidney-shaped, white-fleshed varieties, very popular in some early Potato districts. Eclipse is the later variety, but the heavier cropper.

SECOND EARLIES.—Royal Kidney and Countess: Useful on heavy soils. The latter is a flat, round, white-fleshed variety and a heavy cropper. British Queen: A strong grower of good quality and also a good cropper.

SOILS AND MANURES.

Light or medium loams are to be preferred to heavy stiff soils, although the latter may also be used. The soil in the houses should be dug as deeply as possible without hanging up the subsoil. If the soil is very rich or is deficient in

VARIETIES OF POTATO RESISTANT TO LATE BLIGHT.

In his seventh report* on Potato diseases, Dr. Pethybridge records the degree of resistance of varieties of Potatos to late blight (*Phytophthora infestans*). Clifden Seedling and Champion II are "practically immune"; K Seedling, said to be the offspring of Champion and Up-to-date, is nearly immune; Shamrock, Northern Invincible and Summit are strongly resistant; Arran Chief, Langworthy, Golden Wonder, What's Wanted, and Peacemaker, are feebly resistant; and King Edward VII. is susceptible. From these experiments, now continued over a number of years, Dr. Pethybridge draws the comforting conclusion that varieties of Potato are in existence which resist blight, and the foliage of which remains green and undecayed right up to the end of the season, without being sprayed, even in the extreme west of Ireland, where climatic conditions are usually favourable to the development of blight. At present, however, the most resistant varieties, by reason perhaps of other characters, do not find favour with the growers. It is noteworthy that the highly resistant varieties are somewhat slow growing, come through the ground later than most other varieties, and ripen off comparatively late. There are many other items of information in this bulletin, which we shall hope to deal with at a later date. In the meantime, we advise everyone interested in the scientific investigation of Potato diseases to read attentively the account of Dr. Pethybridge's work.

CULINARY PEAS

Your correspondents on intercropping (see pages 9, 19, and 307 last volume) agree in growing their edible Peas in rows only a few feet apart. I am convinced that for better crops may be obtained if the customary practice of growing garden Peas in a bed is departed from in favour of distributing the rows, as far as circumstances permit, over the kitchen garden. The plant food which is of the greatest importance to the Pea is present in very limited quantities in the soil, and by allowing plenty of room between the rows we give the important nitrogen-absorbing "nodules" much greater opportunities of performing their functions. In addition, isolated rows of Peas are less susceptible to attacks of mildew. Deep trenching for legumes is to be strongly advocated, but when this operation is accompanied by heavy dressings of animal manure much labour and material are wasted. Such rich food is suited to stem and leaf vegetables, in which succulence of growth is desired, but it does not encourage fruitfulness, and, as Cousins says in *The Chemistry of the Garden*, "Peas grown in this way are brought over and over again in the cost of production." Peas may profitably be grown on land which has been heavily manured for a previous crop, such as Celery, otherwise it would be better to work spent Mushroom bed manure into the trenches being prepared for the rows, than to use fresh dung. The value of a liberal dressing of fresh wood ashes well worked into the soil is probably greater than in the case of any other garden crop. I. C. B.

ORTHODOX CULTIVATION OF POTATOS.

GARDENERS generally are aware of the very accommodating character of the Potato plant, struggling as it so often does to produce a crop of new tubers in the most adverse conditions, but in view of the present shortage of labour and threatened scarcity of food it may be of interest to some to know of an easy way of producing a quantity of mid-season Potatos in odd corners of the garden by a method which I have found very successful here, and which entails the minimum expenditure of time and labour.

The idea first suggested itself to me as a result

of a chance remark let fall by a visitor from New South Wales, to the effect that one day, under his household shoot of Potatos, he went to a corner of his orchard where he had observed some Potato stalks growing up through some straw, and on clearing away the straw he discovered new Potatos "like nests of eggs" lying on the surface of the ground. It was some time before I realized that my friend was in earnest, but I quickly saw that, given a humid climate, there was nothing improbable in it, and resolved to try the experiment in a modified form the next season. A small piece of ground in a sunny position was selected and dug in the ordinary way in winter. About the third week in April this was levelled over, and on the surface were laid some well-sprouted tubers of an early variety, kept for the purpose at the usual distance apart given when planting. Some street-hedged material, which had served earlier in the year for forcing Rhubarb out of doors, was then lightly shaken over them to a depth of 6 or 7 inches, and on top of that about 7 inches of straw litter was placed, the bed being covered with a glass

since their beautiful specimens. The flavour of the tubers was excellent and their texture similar to that of the best early Potatos in spring—the latter quality in the month of August being very much appreciated by all who tested them.

I have no doubt that climatic conditions were an important factor in the success of the trial, and this point should be remembered. At the time these Potatos were set the weather was showery, and it continued so until the hail was well above the litter. A spell of hot, sunny weather then supervened, which provided ideal weather conditions for the formation of tubers. Also, no late frost came during that May—a most unusual omission for this district, although, of course, this contingency could easily be guarded against by shaking a little more straw over the shoots whenever frost seemed imminent. Other essential points which suggest themselves are the employment of well-sprouted "seed" of an early or mid-season variety, and not to "plant" too early in the season.

It is not intended to suggest that the method described here provides a reliable means of pro-



FIG. 14. THE CHESTNUT OAK OF SAVERNAH FOREST (See p. 11).

the outermost tubers all round. The hotted material originally consisted of stable litter and tree leaves, and, having been continually moved to get at the Rhubarb, it was quite cold and about half rotted.

Nothing further was done to the plot. In a few weeks the tops of the shoots appeared through the litter, and these developed, and in time showed flower. About the middle of June I cleared away a corner of the covering, and was delighted to find a quantity of small Potatos, the largest at that time being about 5 inches in length. Having at the time plenty of new Potatos besides these, I decided to give them a few weeks longer to mature, and we began using them about the first week in July, and continued throughout August.

I have often regretted since that I did not weigh the produce of that little spot, measuring only 10 yards by 3 yards. It certainly yielded a tremendous crop of fine Potatos, which were, moreover, of a beautiful appearance, having a clear skin quite free from blemish. I thought at the time that I had accidentally stumbled on the means by which some exhibitors of Potatos pro-

duce their main crop of Potatos. It is put forward only as a simple way of augmenting the early and mid-season crops, which this year are likely to be the most important in view of last season's shortage. Saving of labour is its chief advantage, no attention or work being necessary once the covering is put into position. The only disadvantage that occurs to me is that probably the tubers would not remain sound so long as those grown in the usual way, and so would have to be used first.

Climatic conditions vary in different parts of the country, therefore anyone desirous of trying this method for themselves should not do so on too large a scale the first season, but if their experiment is as successful as mine was they will certainly desire to extend it the following year. T. E. Tunplin, Bessborough, Co. Kilkenny.

CHRISTMAS POTATOS (see Vol. LX., p. 66).

THE result of my Christmas, 1916, Potato planting has again met with success, and from experience I find it will be better to plant the tubers not later than the middle of July and deeper into the soil than what may be usual.

* "Investigations on Potato Diseases," by G. H. Pethybridge, *Journ. of Dept. of Agric., Ireland*, XVI., 4.

Protect on against early frost by covering with stable manure or plenty of straw is all that is necessary. From 7 lbs. each of the following seed Potatos (cut in half) I obtained:—Dunnotar Castle, 35 lbs.; Carisbrooke Castle, 42 lbs.; Royal Kidney, 70 lbs., which yields would have been better both in size and quantity but for the inclemency of the weather during the latter part of the year. All the Potatos were absolutely free from any disease. *Joseph B. Holmes, Bowmore.*

HINTS ON PURCHASING "SEED" POTATOS

THE Board of Agriculture and Fisheries, in their leaflet No. 63, state that those who wish to grow Potatos successfully must attend chiefly to the following two points:—

1. The selection of seed, and
2. The preparation and manuring of the soil.

Another point, the prevention of disease, is of much importance in some districts, and for certain kinds of Potatos.

This leaflet deals with the first point only, the others being referred to in other leaflets. The immediate need of the grower who proposes to plant Potatos in March or April is to secure good "seed," and he should do so without delay.

THE "SEED" POTATO

The Potato "seed" or "set," is, of course, not a seed at all, but a tuber, and in this leaflet the word "seed" means "tuber"; the Potato tuber is a modified underground stem. Potato plants may be raised from true seed, and it is by this means that new varieties are commonly produced. When a new and promising variety is discovered it is propagated by its tubers until in time it may occupy many thousands of acres, but it is still in a sense an "individual" plant; unlike Wheat, each annual crop is not a new generation, and thus the Potato "grows old" (just as animals grow old), becomes enfeebled, and ultimately disappears. The rate at which a variety deteriorates depends on several circumstances. Each new variety of Potato has a constitution of its own, since it is a new "individual." Some kinds retain their vigour for a few years only, others for a long time only; thus the variety Up-to-Date has been common for about thirty years. It is now too old for many districts, but in others it is still useful.

None of the Potatos ripening from August onward can long stand cultivation in a hot and dry district. Thus, if Up-to-Date Potatos from Scotland were planted on well-cultivated dry soil in the South of England, the first crop would perhaps amount to 3 tons or more per acre; if "sets" saved from the crop were again planted, possibly 6 tons would result; but if the process were repeated, the third crop might not exceed 3 tons. If seed from Scotland were planted in South Lincolnshire the rate of deterioration would be less rapid, and the second crop might equal the first. It would ripen rather earlier, and as compared with fresh seed from Scotland the weight secured from the "once-grown seed" would depend chiefly on the character of the season. If, however, "twice-grown" seed were used, there would undoubtedly be a sharp fall in the yield of the crop.

A thorough change from the cool climate of Scotland or the north of Ireland is necessary to secure the best results in Potato cultivation. The degree of benefit to be expected from the change depends upon the variety of Potato, and is known to growers and dealers.

There are so many considerations to be taken into account that, in ordering seed, Potato growers who are not themselves familiar with the subject should always order through an experienced and reliable dealer.

It is recognised that for England generally it is desirable to have seed from Scotland or the north of Ireland at least every second year; unless this rule is followed the best results cannot be expected. Results ranging from fair to good may,

however, be secured by getting seed from the north of England, and generally by transferring seed from late to early districts. A change from peaty soil in a late district to a loam in an early district is often markedly beneficial. The benefits of a change vary with the seasons; after a cold and wet season, such as that of 1916, the quality of the seed Potatos grown in England, except in those districts where growth was arrested by drought in July, should be better than usual.

SIZE OF "SEED" POTATOS.

Potatos intended for seed are usually separated from cooking Potatos by dressing the tubers over a $1\frac{1}{2}$ inch or $1\frac{3}{4}$ inch riddle; those too small for cooking which pass through the riddle are again dressed over a $1\frac{1}{4}$ inch riddle so as to separate out very small tubers. The "seconds" thus obtained form the best tubers for seed purposes. It usually takes 2 cwt. of Potatos of this size to plant 20 square rods ($\frac{1}{4}$ acre).

When Potatos are scarce and dear, small Potatos which pass through a $1\frac{1}{4}$ inch riddle but remain on a 1 inch riddle may be used for seed; these are known as "thirds" or "chats," and early Potatos of this size are usually quite satisfactory. On rich, loamy soils and in moist districts, small tubers of second early and maincrop varieties are also quite reliable, but they are less satisfactory than ordinary seed size in dry soils. It is much better, however, to plant Scotch "thirds" than ordinary seed from crops grown for two years and more in England south of a line between, say, Hull and Chester.

"Thirds" are not only considerably cheaper than seed size, but they go further. About $1\frac{1}{2}$ cwt. will plant 20 rods; even 1 cwt. would suffice, but it is desirable to plant "thirds" a good deal closer than ordinary seed. The latter are generally placed 14 inches to 16 inches apart in the rows, the former 10 inches to 12 inches.

As the best Scotch varieties are very scarce this year they are being dressed for seed purposes over 1 inch riddles, so that "thirds" may not be procurable; but of the commoner sorts there will be an unusual number of "thirds" because of the very unfavourable season.

LARGE SEED.—Some of the most popular Scotch varieties, such as Arran Chief and Great Scot, are being sold "as grown," dressed over 1 inch riddles, no cooking Potatos being removed. This means that many of the tubers will be much too large for seed. When large tubers are planted whole the cost for seed is much enhanced, and the resulting crop is likely to consist of many undersized Potatos. In most cases large Potatos should be cut before planting.

CUTTING "SEED" POTATOS.—Some varieties, such as Up-to-Date and Abundance, stand outting well; others, such as King Edward and Ninetyfold, may be much injured by cutting; others again, such as Arran Chief, are uncertain. Cut tubers are always less safe for planting in dry soils than in moist loams, and are less satisfactory in a dry than in a moist spring, but every kind of Potato can be cut and successfully used under all ordinary conditions if carefully treated. Two points must receive attention. The grower should make certain that an "eye" or bud capable of growth is present in the set (if the Potatos have been slightly sprouted there is no difficulty in deciding as to this point), and the cut surfaces should be sprinkled with slaked lime which forms a crust and prevents the Potato drying after it has been cut. This is especially necessary if there is any likelihood of delay between cutting and planting.

SPROUTING "SEED" POTATOS.

This means starting the growth of the Potatos before planting. The usual practice is to place the tubers in shallow trays or boxes (hence the method is often called "boxing" Potatos) so that the tubers may start growth in the early spring months. When properly carried out the practice is most useful and results in a much earlier

crop of early varieties and, generally, in an earlier and larger crop of the later kinds. Those who intend sprouting sets must be prepared to carry out carefully the instructions given. If, through inattention, the sprouts grow long and weak, the crop will be much injured.

HOW TO SECURE "SEED."

The only way to secure a supply of satisfactory seed in most districts this season will be for growers to combine and make up joint orders. If possible, arrangements for consignments of at least 4 tons should be made, as this will effect a saving in carriage.

The Board have asked the War Agricultural Committees to endeavour to arrange for the joint purchasing of seed Potatos, and also to give every possible encouragement to allotment societies or to clubs specially formed for the purpose of securing good seed. The quantity of seed to be distributed to any one grower under this scheme must not exceed 5 cwt.

In Somersetshire, last spring, a very successful scheme was carried out by means of which nearly 200 tons of Scotch seed Potatos were distributed in lots of 5 cwt. or under to growers throughout the county. Similar schemes were adopted in other counties with good results.

The essential preliminaries of schemes of this kind are: (1) the holding of local meetings of those interested for the purpose of appointing a correspondent to collect orders and forward them to the officer nominated by the War Agricultural Committee to act on behalf of the county; (2) the selection of varieties. As a rule the choice should not exceed two or three sorts, otherwise the distribution becomes troublesome.

Local residents who wish to purchase should be invited to state the quantities needed, and the county officer will appoint a day by which all orders must be sent in. He will then complete the purchase, and have the Potatos consigned to convenient stations.

All requests for information as to procedure should be addressed to the Secretary of the War Agricultural Committee of the county concerned.



THE KITCHEN GARDEN.

By J. DRAY, Foreman, Royal Gardens, Windsor.

CABBAGE.—The soil between the rows of Cabbages should be hoed as soon as the surface is dry enough. Make good all failures with plants from the seed bed, and give frequent dustings with soot or lime to keep slugs in check. The surplus plants in the seed bed should be transplanted 4 inches apart in nursery beds with a view to making further plantations in March. If the stock of plants is insufficient for requirements make a sowing of an early variety forthwith. Sow the seeds in boxes and germinate them in gentle warmth. When the seedlings are large enough to handle transplant them in frames. If liberal treatment is afforded them the plants should be ready to plant out early in April. Express is a good variety for the purpose.

BRUSSELS SPROUTS.—A small sowing of Brussels Sprouts should be made now with a view to producing plants for early supplies. Sow in boxes and germinate the seeds in gentle warmth. Remove the seedlings at an early stage to a position close to the roof-glass and ventilate the house or frame to promote sturdy growth. Prick the plants out in a cold pit as soon as they are large enough for transferring, allowing a space of 4 inches each way. When they have become re-established, open the lights freely during fine weather, and remove them altogether as the season advances. Ideal and Dwarf Gem are two good varieties for present sowing.

PEAS IN POTS.—To obtain early pods from plants in pots sow the seed at once. Pots 8 inches

in diameter are best for the purpose, they should be carefully crooked and filled to three parts of their depth with rich soil, moderately firm. Sow sufficient seeds to ensure a full crop; the surplus plants may be removed when they are well through the surface. Any warm house is suitable for this crop, which needs plenty of light and fresh air.

RHUBARB.—Roots of Rhubarb should be exposed to the weather for a few days before they are placed in the forcing-house. A warm pit or house should be chosen, and the roots should be placed as closely together as is possible. Fill in the spaces between the clumps with light, rich soil, which should be thoroughly moistened with water at a temperature of 70°. If new plantations of Rhubarb are to be made, prepare the ground at once by trenching it to the depth of 2 feet, and enrich it with a heavy dressing of farmyard manure.

WINTER BROCCOLI.—Beds of winter Broccoli should be examined frequently and protection afforded as it becomes necessary. A few leaves carefully placed over the crowns will protect them from moderate frost, but in very cold weather Broken Fan should be used.

DIGGING AND TRENCHING.—The work of digging and trenching should be pushed forward as quickly as possible, so that when the time arrives for planting most of the ground will be in readiness. Move the soil as deeply as circumstances permit and leave the surface rough and open to allow the frost and air to enter.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northbrook, Eastcote Park, Kent.

THE SELECTION OF FORCING SHRUBS should include Magnolia, Cyclonea, Myrtina, Almond, Daphne, Cytisus, Forsythia, Hydrangea, Laburnum, Philadelphus, Prunus triloba, Viburnum Opulus (Guedler's), Rosa, Scaphylococcinea, A. and N. goudouana, variegata, W. goudouana, Rubria and Crataegus (Thomas). Most of these plants may be purchased as standards, half-standards, pyramids and bushes. In forcing standards, pyramids and bushes, if in forcing sheds or pits, be the roots have copious supplies of water at all times; a stunted, stunted appearance of the blooms immediately suggests continued drought at the roots.

PERPETUAL FLOWERING CARNATIONS. Make it a rule to admit, if possible, a little fresh air to Carnation houses each day for as long as the outside conditions permit. Do not maintain high temperatures by the use of much fire-heat, for this would result in weakened growth and blooms that lack substance. The night temperature should be maintained at 42°, but it is better to allow it to drop a few degrees on very cold nights than to use much fire-heat. Open the ventilators a little as the temperature rises in the morning, increasing the amount of fresh air when the glass registers 55°, allowing for a rise of 5° to 10° with sun heat. When the weather turns mild after a spell of cold do not suddenly admit much air; guard against draughts, and gradually inure the plants to the changed conditions. It is not wise to use much concentrated fertiliser during mid-winter, but now that the days are lengthening a top-dressing will benefit the plants during the next month or two. Mix the manure with about six times its bulk of fine, sandy soil, and use a little or more, according to the condition of the plants. Plants raised from cuttings inserted last month are ready for shifting singly into small pots. Use light, sandy soil, and do not expose the plants to cold, or they will suffer a check. When potted, place them on a bed or stage near the roof-glass, and not on a dry shelf. They will grow best in a low house or pit, the pots standing on a moderately damp bottom. In such conditions the roots will require very little water until they become more active. Spray the foliage on bright mornings and admit a little air whenever the weather is favourable for ventilating. The temperature of the house should range from 55° to 60° with air, allowing it to rise with sun heat, and fall to 50° at night.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVENY, A.M., 15, Wood, Goldalough, Surrey.

PRUNING.— Endeavour to complete the work of pruning, and especially of wall trees. Cut back old spurs which have become ragged and project a long distance from the wall. It will be noticed that certain varieties of Pears fruit on the ends of the shoots, and such shoots should be retained. Pear trees did not fruit well in 1916, and they do not promise very well for fruit next season; a few, however, are studded with fruit buds. The same remark is true of Apples. When the pruning is finished, examine all the old-ties, and replace any that require it. Strong tarred string after two years should also be very closely examined, or the ties may do serious mischief in cutting the bark. Train the ends of the branches in a regular manner, so that the work will look business-like when complete.

RED AND WHITE CURRA.—These bush fruits are grown in a variety of forms. In pruning those trained against wire supports as double cordons and those in gridiron form tie the top shoots and prune the lateral growths to two or three buds. The leading shoots of bushes and young, untrained plants may be shortened to 7 inches to form well-shaped specimens; the side shoots of these should be shortened to two eyes. Old-established bushes that are not required to extend beyond their present size should be pruned hard uniformly all over the plant. Examine the stakes and renew any that have decayed, making them firm in the ground.

BLACK CURRANT.—Examine Black Currant bushes for "big bud," and remove all infected buds and burn them. If the bushes are badly attacked grub them up and burn them. In pruning bushes keep them a good shape, and remove some of the oldest wood to make room to train in new growths arising from the base. When the pruning is finished rake up all rubbish and scatter lime over the soil and trees freely. This is the best method making a new plantation of Black Currants should choose a fresh site. The best varieties are Black Naples, Baskoop (Grand and Champion). The bushes should be pruned and the first year after planting to ensure a good foundation for well-developed growth.

THE ORCHID HOUSES.

By J. COOPER, Gardener to Sir JEREMIAH COLEMAN, Bart., Garden Park, Reigate.

DECIDUOUS CALANTHES. The majority of these useful winter-flowering Orchids will have passed out of flower, and after the flower spikes are removed the plants will require a decided rest. Some growers prefer to allow them to remain in the pots, in which case they should be placed in a dry position on a shelf near the roof glass in a temperature of about 55°. It, however, space in the houses is limited, the pseudo-bulbs may be turned out of the pots, a portion of the old roots cut away, leaving just sufficient to hold the pseudo-bulbs in an upright position when next potted, all scale insects removed, and the plants placed close together in shallow boxes, with a mixture of equal sphagnum moss and silver sand round their base. Withhold water entirely from the roots. The late-flowering species such as C. Reginaldi, C. Williamsii, C. Stevensii, C. nivalis and C. Sanderiana and their hybrids, should be afforded water at the roots occasionally. If their strong flower spikes are gently bent over during their stages of development, causing them to extend in an arched direction, it adds greatly to their usefulness for decorative purposes.

FRUITS UNDER GLASS.

By JAMES HEDSON, Gardener to LEOPOLD DE ROTHSCHILD, Esq., C.M.G., Gunnersbury House, Acton, W.

THE COLD ORCHARD HOUSE.—Whether the trees in the unheated orchard house are in pots or planted in borders, they should be overhauled thoroughly, for the early varieties are already on the move. Some amount of pruning is needed forthwith, but I prefer to do the principal pruning over an extended period to

obviate the danger of cutting away shoots that might produce fruit. The trees should be syringed thoroughly with an insecticide, and the paintwork and glass cleaned immediately afterwards. Later, just before the flowers open, vaporise the house with a nicotine compound. It is too late to re-pot the trees, but those that were not potted last autumn should receive a top-dressing. Soak the borders in which trees are planted, and apply a top-dressing. Keep the house quite cool.

PEACHES AND NECTARINES.—I have noted during the past week that trees which have been forced for nearly 20 years are swelling their buds. The trees are all in pots, which have been arranged at the usual distances apart. But I shall use no fire-heat, nor close the houses for the present, my object being to retard growth for as long as possible. The trees will, however, be vaporised at once with nicotine, and again just as the first flowers are expanding.

APPLES AND PEARS IN POTS.—I do not consider it expedient in the present circumstances to continue the cultivation of Apples and Pears in pots under glass. Where there are such trees I advise the plunging of the pots over their rims in an open, sunny position out of doors.

OTHER ROUTINE WORK.—Complete the work of training and tying the shoots of all Peaches, Nectarines and Figs under glass as soon as possible, for even the latest trees will soon be showing signs of growth. It is most important to preserve cleanliness in both trees and houses. Late vines should be tied into position as soon as the cleaning is done. Where mildew was present on the vines last year guard the crop against it this season by adopting remedial measures, sulphur being one of the best specifics. So that all inside borders are well watered.

THE FLOWER GARDEN.

By W. J. GRICE, Gardener to Mrs. DEMPSTER, Kew.

SUMMER BEDDING PLANTS. Pelargoniums that were raised from cuttings inserted last autumn should receive attention. Those rooted in boxes should be shifted into 3-inch pots, and others inserted singly in 3-inch pots shifted into pots two sizes larger, using a compost of loam, leaf-mould and sand; soil from old Chrysanthemum stools, mixed with leaf-mould and sand, is also suitable. Grow them in a warm house or frame until they are well rooted, when they should be removed to a cooler plant-house. Old plants of Pelargonium may be placed in place to furnish cuttings at an early date, to replace failures. Marguerites, Fuchsias, Salvia, Heliotropes and similar plants should be shifted into larger pots directly they require more root-space. Lightly fumigate the house or pit occasionally to keep down insect pests. Ageratum, Coleus, Fuchsia, Lobelia, Verbena, Alyssum and other stock plants should be placed in a warm, moist house; they will quickly produce plenty of cuttings for propagating. Specimen plants required for tubs, vases, or bedding purposes need the growths regulating occasionally, to secure evenly-balanced heads. Calceolarias, Pentstemon, Antirrhinum and Marguerites growing in cold frames need ventilating carefully. Directly the plants are tall enough pinch the tips of the shoots to encourage the development of side growths. Pinch out the flower buds of Viola and Pansies growing in frames. The scarier varieties of Dahlias may be potted and placed in gentle warmth to produce shoots for cuttings.

SEED-SOWING. Provided seed of Hollyhock is sown at once, the majority of the seedlings will flower this year. Let the pots or pans be well drained, and use a compost consisting of loam, leaf-mould and sand. Germinate the seeds in a temperature of 65°. Pot the seedlings singly in 3-inch pots as soon as they are large enough to handle. Other seeds that may be sown now, requiring similar treatment, are Acaenolophanta, Grevilla robusta, and Pentstemon, Verbena venosa and Canus should be raised from seed sown in considerable heat. The seeds of Canus are very hard and germinate slowly, therefore place them in warm water for several hours before sowing.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W. C.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or reference to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JANUARY 27.—National Acclimata Soc. (Northern Section) Annual Meeting.
 TUESDAY, JANUARY 30.—Roy. Hort. Soc. Com.'s meet.
 THURSDAY, FEBRUARY 1.—Manchester and N. of England Orchard Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 39.6°.

ACTUAL TEMPERATURE.—Gardens' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, January 25 (10.0 a.m.): Bar, 29.6"; temp., 33.0"; Weather—Dull.

SALES FOR THE ENSUING WEEK.

WEDNESDAY.—Bulbs, Herbaceous Plants, Rhododendrons, Roses, Fruit Trees, &c., at 67 and 68, Cheap-side, E.C., by Protheroe and Morris, at 12 o'clock. Bulbs, Grass-Seed, &c., at 2 o'clock. Japanese Lilies and variegated Lilies, at 5 o'clock.
 THURSDAY.—Roses, at Protheroe and Morris's Rooms, at 1 o'clock.
 THURSDAY AND FRIDAY.—Fruit Trees and General Nursery Stock, at the Nurseries, Epsford, Kent, by Protheroe and Morris, at 11 o'clock.
 FRIDAY.—Bulbs, Plants, Rhododendrons, Roses, Fruit Trees, &c., at Protheroe and Morris's Rooms, at 12 o'clock.

Revised Potato Prices for 1917.

The decision of the authorities to make the price 115-130s. per ton a minimum and not a maximum will be welcomed by Potato growers generally.

The view which we have expressed already in these pages is, we are sure, the right one; namely, that the country cannot afford to reduce production of this important vegetable. We earnestly hope that careful and prompt attention will be given to the further suggestion which we made, namely, the provision of means of dealing with a surplus of Potatoes in the happy event of there being a glut.

In this connection it may be noted that the increase in the number of pigs will automatically provide one means of absorbing a large quantity of inferior Potatoes. Germany, as is well known, uses in normal times as much as 40 per cent. of its enormous Potato crop for feeding pigs. How much of its crop it dries we do not know, but that we ought in this country to erect several large-scale Potato drying plants can be scarcely gainsaid. It should not be a difficult piece of work.

There are Belgians and others here who have had experience in the large-scale drying of Potatoes and other vegetables. The Board of Agriculture has, we believe, been actively encouraging the drying of vegetables. It should prove a benefit to Potato growers, not only in the coming year but always, if any surplus crop could be absorbed for drying purposes, and also for starch and alcohol production. It would be necessary, no doubt, for the State to take the initiative in this matter, for it alone is in a position to buy in advance on favourable terms.

There can be little doubt that the erection of plant for Potato-drying in the chief centres of production, even if it were only undertaken as a war measure, would prove so advantageous that the practice of drying would be continued after the war.

The Australian Grey Mangrove.

Of the genera Rhizophora, Sonneratia and others which make up the dominant features of Mangroves, not the least interesting is *Avicennia*. Of this genus the *Key Index* enumerates 14 species but allows only two, *A. officinalis* and *A. nitida*. Mr. R. T. Baker, the curator of the Technological Museum, Sydney, who has published recently* an interesting account of *Avicennia officinalis*, is of opinion, however, that investigation will prove that more than the two species exist. The Grey Mangrove of Australia, *A. officinalis*, is a plant of some economic importance inasmuch as its remarkable pneumatophores (breathing roots) are unrivalled as nurseries for oysters.

Unfortunately, those who cultivate oysters have found considerable difficulty in establishing the tree, and one of the most interesting and valuable of Mr. Baker's observations appears to supply an explanation of, and a remedy for, overcoming, the difficulty.

It should be premised that the pneumatophores are, *par excellence*, the "breathing" organs of the plant. The leaves of *Avicennia* have for their functions rather the storage of water than the admission of air, and, indeed, contain few or none of the stomata or "breathing pores" which occur in such vast numbers on the surface of ordinary leaves. In *Avicennia* the pneumatophores are roots which, refusing to obey the ordinary rule of gravitation as applied to roots, grow vertically upward out of the ooze or mud of the Mangrove swamp in which the tree is anchored.

The leaves have, however, another function beside that of storing water, and one which is altogether novel to our knowledge. The trees of this "Grey Mangrove" stand at an angle with the foreshore and all the leaves face the north, and thus, interposing their thickness between the midday sun and the breath-

ing roots, act as an effective sunshade, protecting the delicate tissues of the pneumatophores from the heat of the sun. In confirmation of this interesting conclusion Mr. Baker has observed that whenever the breathing roots are exposed for any length of time to the sun's rays they perish, and with them also perish the branches of the tree on the same side as that occupied by the sunstruck pneumatophores. Wherefore Mr. Baker is able to give comfort and advice to the oyster cultivators, and holds out the promise that if they will but shade their recently planted *Avicennias* they will be able to establish both them and the oysters.

CALANTHES AND FOG. On p. 241, November 18 1916, a note on the fine house of *Calanthes* in the gardens of W. K. D'ARCY, Esq., Stanmore Hall, Stanmore, then commencing its show of flowers, was given, together with the method adopted by Mr. TAYLOR, the head gardener there, to counteract the bad effect of fogs on these flowers in the neighbourhood of London. The fogs have been very heavy this season, and many batches of *Calanthes* in the metropolitan area have had the greater part of their blooms destroyed. A visit to Stanmore Hall gardens last week proved that Mr. TAYLOR's treatment had been successful, the house of *Calanthes* throughout being in perfect condition, and not a flower damaged by fog. *Calanthe Bryan*, with its fine sprays of white flowers with dark blotch at the base of the lip is the favourite. C. William MURRAY, raised by the late NORMAN C. COOKSON from the same parents as C. Bryan, stands next, and the bright pink C. *Vaitchii superba*. To prevent ill-effects from fog, Mr. TAYLOR closes the ventilators when fog comes on, and slightly raises the temperature of the house until the troublesome time is past.

LECTURES ON VEGETABLE CULTIVATION.—A series of lectures on the cultivation of vegetables is being delivered by Mr. E. R. JAMES, Horticultural Superintendent, University College, Reading, in the Hall of the University. The meetings are intended to assist beginners, and are open free to all. The syllabus deals with current work for the period intervening between the meetings, which are held fortnightly, the next being on the 7th prox.

SWEET PEA TRIALS ABANDONED.—The Committee of the National Sweet Pea Society has decided to abandon the novelty trials of Sweet Peas for the present year.

THE INSECT POWDER PLANT.—An interesting account of the cultivation of *Chrysanthemum cinerariaefolium*, the plant from which "insect powder" is produced, is given by Mr. HOLMES,* who believes that the plant would prove easy of cultivation on the warmer South and South-West coasts of England. The plant C. *cinerariaefolium* is native of Dalmatia, where it grows on sunny, pebbly and chalky hillsides. The best price is obtained for unopened flower-buds, and the industry of cultivating the plant is said to be a very profitable one in Dalmatia.

TRIALS AT WISLEY.—The R.H.S. will, if the supply of labour permits, conduct trials of Late Peas, Broad Beans, Beet, Onions, Shallots, Leeks, Wart-resistant Potatoes, Stocks (annual), Eschscholzia, and Annual Poppies, at their garden at Wisley during the coming season. Seeds and bulbs for trial should be sent to the Director of the Gardens not later than the 31st inst.

* The Australian "Grey Mangrove," *Journ. of Proceedings of the Roy. Soc. of N. S. Wales*, XLIX., p. 257.

* *Pharmaceutical Journal*, Jan. 6, 1917.

CAMPANULA STANSFIELDII. (see fig 15).—*Campanula Stansfieldii* first appeared as a chance seedling in Mr. W. H. STANSFIELD'S nursery at Southport in 1893, and is supposed to be a hybrid between *C. carpatica* and *C. Wardstaniana*. The flowers are borne on thin, waxy stems, about 6 inches high, and are coloured rich violet-purple, a shade almost as deep as in *Campanula pulla*. The plant was a favourite with the late Mr. WOOTLEY DOW, who described it as the best hybrid *Campanula* of his time. *Campanula Stansfieldii* delights in plenty of sunshine, and in conditions that suit it the plant makes a strong, vigorous clump. The foliage is yellowish-tone, which is not uncommon amongst hybrid *Campanulas*. The plant illustrated is reproduced from a photograph taken by Mr. MAIRY in Miss WHEATMORT'S garden at Great Warley, Essex.

SPHAGNUM-MOSS IN SURGERY.—The use of *Sphagnum*-moss as an aseptic dressing for wounds is said by Mr. ALAN McCLEICHON* to be an ancient practice, and not, as is sometimes claimed, a modern German discovery. Linnaeus, in *Flora Lapponica*, records that in Lapland it was used for treatment of ulcers. Tradition tells that at the battle of Flodden the Highland soldiers staunched their wounds by means of bog Moss and soft Grass.

TRADE WITH RUSSIA.—H.M. Consul at Ekaterinburg (Mr. T. H. DUNSTON) reports that a merchant in that town desires to receive catalogues from United Kingdom growers of summer, winter, and hothouse flower seeds, and vegetable seeds, including Radish, Cabbage, Cauliflower and Carrot seeds; also catalogues from United Kingdom manufacturers of gardening implements, such as hoes, rakes, clippers and cutters, hoses and watering cans. All these goods are required to replace goods formerly obtained from Germany. United Kingdom growers of flower and vegetable seeds and manufacturers of gardening implements, desirous of doing business in the Ekaterinburg district, should send catalogues to the British Consulate at that town for transmission to the inquirer. In sending such catalogues the reference (Misc. No. 191) should be quoted. *Board of Trade Journal*.

LECTURES AT THE LONDON UNIVERSITY.—A course of ten public lectures on the "Exploitation of Plants" arranged in co-operation with the Imperial Studies Committee of the University of London, is being delivered in the Botanical Department at University College, Gower Street, London, W.C., on Mondays, at 5 p.m. The first took place on the 22nd inst., when Prof. F. W. OLIVER delivered an introductory to the course. Lecture II.—"Plant Food and Soil Problems." Professor W. B. BOTTOMLEY, F.R.S. (King's College, London). Lecture III.—"Timber Production in Britain." Dr. E. J. SALISBURY (East London College). Lecture IV.—"Cotton." Dr. W. LAWRENCE BAILEY (Manager, Cotton Investigations Department, F.R.S. and D.A.). Lecture V.—"Tea-Making." Dr. S. E. CHANDLER (Imperial Institute). Lecture VI.—"The Plant as Healer." Dr. ERNEST THOMAS. Lecture VII.—"Tropical Exploitation, with especial reference to Rubber." Dr. JOSEF C. WILITS (lately Director of Botanic Gardens, Rio de Janeiro). Lecture VIII.—"Vegetable Dyes." Dr. SARAH M. BAKER. Lecture IX.—"Diseases of Plants." Dr. H. C. I. GWYNNE-VARNEY (Birkbeck College). Lecture X.—"Plants as the Source of National Power: Coal." Dr. MARIE C. STROPS. Admission is free, and no tickets are required.

GARDENING IN EGYPT.—The *Fidd* for January 13 publishes the following interesting letter on gardening in Egypt from a correspondent in Gizeh: "Having decided to pass the evening of my life in Egypt, I have built myself a small

house in the ever fertile fields of this country. I feel that in my old age a garden, in this climate and with three of the most beautiful views that man can imagine, will be a great resource. In this country the sun shines every day and all day for 360 days a year, and the rain is, so to speak, on tap; I mean that our only source of cultivation water is the irrigation water supplied by the Government. In winter there is, every five or six years, a slight wind frost; but you can judge of the winter climate by the fact that from December 1 on is the time for Roses and Strawberries, Roses being magnificent here and most easy to grow. In summer we get 85°-95° Fahr. for several months, and generally a few days on which the temperature rises to 110°-117°. The dryness of the atmosphere prevents us from growing many plants of the equatorial zone; for instance, *Stephanotis* grows and flowers splendidly in autumn and winter; but in summer it requires care, or one day it quietly dries up and dies. I should say that after Central America Egypt is meant for Cacti. I have collected a good many from old palace gardens, where they had probably been put by Ismail Pacha, who bought every plant he could. They have grown magnifi-

use of a solution of iodine or chloroform. The strength is 1 dr. to the gallon of the solution violet.

WAR ITEMS. We have received the following further particulars regarding the reported death of Rifleman JOHN DYVERS, referred to on p. 16. DYVERS, whose portrait we give on p. 40, was posted missing after a fierce engagement on October 9 at the farthest advanced position of the British Expeditionary Force in France, when the lines were extended and trenches captured from the enemy. In his early years, taught by his father, Mr. J. J. DYVERS, Richmond, deceased ramble in Ireland and Wales to study wild flowers, and in this way developed a love of plants that determined his choice of a vocation. He commenced his gardening career under Mr. W. W. PARRINEW (now of Manchester) in the Leath Park Gardens, Cardiff. In due course he proceeded to Belvoir Castle Gardens, under his uncle, Mr. W. H. DYVERS. Afterwards he entered the Royal Gardens, Kew, for the usual student's course. He was, on its termination, promoted to a deputy foremanship in the Alpine and Herbaceous de-



FIG. 15.—*CAMPANULA STANSFIELDII*. FLOWER FLOWERS VIOLET-PURPLE.

cently. Several Echinocacti have now, for two years running, been in blossom for four to five months, with three or more flowers open at a time; in some cases on plants so small that the whole plant—roots, spines, and all, would go into one of its own flowers. There are fine garden-here, but they are exclusively devoted to producing Roses and European annuals in winter. I want to get on to other plants, and my few Cacti, Stapelias, and Gasterias have encouraged me much. It used to be said here that no Roses, except La France and Gloire de Dijon, would grow in Egypt, but some bold adventurer imported others and found that they all grew and flowered splendidly. Again, the *Zinnia* grown here is a poor thing, so I got some of Sutton's and had plants a yard high and a yard and a half wide, covered with flowers, many of which were 1½ inches in circumference. Single plants of Indian Pink are 4 feet across.

IODINE FOR WOUNDS.—The practice of dressing cuts and other wounds with tincture of iodine, adopted in France for some years, has become popular in this country. One drawback is the rather sharp but evanescent smart which it causes. This may, however, be avoided by the

partment, under Mr. W. IRVING. Skilful at free-hand drawing from life, the original double-page illustrations of Saxifrage Groups in the Rock Gardeners' Library were the production of his pencil. At the declaration of war he was preparing to journey to Switzerland to study the growth of Alpine flowers in their native habitats. Quiet, unobtrusive, diligent, and of a kindly disposition, he was beloved by his countrymen, and by his guild and gardening friends.

Captain IAN BAXTER, B.Sc., R.W.F., only son of Mr. JAMES BAXTER, The Gardens, Benarth Hall, Coupar, has been awarded the Military Cross. Captain BAXTER enlisted in 1914, and shortly afterwards was given Commissioned rank. Subsequently, and before going to the Front in 1915, he acted as Instructor in Range-finding. He is a graduate of Bangor University, and before the war was carrying out Research in Forestry under a Government scheme.

PUBLICATIONS RECEIVED.—Allotments and Small Gardens in War-Time. (Austin & McAslan, Glasgow.) Gratis.

* *Pharmaceut. Journal*, Jan. 6, 1917.

* "The Harvesting of Sphagnum Moss." *Tharm. Journ. and Pharmacist*, Dec. 25, 1916.

NOTICES OF BOOKS.

SWEET PEA ANNUAL.

This is perhaps the best *Annual* ever issued by the Society; which is saying a great deal for the energy of its editor, Mr. J. S. Brimton. Appropriately, the first two articles are tributes to the late Mr. N. N. Sherwood and Mr. Albee Bumper, who, from its commencement, have been earnest supporters of the National Sweet Pea Society. These articles, from the pens respectively of Mr. C. H. Curtis and Mr. Hugh Dickson, are illustrated by splendid portraits of the deceased gentlemen.

Mr. T. H. Dignall, M.A., writes a thoughtful and suggestive article on "The classification of Sweet Peas," but I am doubtful if his proposed system would be as popular as the one at present in use, which was devised by Mr. Walter P. Wright in 1900—the year of the bi-centenary celebration of the introduction of the Sweet Pea into England.

Mr. E. R. James' article on "Long Stems v. Quality and Refinement in Sweet Peas" appears very much to me, and I am in entire sympathy with it. If quality is sacrificed to size and grossness in anything a real loss is always made. Two writers from America, Mr. George Kerr and Mr. Frank G. Cuthbertson, tell us about the new race of early-flowering long-stemmed Spencer Sweet Peas. In the warmer States this new type when sown in October blossoms in the open from February to July, and cut flowers are on the market all the winter from plants grown under glass.

The veteran Edinburgh florist, Mr. Matthew Todd, writes on "What Scotsmen have done for the Sweet Pea." "Scotsmen in Exceelsis" would have been a fitting title for Mr. Todd's article. Mr. R. F. Felton writes charmingly on "The Decorative Value of Sweet Peas."

It would have added interest to the fine photographs of the different groups of judges at work if the names of the members had been added below each picture. *Wm. Cuthbertson.*

CULTURAL MEMORANDA.

VIOLETS.

Violet plants growing in frames should have all decayed leaves removed, the surface soil stirred between the plants, and the supply of water kept rather low at present. Any water that is necessary should be given early in the day, and extra air admitted afterwards, in order that the foliage may dry before night. Violets in pots may be given a slightly higher temperature in order to force the buds out. Stand them in a light position, and admit a moderate amount of air in favourable weather. Violets in pots are very acceptable for use in bowls in the dwelling-house.

THE PLANT STOVE.

The temperature of houses containing tropical plants may be kept low. A minimum temperature of 55° will suffice during very cold weather, provided the atmosphere is not overcharged with moisture. Any damping of the paths and stages should be done early in the afternoon; but very little damping is necessary in dull weather. In frosty weather lower the roof-blinds at night where fire-heat is used, to keep the temperature above the minimum. Let the plants have plenty of room, discarding any that are useless, rather than crowd the stages. Keep the roof-glass clean always. In winter, *Codiaeum* (crocodias), *Dioscoreas* and other stove foliage plants should not be afforded stimulants, and they should be watered with extra care; nothing should be done to cause the plants to make much growth at this season.

WINTER FLOWERING PELARGONIUMS.

Old plants of *Pelargonium* have passed out of *The Sweet Pea Annual*, Part 18. (Nat. Sweet Pea Society.)

flower, and if suitable young growths are available cuttings may be inserted. Shoots that have been exposed to the light are the best for the purpose, and they may be inserted around the sides of 4 inch pots filled with a compost consisting of loam, leaf-mould and sand. Water the soil, and place the pots on a shelf in the greenhouse.

LILY OF THE VALLEY.

RETAINED crowns of Lily-of-the-Valley are very scarce, but clumps may be dug from a well-established bed and placed on a hot-bed in a heated pit. Cover the roots with fine soil, and soak them with lukewarm water. Place some mats or litter over the glass until the flower-spikes are well through the soil. The plants may then be gradually nursed to the light. Successional clumps may be placed in heat at suitable intervals to maintain a constant supply of flowers.

FORMING SHRUBS.

SHRUBS of all kinds may be lifted from the reserve beds and potted in readiness for placing out to heat as required. They may be forced easily now after the recent frosts. Very large plants of *Lonicera* may be placed in boxes or tubs:



THE LATE RULERMAN JOHN DIVERS.
(See p. 39.)

they will be useful for supplying cut flowers. When the plants are introduced into heat syringe them with warm water two or three times daily.

THE MARKET FRUIT GARDEN.

APPLE FRUIT-BUD DEVELOPMENT.

FRUIT physiology is a subject studied more in the United States than in this country. A reminder of this fact is given in a record of some observations made on the subject named above by Mr. F. C. Bradford, apparently a member of the staff of the Oregon Agricultural College, and reprinted in the *Fruit Trades' Journal*. The Yellow Newtown Pippin appears to have been the subject of the author's observations. Under normal conditions, he says, this variety forms its fruit-buds on wood two or three years old, and, under favourable conditions, a bud produced in the axil of a leaf on wood of the current year will produce next year a short spur with wintered leaves, and in the following year this spur will bear fruit. Normally, it is added, the spur, having borne fruit, will again form a fruit-bud during the succeeding year, which may be expected to bear fruit a year later. But these apparently normal conditions are often varied. For example, a spur may bear fruit two years in succession, and terminal, or sometimes axillary buds, produced in one year may bear fruit in the following season. A particularly interesting observation is one bearing upon the alternate-year fruiting of many varieties of Apples, particularly those which usually fruit profusely when they bear at all. It was noticed

that in a very small crop year the spurs which were bearing were as likely to form fruit-buds for the next year or those not bearing, while when a tree is bearing a full crop very few of even the barren spurs will develop fruit-buds sufficiently for fruiting in the following season. It is satisfactory to have this confirmation of my own theory of the cause of alternate-year fruiting, derived from the labelling of trees of the Allington Pippin in three successive seasons. It was found that trees which bore great crops in one year had none in the next season, while those which bore moderate crops had more or less fruit, and those which bore no Apples had great crops in the next year. Fruiting on terminal buds of one-year-old wood appears to be more common on American varieties than on those grown in this country. It was so general in the Oregon College orchards in 1914 that it was observed on all but one or two varieties. But it is more common on young than on old trees. On the latter, indeed, it was found that numerous fruit-buds on terminals of one-year-old wood were developed only when a tree formed such buds in great abundance. When the number of fruit-buds was small there were practically none on the one-year-old wood.

APPLE CHELMSFORD WONDER.

This variety is never named in market quotations, and therefore it may be supposed to be not commonly grown for market. It is not named in Hogg's *Fruit Manual*, and possibly it may be a comparatively new variety. [Apple Chelmsford Wonder was raised from seed by the son of a mechanic at about 1870 in a cottage garden in the neighbourhood of Chelmsford, but nothing is known of its parentage. It was not introduced to commerce till about 1890, and it received a First-Class Certificate from the R.H.S. Fruit Committee on November 10, 1891, when exhibited by Messrs. Salmarsch and Sons. It is a good late Apple, and has an excellent flavour when cooked.—E.S.] It was supplied to me by Messrs. Cheal as one of the Apples grown in short rows for trial. The trees proved vigorous growers, and since they reached fruiting age they have borne moderate crops annually. The fruit is large and of a delicate yellow colour, with light pink slightly striped on the sunny side. One particular feature of this Apple is the extreme thinness of its skin. This renders it subject to insect punctures, the results of which are now apparent in numerous very small and slightly sunken spots, which lower its market value. The spots have developed almost, if not quite, entirely since the fruit has been stored in the fruit chamber. Chelmsford Wonder is one of the best of cookers, and, as its core is small and its skin extremely thin, it is an economical Apple to use, except that its acidity calls for a full supply of sugar. For baking whole after coring it is almost unequalled for softness and juiciness. When sound it keeps as long as Bramley's Seedling or Newton Wonder.

SPOTTED APPLES.

The disfigurement of Apples by numerous small spots is not to be confused with the results of Apple fruit spot (*Xanthosporium pomii*), which resembles bitter pit, and is commonly confused with it. The spotting now referred to is not yet recognised as a distinct disease. Last winter the small spots developed on several varieties while the fruit was in store, and possibly the same results would have appeared this winter if these varieties had been kept as long as usual.

All but some Chelmsford Wonders and Newton Wonders, however, were sold by the end of November, as prices were tempting. Efforts made in various directions last winter to ascertain the cause of the spotting were not successful. The most that was conjectured was that some kind of "semi-parasite," such as *Cladosporium*, attacked punctures made by insects. But no one seems to know what insect makes numerous punctures invisible to the naked eye upon the fruit while it is on the trees (as no insects that

could make them as found on the Apples in stock. Last winter 170 spots were counted on one Apple, and 50 to 100 were quite common.

AMERICAN APPLE EXPORTS.

Considering how largely we import Apples from the United States, it is surprising to see, from a report by the American Department of Agriculture, that exports to all countries, including dried Apples estimated as green, even before the war reduced them, were only about 5 to 6 per cent. of the total crops. The estimated crops of 1901-5 averaged 69,691,090 barrels, of which the average exports were: 5.1 per cent. The corresponding figures for 1906-10 were 51,532,000 and 5.4. Later crops and exports were as follows: 1911, crop 71,340,000 barrels, exports 5.9 per cent.; 1912, crop 78,407,000 barrels, exports 5.5 per cent.; 1913, crop 48,470,000 barrels, exports 6.7 per cent.; 1914, crop 84,400,000 barrels, exports 5.4 per cent.; 1915, crop 76,670,000 barrels, exports 5.9 per cent.; 1916, crop 67,695,000 barrels, exports not yet known. It will be seen that the war reduced the exports considerably in 1915. *Southden Grower.*

HOME CORRESPONDENCE.

OLD SEED AND PLANT CATALOGUES.—As stated by your correspondent, W. H. C., Hampton, there are no catalogues now published such as the firm of Rollison used to issue. Neither are such collections of plants brought together as used to be cultivated at Tooting, the present day tendency being to specialise rather than give collections which in the number of kinds represented could compare with many botanic gardens. A catalogue now before me of William Rollison and Sons, Tooting, for the spring of 1917, must have been among the last issued. It consists of 238 closely-printed pages, and contains all classes of plants, of which, by the way, a much higher price is charged for many than that which prevails at the present time. It is noteworthy for the long lists of Camellias, Indian Azaleas, greenhouse Hoeths and various other hard wood plants, which are now so seldom seen. A full page is devoted to Rollison's Telegraph Catalogue, referred to by your correspondent, W. T.

I am glad to see that there is someone still left who knew the old firm of William Rollison, and the catalogues they used to issue in those days second to none. Was the secretary of old gardener who raised the Rollison Telegraph Catalogue? In imagination I can see the old man now coming from his straggling garden situated in the High Street. At that time the firm was in a flourishing condition; my father was head packer, and he a boy in the Springfield and Home Nurseries. Until recently I had in my possession a copy of their latest catalogue. I do not remember W. H. C., but he may recollect my name. *William Gardner, Barkingside House, near East Grinstead, Sussex.*

VACANT LAND IN MUNICIPAL AREAS. Some vacant land is getting operated upon in this district, and much more will be brought into use as the season advances. The work is being done by any individual who chooses to say that he wants a plot and will work it. I do not believe this is the best way to go to work, and have said so locally, from the first. All spare, suitable suburban lands should have been taken over and cultivated by each respective borough or urban council definitely for the nation. (This idea is also fully embodied in the leading article in the *Gardener's Chronicle* of December 25). The work of preparing the land would be more quickly and much more easily done by municipal authorities getting a plough to break up the ground after first having it closely mown with a scythe, than the method which seems to obtain here of each person getting to work as he best can. At harvest time it will be a case of each cultivator getting the highest prices he can, and rightly so, for his labour; whereas, in the hands of a council, it would be to no one's gain to hold up or push any given commodity. With the exception of buying a plough (which perhaps

could be borrowed), and the necessary seeds, there would not be any further expense, for I believe, around here at any rate, employers would gladly have given their gardeners' services on stated days which, together with the council's labour, also loaned, could have been arranged to cover the whole operations in a manner equitable and satisfying to all. *C. J. Higgate.*

GARRYA ELLIPTICA (see p. 19). A specimen growing in a garden in Central Porthshire, planted some eighteen years ago, has at present a height of about 12 feet. It is certainly sheltered from the north, but since being planted it has been at least three times exposed to a temperature below zero. It regularly produces a crop of catkins. *J. Gilbert, Lelock Park Nursery, Cornwall.*

SEED GROWING.—It is obvious that without a sufficient quantity of seed the breaking up of fresh land or the cultivation of vacant spaces can only result in great waste, both of the labour so urgently needed on all sides and also of capital. The actual situation at the present time in regard to seed supplies is clearly stated in the introduction to my firm's *Grower's Guide for 1917*, in the following terms:—

ing of seed crops be ensured when all other crops involved less labour. There is little doubt that before spring has far advanced the available stocks in this country of many kinds of vegetable seeds must prove insufficient for the needs of the community.

The following are some typical examples of the increases in wholesale values of seeds, as compared with those in a normal year, and even at these prices further supplies, in some instances, are unobtainable:—

Seed	Per cent.	Seed	Per cent.
Broad Beans	300	Runner Beans	300
Spinach	300	Onions	300
Garden Carrots	300	Garden Peas	100
Garden Turnips	50	Swedes	75

Field Turnips, 120 to 150 per cent.

The two main contributing causes to this unprecedented rise in values are, of course, the high prices obtained for cereals and the scarcity of labour. And if the present scarcity and the abnormal values now ruling are not to become far more serious next season, there is but one possible remedy—viz., to reinstate on seed-growing farms all the trained and expert labour which has been removed by tribunals. In the great majority of cases farmers who are seed-growers allowed all their men who could be

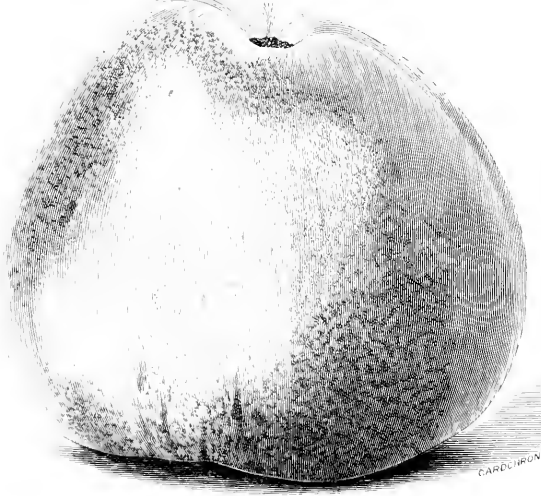


FIG. 16. APPLE CHALMERSFORD WONDER (See p. 40.)

SEED SUPPLIES AND THE WAR. Our customers will not be surprised that the war, in which nearly the whole world is engaged, has affected the supplies of seeds in common with other necessaries of life. The scarcity of farm labour in itself has materially reduced the acreage under seed cultivation, and this will be readily understood in view of the high prices prevailing for cereal crops, which require much less labour than seeds. A further important factor is that, during the long years of European peace, seed growers have been able to place their crops wherever in the countries of our Allies the soil and climate produced the best supplies with the highest germinating power. But with the progress of the war these sources of supply are necessarily curtailed—partly through difficulties of transit, partly through regulations prohibiting the export of seeds, and, partly again, through the shortage of labour which everywhere exists. These seed houses which were in a position to forecast the probable course of events naturally extended their cultures at home. While we ourselves have thus been able to make abundant provision for the requirements of our customers, this was only possible by increased capital expenditure, for by no other means could the plant

spared to volunteer under the Derby scheme, retaining only those whose expert and technical knowledge rendered them indispensable. When the tribunals began work they considered it their duty still further to deplete the labour on seed farms, with the result that the acreage under seeds for harvest 1917 and 1918 (now contracted for) is very much less than in 1916. Foreseeing the difficulties with which seed growers are now faced, I had the privilege early last year of introducing to the Committee dealing with Reserved Occupations a deputation of leading houses in the seed trade, amongst whom were represented Messrs. Carter, Messrs. Webb, Messrs. Dobbie, Messrs. Garton, Messrs. Barr, etc., and Messrs. Hurst, the leading wholesale seed merchants. The Committee only needed to have the facts placed before them to realise the immediate necessity of including seed growing and distributing amongst the reserved occupations. In doing this the Committee were greatly influenced by the fact that not only is it imperative to maintain the supply of seeds for raising vegetable crops at home, and the roots and herbs and green crops upon which our flocks and herds are fattened, but also the supply of seeds for exporting to the Colonies and Dominions, which

depend entirely on seeds shipped from England for raising the vast supplies of mutton etc. annually imported into this country. The present difficulty should have been, in a great measure, obviated if tribunals had granted the exemptions they were authorised to grant to seed-growing experts, but unfortunately this has rarely been the case in any sufficient degree. Such gossians have been made that the State should start seed farms, but seed cannot be grown without technical knowledge, and, as already stated, there are insufficient men now left on the existing seed farms. The situation is undoubtedly grave, but with due support from the existing authorities seed growers may be trusted to make the utmost use, not only of their knowledge and experience, but of every means at their disposal for economising labour. As an instance of such economy of male labour, I may mention that a crop of Mangold seed, considered to be the finest in the county of Lincoln, was last year entirely planted and harvested by women, under the grower's supervision. May I add a word on the supply of seed Potatoes? "Seed Potatoes" may be classed under two general headings—(a) The smaller tubers, screened out of the general crops, which are often used for planting on farms, or, failing such a demand, given to the pigs or sold to the bakers. (b) "Seed Potatoes," which are grown by seed merchants, either personally or under contract, and which are raised exclusively from selected pedigree stocks. In the latter case the entire crop, after imperfect, immature, or diseased tubers are removed by hand picking, is used for "seed"—only those too large for planting being otherwise disposed of. The cost of producing seed Potatoes grown from pedigree stocks is out of all proportion to that of ordinary field crops. Every plant has to be examined during growth for trueness to type, &c., and untrue plants removed by hand, and this involves frequent inspection of crops in various stages of growth. The same land cannot be used in successive years, as is sometimes the case for market crops (as in Avshire), otherwise self-seed tubers appear in the crop. The produce cannot be marketed when lifted, but must be stored at great expense until the spring, and stored in such a manner as to ensure a free growth immediately the tubers are planted. If, therefore, the price a grower of seed Potatoes may ask for the crop of 1917 is limited to £5 15s. per ton, as now proposed, the production must be reduced to such an extent as to jeopardise the supply for planting in 1918—if not to destroy all hopes of any adequate supply. No maximum price less than £8 per ton can possibly meet the situation. The seed Potatoes grown from pedigree stocks during 1916 have involved an outlay, on an average, about 50 per cent. above £3. Arthur W. Sutton, Reading.

to ensure are the wishes of the supporters of the Institution. At the commencement of the year there were 265 inmates, viz., 152 men and 113 widows, receiving an annual amount of £4,248. To-day the Committee propose to the subscribers to add by election 17 applicants from an approved list of 61 candidates. They very deeply regret that they are unable to advise a greater number, especially as some of these candidates have been asking for the Institution's help for some years past, but with an income diminishing on account of the sad times through which we are passing, and not knowing what the immediate future may bring they feel it is desirable to be very cautious in the administration of the funds. But whilst they are sure that so many deserving cases should have to wait another year at least before they can receive the longed-for annuity, the Committee are very thankful to have the means of assisting many of the very necessitous cases through the two charitable special funds, viz., "The Victorian Era" and the "Good Samaritan," the income from which is devoted in the one case to assisting these unfortunates and candidates who had formerly been contributors to the funds of the Institution, and in the other case to temporarily helping deserving applicants in distress through illness or some other misfortune. The interest only derived from invested funds is available for these two purposes. The Committee also desire to express their indebtedness to those individuals, ladies, and gentlemen who have so kindly allowed their gardens to be opened to the public for the benefit of the cause, viz., The Right Hon. Earl Beauchamp, The Right Hon. Lord Northbourne, The Lady Balfour, Sir Frank Cross Bart., J.P., LL.B., Roger J. Corbet, Esq., and C. W. Dixon Permas, Esq. The Committee also desire to place on record the kindness of their Treasurer, Arthur W. Sutton, Esq., J.P., F.R.S., V.M.H., and George Moore, Esq., V.M.H., for generously giving a year's allowance to three of the unsuccessful candidates who were most grateful for the help afforded them. They also tender their best thanks to the Hon. Solicitor, W. A. Biles, Esq., J.P. the Hon. Auditor, Messrs. George H. Colley and Co., Thomas Manning, Esq., and Part J. Moore, Esq., the Horticultural Press, the George Moore Concert Committee, and to other friends for their valuable services to the Institution. The several Auxiliaries have again proved valuable adherents to the work, especially during the past year, and grateful thanks are given to the following honorary officers for their much appreciated services.

RECEIPTS AND PAYMENTS OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION

		FOR THE YEAR ENDING, DECEMBER 30, 1916.					
		£	s	d	£	s	d
To Balance with Treasurer, January 1, 1916	1,274	0	1				
.. Deposit Account	2,280	0	0				
.. Welfe Legacy (including interest)	1,148	11	4				
.. Annual Subscriptions				4,702	11	5	
.. Donations, including Special Gifts	1,169	14	0				
.. Legacy, Geo. Wythes, Esq., V.M.H.	1,417	9	1				
.. Schroder Annuity	100	0	0				
.. Dividends and Interest	844	12	8				
.. Deposit Interest, Welfe Legacy	37	8	8				
.. Repaid Income Tax	132	4	5				
				3,721	8	10	
				£8,424	0	5	
£1,211 is required to meet the quarterly payments due on December 31, 1916.							
The undersigned, having had access to all the Books and Accounts of the Society, and having examined the foregoing General Statement and verified the same with the Accounts and Vouchers relating thereto, now sign the same as found to be correct, duly vouched and in accordance with law.							
				GEO. H. COBLEY (VAL., Honorary Auditors, Chartered Accountants).			

SOCIETIES.

GARDENERS' ROYAL BENEVOLENT INSTITUTION. ANNUAL MEETING AND ELECTION OF PENSIONERS.

JANUARY 25.—The seventy-seventh annual general meeting of the Gardeners' Royal Benevolent Institution took place on Tuesday last at Simpson's Restaurant, Strand. Sir Harry J. Veitch, chairman and treasurer, presided over a moderate attendance. The report of the executive committee for 1916, and the statement of accounts for the year, were read by the secretary, Mr. G. J. Ingram, as follows:

THE REPORT OF EXECUTIVE COMMITTEE. The Committee, in presenting their 7th Annual Report and Audit Statement of Accounts, are very pleased to be able to state that, notwithstanding the many difficulties arising out of the terrible war in which our country is engaged, the good work and benefits of the Institution have been well maintained during the past year. Never has there been a more anxious time, accentuated by the loss of many valued and liberal subscribers, also by the inability to hold the usual Festival Dinner, one of the main sources of adding to the income of the Charity in meeting its liabilities, and which has materially assisted the funds. Nevertheless, the Committee have done their utmost to carry out what they

- BRISTOL AND BATH.
 President, Hon. Treasurer, Hon. Secretaries,
 Col. H. Cary Batten Mr. George New Mr. F. E. Ailingbury
 WORCESTER.
 Rt. Hon. Earl Beauchamp John White, Esq. Mr. Harry J. White
 champion, C.M.G. (Mr. Terry.)
 DEVON AND EXETER.
 Trelawke K. Keene Mr. W. Mackay
 with Esq. (Mr. W. Mackay)
 WOLVERHAMPTON.
 C. T. Mander, Esq., Mr. George Bradley
 J.P. (Mr. George Bradley)
 BERKSHIRE, READING AND DISTRICT.
 Mrs. Roland Speer Arthur W. Sutton, M. C. G. Cox
 Esq., J.P., F.R.S., V.M.H.
 LIVERPOOL.
 The Rt. Hon. the A. J. Crippin, Esq. Mr. R. G. Water-
 Earl of Derby, man
 K.G.

The losses of valued friends and supporters by death have been unusually heavy during the year. Foremost amongst them must be mentioned N. X. Sherwood, Esq., J.P., V.M.H., for many years one of the Trustees of the Institution, and for over fifty years a most generous contributor to its funds, and whose passing away is a most grievous loss; also W. Y. Baker, Esq., Vice-Chairman of the Committee, and for many years a constant attendant at all its meetings, and who was ever ready to give it liberal financial support. Another death was that of G. Wythes, Esq., V.M.H., who was for many years a member of the Committee, and still another was that of Robert Tait, Esq., of Manchester, who for nearly forty years had been a regular contributor to the funds. The Committee very gratefully acknowledge legacies from each of these gentlemen. Amongst other losses may be mentioned A. Thompson, Esq., of Milton Grange, Soudon; Henry J. Jones, Esq., of Bevington; Mrs. Wheeler Lea, of Worcester, &c., &c. In conclusion, whilst deeply thankful for the generous support accorded to the Institution during the past year under the trying circumstances which have been met, and most of all the Committee venture to express their most earnest hope that the next Annual Meeting of the Charity may be held under much more happy conditions, and that, in the meantime, every friend will do his utmost to continue to support its funds, and also to induce others to do so, remembering how many old and

RECEIPTS

	£	s	d
To Balance, January 1, 1916	221	0	11
.. Donations	188	12	6
.. Repaid Income Tax	33	7	10
	£443	1	3

VICTORIAN ERA FUND.

	£	s	d
To Balance, January 1, 1916	221	0	11
.. Donations	188	12	6
.. Repaid Income Tax	33	7	10
	£443	1	3

PAYMENTS

	£	s	d
To Balance, December 30, 1916	246	0	0
.. Balance, December 30, 1916	197	1	3
	£443	1	3

RECEIPTS

	£	s	d
To Balance, January 1, 1916	245	10	4
.. Donations	12	8	4
.. Dividends	116	9	6
.. Repaid Income Tax	19	0	11
	£393	9	2

GOOD SAMARITAN FUND.

	£	s	d
To Balance, January 1, 1916	245	10	4
.. Donations	12	8	4
.. Dividends	116	9	6
.. Repaid Income Tax	19	0	11
	£393	9	2

PAYMENTS

	£	s	d
To Balance, December 30, 1916	256	13	4
.. Bank Charge	0	4	5
.. Balance, December 30, 1916	256	11	5
	£393	9	2

Reserving applicants are looking to the Institution for that invaluable help which will be such a boon to them during their remaining years.

HARRY J. VEITCH,
Treasurer and Chairman of Committee.
GEORGE J. INGRAM,
Secretary.

The adoption of the foregoing report and balance-sheet were moved by Sir Harry Veitch, who said that they met that afternoon with mixed feelings, and in circumstances differing from those of recent occasions. The losses the institution had sustained during the year were very much more serious than usual. The late Mr. N. N. Sherwood, one of their trustees, had been a great personal friend of his for many years. He was glad to say that Mr. Sherwood's son, Mr. Edward Sherwood, was following in his father's footsteps, and gave promise of doing a great deal of good; they welcomed with enthusiasm the work he had already begun; but no one could ever quite fill the place rendered vacant by the loss of Mr. N. N. Sherwood. Then there was Mr. Baker, a man who was always sympathetic, always desirous of helping the work of the Institution to the utmost of his power. He was their vice-chairman, and always attended the committee meetings when he (Sir Harry) was unable to be present. There were others whose death would affect the prosperity of the Institution, but he mentioned those two as being amongst their most intimate colleagues.

The present unfortunate circumstances were having an influence on the funds. He did not wish the meeting to understand that the financial position was anything but sound; it was perfectly sound—but at the same time, they had to face the fact that the Institution had to reckon with a diminishing income, and it was just as well to look the situation fairly in the face. It might be said that the laid first-class investments, which was no doubt the case; but with the present depreciation of capital the committee earnestly hoped that it would not become necessary to realise any portion of the investments. Three matters showed that the committee had had to manage the Institution during a very anxious time. In the circumstances, therefore, they were most thankful to those who had thrown open their gardens to the public and had given to the Institution part of the whole of the proceeds obtained in this way. For instance, that very afternoon they had received from Sir Frank Crisp a cheque for over £90. Then, the local auxiliaries were continuing their efforts with unabated zeal, though not, of course, a way with the same success as had previously attended their efforts. From Worcester, for instance, a delegate had paid to-day a cheque for £100, and he believed that during the afternoon a delegate from the Reading branch was expected to bring a cheque of equal or larger amount. Referring appreciatively to the excellent services rendered by the secretary, Sir Harry Veitch remarked that for months Mr. Ingram had been without an assistant, and had in very trying circumstances done the work himself, in his usual efficient manner.

The motion for adoption was seconded by Mr. Howard, and carried unanimously. Proceeding to the election of officers, Mr. A. W. Sutton proposed the re-election of Sir Harry J. Veitch as Treasurer. He said that year after year they tried to express their thanks to him for the great services he rendered to the Institution, but words failed adequately to convey what they really felt. For himself he could say that he never realised the value of those services more highly than at the present time, with the severe losses already referred to in his mind. He thought that the best way to express their thanks to Sir Harry Veitch would be to redouble their efforts to add to the resources of the Institution. The motion was seconded by Mr. Geo. Munro and carried with acclamation. In response, Sir Harry Veitch said that as long as his health and strength permitted him to do the work, and the members continued their confidence in him, he would have the greatest satisfaction in continuing in his present position.

Mr. Geo. Munro proposed the re-election of Mr. G. J. Ingram as Secretary; this was

seconded by Mr. D. Ingamells, and carried unanimously. The re-election of the retiring members of the Committee, with two additional members, Mr. H. G. Alexander and Mr. J. K. Kinnell, was moved by Mr. J. McKechar, and carried unanimously. On the motion of Mr. W. A. Blaney, Mr. Edward Sherwood was elected a Trustee in place of his father, now deceased. The auditors and arbitrators were re-elected, and the meeting then proceeded to appoint scrutineers for the ballot, Messrs. J. McKechar, Edward White, and H. G. Cox being appointed for this purpose. There were sixty-four candidates, and the Committee recommended the election of eighteen of these.

RESULT OF ELECTION.

Name	Age	No. of Votes
Albrey, George	80	5,845
Farquhar, Jane G.	69	4,419
Vallance, Abram	60	4,369
Cassleton, George J.	62	4,302
Edwards, Jessie	66	3,821
Carling, Thomas	67	3,759
Truelove, William	64	3,759
Cannon, Sarah M.	82	3,710
Murray, John	61	3,674
Penton, James	71	3,635
Claydon, John	62	3,557
Byrne, Henry	65	3,508
Evans, Edward	70	3,472
Stoward, Emily A.	64	3,457
Lockyer, John	66	3,244
Jinks, Eliza	67	3,241
Hinton, George	63	3,235
Opton, Elizabeth	65	3,122

The Scrutineers reported that twenty-four voting papers were spoiled, accounting for 195 votes. It was also reported that the candidates Charles Burden, and Charles Morgan had died since the list of candidates was drawn up. Following the declaration of the poll, Mr. Geo. Munro moved that the candidate George Wilson be elected a pensioner by resolution, on owing to the special circumstances surrounding his case. This was seconded by Mr. James Hudson, and carried. Mr. Munro further said that the candidate Albert Harding was in very hard case, and offered a sum of £10 for the benefit of this candidate, promising at the same time to do all he could to get him elected at the next meeting. It was also announced that Mr. Arthur W. Sutton desired to give a sum of £20 in order to place upon the fund the candidate Edwin Fough. This completed the business of elections. A vote of thanks to the Scrutineers closed the proceedings.

ROYAL SCOTTISH ARBORICULTURAL.

As the Court of Session recently an action was raised by Mr. Charles S. France, Aberdeen, to have a resolution altering the law relating to the number and election of the office bearers, which was passed at the annual business meeting of this society on February 6, 1915, reduced on the ground that it was not passed in accordance with the laws of the society. The pursuer's contention was that the motion for alteration of the law was not carried by a two-thirds majority, which is necessary for the alteration of a fundamental law, and that therefore the pretended resolution was null and void. A proof of the averments was allowed, and the Lord Ordinary (Hunter) has found that the resolution was passed by the necessary two-thirds majority, and has assigned the defenders with expenses.

ROYAL CALEDONIAN HORTICULTURAL.

JANUARY 10.—The annual general meeting of this society was held in Dowell's Rooms, George Street, Edinburgh, on this date. Mr. J. D. Adair, senior vice-president, occupied the chair, and, including the council, there was an attendance of 25 members.

The statement of the accounts showed that the income for the year exceeded the expenditure by £56 *vs.* 9d., and that the funds were £682 14s. 5d., an increase of £17 5s. 9d. over the previous year. Mr. W. H. Massie pointed

out that as the railway stocks held by the society had not been valued, the capital was over-stated by over £170, and he thought that before incurring so much expense as they had done in connection with the show which it was proposed to hold last September, the council should have taken steps to ascertain whether it was possible to carry it through or not. The accounts were afterwards adopted.

The following office-bearers were elected for 1917: President, Lord Elphinstone; vice-president, Mr. Henry Methven; councillors, Messrs. Robert Fife (Messrs. Dobbie and Co.), Edinburgh; and John Hightgate, Hopetoun, South Queensferry.

CROP AND STOCK ON THE HOME FARM.

IS the hope of aiding the movement for increasing the food supply, the Editors have asked me to contribute hints on reasonable matters pertaining to farm crops and stocks. There are many head gardeners who are responsible for land and small farms, as well as the garden, and some of the less experienced may be glad of a few hints from one who has had many years' experience. My remarks on the various subjects will be based on my own practice. It is not necessary to tell a practical person that the ploughing up of grass land will not produce a huge crop of Potatoes the first year. But to those with little experience, let me say, do not imagine such a result possible unless actual trenching of the soil is carried out. Grass land properly prepared for another crop this season would produce a full Potato crop in 1918. For the proper utilisation of such a plot note what I say in a subsequent paragraph on Oats.

For this season's Potato crop lose no time in getting the farmyard manure on to the land, at the rate of 15 to 20 tons per acre, deeply ploughing it in. Stiff soils must have the manure in winter, but in the case of soils of a lighter character the manure may be applied at planting time if more convenient.

The seed tubers should be occasionally examined to make sure that they are not prematurely "sprouting." If they show signs of undue growth a vigorous turn over with the Potato fork will bruise any shoots and thus check growth. The quantity of seed required per acre is approximately 15 cwt., regulated, of course, by the size of the tubers. Where farmyard manure is not available in quantity, artificial stimulants will be required to aid growth. I would strongly advise that such manures as basic slag, superphosphates and sulphate of ammonia, be obtained as early as possible, as there appears already to be some difficulty in getting such things through. A clean Oat or Wheat stubble is good land for Potatoes, assuming it was deeply ploughed in the autumn.

WHEAT.—The daily press is advocating strongly the sowing of spring Wheat, especially on broken-up pasture. I am little in favour of spring sown Wheat; the chance of obtaining a reasonable crop is too small. Much better have a full crop of Oats from the same plot. Land from which sheep fed Rape, Cabbage or Turnips was taken, might produce a fair crop of the white nursery variety. My experience of Wheat sown on February 22 last year as an experiment does not encourage me to repeat the experiment, as it was a miserable failure. My experience of varieties recommended, like Little Loss or Marvel, is that the corn produced lacks "strength," known as glutin, which is essential to the miller. A strong sample of Wheat should be opaque, with a dark skin, not light in colour as in the case of a "weak" sample. "Strong" Wheat should weigh from 65 lbs. to 66 lbs. per bushel.

OATS.—When people agitate for the ploughing up of grass land and sowing thereon Oats, they are acting wisely as far as this crop is

concerned. This method of dealing, with woad-out Suffolk leys is common and on all farms with the ploughing up of pasture. Wireworm is apt to be troublesome to the first crop, but with judicious management this pest can be kept under. At times heavy fields of Oats are obtained from such a preparation. From 48 to 60 bushels per acre may reasonably be expected.

Plough the land at once, and not more than 5 inches deep, carefully adjust the skim roller on the plough to ensure the grass being thoroughly buried. The presser should follow in each furrow to consolidate the whole, thus ensuring the rotting of the turf quicker and making travelling less easy for the wireworm. If the ploughing be done at once a good surface tilth will be obtained by sowing time—March 1. Four bushels of seed per acre is the common quantity allowed; some sow more, others less. In some counties black Oats only are grown, the Tartarian variety being generally preferred; in other districts white Oats of the Abundance type are largely grown.

MANGOLDS—This is one of the most important of root crops grown, especially for dairy cows in butter production. Horses, sheep, pigs and poultry all appreciate the roots. The amount of crop obtained per acre varies considerably, owing to soil and methods of culture; a reasonable yield is 30 tons per acre. For cows in milk the Tankard section is preferred, as containing more sugar. Globe varieties produce a heavier bulk, and are valuable for sheep, pigs and poultry. The quantity of seed per acre is 3 lbs. Mangolds can be grown quite well by the aid of artificial manure only. Therefore, those with no animal manure available need not despair, though with a combination of the two greater success is assured. Spread from 15 to 20 tons of farmyard manure per acre, if available, on the plot selected, which may have carried Wheat, Oats or Barley as the previous crop, and was ploughed deeply in the autumn. Plough in the manure at once; this will allow time to obtain a good surface tilth by April, which is a good time to sow the seed.

CABBAGE—Varieties of the Drumhead type will produce a large quantity of valuable food from an acre of land well managed, ready for the use of cows early in October, as the grass in the pastures is getting scarce. Sheep fatten on Cabbage alone in the early autumn. For breeding sows and poultry, too, Cabbage is an economical food. Half a pound of seed will be sufficient for an acre, raising the plants in a bed and transplanting them afterwards. Heavily manured and deeply ploughed stiff land is ideal for this crop. The surface should be left as rough as possible to be pulverised by the weather.

POULTRY—At the present time poultry is one of the most valuable assets to a farm, no matter how small; but, unfortunately, in the past poultry has been sadly neglected by the farmer, until the present scarcity of eggs has forced upon all classes the need of greater effort in maintaining a better home supply. Among the fifty breeds of fowls there is naturally a difference of opinion as to which is the best. Too many persons wish to combine egg and table fowls in one breed. This is not possible if perfection in egg production and table fowl is the aim. For all-round hardy utility fowls, Rhode Island Red, Light Sussex, Buff and White Orpington are to be recommended. For egg production only, White and Black Leghorn are excellent. For table chickens, Silver or Dark Dorking, crossed with Indian game, are unexcelled. As a combination, Plymouth Rock, Buff and Black Orpington, crossed with Indian or English game, are good.

No time should be lost in mating the birds for this season's supply. Six hens of 1915 hatching mated with a cockerel of last season's hatch, or six pullets mated with a bird of 1915, should produce good results. *E. Robinson, Swanmore Park, Bishop's Cleeve, Waltham.*

LAW NOTE.

DELAY IN TRANSIT.

At the Huntington County Court on Friday, before His Honour Judge Wheeler, K.C., the Great Northern Railway Company sued H. Papworth, farmer, Ramsey, for 18s. 10d., carriage of manure, and defendant brought a counter-claim of 24 1/2s. for loss on sale of a quantity of Celery. Mr. R. G. Deacon, from the solicitor's department, King's Cross, appeared for the company, and Mr. Sergeant, of Ramsey, for the defendant.

The claim for carriage was admitted, and on the counter-claim Mr. Sergeant said in November, 1914, his client consigned from Ramsey St. Mary Station to a firm of salesmen at St. Pancras Potato Market 500 rolls of Celery for sale on commission. The Celery arrived on November 30, hot and in bad condition. Some 270 rolls were sold for 8s. per dozen and 30 for 4s. per dozen, the market price that day for Celery in good condition being 12s. per dozen rolls. Defendant claimed 4s. per dozen on 270 rolls, less 9s. commission. In the ordinary course of transit the Celery should have reached the market the day after it was loaded up, but in this instance the Celery was five days in transit. A claim was originally sent in for 23 15s. 2d. in December, and defendant heard nothing from the company until April, 1915, when they wrote that the delay in the transit was due to the exceptionally congested state of the railways at the time, consequent on the war. No doubt the war had something to do with the delay at the time, but the question was whether the delay in this case was due to neglect.

His Honour said they had all had to suffer inconvenience by reason of the war.

Mr. Sergeant said the company had to prove that this particular traffic was delayed by the war.

His Honour: I am bound to assume there is a war going on. The next question is: Was this delay caused by the war?

Mr. Deacon, for the company, admitted there was delay, but thought he could shorten the case on another point. On the consignment note signed by Mr. Papworth, Clause 3 read: "No claim in respect of goods for loss or damage during the transit for which the company may be liable will be allowed unless the same be made in writing within three days after delivery of the goods." In this case the company heard nothing about the claim until December 8, although the goods were delivered on November 30, so that the company had no opportunity of inspecting.

Mr. Sergeant said the claim was made at the earliest date, as his client did not hear of the delay until December 2.

His Honour pointed out that defendant's agent, to whom the goods were consigned, was equally bound by the conditions laid down by the company. Mr. Sergeant said if his Honour held that the condition applied in this case, there was still the point as to whether the delay had been reasonable.

Mr. Deacon said he was prepared, if necessary, to fight the case on the question that the delay was due to the war.

His Honour: We all know that the war has caused delay on the railways. Even in my own small way I have been delayed hours and hours. Mr. Sergeant: I am afraid we all have.

His Honour thought defendant must be bound by the condition stated. This condition was purposely inserted for the protection of the company. He had a lot to do with cases dealing with railway conditions in his younger days, and had tried over and over again to get beyond them, but always failed to do so. He gave a verdict for the railway company on the claim and counter-claim.

Spello Hill, where the late Mr. Stobart had an excellent collection of Orchids, the *Odontoglossum* being a great feature. A brusque, outspoken Yorkshireman, Mr. Hartley was highly respected by all who knew him, even by those who perchance did not agree with his views, always fearlessly expressed. He was a well-known figure at the London R.H.S. Shows. He was laid to rest on New Year's Day in the little churchyard at Copgrove, close to the scenes of his many activities, amid many manifestations of esteem and respect. T. 1.

ANSWERS TO CORRESPONDENTS.

There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to inquire, or from not knowing of whom to make the inquiry, they too often fail to obtain the information they are in want of. And let no one be alarmed lest his questions should appear trifling, or those of a person ignorant of that which he ought to know. He is the wisest man who is conscious of his ignorance; for how little do the wisest really know—except that they know little. If one man is unacquainted with a fact, however common, it is probable that hundreds of others in the same position as himself are equally unacquainted with it. To ask a question, then, is to consult the good of others as well as of one's self.—*Gardener's Chronicle*, Vol. 1, Vol. 1, January, 1917.

HURRY CYTRIFERUMS: *Dorset Gardener*. Some of the North American species, like *C. aculea* and *C. montanum*, may be grown in soil which is quite free from lime if given the requisite conditions of shade and suitable soil. For these two a soil rich in humus overlying heavier, well-drained loam is necessary. *C. spectabile* may be grown in heavy loam, and sometimes does well on a bank amongst low shrubs in full sun, where the soil is very retentive, though no stagnant moisture is found anywhere near the plant. This position has been tried with success after failure in a peat bog. The Siberian *C. maranthum*, and our native *C. calcidius*, with the intermediate *C. ventricosum*, are easy to grow if a prepared bed of heavy loam is available. If *Dorset Gardener* could get some clay and mix it with his sandy loam he would have a suitable compost for these plants. Plenty of lime rubble in the way of drainage is also necessary, and a half-shady position is best amongst low growing shrubs.

ONIONS: *G. B.* In an ordinary way it is not necessary to bend the neck of an Onion over in order to get it to mature satisfactorily, nor is it advisable to make the practice a general one; at the same time it is found that in cases where particular plants develop thick necks and show a disposition to continue growth the purpose of the grower, which is the ripening of the bulb, is accelerated by imposing the check referred to in your note.

PURCHASE OF POTATO TUBERS: *P. de H. B.* We cannot be responsible for advising you where it is possible to obtain perfectly healthy seed-tubers, though there is no doubt that they are (or were) to be purchased. There are certain varieties that so far have proved immune from the black scab disease, but we judge from your letter, which is scarcely so definite as could be wished, that your loss last season was caused by the older disease, *Phytophthora infestans*. Read the hints on Potatoes printed on pp. 34 and 36.

THERMOMETER: *A. W.* The easiest way of testing your thermometer is to compare its readings with another instrument that is known to be correct. If you have not a recently tested thermometer take the one you consider doubtful to a manufacturer or dealer in scientific instruments, and he will doubtless test it for you for a small fee.


Communications Received.—F. W. M. E. H. J. A. N. H.—W. L. D.—A. H. M.—A. H. P.—Patrol. S. T. A.—G. W.—W. B. C.—W. H. A.—R. G.—G. A. R.—C. Wheeler—Dr. H.—W. J. G. E. M.—A. S. G. T.—Dublin.

Obituary.

LEVI HARTLEY. This veteran gardener passed away at the end of 1916. Mr. Hartley was for the past fifteen years gardener to Admiral Sir J. Buxton, R.N., at Copgrove Hill, near Harrogate, and previously for a similar period at

*NEW POSTAL RATES.—Contributors and correspondents are reminded that under the new postal rates, letters bearing a penny stamp must not weigh more than one ounce. The postal charge for letters exceeding one ounce, but not exceeding two ounces, is twopence, and thereafter at the rate of 1d. every two ounces.

BUNYARD'S
FRUIT TREES



CATALOGUE
by RETURN

GEORGE BUNYARD & CO.
Royal Nurseries,
MAIDSTONE.

HORTICULTURAL SHEET GLASS
6% MORE LIGHT

A SUBSTITUTE for ordinary 21 oz. glass, which is no so scarce. The new British Rolled Sheet is about 1/2 in. (or equal to stout 21 oz. in thickness). Can be supplied to buyers' sizes at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

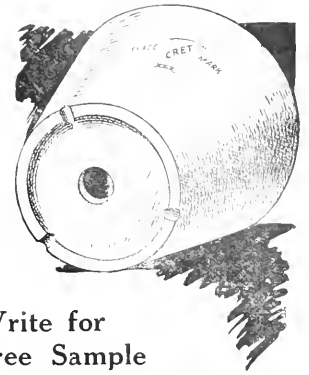
Manufacturers of
GENUINE WHITE LEAD PAINT.

'BLACKFRIARS BRAND.'
Mixed ready for use. In 14lb. tin and 1 cwt. wide-neck cans.

BEST LIN OIL PUTTY.

Complete Price List of
Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
QUOTE GARDENERS' CHRONICLE



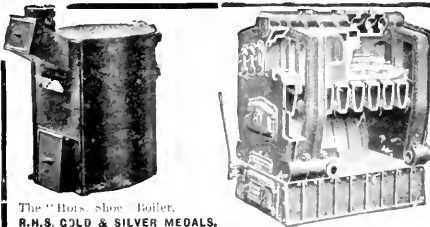
Write for
Free Sample

Cret Pot with Booklet and you'll appreciate the Cret Advantages in room, drainage, porosity, cleanliness, shapeliness, and strength. Greater health on your staging.

THE BOOKLET gives all Cret prices per 100, enabling you to buy just what you want. Also 5 Special Assortment Offers. Carriage Paid on orders over 20/-. Write to-day.

Two Specimen Prices—2 1/2 ins., 4" per 100 : 7 1/2 ins., 2 1/2". Safe Delivery Guaranteed.

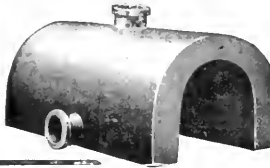
PETER BAILEY & SONS, LTD.,
2, Heaton Mersey Pottery, near Manchester.



BOILERS.

For House and Greenhouse. Sectional, Sizable and other Patterns for Replacement, &c.

FROM STOCK.



The "Horseshoe" Boiler.
R.H.S. GOLD & SILVER MEDALS.

List C2 Post Free. Phone: Hop 372.

C. P. KINNELL & CO., LD.,
65a, SOUTHWARK ST., LONDON, S.E.
(Close to Hop Exchange.)



Food Production on Farms & in Gardens.

To obtain the best results sow
Dicksons Seeds
which are all carefully selected from the finest and most productive strains, and are always reliable.

Prices moderate. Catalogues free.
Dicksons Seed & Showers - Chester.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties. STOVE AND GREENHOUSE PLANTS OF ALL KINDS. Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, GUELLENHAM.

TURF LOAM.

Very Fibrous Yellow Turf Loam

For VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc.

Quotations Carriage Paid or Delivered.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.

THE ROCK GARDEN

A practical work on the cultivation and management of Rock Gardens, written by Reginald Farrer. One of the best and most popular works on the subject.

Contains 3 plates in colour. Price 1/10 post free.

THE PUBLISHER,
The Gardeners' Chronicle, Ltd., Wellington Street, Covent Garden, LONDON, W.C.

ROYAL GARDENERS' ORPHAN FUND

B. WYNNE, Sec.,
19, Bedford Chambers, Covent Garden, London, W.C.

EVERY GARDENER KNOWS THAT

Clay's gets there and makes the Garden gay all the year round

Sold everywhere in TINS at 6d. & 1s., and in BRANDED & SEALED BAGS: 7 lbs. 2s. 6d., 14 lbs. 4s. 6d., 28 lbs. 7s. 6d., 56 lbs. 12s. 6d., 112 lbs. 20s. Or direct from the Works, Carriage paid to the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mills & Bone Crushers, STRATFORD, LONDON, E.

THE CLAY'S FERTILIZER TRADE MARK EVERY GENUINE TIN, BAG & SEAL BEARS THIS TRADE MARK.

IT IS THE STANDARD FOOD FOR PLANTS.

MARKETS.

COVENT GARDEN, January 27.

We cannot accept any responsibility for the subsequent reports. They are furnished to us regularly every Wednesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quantity of the sample, the season in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—*ENS.*

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Aruno, per doz.	8 0 10 0	Lilium—	
Azalea, white,		— ancofilium	
per doz. bunch.	7 0 8 0	— album, long.	3 0 3 6
Camellia, white,		— short	2 6 3 0
per doz. blms.	3 0 3 6	— r u b r u m,	
Carnations, per		per doz. long.	3 6 4 0
doz. blooms,		— short	3 0 3 6
best American		Lily-of-the-Valley,	
varieties	4 0 5 0	per doz. bun.	24 0 53 0
— Carolina (crim-		Narcissus	
son), ex. large	5 0 5 6	— grand primo,	
Chrysanthemums,		— per doz. bun.	1 0 6 0
white, per		— Soliel d'Or,	
doz. blooms,	3 0 5 0	— Guensey, per	
— white, per		doz. bun.	8 0 12 0
doz. bunches	30 0 36 0	Orchids, per doz.:	
Daffodils, single,		— per doz. long.	12 0 15 0
per doz.	12 0 15 0	— Cypripedium	2 0 3 0
Eucharis, per doz		— Od on toglos-	
bloom.	3 0 3 6	— crispum	3 0 4 0
Frezia, per doz.	3 0 3 6	Pelargonium, per	
— bun.		doz. bunches,	
Gardenia, per		— double scarlet	12 0 15 0
box of 12 white		Tulip, white, per	
— 18 blooms	6 0 8 0	doz. bun.	20 0 36 0
Heather, white,		— Violets, single,	
per doz. bun.	12 0 0	— per doz.	
Lilium longi-		— Wales,	4 0 5 0
florum, long	6 0 6 6		
— short	6 0 7 0		

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Adiantum (Maiden-		Cycas leaves, per	
hair) Fern,		doz.	5 0 12 0
best, per doz.		Fern, French, per	
bunches	9 0 10 0	doz. bunches,	
Asparagus plin-		— common	3 0 4 0
mosus, long		Ivy leaves, per	
trays, per		doz. bun.	2 0 2 6
half-dozen	2 6 3 0	Moss, gross	
— medium		— bunches	9 0 10 0
doz. bunches	12 0 18 0	Myrtle, doz. bun.	
— Sprenger	8 0 12 0	— small-leaved	6 0 0
Bronze foliage	3 0 6 0	— French, per	
Carnation foliage,		doz. bunches	1 0 1 3
per doz. bunches	4 0 5 0	Smilax, per doz.	
Croton foliage,		— of 6 trails	1 3 1 6
per doz. bunches	12 0 15 0		

French Flowers, &c.: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Ane none, double		Narcissus—con.	
pink, per doz.		— Sol d'or, per	
doz. bun.	3 6 4 6	doz. of 6	4 0 4 6
— single, mixed		Ranunculus, per	
per doz. bun.	12 0 15 0	doz. bun.	6 0 8 0
Lilac, white, per		— Carmine, per	
doz. sprays	4 6 6 0	doz. bun.	8 0 9 0
Mimosa (Acacia)		— R o n a n o,	
per doz. bun.	10 0 12 0	— scarlet, per	
Narcissus paper		doz. bun.	15 0 18 0
white, per doz.	3 6 4 0	Violets, single,	
— bun.		per doz. bun.	3 0 4 0

Remarks: The cut flower department has still an empty appearance. Chrysanthemums are practically finished, and this fact has forced the prices for other white flowers, conditions which promise to obtain for a few weeks to come. A few boxes of bulb-balls are received from Llandudno. There is a further increase of these flowers and yellow Narcissus from Guernsey, so that a drop in their prices is expected daily. The odd variety has caused a shortage in the supply of Carnations and Liliums. A few white and coloured Tulips are sold at high prices. The supply of Lily of the Valley is sufficient for the demand. The quality is fairly good, but red boxes of bulb-balls from the new season crop are being sold at from 10s. to 12s. per dozen boxes. Small consignments of French flowers are received daily, they are mostly white Carnations, Mimosa and Violets. There have been no Arran Narcissus or Campanulid, so far as is known from France this season.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Aralia Sieboldii,		Cocos Weddell-	
— dozen	5 0 6 0	— ana, 48's, per	
Asparagus plu-		doz.	18 0 30 0
mosus nanus,		— 60's per doz.	8 0 10 0
per doz.	10 0 12 0	Croton per doz.	18 0 36 0
— Sprenger	8 0 10 0	Erica gracilis,	
Aspidistra, per		— melanthra,	18 0 21
doz. green	24 0 36 0	— hymalis,	12 0 15 0
Cacti, various,		— hymalis, in	
— tray of 12's	4 0 0	— humbs	4 0 12 0

Plants in Pots, &c.: Average Wholesale Prices.—con.

	s.d.s.d.		s.d.s.d.
Ferns, in thumbs,		Latania borbon-	
— per 100	10 0 15 0	— ica, per doz.	12 0 30 0
— small and		Lilium longi-	
— large 60's	14 0 24 0	— florum, per	
in 48's per doz.	6 0 7 0	— doz.	36 0 42 0
— in 32's	12 0 18 0	— lacinifolium	
— choicer sorts,		— album	24 0 30 0
per doz. 48's	8 0 12 0	— album	24 0 30 0
Geonoma araxis,		Marguerites, 48's,	
60's, per doz.	6 0 8 0	per doz. 12 0 0	
— larger, each.	2 6 7 6	Pandanus Veitchii,	
Keok, primrose-		per doz.	36 0 48 0
— ana, per doz.	4 0 8 0	Phoenix rupi-	
— larger, per		— cola, each	12 6 21 0
doz.	18 0 36 0	Roman Hyacinths	
— Forsteriana,		per box 24's	8 0 10 0
60's, per doz.	5 0 8 0	— Spiraea, per doz.	12 0 15 0

Remarks: The very odd weather has caused business in this department to be almost at a standstill; the majority of growers will not send tender plants to market in such wintry weather.

Vegetables: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Artichokes, Globe,		Lettuce, Cabbage	
per doz.	2 6 4 6	per doz.	1 0 2 0
— per bushel	1 0 1 6	— per doz. per lb.	1 3 1 6
— per bus.	5 0 0	— Mustard and	
Asparagus, Paris		— Cress, per doz.	
— Green, per bush.	4 6 4 6	— punnets	1 0 1 6
Beans, English,		Onions, per bag	18 0 22 0
— per lb.	3 6 4 0	— sprink, per	
Broccoli, purple		— doz. bun.	8 0 0
— sprouting, per		— Parsnips, per bus.	3 0 6 0
bus.	2 6 0	— Peas, per lb.	
Brussels Sprouts,		— Potatoes, new, per	
— per doz.	6 0 0	— lb.	0 6 0 8
Cabbage, per		— Radishes, per	
— tall	5 0 10 0	doz. bun.	1 6 2 6
— Red, per doz.	3 0 0	Rhubarb, forced,	
— Green, per bush.	9 0 0	per doz.	1 3 1 9
— Cauliflowers, per		Savoy, per tally	6 0 10 0
— tall	10 0 30 0	— Sea-kale, per doz.	
Celeriac, per doz.	2 6 4 6	— punnets	12 0 15 0
— per doz.	12 0 30 0	Shallots, per lb.	0 5 0 6
Cucumbers, per		Spinach, per bus.	12 0 0
doz.	10 0 20 0	— Swedes, per bag	5 0 0
Endive, per doz.	3 0 0	Tomatoes, Tene-	
— Greens, per bag	2 0 0	— riffs, per	
Garlic, per cwt.	44 0 0	— bundle	16 0 20 0
Herbs, per doz.	2 6 0	Turnips, new, per	
— bun.	2 0 6 0	— bag	6 0 0
— Herbs, per doz.	2 6 0	— per bus. per bag	10 0 1 6
— doz.	42 0 0	Watercress, per	
Leeks, per doz.	6 0 12 0	— doz.	0 9 1 0

Fruit: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Almonds, per		Grapes: Almeria,	
cwt.	70 0 0	per brl.	16 0 25 0
Apples—		— Alicante	13 2 6
— Californian		— Gros Colman	14 3 0
— New to wns,		per lb.	1 1 3 0
— per cwt.	12 6 14 0	— Muscats, per	
— English		lb.	12 0 15 0
— Cooking, per		Grape Fruit, per	
— case	11 0 12 0	— case	16 0 20 0
— Scotch		— Lemons, per case	14 0 25 0
— Orreks, per	29 0 38 0	— KentCobs, per lb.	1 0 1 3
— case	14 0 17 0	Nectarines, per	
— per box	4 0 6 0	— box	5 0 10 0
Bananas, bunch-		Nuts, Brazil,	
— Medium	18 0 0	— new, per cwt.	00 0 0
— X-medium	18 0 0	— Cocanuts, per	
— Extra	20 0 0	— 100	31 0 32 0
— Double X	24 0 0	Oranges, per case	16 0 42 0
— Giants	28 0 30 0	— Peaches, per box	4 0 10 0
— Red, per ton	25 0 0	Pears—	
— Jamaica, per		— Californian	15 0 22 0
ton	£18 0 0	— Plums, per box	4 0 8 0
Chestnuts, per		Tangerines, per	
bag	22 0 26 0	— box	1 0 2 0
Cranberries, per		Walnuts, s.	
case	19 0 20 0	— per cwt.	56 0 85 0
Dates, per doz.			
boxes	7 0 7 6		

Remarks: There are only limited supplies of both English and Colonial Apples. Pears from California are a good supply, the varieties consisting of Winter King, Pomona, die Concord, Glen Moreau and Easter Beauty. Blackberries are fairly plentiful, but several varieties are almost finished. A consignment of fruit from the Cape is due to reach the market the shipment consisting of Nectarines, Peaches, Pears, Plums and Apricots, besides oranges and an odd lot. There has been a better supply of French salads during the past week. Fanned vegetables are scarce, and if odd wealth continues there will be a shortage in all vegetables and fruit not shown. Some of the prices to reach the market from Toronto: E. B. R. Coed Garden Market, January 27, 1917.

	s.d.s.d.		s.d.s.d.
Bedford—		Lincoln—c.n.	
— King Edward	10 6 11 6	— Blackland	10 6 11 0
— in a Chief	10 6 11 6	— Evergood	10 6 11 6
— Linn	10 6 11 6	— King Edward	10 12 6
— Arran Chief	11 6 12 1	— Queen	11 0 11 6

Remarks: There are moderate supplies and a fair demand. Stock in London are not very large. Prices are about the same as those of last week. Edward J. Bennett, Covent Garden and St. Pancras, January 27, 1917.

DEBATING SOCIETIES.

ELSTREE AND BOREHAM WOOD HORTICULTURAL CLUB.—At the meeting of the Elstree and Boreham Wood Horticultural Society, held at the Parish Hall, Letchmore Heath, on the 18th inst., Mr. Edwin Beckett gave an address on "Increased Vegetable Culture." Mr. C. P. Ayis, J.P., occupied the chair. Despite bad weather the hall was crowded. Slides were shown dealing with vegetable cultivation, including several recently taken of ploughing at Aldenham Park, where about 30 acres of rough pasture-land is being broken up specially for the growing of vegetables. The lecturer urged the necessity of everyone, who can, to grow vegetables to assist in adding to the national food supplies. Questions were answered by Mr. Beckett at the conclusion of his address. Mr. Kent, Letchmore Heath, offered, next free, twenty 10-foot plots on one of his fields for the use of growers, and stated that he would give two prizes in connection therewith. The society is arranging a series of lectures on Bee-keeping and Poultry Rearing.

WARWAGE AND DISTRICT GARDENERS.—The annual general meeting of this Association took place on Wednesday, the 17th inst., the Rev. S. M. Winter, a vice-president, occupying the chair. After the minutes had been read and signed and some formal business done, the election of officers was proceeded with. Mr. R. Dow, of Parkwood Gardens, was elected chairman and Mr. F. Masood, of Warwage Court Gardens, vice-chairman. The committee was re-elected, with Mr. W. Clarke in place of Mr. Doc. Mr. H. Colby was re-elected hon. secretary and treasurer. The annual report and balance-sheet were presented and adopted, and were considered satisfactory. It was decided to hold another Potato-growing competition among the members, and also a children's Sweet Pea-show during the year.

CATALOGUES RECEIVED.

- SEEDS.
GEO. COOKE and SONS, Bath.
KENT AND BAYDON, Darlington.
G. H. PENT AND CO., The Eastgate, Chester.
JOHN McKEITHEN, 35, Gosbach Road, Upper Holloway, N. 6.
P. BIRDIE, 6, Waterloo Street, Glasgow.
T. S. WILK, Ltd., Fetham, Middlesex.
W. SMITH and SONS, Market Street, Aberdeen.
W. SAMSON, Ltd., Co. 8 and 10, Portland Street, Kilmbeock.
W. THOMPSON AND CO., LTD., Londonberry.
WATSON and McALAN, Glasgow.
ROBERT VITCH and SON, 54, High Street, Exeter.
FRANK DICKS and CO., 59, Deansgate, Manchester.

SCHEDULE RECEIVED.

Southampton Royal Horticultural Society Summer Show, to be held in the grounds of South Stoneham House, on Wednesday, July 11. Secretary, Mr. C. S. Fudge, 7, Silverdale Road, Southampton.

THE HORTICULTURAL DIRECTORY AND YEAR BOOK.

We much regret that the publication of the Horticultural Directory and Year Book for 1917 has been delayed by unforeseen and unavoidable circumstances. First, the difficulties in regard to printing and paper supplies have increased greatly of late; and secondly, the number of corrections that have to be made this year is altogether unusual, owing to the fact that so many gardeners have joined the Army. To those who have already sent us prepaid orders we offer our apologies for the delay, and assure them that everything possible is being done to expedite publication.

GARDENERS' CHRONICLE, Ltd.,
41, WELLINGTON STREET, COVENT GARDEN,
LONDON, W.C.

(Continued from page iii.)

WANTED, in good garden, 2 expert or improvers, for inside, age 17, wages 13s., rising 19s. weekly; bothy, milk, vegetable, &c., 6d. duty every fourth week; 6d. per hour overtime, 1 o'clock Saturday.—Apply, H. LLOYD, Twin Water Gardens, Welwyn, Herts.

WANTED, YOUTH, age about 16, as FM FLOWER, Inside and Out; wages 17s. and 10s.—E. MORGAN, Wassand Hall Gardens, Hants.

WANTED, Two YOUTHS, about 17 years; Inside and Out, wages 17s., 5s. War bonus, duty paid extra; 12 o'clock overtime, 1 o'clock Saturday.—W. E. ANDERSON, Close House Gardens, Wylam-on-Tyne.

WANTED, Strong YOUTH, age 16 to 17, for Gardens; wages 18s. weekly.—Apply, H. GOODE, Morton House Gardens, Kingsworthy, Hants.

WANTED, a YOUTH, for the Houses, wages 15s., Bothy and vegetables, duty paid.—State age and if any experience to W. L. BASTIN, Buscot, Faringdon, Berks.

WANTED, for large establishment in the Midlands, Two or Three YOUTHS, about 16, 4 Inside Work; good wages and Bothy to smart lads. Apply, in the first place, to JOHN PEEB & SON, The King's Seedsmen and Nurserymen, West Norwood.

WANTED, for Holdenby Gardens, Strong YOUTH, 15 to 16, to look after garden horse and work in Garden; good wages, Bothy, and attendance.—Apply, J. SHEENAN, Holdenby, Northampton.

WANTED, a LAD for Gardens (IN and OUT), about 16, or soldier dis-charged, former Gardener, comfortable Bothy; liberal wages.—Apply, PRATT, Inwood, Templecombe.

WANTED, YOUNG WOMAN, for Jersey Cows and Poultry, near London; state wages and experience.—S. P. B. 24, 41, Wellington Street, Covent Garden, W.C.

WANTED, a GENERAL SERVANT, age 18-22, comfortable home, very little work, no windows, wages, £18 to £30. Apply, 549 Wandsworth Road, Highgate, London, N.

TRADE.

WANTED, MANAGER, for First-class Florist and Fruiterer's Business; in the province, must be good Salesman and thoroughly conversant with all branches Trade. State salary, experience, age, &c., to B. B. Box 22, 41, Wellington Street, Covent Garden, W.C.

WANTED, WORKING FOREMAN, to take charge of Branch Nursery, WALSHAW & SON, Scarborough.

EXPERIENCED CHARGE HANDS wanted for Palms, Ferns, and Vines; wages 50p per week and 6d. per hour overtime, Sunday duty extra.—THOMAS ROCHFORD & SONS, LTD., Tarrford Hall Nurseries, near Broxbourne, Herts.

WANTED, a good PROPAGATOR and GROWER, one used to Ross Climatic, Chrysanthemums, and general Nursery Stock. Apply, with particulars, wages, etc., to THE BEVAN ROSEBURY AND FRUIT FARM, LTD., Torquay.

GROWER wanted, for small collection of Fruit Vines, Ross, &c.; please state wages required, age, and send references.—WILL TAYLER, Hampton Middlesex.

WANTED, good KNIFESEMAN; well up in Budding, Grafting, and Training of Fruit Trees; permanent situation to reliable man, incl. lib. Full particulars of position, wages, &c., apply to JOHN PERKINS & SON, Billing, Road Nurseries, Northampton.

WANTED, a careful, WORKING GARDENER, for all kinds of general, bedding and sowing Seeds, growing Vegetables and Flowers, &c.—HARRISON & SONS, Seed Merchants, Leicester.

WANTED, MEN, ineligible, for Soft wooded stuff, Chrysanthemums, Tomatos, and Cucumbers, &c.—G. BENNETT & SON, Hansell, W.

WANTED, capable MAN, for Market Nursery, ineligible, to tend Tomatos, Ferns, &c. State wages, age, with copies of letters.—LEWIS COOK, Park Nurseries, Hatton, Essex.

NURSERY HANDS wanted; wages, 35s., a per week overtime extra, previous experience preferred, but not imperative. State age, &c., to ANDREWS, 31, Crooked Lane Street, Waltham Cross, Herts.

SEED TRADE Wanted, at once, ineligible smart ASSISTANT for Seed and Sundries orders.—Apply, MANAGER, Seed Dept., Army and Navy Auxiliary Co-operative Supply, Ltd., Flancon Street, Westminster.

WANTED, MEN for General Furnishing and Florist's work, ineligible.—Apply, WILLS & SEAGAR, Royal Exotic Nursery, Onslow Crescent, South Kensington.

WANTED, FLORIST, Male or Female, first-class maker-up.—Apply, stating experience and wages required, to WILLS & SEAGAR, Royal Exotic Nursery, Onslow Crescent, South Kensington.

FLORIST AND FRUIT—YOUNG LADY wanted at once, must be quick at making up; good wages.—E. COX, Aldwick Road, Begnor.

SITUATIONS WANTED.

Twenty-six words for 16, and 6d for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address above are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having letters addressed to Initials at Post offices, as all letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

GARDENER (HEAD) or GARDENER and BAILIFF, W. PETERS, Gwyns Garden, Leatherhead, Surrey, recommends as above, 29 years' experience, 20 which in full charge of estate of 160 acres, including police, head of Jersey's large Garden and Glass and Pottery, reason for leaving, highest references, age 37, married.

MISS ANSON, Pines House, Faringdon, Berks, highly recommends her Head Gardener, C. JONES, being well of gentleman requiring a thoroughly experienced man to head in large establishment, has been a year at the Royal W. R. Anson, B., and Miss Anson, 12 years as Head, and leaves only because of his expiring, and wishes to continue light plant and stock work, age 41, ineligible.—Apply, C. JONES, as above.

GARDENER (HEAD)—The Earl of Arundel, who desires to strongly recommend W. BROWN, a well experienced all round WORKING GARDENER, Inside and Out, has been 12 years at Weyham Abbey, Oxford, with a men only, age 43, married one boy, 11, dis-charged, Write, W. BROWN, Cookham Dean, Maidenhead.

GARDENER (HEAD), dis-charged, for 20 years, Head Gardener at Norbury Park; normal if 12 men, though death of employer seeks re-employment, awarded cups, medals, &c., at R.H.S. meetings for Fruit, Vegetables, Plants and Flowers; high references.—E. R. KENT (age 50, 15, Pixham Lane, Dorking).

GARDENER (HEAD) in good establishment, long experience; strongly recommended all branches, outside and under glass, 10 years manager small estate (100 acres), land and stock, highest references, married, age 45.—DAV, Green View, Boly, for Maidenhead.

W. HIGGS, Head Gardener, Fricham Park, Leatherhead, seeks re-employment, in experience in all branches; successful exhibitor.—Address, as above.

HEAD GARDENER requires Situation with his two sons (except from military service), good references.—B. 9, Balsdon Road, East Dulwich.

GENTLEMAN highly recommends his GARDENER (HEAD WORKING), where several are kept to any lady or gentleman requiring a thoroughly practical man, most successful cultivator of all Flowers, including orchids, Fruit, and Vegetables; 17 years as Head, age 45, one daughter (13 years).—A. WINTER, 31, Dekker Road, Dulwich Village, S.E.

GENTLEMAN giving up country house recommends his GARDENER (HEAD WORKING); practical life experience; thoroughly reliable and trustworthy; married; age 40, ineligible, near London preferred. BARRETT, Hatfield Heath, near Harlow.

GARDENER (HEAD WORKING) seeks Re-employment, thoroughly experienced in all branches, including Orchids, Carnations, Herbaceous and Alpines; 17 years Head in present situation; highly recommended; married; age 42.—H. F. WARRER, The Gardens, Highfield, Mansel-tongh.

GARDENER (HEAD WORKING), where several are kept; life experience, excellent references; single; ineligible; age 32, 8 years in present situation.—F. DENVER, The Vicarage, Cobham, Surrey.

FOREMAN (INSIDE) or HEAD; 25 years in good establishments, 42; good propagator, decorator; thoroughly practical; single; abstinent; at liberty; good references; state wages; London or Home Counties preferred.—C. FOX, 64, Cumberland Street, Panlloo, S.W.

DISCHARGED SOLDIER, 24, seeks Situation, Inside or Inside and Out, life experience up to outbreak of war.—S. WRIGHT, Copley Lodge, Outwood, Redhill, Surrey.

MIDDLE-AGED MAN (Single) requires Situation in Gardens, Outside; good references.—MOORE, 65, Jackson Road, East Barnet, Herts.

MAN (Rejected) seeks Situation (INSIDE or OUT); London or suburbs; no Mowing or heavy digging, some experience, willing, trustworthy.—W. G. BIRSTOW, 38, Dymock Street, Fulham.

YOUNG MAN seeks Situation in the Houses; 8 years' experience in the Gardens; good references, finally dis-charged from Army.—E. S. CHARSLEY, A-Stop Road, King's Sutton, Banbury, Oxon.

YOUNG WOMAN GARDENER requires position under capable Head; near Brighton.—C. H. 10, High Street, Brighton.

UNDER GARDENER (Lady); 1 year's training, indoors and out; three months' experience.—R. M. B. Box 21, 41, Wellington Street, Covent Garden, W.C.

TRADE.

ADVERTISER, educated, would manage development land for production, farm, garden produce, intensive crops, pigs, poultry, forage crops for dairy cows, Fruit, canisters, insect dust, soldier, or women workers; could establish very profitable industry, employing many all year round.—Address, Stratmore, Llanfairpwll, Anglesey.

ADVERTISER (Single), with life experience in growing for market, desires position as WORKING MANAGER, keen and energetic, over military age, good references.—B. B. Box 20, 41, Wellington Street, Covent Garden, W.C.

FOREMAN or MANAGER wishes Re-employment when suitable, thoroughly conversant details, propagator and grower all kinds market nursery stock, all departments, Inside and Outside, &c.; life experience, single, age 28, first dis-charging from Army; good references.—E. S. B. Box 16, 41, Wellington Street, Covent Garden, W.C.

FOREMAN (WORKING), near London; age 54, life experience, Cucumbers, Tomatos, Vines, &c.—P. HANSON, 3, Eldon Road, Bruce Grove, Tottenham, N.

FOREMAN GROWER, 26 years as Trade Grower; Tomatos and Cucumbers a specialty; thoroughly understands the profitable management of Glasshouses; good references for honesty, sobriety, and ability; capable of taking full charge Inside and Out, if experience; late grower of first-class growing. State full particulars of crops required growing, also wages offered.—H. J. GUFFIN, c/o Mrs. Colse, Bradninch, Devon.

FLORIST'S MANAGER, or as SHOP-MAN, good maker-up, Floral Decorator, &c.; life experience in the Trade; Plants, Seeds, Sundries, &c.; can assist with packing, general nursery repairs, good references; married.—148, Hunderhill Road, Croydon.

LADY GARDENER seeks Situation, Market Gardening preferred; 10 months' training Indoors and Out; reference if required.—A. E. SHUK, 32, Rothen Street, Ilford, Essex.

Books as Presents

There is nothing so helpful to a young gardener as carefully selected books written by successful cultivators in the various branches of gardening.

- Annals, Hardy and Half-Hardy.** By Charles H. Curtis. Contains 8 Coloured Plates. 1s. 10d.
- Apples and Pears.** By George Bunyard, V.M.H. With 8 Coloured Plates. 1s. 10d.
- Bulb Book, The.** A Practical Work on Cultivation, Propagation, etc. By John Weathers. Illustrated. 15s. 7d.
- Bulbous Plants, Beautiful.** By Jno. Weathers. 5s. 4d.
- Bulbs and their Cultivation.** By T. W. Sanders. 2s. 10d.
- Bulbs, The Book of.** By S. Arnott. Illustrated. 2s. 9d.
- Carnation Culture, Commercial.** Edited by J. Harrison Dick. A collection of treatises by the best modern cultivators. Illustrated. 7s. 4d. (\$1.50).
- Carnations, Perpetual Flowering.** By Laurence J. Cook. A Practical Manual with Details of Cultivation. Illustrated. Paper, 1s. 5d.; cloth, 1s. 9d.
- Carnations and Pinks.** By T. H. Cook, Head Gardener at Sandringham; James Douglas, V.M.H.; and J. F. McLeod. Contains 8 Coloured Plates, reproduced from colour photographs. 1s. 10d.
- Chemistry of the Garden.** By D. R. Edwardes-Ker. A course of practical work designed for the use of Teachers and Students of Gardening. 1s. 6d.
- Chrysanthemums.** By Thomas Stevenson. With Chapters by Charles E. Shea and C. Harman Payne. Contains 8 Coloured Plates. 1s. 10d.
- Chrysanthemums for Garden and Greenhouse.** By D. B. Crane. Edited by T. W. Sanders. Illustrated. 2s. 10d.
- Climbing Plants.** By W. Watson, A.L.S. With Introduction by W. Robinson, author of "The English Flower Garden." 2s. 10d. and 3s. 10d.
- Daffodils.** By the Rev. Joseph Jacob. With Preface by the Rev. W. Wilks, M.A. A full treatise on their culture for private and Exhibition purposes. With 8 Coloured Plates. 1s. 10d.
- Dahlias and their Cultivation.** By J. B. Wroe. 1s. 2d.; cloth, 1s. 8d.
- Dahlias.** By George Gordon, late President of the National Dahlia Society. Contains 8 Coloured Plates. 1s. 10d.
- English Flower Garden, The.** An Illustrated Dictionary of the Plants Used, and Directions for their Culture and Arrangement. By W. Robinson. With numerous Illustrations. 15s. 7d.
- Ferns, The Book of British.** By C. T. Druey. Illustrated. 3s. 10d.
- Ferns, Choice, for Amateurs.** For the Garden, Conservatory, and Stove. Illustrated. With full directions for their Cultivation, and Formation of Ferneries, Rockeries, etc. By George Schneider. New Edition. 5s. 11d.
- Fern Culture.** By A. Hemsley. Well illustrated. 2s. 9d.
- Ferns and Fern Culture.** By J. Birkenhead. New Edition, revised by F. Parsons. 1s. 3d.
- Fertilisers and Manures.** By A. D. Hall, F.R.S. 5s. 5d.
- Floral Decoration, British.** By R. F. Felton. Containing 26 full-page Illustrations (12 in Colour). 4s.
- Flower Garden, The.** By T. W. Sanders. The Formation and Management of a Garden, and the Culture of Outdoor Flowers and Plants. 450 pages. 104 Illustrations. 8s.
- Fruit Culture, Practical.** A Treatise on Planting, Growing and Storage of Hardy Fruits for Market and Private Growers. By J. Cheal. Sixth Edition. Illustrated. 2s. 9d.
- Fruit Farming, Practical.** For Commercial Fruit-growers and others. By Cecil H. Hooper. 3s. 10d.
- Fruit Farming for Profit.** By George Bunyard. A practical treatise on all the more profitable Fruits. Sixth Edition. 2s. 9d.
- Fruit Garden, The.** By George Bunyard and Owen Thomas. 15s.
- Fruit Trees, The Scientific and Profitable Culture of.** From the French of M. Du Breuil. Fifth Edition, carefully Revised by George Glenn. With 137 Woodcuts. 3s. 9d.
- Garden Beautiful, The, for Home Woods and Home Landscape.** By W. Robinson. Illustrated. 7s. 10d.
- Garden Planning and Planting.** A Guide to the Laying out and Designing of Flower Beds and Borders. Illustrated. Paper, 1s. 3d.; cloth, 1s. 9d.
- Garden, Chemistry of the.** A Primer for Amateurs and Young Gardeners. By Herbert H. Cousins, M.A. 1s. 2d.
- Garden Designs, The Book of.** By Charles Thonger. 2s. 10d.
- Garden Series** (edited by R. Hooper Pearson).
My Garden in Spring. By E. A. Bowles, M.A., Chairman of Scientific Committee of Royal Horticultural Society. With Preface by Reginald Farrer. 320 pages. Contains 16 Coloured Plates and 24 Half-tones. Price, 5s. 6d.
- My Garden in Summer.** By the same author as above. Price 5s. 6d.
- My Garden in Autumn and Winter.** By the same author. Issued 1915. Price 5s. 6d.
- Gardener's Assistant, The.** New Edition by William Watson, Curator, Royal Gardens, Kew. 6 vols., cloth, 8s. 5d. each. Also in 2 vols., Roxburghe binding, 52s.
- Grafting and Budding, Art of.** By Charles Ballet. With Illustrations. 2s. 9d.
- Irises.** By W. R. Dykes, M.A. With Preface by Prof. Bayley Balfour, F.R.S. Contains 8 full-page Coloured Plates. 1s. 10d.
- Johnson's Gardeners' Dictionary.** New Edition. 9s. 6d.
- Landscape Architecture, The Art of.** By Samuel Parsons. A practical and authoritative work. Illustrated. 18s.
- Lilies.** By A. Grove. With Preface by H. J. Elwes, F.R.S. Contains 8 Coloured Plates. 1s. 10d.
- Orchids and their Cultivation.** By James O'Brien, V.M.H., Hon. Sec. of the R.H.S. Orchid Committee. Contains 8 full-page Coloured Plates from Colour Photography. 1s. 10d.
- Orchids; Their Culture and Management.** By W. Watson (Curator, Royal Botanic Gardens, Kew) and H. J. Chapman. Illustrated with 180 Engravings and 20 Coloured Plates. 25s. 8d.
- Pansies, Violas and Violets.** By W. Colthbertson and R. Hooper Pearson. With 8 full-page Coloured Plates from Colour Photography. 1s. 10d.
- Peach, The Book of the.** By H. W. Ward. A Practical Handbook on the Cultivation of Peaches and Nectarines under Glass and Out-of-doors. 2s. 10d.
- Rhododendrons and Azaleas.** By W. Watson. With Preface by Sir F. W. Moore, F.L.S. (The first popular volume published on this subject.) 8 full-page Coloured Plates. 1s. 10d.
- Rock Gardens.** By Reginald Farrer. With Preface by Dr. J. Brethland Farmer, F.R.S. Contains 8 Coloured Plates. 1s. 10d.
- Root and Stem Vegetables.** By the late Alexander Dean. Contains 8 full-page Coloured Plates. 1s. 10d.
- Roses.** By H. R. Darlington. Contains 8 full-page Coloured Plates. 2s. 11d.
- Sweet Peas, The Modern Culture of.** By Thomas Stevenson. Fully described and illustrated. With Coloured Plates. Paper edition, 1s. 3d.; cloth, 3s. 4d.
- Trees and Shrubs, Hardy, Ornamental Flowering.** By A. D. Webster. Third Revised and greatly enlarged Edition. 3s. 10d.
- Tulips.** By the Rev. Joseph Jacob. Illustrated with 8 Coloured Plates. 1s. 10d.
- Vegetables for Home Consumption and Exhibition.** By E. Beckett, V.M.H. Useful for every Gardener, and indispensable to Exhibitors. New Edition. 5s. 6d.
- Vegetables and Flowers, the Culture of, from Seeds and Roots.** By Sutton & Sons, Reading. New Edition. 5s. 6d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841 No 3971

No. 1571. Vol. LXI. {THIRD} SATURDAY, FEBRUARY 3, 1917. {Registered as a Newspaper.} {PRICE 3d.} {POST-FREE, 3d.}

SUBSCRIPTION—Inland, 15-; Foreign, 17/6 (22/9. 10c.) [\$4 28c.] per annum. Entered at New York Post Office as second-class matter. Postal Address—41, Wellington Street, Covent Garden, W.C. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 45.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

YOUR GARDEN NEEDS FOOD

To obtain the Finest Vegetables and Flowers, use **WEBB'S GARDEN FERTILISERS**. PERFECT PLANT FOODS. Used by the Leading Growers and Exhibitors. Manufactured at Webb's Manure Works, 261/2, Chester, 6 acres in extent. POTATO MANURE, 19s. 6d. per 2 cwt., 20-cwt. TOMATO MANURE, 13s. 6d. per 2 cwt., 20-cwt. GENERAL MANURE, 10s. 6d. per 2 cwt., 20-cwt. VINE MANURE, 12s. 6d. per 2 cwt., 25-cwt. LAWY MANURE, 12s. 6d. per 2 cwt., 25-cwt. Rose, Carnation, Chrysanthemum, and Sweet Pea Manures. Carriage Paid. For particulars, see Webb's Garden Catalogue, post free on request.

WEBB & SONS, LTD., The King's Seedsman, STOURBRIDGE

GREENHOUSE PAINTING & GLAZING. Vitrolite superior to White Lead Paint, 15s. per gall. "Plating" supersedes putty, 18s. per cwt.—full particulars from **W. CARSON & SONS**, Grove Works, Batterssea. Agents throughout the country.

NEW PILLOWS.

A GRAND STOCK of these Brilliant Flowers in all shades, now ready for delivery. For lists with full particulars, apply **GUNN & SONS**, Olton, Warwickshire.

JAMES GRAY, LTD., Builder of Con servatories, Greenhouses, &c., and Heating Engineer, Danvers Street, Chelsea, London, S.W. Wire, 201, Western London. Telephone, 201 Western.

LAXTON'S SEEDS AND FRUIT TREES. New Catalogues of the above now issued gratis. Grand New Early Pea, Laxton's Superb, &c., Fruit Trees. A fine stock to offer may still be safely planted. Pamphlet on Cultivation on receipt of stamped envelope.—**LAXTON BROTHERS**, Nurserymen, Bedford.

FIDLER'S NEW ILLUSTRATED CATALOGUE OF CHOICE GARDEN SEEDS will be sent, post free, to any address on receipt of postcard. Write one for a copy. It may help you to save 50 per cent. on your seed bill this season.—**FIDLER & SONS**, Royal Berkshire Seed Store, Reading.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also Dickson's Improved Michigan Spanish Pruning Scissors, now on application to **DICKSON'S**, Royal Seed Warehouse and Nurseries, Chester.

WM. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham. Conservatories, Winter Gardens, Vineries, Peach-houses, Portable Buildings, &c. Catalogues gratis.

SECURE YOUR SUPPLIES OF THE FOLLOWING WITHOUT DELAY.

SUTTON'S EARLY GIANT PEA. A popular early variety, per pint 1s. 8d. **SUTTON'S BEST OF ALL REXNER BEAN**. The Largest seeded Strict Runner, per 2 pint 1s. 8d. **SUTTON'S NEW RED INTERMEDIATE CARROT**. A type for general cultivation, per pint 1s. 2. **SUTTON'S BLENDED AND TRIPLE PARSNIP**. Of white flesh and delicate flavour, per oz. 18d. Post free.

SUTTON & SONS, The King's Seedsman, READING.

COWAN'S NEW ORCHID MATERIAL. The best in the world at the cheapest. Full particulars apply to **COWAN & CO.**, Glasgower Nurseries, Glasgow, Liverpool.

SANDER AND SONS, Orchard Growers, St. Albans.

WATERER'S ROSES & FRUIT TREES. A grand stock of the best varieties. Lists free.—**JOHN WATERER, SONS & CRISP, LTD.**, The Nurseries, Layer St. Mary, Berks.

CYCLAMEN SEEDLINGS for potting up of our choice are—Giant White, Deopost Red, Rose, Perennium, or Mixed, 2s. 10d. per doz. Salmon King, Cherry Bells, &c., per doz. per doz. **STUART LOW & CO.**, Bush Hill Park, Middlesex.

NOW IS THE TIME TO PLANT

KELWAY'S PERFECTLY GLORIOUS PAEONIES. As lovely as beautiful blue Paeoniums. As very brilliant as coloured Paeonies. As lovely as Odour Paeonies, ever in bloom. Reveal a new and choice hardy perennial plants of all kinds.

NOW is the time to ORDER for Spring planting **KELWAY'S Famous Godolfs**, **KELWAY'S many coloured Pyrethrums**, **KELWAY'S g. Gaillardias**.

NOW is the time to SEND for particulars to **KELWAY & SON**, Retail Plant Department, LAMPPOST, SOMERSET.

100,000 LARGE GARDEN FERNS. 200, 400, Palms, Begonias, Crotons, Dracaenas, Roses, Ericas, Gloxinias, Lilies, Hydrangeas, &c., catalogues free. **J. E. SMITH**, London Fern Nurseries, Loughborough Junction, London, S.W.

ENGLISH YEWs. The cleanest and best certified lot in England; every plant a perfect specimen and splendidly rooted; 2ft. to 24ft., 60s. per 100; 24ft. to 3ft., 90s. per 100; 3ft. to 54ft., 120s. per 100; 3ft. to 4ft., 150s. per 100; 4ft. to 5ft., 180s. per 100. **LINTON BROS., LTD.**, The Warwick Nurseries, Warwick.

ROCK GARDEN PLANTS. Where and In What Soil to Plant Them, with Catalogue, free on application. Special selections, 12, 3s. 6d.; 25, 6s. 6d.; 50, 12s. 6d.; 100, 25s. All different, named, strong stock; please state position and soil.—**R. R. PHIPPS**, Alpine Nursery, Barnham, Bognor.

200,000 CAMELLIAS in variety, 2s. to 3ft., bushy and bushy, 10s. each.—**SMITH**, Fernery, Loughborough Junction, London, S.W.

For Advertisement Charges see page ii.

PEED'S SEEDS. PEED'S SEEDS FOR RICH CROPS. You will expectational results from your garden this year. Write for our 1917 Seed List. We can give you the record crops you want.

JOHN PEED & SON, The King's Seedsman and Nurseryman, WEST NORWOOD.

GISHURST COMPOUND.—Insecticide and Fungicide. Over 50 years' reputation; highly commended R.H.S. Scientifically controlled Trials at Wisley, 1914-15. Sold by Dealers in Garden Sundries. Wholesale: **PERKINS PATENT CANDLE CO., LTD.**, Barton Road, London, S.W.

WATERER'S GOLD MEDAL RHODODENDRONS. We cordially invite you to come and select any plants you require. We have over 60 acres comprising the finest collection in cultivation. Catalogue free. **JOHN WATERER, SONS & CRISP, LTD.**, The Nurseries, Bagshot, Surrey.

WELLS' Catalogue of Chrysanthemums and Perennial Geraniums now ready, post free on application.—**W. WELLS & CO.**, Metcham, Surrey.

BATHUS SELECT SEEDS. New Illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application.—**Dept. A, R. H. BATH, LTD.**, The Floral Farm, Wisbech.

DOBBIE & CO., ROYAL SEEDSMEN, EDINBURGH, will send a copy of their 1917 Catalogue, and Guide to Gardening, 160 pages, nearly 150 illustrations, free, if this paper is mentioned.

MACKENZIE AND MONCUR, Limited, Horticulture Builders and Heating Engineers, London, Edinburgh and Glasgow. By special Appointment to H.M. the King, London Office, 8, Camden Road, N.W.

BARRI'S SEED GUIDE, now ready, free. Vegetable and Flower Seeds of finest Selected Strains and Tested Growth at moderate prices. **BARR & SONS**, King Street, Covent Garden, London.

FRUIT TREES, true to name, my speciality. Trained Trees, in well grown, extra-sized specimens, with fibrous roots. Cordun Pears, Grape Vines, Orange Trees, Fig Trees, in pots, for fruiting. Catalogue, **W.H. TAYLER**, Hampton, Middlesex.

PERNS! FERNS!—Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns; catalogues free.—**J. E. SMITH**, London Fern Nursery, Loughborough Junction, London, S.W.

GENUINE OLD YORK STONE PAVING for Rose Walks, Terraces, Lily Ponds, &c., rectangular or cross, delivered in large or small quantities.—**H. BROOK**, Quarry owner, 40, Valley Road, Streatham, S.W.

ORCHID PEAT, 5s. and 7s. 6d. per sack. Brown Peat, 10s. 6d. per yard in trucks; in bags 2s. each, 2s. 6d. each; Oak and Beech Leaf Mould, Yellow Loam, Sifted and Fresh Cut, Silver Sand; 4-lb. Jars for 6s.; C.N. Fibre, 18s. dozen bags; 10lb. Jars.—**J. HANDBOROUGH, FR. H.S.**, Fildham, Middlesex.

SALES BY AUCTION.**WEDNESDAY AND FRIDAY NEXT.**

Spring-flowering and other Bulbs, Hardy Herbaceous, and Rock Plants, Rhododendrons, Roses, Fruit Trees, Palms, Lily-of-the-Valley, Carnations, &c.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., at 12 o'clock each day.
On view mornings of sales and catalogues had.

SPECIAL TRADE SALE.
Wednesday, February 7th, at 3 o'clock.

Quantities of Narcissus, late-flowering Tulips, Gladiolus in variety, Anemones, Ranunculus, Spruces, Lily-of-the-Valley.

Also

250 CASES OF JAPANESE LILIES, comprising L. auratum, L. speciosum album, rubrum and magnificum, L. L. giganteum, Henryi, &c.

MESSRS. PROTHEROE & MORRIS will sell as above, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.
On view morning of sale and catalogues had.

ROSES.

THURSDAY NEXT.

MESSRS. PROTHEROE & MORRIS will sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on Thursday, February 8th, and every succeeding Thursday at 11 o'clock, consignments of well-grown ROSES, especially lotted to suit all buyers.
On view morning of sale and catalogues had.

SHORTLANDS, KENT.

Unreserved Sale of well-grown Nursery Stock comprising 2,000 Border Shrubs, Golden Privet, Standard, Half-Standard, and Dwarf Roses, 5,000 Herbaceous Plants, 1,000 Fruit Trees and Bushes; also 30 Fowls, 3 Greenhouses, Piping, and Sundries.

MESSRS. PROTHEROE & MORRIS are instructed by Mr. J. B. Bryant to sell the above by auction at the Nursery, Bromley Road, Shortlands.

On Saturday, February 10th, at 12 o'clock.

On view, Catalogues on the premises and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

RICHMOND.

MESSRS. PROTHEROE & MORRIS are instructed by the Trustee to sell by auction at the Common Nursery, Richmond.

On Monday and Tuesday, February 5th and 6th, at 12 o'clock precisely each day,

large quantities of well-grown NURSERY STOCK comprising Golden Privet, Variegated and Green Hollies, Standard Ornamental Trees, Evergreen and Flowering Shrubs, Roses, and a number of Clipped Yew in various fancy shapes.

On view, Catalogues had on the premises, of P. Mason, Esq., the Trustee, 51, Gresham Street, E.C., and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

MARESFIELD, SUSSEX.

Unreserved sale of Nursery Stock, on certain lands, where the tenancy expires on March 25th next, by order of Messrs. Wm. Wood & Son (Hereford), Ltd.

MESSRS. PROTHEROE & MORRIS, in conjunction with Messrs. Wm. Wood, Son & Gardner, will sell by auction on the premises.

THE WOODLANDS NURSERY, MARESFIELD,

On Wednesday and Thursday, February 7th and 8th, at 12 o'clock, each day

Large quantities of Nursery Stock, comprising 25,000 Conifers and Shrubs, 2,000 named and Pomona Rhododendrons, Fruit Trees, 8,500 Deciduous Trees, Nuts, 10,000 Quick, flowering Shrubs, Roses, Climbing, Herbaceous, and Rock Plants, &c.

May be viewed. Catalogues had on the premises, of Messrs. Wm. Wood, Son & Gardner, Local Agents, Crawley, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

TUNBRIDGE WELLS.

Unreserved Clearance Sale of the grounds of 14 Greenhouses, Hot Water Piping, Fats and Lights, Boilers, Slating and Brickwork, together with the Stock of Greenhouse Plants, and a further portion of the Outdoor Nursery Stock, by order of the Trustee of Mr. L. B. Russell.

MESSRS. PROTHEROE & MORRIS have been instructed to sell the above by auction on the premises, the Tunbridge Wells Nurseries, Tunbridge Wells.

On Tuesday and Wednesday, February 13th and 14th, at 12 o'clock precisely each day.

May be viewed. Catalogues had on the premises, of P. Mason, Esq., the Trustee, 51, Gresham Street, E.C.; of C. Butcher, Esq., Solicitor, 35, Gresham Street, E.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

BUSINESSES TO LET.

NURSERY TO LET; commanding position; five minutes from rail and tram; 330ft. Glass; 14 acres land, house, &c.—MILLES, Royal Hotel, Sheerness.

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORISTS' AND SEED BUSINESSES to be Let or Sold, Published by

MESSRS. PROTHEROE & MORRIS every month. Copies may be obtained post free on application—Estate Offices, 67 and 68, Cheapside, London, E.C.

PROPERTY WANTED.

FARM, not too large, wanted to Purchase on long or short lease or cheap Freehold (not too large), between Brighton and Eastbourne, not far from sea and close to a railway station, Brighton district preferred; must show good average profit in past years; present employees could remain on at good wages. Earns £1000 required to take full charge at liberal salary and share profits; one who is thoroughly experienced in farming in all its branches.—Send full details in first instance to J. C. B., Box 3,873, Willing's, 125, Strand, W.C.

PLANTS, &c., WANTED.

WANTED, large Kentia Fosteriana PALMS, from 5 to 25 feet in height, for cash or exchange—ROBERT GREEN (1911), LTD., 28, Crawford Street, London, W.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, Quotations on the following ORCHIDS:—Cattleyas: Laurenceana x aurea, Schrieberae x aurea, Mossiae x Gigas, Franca x Gigas, Labata x aurea. Also Cattleya x Hardyana and Brasso-Cattleyas, larger kinds only; all to be unflowered, strong plants, to flower the first season. Also price lists on orchids solicited.—LAGER & HURELL, Orchard Growers and Importers, Summit, N.J., U.S.A.

PLANTS, &c., FOR SALE.

A MARYLLIS (Hybrid of Vittata).—MORLE & CO. offer magnificent named sorts from Mr. W. Bull's celebrated Gold Medal prize collection, also Flowering Bulbs, crossed with named sorts, at half usual prices. List free. 150 156, Fenchley Road, N.W.

JAPANESE LILiums, just landed in splendid condition; large, firm Bulbs, Longiflorum giganteum, 3s. 6d., 6s. and 9s.; Speciosum Melponense and magnificum, and Album Keitizens (the best), 5s., 8s. and 10s.; Auratum, 6s. and 10s.; Henryi, 6s. and 8s.; all per dozen; also others. List free.—MORLE & CO., as above.

SEED POTATOS, Lincolnshire or Scotch, Myatt's Ash Leaf, Hebrons, Early Rose, Express, Royal Kidney, Up-to-Date, Sir J. Llewellyn, Arcton Chief, King Edward, and others, per bush, or cart.—MORLE & CO., as above. Our Seed and Plant List sent on application.

LILY-OF-THE-VALLEY.—Extra special large forcing Victoria crowns, extremely scarce, offered at 10s. 100, planting ditto, 8s. 100; stock limited.—MORLE & CO., as above.

PERPETUAL FLOWERING CARNATIONS, strong, healthy plants, now ready, amongst which are the following varieties: 1s. 6d. per doz. out of sand, 5s. 6d. per doz. in pots.—Enchantress, Snowstorm, May Day, Lady Northcliffe, Madge, Rose Pink Enchantress, 6s. per doz. out of sand, 7s. per doz. in pots.—Enchantress Supreme, Salmon King George, White Enchantress, Clumpion, Triumph. Price List of Latest Novelties on application.—J. C. JENNER, Lynwood Nurseries, Rayleigh, Essex.

MISCELLANEOUS.

NEARLY new LEAN-TO GREENHOUSE, with span roof, 32ft. by 11ft., 3 top lights, 3 front lights, and a return glass end, with 60ft. of 4in. hot water pipes, stove, saddle boiler, all in working order.—Appl., 32, Camden Road, N. Letters only.

The Gardeners' Chronicle**SCALE OF CHARGES FOR ADVERTISEMENTS.**

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than **WEDNESDAY, 5 p.m.**

	£	s.	d.
Ordinary Positions per page	10	10	0
Facing matter and Back Page	12	12	0
Half and quarter pages, column and half column spaces, pro rata.			
4 line space not exceeding 20 words	2	3	0
Per inch, single column	7	0	
Per inch, across 2 columns	14	0	
Per inch, across 3 columns	1	1	0

Front page (no display allowed) 1/- per line space, [Headline counted as two lines.]

For discounts apply to address below.

SITUATIONS WANTED.

26 words, 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM 15/- per annum.
ABROAD 17/6 ..

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C.

Telegrams: 1543 "GARDENERS, RAND, LONDON." Telephone: 1543 GERRARD.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

WANTED, GARDENER (HEAD), to take charge of the Gardens at Witham-on-the-Hill, near Bourne, Lines; must be thoroughly experienced in all branches, both inside and outside work; only a man intelligible for the Army would be taken; a reduced staff of men only kept during the war.—Apply, giving full references, to JAS. MARTIN & CO., Estate Offices, Waufrat, Lincolnshire.

WANTED, good WORKING HEAD GARDENER; thoroughly experienced; intelligible.—Write fullest particulars, with references, and state wages, to MISS WELDON, Hints Hall, Tamworth.

WANTED, immediately, a HEAD KITCHEN GARDENER, to take over a piece of land about 120ft. wide by 350ft. long, which is to be prepared for the growing of Vegetables in conjunction with a large industrial canteen in the West London district; must be able to control labour.—Write, stating age, whether eligible, experience, also wages required, to P. K. Box 26, 41, Wellington Street, Covent Garden, W.C.

SITUATIONS VACANT continued on page v.

ORDER OUR CELEBRATED

FORCING ROOTS

Seakale, Asparagus, Mint, Rhubarb, etc.
Also Fruit Bushes.

Write for Illustrated Catalogue, containing PRACTICAL NOTES ON CROWING AND FORCING.

ESTABLISHED 1857.

MANN & SONS,

Whitton Road, Twickenham.

RIVERS'

Fruit Trees, Roses, Vines, Figs, Oranges, AND Orchard House Trees.

A LARGE AND SELECT STOCK ALWAYS ON VIEW.

ILLUSTRATED AND DESCRIPTIVE CATALOGUE POST FREE.

THOMAS RIVERS & SON

Sawbridgeworth, Herts.
STATION : HARLOW, G.E.R.

SEEDS FOR 1917.

It is none too early for garden lovers to think of seeds, but be sure the seeds you buy are seeds of quality. It is a gardening axiom that

RYDERS SEEDS

are the best, and despite the fact of a War Time price of 1½d. per packet, orders for these famous Flower and Vegetable seeds are daily growing in volume. Seeds of quality cannot now be supplied, even by Ryders, in Penny Packets.

Ryders Illustrated Seed Catalogue Free.

Ryders 1917 Catalogue contains a large number of choice varieties not found in other lists.

Ryders offer in 1½d. packets such standard novelties as—

- Tomato Bide's Recruit, 8 seeds for 1½d.
- "All the Year Round" Cauliflower.
- The New Chinese Celery-Cabbage "Pe Tsai."
- Kychnis Arkwrightii.
- Calceolaria Veitchii.
- New Double Cosmos, pink and white.
- Such Sweet Peas as Jean Ireland, President, Fiery Cross, The Lady Eveline, Yarrowa, and over 200 others.

Send a post-card to-day for your free copy of this Catalogue. Remember the one and only address and beware of imitators—no agents.

RYDER & SONS, Ltd.,

Seed Specialists,
ST. ALBANS.

Grow Your Own Food by Sowing Ryders Famous Vegetable Seeds.



Food Production on Farms & in Gardens.

To obtain the best results sow *Dicksons Seeds* which are all carefully selected from the finest and most productive strains, and are always reliable.

Prices moderate. Catalogues free.

Dicksons Seed Growers, Chester.

Burpee's Seeds Grow

THE truth of this famous slogan is proved by thousands of pleased and permanent customers. The Burpee Idea of Quality First,—combined with efficient service has built the World's Greatest Mail-Order Seed Business. Burpee's Annual, The Leading American Seed Catalog for 1917 is a bright new book of 204 pages, in colors, and a Safe Guide to Success in the garden. Mailed free. Write for it today.

W. ATLEE BURPEE & CO., Seed Growers,
Burpee Buildings, Philadelphia, Pa., U. S. A.

BENTLEY'S WEED DESTROYERS :

Liquid : Concentrated Strength 1 to 80.
Double Strength 1 to 50.
Patent Powder : 1 to 25.

BENTLEY'S DAISY KILLER

(LAWN SAND).

BENTLEY'S INSECTICIDES.

BENTLEY'S FUNGICIDES.

BENTLEY'S FUMIGANTS.

BENTLEY'S MANURES.

Catalogue on application.

JOSEPH BENTLEY, Ltd.,

Chemical Works,
Barrow-on-Humber, HULL.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.

STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,

Exotic Nurseries, CHELTENHAM.

CARTERS TESTED SEEDS

SOW VEGETABLE SEEDS

of the highest productive value.

"When it comes to production, every available square yard of land must be made to produce food." — Mr. Lloyd George, Dec. 19, 1916.

ILLUSTRATED CATALOGUE POST FREE.

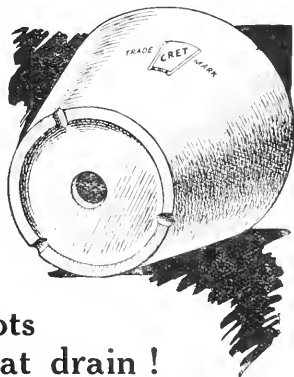
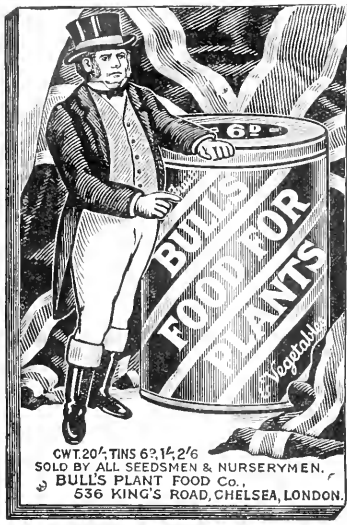
Seedsmen to H.M. the King.

Carters

TESTED SEEDS

RAYNES PARK, LONDON, S.W.

Branches : 237 and 238, High Holborn, W.C.
53a, Queen Victoria Street, E.C.



Pots that drain !

The ingenious channels in the concave bottom of Cret Pots drain off all superfluous water. Exceptional Root Room, Cleanliness, and Porosity complete the healthfulness of Crets. Good enough for "Show" unequalled for practical growing.

Two Specimen Prices—2 1/2 ins., 4/- per 100; 1 1/2 ins., 75/- Carriage Paid on all orders over 20/-.

FREE SAMPLE "Cret" Pot, on request, with interesting Booklet giving all prices per 100 and 5 Special Assortment Offers. Write to-day.

PETER BAILEY & SONS, LTD.,
2, Heaton Mersey Pottery, near Manchester.

CHARLES TURNER'S
Catalogue of **GARDEN SEEDS**
FOR 1917

is now ready and can be had on application. Also of

ROSES, FRUIT TREES, SHRUBS,
HARDY TREES, etc.

The Royal Nurseries, **SLOUGH.**

The National Food Problem

Sow now under glass to obtain early supplies.

PEAS.

- Sutton's Pioneer. The largest podded Dwarf Pea Per pint 2/-
- Sutton's World's Record. One of the earliest marrowtats Per pint 2/-

DWARF BEAN.

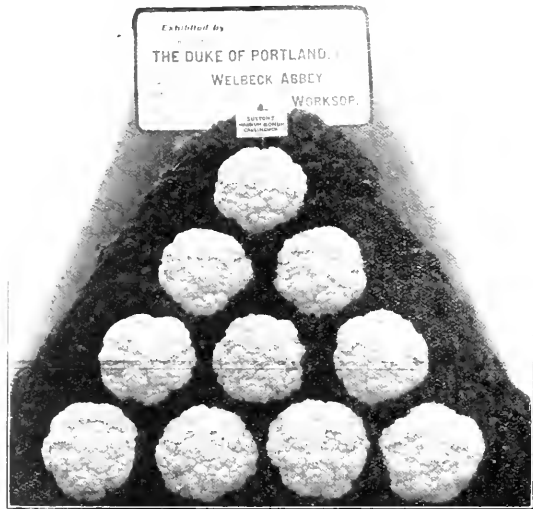
- Sutton's Evergreen. A continuous cropping variety Per pint 1/9
- Sutton's Selected Canadian Wonder. A favourite variety Per pint 1/3

CARROT.

- Sutton's Champion Scarlet Horn. Valuable for frame sowing .. Per pkt. 1/-

CAULIFLOWER.

- Sutton's Magnum Bonum. Solid pure white heads Per pkt. 1/6



GROUP OF SUTTON'S MAGNUM BONUM CAULIFLOWER.
(MR. J. GIBSON, Gardener.)

- Sutton's Early Giant. Beautifully white, close and delicate in flavour Per pkt. 1/6

CUCUMBER.

- Sutton's Every-day. An all-season's variety Per pkt. 2/6

LEEK.

- Sutton's Prizetaker. The largest and heaviest cropping variety .. Per pkt. 1/6

LETTUCE.

- Sutton's Commodore Nutt. A compact early variety Per pkt. 1/6
- Sutton's Golden Ball. Excellent for frame culture Per pkt. 1/-

ONION.

- Sutton's Selected Ailsa Craig. The heaviest cropper Per pkt. 1/6

TOMATO.

- Sutton's Best of All. Big cropper and free setter Per pkt. 1/6
- Sutton's Princess of Wales. An early smooth fruited Per pkt. 1/6

POST FREE.

SUTTON & SONS, THE KING'S SEEDSMEN, READING.



THE
Gardeners' Chronicle

No. 1511.—SATURDAY, FEBRUARY 3, 1917.

CONTENTS.

Appointments	49	Potatoes and papadoc ..	34
Berberis subulnata ..	33	Pot-washing, economical ..	34
Brown rot in fruit trees	54	Queen's-land .. Plant ..	32
Catalogue, oil seed and plant ..	4	Rhodesias in ..	32
Chinese plants, new ..	46	Rhodesia Mrs. Str. ..	32
Courants, standard ..	55	Resay, the ..	32
Douglas Fir, the, in chalky soil ..	50	Severalls, local ..	32
Dunery, Mr. C. T. ..	21	Soerthers ..	32
Farm, crop and stock on the home ..	1	Manchester and North of England Orchard ..	32
Gaulth ..	1	Royal Horticultural ..	32
His arizonica ..	45	Royal Scottish Arboretum ..	32
Iris, the planting of ..	14	Scottish Horticultural ..	32
Reed ..	14	South-west ..	32
Lupins as poisonous plants ..	1	Strawberry beds, treatment of ..	47
Macmillan, Mr. H. F. ..	12	Trees and shrubs ..	45
Novae, re-visions of ..	12	Tree-ling, methods of ..	4
Orchid notes and cleanings ..	45	Vegetables ..	46
Orphan Fund, Royal ..	1	War Horticultural ..	32
Gardeners ..	1	Wool ..	32
Plant notes ..	1	Wool, wool, for ..	32
Potato, "seed" ..	1	Week's work, the ..	32

ILLUSTRATIONS.

Acra Davidi ..	39
Berberis subulnata ..	33
Polypodium ..	37
Rhodesia Mrs. Str. ..	32

IRIS ARIZONICA.*

ON the western side of the North American continent there occurs a group of Irises, of which the best known is perhaps *I. longipetala*, and of which the members most present considerable difficulties to systematic botanists, who deal only with dried material.

The true *I. longipetala* is a strong, stiff plant, confined in the wild state, I believe, to the coast of California, from San Francisco southwards to Monterey. Even in cultivation it is not still showing the effect of the California climate by losing its leaves at the end of the summer and starting into growth again in early autumn, a habit which clearly indicates that its home is in a region where no hard winters occur.

Further inland there occurs another species, which I believe to be the true *I. missouriensis* of Nuttall, and which is to all intents and purposes merely an upland or mountain form of *I. longipetala*. When in flower, it agrees in almost all respects with that species, even to having the characteristically blunt, square-topped standards with a wide emargination or indentation in the centre, and only differs in being more slender in all its dimensions, and especially in its habit of not starting again into growth until the spring when once the leaves have died down in late summer. This is a characteristic which we should expect to find in a plant from mountainous districts with hard frosts in winter.

A third and rarely allied species grows in close proximity to *I. missouriensis*, and, unfortunately, the nomenclature of these two species has become very confused. The name of *holocoma* has been applied at times to both species, and it seems, therefore, better to retain Nuttall's manuscript name of *montana* for this third species. In its habit of growth it closely resembles *missouriensis*, but differs in having pointed and not blunt standards, and in producing usually only two flowers

* *Iris arizonica* spec. nov. *I. longipetala* et *I. montana* affinis. Ab utraque foliis viridibus nec glaucis, usque ad hincem inermem permanentibus, ab illis seque interfoliis acutis nervis emarginatis, ab his seque multifloribus nec bifloris, pedicellis elongatis spatibus longioribus facile distinguuntur.

on short pedicels in contrast to longipetala and missouriensis, which may both have as many as five flowers in a head on pedicels of varying lengths up to several inches.

All the characteristics which I have mentioned, including even the indentation in the standards of longipetala and missouriensis, have proved to be constant here in successive generations of seedling, but it can easily be realised that, in cases where the standards of the flowers are either invisible or damaged, it is extremely difficult to separate herbarium specimens with any degree of certainty.

A further difficulty arose when in 1902 a description was published in Coultter's *Botanical Gazette*, XXVII, p. 62, of an *Iris pelocoma* from Wyoming. It is said to resemble *missouriensis*, but to be much smaller, though proportionately stouter. From the fact, however, that it has only one or two flowers on each stem, and that the spathe often reach halfway up the falls, it seems more probable that it is more closely allied to it (or a mere form of the plant which I take to be *montana*, and not *missouriensis*).

In 1911 I was looking through a number of herbarium specimens of this group of Irises, and to my puzzling example from an altitude of 8,000 feet in Barfoot Park among the Chiricahua Mountains of Arizona, there was attached a large packet of seeds. These had been in a museum for several years, but I could not resist the temptation of sowing half a dozen in the hope that they might yet germinate, and that the resultant plants might help to settle the difficulty that I felt in determining the identity of the specimen.

It is, however, the result has been, rather to increase than to decrease the difficulties presented by this puzzling group of plants, for this Arizona *Iris* has proved after several years' cultivation in my garden to be quite distinct from either of the three or four species mentioned above.

The foliage, which grows to a height of two feet or a little more, with a maximum breadth of about 1 inch, is very dense, denser even than that of *I. longipetala*, and of a duller, yellowish green, without the glaucous, grey tinge of the other species. Another point of difference becomes very obvious as summer passes into autumn, for the leaves of *I. arizonica* remain fresh and green long after those of the allied species have withered away. It is not, in fact, until late October or November that the leaves become a pale sickly yellow colour, and begin to collapse. It is obvious that in this respect *I. arizonica* behaves exactly as do the various forms of the Asiatic *I. ensata*. Among Apogon Irises similarity of the seeds is always a sign of affinity in other respects among the plants, and these of *I. ensata* are practically indistinguishable from those of the members of the longipetala group. In December it is hard to distinguish plants of *I. arizonica* from plants of *I. ensata*, though neither of these could be confused with *I. longipetala* or its other relatives.

The flower-stems of *I. arizonica* are about equal in length to the leaves, and bear a terminal head of three to five flowers on long pedicels of varying lengths up to 4 inches. A lateral head of one or two flowers is occasionally produced about 6 inches below the top of the stem, as in *I. longipetala*. The spathe valves are very narrow, 2.5 inches long, clinging closely to the pedicels and becoming saucy and of a deep grey colour at flowering time. The three-sided ovary is a little more than half an inch long, while the perianth tube scarcely measures as much as one-quarter inch.

The flowers resemble those of *I. longipetala*, but are slightly smaller, and less conspicuously marked. Both species have, however, a central lobe on the haft of the falls, sprinkled with purple dots on a whitish ground. As the narrow haft expands gradually into the blade the white ground becomes veined with violet purple, and bears in the centre a yellow blotch. Beyond this the veins spread, the colour becomes a little paler

and covers the whole surface. There is some variation in the shade of violet-purple. The length of the falls is a little more than two inches, and the blade measures a little less than an inch across. The standards are narrow, oblong-ovate, pointed, and not emarginate, about 1 1/2 inch long, violet-purple in colour. The styles are short with small triangular crests, and the stigma entire or only obscurely lobed. The filaments and the anthers are both a pale mauve, while the pollen is cream coloured.

The ripe capsules have thin membranous walls, like those of the other members of the group, taper slightly towards either end, and in section are roughly triangular, with slightly inflated sides. The seeds are dark brown, smooth, and pear-shaped, with a minute whitish circle or aril at the upper end.

May I, in conclusion, ask any American gardeners and botanists who may chance to see these notes to be so good as to send me a few seeds of any Irises of this group of which they may happen to possess plants from known localities, or which they find growing wild. It is, I am sure, only by growing all obtainable plants side by side and by comparing them as they grow that the species can be separated and described in such a way as to differentiate them satisfactorily one from another.

I. arizonica is not, perhaps, so striking a garden plant as *I. longipetala*, but it is interesting as a link connecting that species and its American relatives with one of the most widely distributed of Asiatic Irises, namely, *I. ensata*. W. R. Dykes, *Charterhouse, Godalming*.

ORCHID NOTES AND CLEANINGS.

CATLEYA RAINBOW.

A FLOWER of one of the most beautiful of their new hybrids, flowering in 1916, and named *Catleya Rainbow*, is sent by Messrs. Sander and Sons, St. Albans. It was raised by crossing *C. Alcinæ* (*Iris chabiata*) and *C. Dowiana Rosita*, and in the hybrid it is interesting to note that in the sepals and petals the rose-purple of *C. chabiata* and the heavy freckling of claret red of *C. Dowiana Rosita* are suppressed and the colour of typical *C. Dowiana* retained, although in the yellowish cream colour of the sepals and petals of *C. Rainbow* there is the faintest underlying suggestion of colour on the exterior. The handsome labellum is magenta crimson with well defined chrome-yellow lines running from the base to the centre and merging in the broad bright yellow disc. The margin of the lip is crimped and slightly fringed, and although in its broad expansion it follows *C. Dowiana*, there is some indication, in the interrupted outline between the front and side lobes, of *C. bicolor*, one of the parents of *C. Iris*.

CYPRIPEDIUM FROM WALTON GRANGE.

MR. J. HOWES, from the gardens of the late William Thompson, Walton Grange, Stone, Staffs.-Here, sends a box of magnificent blooms of some of the fine *Cypripedium* in flower there. Several of the largest and best are seedlings not yet named. Of the new forms of unrecorded parentage, *C. Hermes*, *C. Harold* and another suggesting an improvement on *C. insigne* Harold Hall, are especially good. The two forms of named kinds include *C. Euryades* Walton Grange variety, a flower of large size and richly marked; *C. Thibe*, like a fine *C. Pyramus*, with very large dorsal sepal spotted with a network; *C. Actæus* Bienen, one of the most beautiful of yellow and white *Cypripediums*; and *C. insigne* Snow Queen, a charming variety of similar colour. The most remarkable of the others are *C. Arthurianum* Walton Grange variety, of dark colour; *C. Troilus* Impregnable, a noble flower; *C. Victor Hugo*, *C. Fitzhugh*, *Palatte*, *C. Leocorum* Corona, *C. Leeanum* Mary Amelia, *C. Noel*, a grand flower

of the *C. Dreadnought* class: *C. Nubia* and *C. Diomedes*, Keeling's variety. We understand that the collection will shortly be disposed of by auction sale.

NEW HYBRIDS.

A FLOWER of the new *Cymbidium* Beechler hybrid is sent by Messrs. Hassall and Co., Southgate, who raised it from *C. Lowianum* and *C. Schlegelii* (*insigne* × *Wiganianum*). Its main features are of *C. Tracyanum*, which, with *C. orbucum*, produced *C. Wiganianum*, and is an instance of reversion to the most distinct ancestor. The sepals and petals are greenish white, with dotted red lines. The lip is very

NEW CHINESE PLANTS.

ACER DAVIDII

ACER DAVIDII (see fig. 17) is a native of Hupeh, Ichang, and other parts of Western China, where it was collected by Mr. E. H. Wilson in 1907 B. The tree grows wild in altitudes ranging up to 2,700 m., in woods and by the sides of streams. The foliage does not suggest a Maple, for the leaves have more the shape and general appearance of the Portuguese Laurel. The petioles are of a ruby colour, and a tree in full foliage is a very striking object, but the chief beauty of this new tree lies in

Wilson describes the species as a very handsome tree, resembling in habit *P. lasiocarpa*, and with leaves almost as large as in that species. The foliage is coloured red and bronze in early spring, and the colouring runs into the stems, a feature which is absent from *P. lasiocarpa*. Moreover, cuttings strike readily, which is not by any means the case with its congener. The plant illustrated is growing in a frame in the Hon. Vicary Gibbs's gardens.

VEGETABLES.

INCREASING THE ONION CROP.

GROWERS in this country have been slow in realising the importance of the Onion crop, and how easily more land could be devoted to the growing of the bulbs with a reasonable prospect of success. The extraordinary prices English Onions have made during the past two years as compared with those obtained in former years should encourage growers to plant an extended area with Onions in the near future. They should be grown more also in cottage gardens.

A reasonable crop to expect is from four bushels to six bushels per rod (forty bushels to the ton), according to the variety. For an acre, 10 lbs. seed would be required, costing approximately £8. Four good varieties are Maincrop, Rousham Park, James Long Keeping and Bedfordshire Champion.

A fairly stiff loam is perhaps the most suitable of all soils, and the Onion being a gross feeder a good dressing of farmyard manure is necessary; this is best applied in the autumn and ploughed or dug in. In gardens and small plots trenching is much the best method of bringing the soil into a desirable condition for this crop. The Onion is a deep-rooting subject, and shallow soils are of little value unless extra treatment be given them. Suitable ground should be trenched at least 2 feet deep, adding manure as the work proceeds, and leaving the surface as rough as possible to be pulverised by the weather. Choose a dry time at the end of February to fork over the plot to obtain a good tilth for sowing the seed. Onions require firm ground to root in, therefore make the soil firm by treading or rolling. If farmyard manure was not dug in the ground in the autumn a concentrated fertiliser should be spread over the surface before forking the ground in preparation for seed-sowing in March. Three-parts of superphosphate to one of sulphate ammonia, at the rate of 10 lbs. per rod, will stimulate growth, to be followed as growth proceeds with occasional dressings of soot in showery weather. Make the surface very fine, and draw shallow drills 14 inches apart, sowing the seed evenly. If wood ashes are available for a small plot, cover the seed thinly with the ash before finally filling in the drills with soil, and rake the surface fine.

Another form of Onion culture which has much to recommend it is to sow seed in a cold frame at the end of February to allow a longer time for the plants to grow. Sow the seed either in boxes of prepared soil or on a bed in the frame. Keep the frame closed until the plants show through the soil, and at that stage admit air freely to induce a stocky growth. When the plants have made good roots and a sturdy top, being then large enough to handle, plant them 4 inches apart in drills made 14 inches wide.

If extra large bulbs are required special treatment is necessary. Extra rich, deeply-trenched soil is essential, and the plants must receive constant attention in the way of watering and daily syringing in hot weather. Sow the seed early in January in boxes filled with rich soil and germinate them in a temperature of 55°. Gradually harden the seedlings as growth proceeds, and when large enough to handle, prick them out in other boxes or in a cold frame or a prepared bed of rich soil. The Onions



[Photograph by C. W. Cole.]

FIG. 17.—*ACER DAVIDII*, A NEW CHINESE SPECIES WITH VARIOUSLY COLOURED BARK

near to *C. Tracyanum*, white, with red-brown lines from the base and a band of the same colour near the margin.

Cymbidium Sybil, obtained by the same raisers between *C. orbucum* and *C. Pauwelsii* (*insigne* × *Lowianum*), is a handsome, pale-green flower with numerous red-dotted lines on the sepals, the broad cream-coloured lip being finely marked with clay-coloured lines, and larger linct-red blotches on the front lobe.

Odontioda Bernellie is a richly coloured hybrid raised in the collection of C. J. Phillips, Esq., The Glebe, Oak Lane, Sevenoaks, between *Oda*, Charlesworth and Odin, Her Majesty. The hybrid promises, when mature, to prove distinct.

the bark, which is striated in a bizarre manner, yet the surface is perfectly smooth, although the irregular lines of purple grey, yellow, green and other colours look as if they were in fissures. The whole appearance of the bark suggests a piece of polished, coloured marble and is almost unique amongst stem colourings. The photograph reproduced in fig. 17 was taken by Mr. C. W. Cole last autumn in the Hon. Vicary Gibbs's gardens at Aldenham House, Elstree.

POPULUS SZECRUANICA.

THIS new Poplar (see fig. 18) was also collected by Mr. Wilson. In *Planta Sinensis* it is stated that it grows in the moist forests of Szechuan between 2,200 and 3,500 m. altitude.

may be planted in their permanent quarters in rows made 15 inches apart, lifting the roots then with a ball of earth attached.

The field culture of Onions is likely to increase considerably in the coming season. The object of the grower is to obtain a heavy crop of medium-sized, firm bulbs that will keep well into the spring. The land should, if possible, be prepared in the autumn by ploughing in, not too deeply, 20 tons of farmyard manure to the acre. In February, if the weather is suitable, the land should be ploughed again deeper. The manure having by this time become decomposed, the ploughing will disintegrate the portions, rendering it further available for assimilation. Early in March apply a top-dressing of artificial manure at the rate of 10 cwt. per acre, of superphosphate 3 cwt., and sulphate of ammonia 2 cwt. Cultivate the soil and harrow these fertilisers in, afterwards making the soil quite firm by rolling it, especially if it is light in texture. A fine tilth is necessary for sowing the seed, which should be used at the rate of 10 lbs. per acre, in drills made 14 inches apart. Keep the ground free from weeds by hoeing, but not too deeply, leaving the soil very firm about the roots. Do not thin the plants, but allow them all to grow, for the object is not so much large bulbs as quantity.

If the land is fairly strong and in good "heart," no further stimulant will be required beyond an occasional sprinkling with soot or wood ash. If the soil is light in texture and the plants appear to drag in their growth, especially during times of dry weather, sprinkle it in the evening with sulphate of ammonia. The inexperienced would be wise in applying such stimulants as nitrate of soda with extreme care, for should a wet autumn prevail the ripening of the bulbs would be considerably retarded by an extensive quantity of nitrate of soda. *E. Molyneux.*

THE WART DISEASE OF POTATOS ORDER OF 1917.

THE Board of Agriculture and Fisheries, by virtue and in exercise of the powers vested in them under the Destructive Insects and Pests Acts, 1877 and 1907, and of every other power enabling them in this behalf, do order, and it is hereby ordered, as follows:—

PROHIBITION OF PLANTING OF POTATOS ON PREMISES WHERE WART DISEASE HAS OCCURRED EXCEPT BY LICENCE.

1. No person shall plant Potatos, or cause or permit Potatos to be planted, in any field, garden, or allotment in his occupation on which Potatos affected with wart disease have been grown in a previous year, unless such planting is authorised by, and is in accordance with the conditions (if any) imposed by, a licence granted by an Inspector of the Board of Agriculture and Fisheries or of the Local Authority, and any person who shall plant Potatos, or cause or permit Potatos to be planted, in contravention of this provision, or who shall permit to remain in any field, garden, or allotment in his occupation, anyone planting Potatos in contravention of this provision, shall be liable on conviction to a penalty not exceeding ten pounds, unless he proves to the satisfaction of the Court that he did not know that Potatos affected with wart disease had been grown on the land in a previous year.

EXTENSION OF RESTRICTION ON PLANTING IN INFECTED AREA.

2. Any person who shall permit to remain in any field, garden, or allotment in his occupation, which is situate in an infected area declared for the purposes of the Wart Disease of Potatos (Infected Areas) Order of 1914, Potatos which have been planted without the authority of a licence granted under that Order or otherwise than in accordance with the conditions imposed by a licence so granted, shall be liable on conviction to a penalty not exceeding ten pounds.

DEFINITION.

3. The expression "wart disease" means the disease affecting Potatos which is known as *Synchytrium endobioticum* or wart disease of Potatos, black scab, Cauliflower disease, or Potato canker; and the expression "the local authority" means as regards any district the local authority for the district under the Diseases of Animals Act, 1894.

COMMENCEMENT.

4. This Order shall come into operation on the first day of February, nineteen hundred and seventeen.

TRIALS AT WISLEY.

R. H. S. AWARDS TO CELERY AND CEELERIAC

AWARDS TO CELERY.

AWARD OF MERIT.—No. 30, *Clayworth Prize Pink*, raised, introduced and sent by Messrs ROBEI, SYDENHAM, LTD., BIRMINGHAM.

No. 31, *Clayworth Prize Pink*, sent by Messrs HERST AND SON, London



FIG. 18.—*POPULUS SZECHUANICA*, A NEW SPECIES FROM CHINA (See p. 46.)

No. 4, *Incomparable White*, raised, introduced and sent by Messrs. DOBBIE AND CO., Edinburgh. **HIGHLY COMMENDED.**—No. 6, *Early Rose*, sent by Messrs. HERST AND SON, London (A.M. 1906).

No. 49, *Incomparable Crimson*, raised, introduced and sent by Messrs. JAY, CARTER AND CO., RAYNES PARK, S.W.

No. 26, *Matchless Pink*, raised, introduced and sent by Messrs. A. DICKSON AND SON, LTD., Belfast.

AWARDS TO CELERY.

HIGHLY COMMENDED.—No. 12, *Delicatess*, introduced and sent by Messrs. BARR AND SONS, Taplow.

No. 15, *Late Summer*, sent by Messrs. BARR AND SONS, Taplow.

No. 5, *Ordinary Type*, raised, introduced and sent by Messrs. ROBEI, SYDENHAM, LTD., Birmingham.

No. 1, *Selected*, raised, introduced and sent by Messrs. SUTTON AND SONS, Reading.

TREATMENT OF STRAWBERRY BEDS.

I VENTURE to explain the system of cultivation that is carried out with this crop in these gardens. In the final preparation of the ground soil and situation are taken into consideration.

Different treatment is necessary according to the length of time the beds are to remain in a cropping condition. I prefer to make fresh plantations on all kinds of soil at least every third year, and in some cases I have made them annually, but with this latter method the plants may be put closer together, 15 to 18 inches between the rows, and a foot between the plants in the rows being sufficient. If the plants are to be left in the beds for two or more seasons, a thorough tilling of the plot is carried out, trenching the site 2 to 5 feet deep, and working at least two layers of dung into it; if the land be light, cow or pig manure is preferred; if heavy, stable manure is suitable. Differences of opinion exist as to whether the bottom spit should be brought to the surface or not, but this should be decided by the operator, according to soil conditions. If the bottom spit consists of wet, heavy soil, work plenty of opening material into it and leave it where it is for this season, to be brought up another time, when it will be found in better condition. Should it be good soil, that has been well worked previously, do not hesitate to bring it to the surface. As the work proceeds we mix plenty of burnt refuse into the soil, and if lime is deficient this also is applied. If dung is limited basic slag is well worked into the lower spits, which supply lime and phosphates.

I prefer to get this operation performed as early in the winter as possible, so that frost and air may well permeate the whole. A method I generally follow is to plant this plot with early Teas, or early and mid-season Potatos; both crops are off the ground before planting time. We put the rows from 1 to 2½ feet apart and the plants from 1 to 2 feet in the rows, according to variety. A method I have also tried with success where ground is limited, and where the plants were intended to stand more than one season, is to plant 15 inches between the rows and 1 foot in the rows, chopping out alternate rows and plants after the first season. This is the method I always follow when a fresh bed is made every season. After fruiting, the whole batch is cleared away and the ground makes an excellent position for late green crops.

Good sturdy runners are procured as early as possible, and layered into small pots in a good compost of loam, wood ashes, and horse droppings, three parts of the former to one of the latter, with a portion of grit if the loam is heavy. The young plants are usually planted out during August, and before the pots are too full of roots, spreading out the roots during the operation. They are kept well watered until established, and the surface soil is kept stirred with the Dutch hoe; mulching is also practised if light material for this purpose is available. Where our beds stand over one season, my practice is to give a good dressing of decayed manure directly the beds are cleared of fruit and rubbish, and I consider this to be preferable either to winter or spring mulching, as it keeps the roots and soil cool and moist during the hotter months of the year. By the time winter comes it is in better condition for the plants than the heavy mulch of wet manure around the collars of the plants applied in winter or spring, whereas the manurial qualities are still present for the roots to absorb. When the plants show signs of becoming active again a dressing of some fertiliser, or soot and superphosphate, is applied, and very lightly turned into the soil with the old mulch. Here I may mention that my objection to the heavy spring mulching is that it stops the air and sun, so beneficial at this early period, from

reaching the roots, and retards growth instead of helping it, unless turned into the surface directly it is applied. Should the plants become dry before the flowering period a good watering is given; disfigured fruits are frequently produced through dryness at the flowering stage. After the fruit is set another good watering with some sort of manure water more than repays the trouble, especially on light soils. The long, strawy material is placed in position in good time, so that the fruits may be free from grit; but a good dressing of soot is first applied, and not only proves beneficial, but checks the attack of slugs on the fruit later. To obtain a long succession of fruits old varieties are chiefly relied on, and aspects of different degrees of earliness. There are several new varieties of Strawberries, but good supplies are obtained over a long period with the following varieties:—Royal Sovereign, Joseph Paxton, Waterloo, and Givon's Late Prolific. A change of stock should be made occasionally. Alpine Strawberries may also be grown for very late fruits, pinching off all flower trusses until July, after which they will produce some nice, sweet fruits. Should the autumn months prove very wet old garden lights may with advantage be placed over the plants. *H. E. Kemp, Priory Gardens, Reigate.*

TREES AND SHRUBS.

TREES AND SHRUBS CERTIFICATED.

The article on page 24 of the *Gardeners' Chronicle* on plants that have received honours from "The Floral Committee of the Royal Horticultural Society" serves to call attention to the fact that many look upon certificates and awards as being granted only to new or comparatively new plants.

That this is not the case was proved early in 1916, for at the meeting on January 11 a First-class Certificate was bestowed upon *Abies bracteata*, of which one bearing branches were shown from Berry Hill, Dorking. This Silver Fir, which is a native of California, was introduced as long ago as 1853 by William Lobb, when travelling in Western North America on behalf of Messrs. Veitch. Though a striking Silver Fir in every way, it is, generally speaking, not a success in this country, being particularly liable to injury from late spring frosts. Strange to say, the same collector was also answerable for the second certificated subject, namely, *Tricuspidaria lanceolata*, as it was first introduced by him from Chile in 1848, and later on by Richard Pearce, of Tuberous Begonia fame. It is hardy only in the more favoured parts of these islands, and succeeds best where there is a liberal amount of atmospheric moisture. This beautiful and distinct shrub has beside the above name been also known as *Tricuspidaria dependens*, *Tricuspidaria hexapetala*, and *Crinodendron Hookerianum*.

The third certificated was awarded to *Rosa Moysesii*, a true species from China, with rich crimson flowers and golden anthers. Its bottle-shaped fruits also form an attractive autumn feature. It is by no means a novelty, having been given an Award of Merit in 1908, but in 1916 this was increased to a well-deserved First-class Certificate. This honour was in all gained by five shrubs, the remaining two being *Berberis*, and, strange to say, they were both shown on the same day, namely, on November 7. The first, *Berberis Nagentiana*, obtained an Award of Merit the previous year. It is an ever green species related to the Himalayan *Berberis Hookerii*, but is said to be much harder than that kind. The second, *Berberis ruberostilla*, an accidental seedling raised at Wisley, can claim to be a novelty, as it is not in general cultivation. It is deciduous, and remarkable for the great profusion of its rich coral-red drop-like berries. An Award of Merit was given to *Enonymus latifolius*, which has been grown in British gardens since 1730. *J. T.*



PLANTS UNDER GLASS. & 202

By J. G. WESTON, Gardener to Lady Northcote, Eastwell Park, Kent.

SEED-SOWING.—Seeds of many choice plants are exceedingly minute, and require the greatest care in handling. Amongst those that require sowing this month are *Streptocarpus*, *Cockscomb*, *Coleus*, *Begonia*, *Gloxinia* and *Celosia*. Use a very light compost, consisting of light loam, fine peat, and leaf soil in equal parts, with some sharp sand added. Let the pots or pans be filled to within 1 inch from the top, and the surface made perfectly level with very fine soil, and watered before sowing the seed. Very fine seeds should not be covered with soil, it is better to press the soil lightly after the seed is sown, which is all that is required. Place the seed-pans in a house where the temperature is from 65° to 70°. Keep a close watch, and never allow the soil to approach dryness. Pans containing choice seeds should be covered with sheets of glass, and shaded with cloths of paper till germination takes place. Seeds of *Asparagus Sprengeri*, *A. plumosus* and *A. deflexus*, *Grevillea robusta*, *Cyperus alternifolius* and *C. natalensis* should be sown now; also *Clivias*, *Anaryllis* and *Asparagus medeoloides*, often grown under the trade-name of *Smilax*.

GLOXINIA.—Tubers of *Gloxinia* that have been stored since last autumn should now be shaken out preparatory to starting them into growth. To economise space the tubers may be placed in shallow boxes, with a little light soil round them. Stand the boxes in a Cucumber or Melon pit, or other place, where there is sufficient atmospheric moisture to start them into growth. Spray them lightly on fine days, but do not give the plants much water at the roots in the early stages. When growth starts keep the plants well up to the glass or the foliage will become drawn.

HIPPEASTRUM (AMARYLLIS).—Old bulbs of *Amaryllis* that have been resting in a cool house should now be brought into heat to flower. See that the drainage is quite free, and place the pots on a bed or stage in a moderately warm house. One good watering should be given, after which a very moderate quantity only will be necessary till growth is active. Spray the plants over on fine days, and fumigate occasionally for thrips.

SEEDLING AMARYLLIS.—Keep young plants growing without any resting period till they have flowered. Give sufficient space to keep the foliage firm and healthy, growing the plants at this season where they have the maximum amount of sunshine.

CLIVIA. Improved forms of *Clivias* are now procurable, completely outclassing the old *miniata* type, the foliage being longer and broader, and the flowers superior, both in form and colour. Plants now resting in a cool house will quickly start into growth and flower if brought into a higher temperature. A viney just started is a very suitable place. When the pots are crammed with roots manure water may be given with advantage. Plants requiring more root-room should be potted directly after flowering.

THE PROPAGATING HOUSE.—Make the propagating house ready for use, giving the interior a thorough cleansing. Clear out the old hotbed material and that used for plunging, as it usually becomes infested with wood-bore, cock roaches and other insect pests. Wash the glass and woodwork, and lime-wash the walls if necessary. Use a little soil fumigant in the fresh plunging material. I also find it a good plan to sprinkle a little of the fumigant by the water-pipes, and in any dry crevices where insects lurk.

THE SHOW-HOUSE OR CONSERVATORY.—The cleaning and rearrangement of the permanent plants in these houses should be undertaken

now, before the potting season arrives. Palms, *Cordylines*, and similar plants that have outgrown their spaces should be transplanted in more suitable positions. Soft-growing plants, such as *Abutilons* should be cut hard back. Cleanse the interior of the structure and the plants before re-arranging the occupants.

THE FLOWER GARDEN.

By W. J. GIBSE, Gardener to Mrs. DEMPSTER, Keele Hall, Staffordshire.

SWEET PEAS.—Sweet Pea plants raised from seed sown last autumn should be shifted into larger pots. Place small pieces of Birch twigs in the pots to support the young shoots. Another sowing may be made now in 5-inch pots, boxes or turves. Germinate the seeds in a warm pit and remove the seedlings directly they appear above the soil, to cooler quarters. Precautions must be taken against slugs before placing the plants in the frames by dusting the surface soil with soot. Admit air on all favourable occasions and at no stage coddle the plants, or they will grow weakly. The ground for Sweet Peas should be prepared well in advance, leaving the surface as rough as possible to be pulverised by frost. Dig the soil to a depth of 18 inches to 2 feet and incorporate with it a reasonable quantity of well-decayed manure, leaf-mould and wood ash. The amount of manuring must not be overdone, or the flower-buds will turn yellow and drop at the flowering stage. In favoured districts Sweet Peas may be sown in the open now, choosing a warm, sheltered border.

ANTIRRHINUM.—Here at Keele we sow *Antirrhinum* seed in well-drained boxes, in a compost of loam, leaf-mould, and sand. The soil is watered through a fine rose a few hours previous to sowing, which is done thinly, the seeds being lightly covered with fine soil. The boxes are placed near the roof-glass in a house having a temperature of 60°, and are covered with squares of glass and shaded with paper until the seeds have germinated. After a short period the boxes are removed to cooler quarters to ensure the seedlings making sturdy growth. They are pricked out into heated, shallow frames, in which is placed a layer of decayed stable manure on an ash bottom, the surface of the manure being covered with 4 inches of old potting soil. The seedlings are placed 4 inches apart each way, sprayed, and shaded daily for a week or ten days. Air is admitted gradually, the plants hardening finally by the middle of May. The intermediate varieties are most suitable for bedding, such sorts as *Bright Pink*, *Fire King*, *Orange King*, *Coral (red)*, *White*, *Crimson*, and *Yellow*, whilst others of the dwarf section can be employed for the front rows. For massing in large groups or planting in the mixed border the tall varieties are very effective.

EAST LOTHIAN STOCKS.—The seed of *East Lothian Stocks* should be sown at once to secure plants for flowering early. Sow the seeds in well-drained pans or boxes, in a compost of loam, leaf-mould and sand. Cover them lightly with fine soil and germinate them in a temperature of 55° to 60°. Pot the seedlings in 3-inch pots directly they are large enough to handle, and grow them near the roof-glass. Cool conditions are essential to the production of strong, sturdy plants.

FRUITS UNDER GLASS.

By JAMES HUDSON, Gardener to LEOPOLD or ROTHSCHILD, Esq., C.V.O., Gurnersbury House, Acton, W.

PINES.—I do not propose to deal comprehensively with the treatment of the Pineapple, as the cultivation of this fruit has declined much of late years owing to the increased imports. These imported Pines may now be purchased so cheaply that it does not pay to grow the *Cayenne* or *Charlotte Rothschild* varieties in hot-houses at home. With the *Queen variety*, however, it is different, as there is no other Pine that approaches it in flavour, and a small house or pit might be devoted to the cultivation of this special sort. Moreover, the *Queen variety* may be grown more closely together than the others I have named, whilst the minimum tem-

perature during the winter, or resting season, may be quite 5° less than the others need. Those who are growing the Queen variety should pay close attention to watering; do not allow the plants, in whatever stage, to become very dry, and guard also against over-watering. With the additional warmth in the water-pipes at this season the atmospheric moisture will be considerably reduced, and this state, if accompanied by drought at the roots, might cause a sufficient check to induce adventitious fruiting. Whilst wintry weather lasts the night temperature need not exceed 60°; if the thermometer registers 55° in the morning there will be ample warmth.

VINES IN POTS.—Pot vines that were started in November are pushing into growth freely. The work of disbudding should be completed without further delay; a few shoots may be gaining an ascendancy over the others, and these gross growths should be stopped two joints beyond the bunch. Where the vines are making a good show of bunches one bunch will be sufficient for each shoot. Allow a good margin of surplus ones, however, until the setting is safely over. The night temperature should be 60°; it may fall a few degrees in the morning, but should reach 70° by fire-heat and 75° by sunshine in the daytime. The house should be 5° warmer when the vines are in flower. If fermenting material be used let it be only of a moderate warmth. It is not essential, and in any case should not raise the temperature of the pots more than 5° above that of the mean temperature of the house. Do not be in a hurry to fasten the shoots to the wires, for this work should be done gradually, and if it is completed by the time the bunches are thinned it will be sufficient.

PEACHERS AND NECTARINES SHOWING FLOWER.—By the time these lines are in print some of the earliest Peaches and Nectarines will probably be in flower. For securing a good set I find nothing better than having a hive of bees placed in the house. In this locality we have frequent periods of dull, sunless weather, hence a hive of bees is more effective than the use of the time-honoured rabbit's tail or the camel's hair brush. A good night temperature at such times may be taken at 52° to 55° preferably the lower. A fall of 5° by the early morning will not do any harm. Of course, the fire should be started on early in the morning in frosty weather. I do not advise any damping down during the flowering period unless it be on a bright sunny day, or when the water-pipes have to be kept somewhat on the warm side. Unless the wind be very keen and piercing, a little ventilation is advisable, and this should be equally distributed. In such houses, and at such times, no plants in pots should be tolerated upon which green fly is disposed to congregate. If this be the case these insects will soon injure the young, succulent leaves of both the Peach and the Nectarine. In houses where no flowers are yet open it will be inadvisable still to syringe the trees lightly, but not late in the afternoon.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVY, Abbots Wood, Goolabring, Surrey.

ESPALIER FRUIT TREES.—Wooden stakes to which espaliers are trained require to be renewed frequently, and, as the trees grow, larger ones are needed. Choose straight timber for the purpose and cut it into lengths of the required size. Let the uprights into the ground by means of an iron bar, for driving them in with the mallet would break or crush the tops. The bottoms of the stakes should be dipped in creosote to make them last longer. Strong Bamboo canes make very good cross or horizontal pieces. Tie the branches straight along these, allowing room for the summer growths to be trained in. Prune all long spurs to two eyes; nothing is gained by leaving the spurs very long, and they often send out a mass of shoots that need to be cut away in the growing season. Trees that are making gross growth should be root pruned. Scale insects and other bark pests should be promptly dealt with. The bark should be scrubbed with either a solution of N. All preparation or a mixture made

up as follows: Dissolve 2 lb. soft soap in 2 gallons of boiling water; to this add ½ pint petroleum emulsion; mix thoroughly and add about 6 gallons of soft water. Work the specific into all affected parts with the brush.

STRAWBERRIES.—Where fresh plantations of Strawberries were made last August and September the rows should be gone over and any plants that may have become loosened or lifted from the effects of frost made firm. Whilst doing this remove with the hand all weeds that are noticed. Weeds grow and spread rapidly on light soils.

LOGANBERRY AND WINEBERRY.—The Logan berry requires plenty of room; the shoots may be trained on tripods or on strained wires, which should not be less than 6 feet in height. In pruning cut out all the old canes, tie the young, strong shoots with tarred string to the required height and then shorten the tops. Good, strong, firm soil suits this Rubus to perfection, more especially if it is on the moist side. The Japanese Wineberry should be treated similarly.

APRICOTS.—The pruning and training of Apricots on walls should be completed before the other trees, as this fruit is the earliest to flower. It will be necessary to protect the blossoms in times of frost, but the material should not be placed in position until the last moment. The Apricot grows well in almost any good soil that is well drained, but light ground is the most suitable. Guard against drought at the roots, for light soils near walls soon dry out; and when applying water it is necessary to soak the soil thoroughly on more than one occasion. The finest Apricots I have seen were grown in a paved yard, the roots receiving moisture when the yard was washed, and occasionally liquid manure from the cowyard. In gardens in the south and south-west Apricots may be grown in standards with a certain amount of success, the variety Broda being the most suitable for this purpose. It is best to plant the trees in the beginning of October, but planting may be done now. Fan-shape is the best system of training, as this method permits gaps being more readily filled, and the branches do not admit of horizontal training. The tree produces its fruits on shoots of the previous summer's growth and also on spurs of greater age. The finest, however, are produced on wood one and two years old; therefore, train on a number of such shoots. The trees are subject to attack by a small yellow caterpillar, which must be sought and destroyed. Fasten the shoots loosely, for tight ties may injure the bark and cause gummying. The borders may be enriched by lime rubble and bone meal forked in lightly.

BIRDS.—As the buds begin to swell keep a sharp look out for birds, and either trap or shoot them. To prevent birds injuring the buds of Gooseberries spray the bushes with a mixture of paraffin and lime. This will not only keep birds away, but destroy any moss and lichen growing on the branches. Mix half a pint of paraffin in a quart with about 4 lb. of lime. The foot syringe pump is an excellent machine with which to do this kind of work.

THE KITCHEN GARDEN.

By J. DENN, Foreman, Royal Gardens, Windsor.

MUSHROOMS.—Horse droppings should be collected daily and placed in a dry, open shed, where they may be turned frequently. When a sufficient quantity of dung has been collected and turned sufficiently it should be removed to the house in which the bed is to be made and left loose for a day or two until the temperature from fermentation is 30°. At that stage the bed should be formed, ramming the material tightly. The bed should be spanned when the temperature is declining slightly, inserting the spaw 2 inches below the surface, covering the litter with new loam to the depth of 1 inch and making it firm by the back of a spade. If the surface of the bed becomes dry it should be lightly syringed with clear water, but frequent applications of water should be avoided, it being better to damp the floor and walls with a view to producing atmospheric moisture. The temperature of the house should be about 55°, and the fire-heat should be used as little as possible.

SEAKALE.—Maintain a constant supply of Sea kale by introducing roots to the forcing quarters at regular intervals; it will be a clear fortnight before the heads are ready when forced in a temperature of 65°. A mild hotbed may be set apart for the purpose, and the crop must be grown in perfect darkness. Small quantities of this vegetable may be grown in pots or boxes; the roots should be made firm in fine, rich soil, which should be watered when dry. If large quantities are required, the forcing should be done on mild hotbeds, each of a sufficient size to give a week's supply. A layer of rich soil 1 foot deep should be placed over the bed, and the roots set as closely together as possible in rows made 6 inches apart. Make the soil firm with the foot as the roots are inserted with the aid of a spade. If the soil is not sufficiently moist, it should be watered thoroughly before the covering material is placed in position. Care must be taken that the bottom heat does not exceed 70°. While the roots are being lifted for forcing a sufficient number of straight, clean thorns should be secured for next season's stock. Prepare the cuttings and insert them closely together in a sheltered border, covering them with 3 inches of sandy soil. By the middle of April they will have made sufficient progress to be ready for planting in well prepared ground. At Frogmore we grow about 20,000 crowns in this way.

ARTICHOKES.—This crop should be lifted and stored as soon as possible, and as the work is being done a sufficient quantity of medium-sized tubers should be selected for new plantations, which may be made as soon as possible. Select rich ground in some back part of the garden and plant in rows 4 feet apart, covering the sets with at least 4 inches of soil.

TOMATOS.—Plants raised from seeds sown early in October should be ready for their final potting. A compost of three parts turfy loam and one part decayed horse droppings, with sufficient sifted fine rubble to keep the compost porous, is suitable. Crock the pots carefully and pot firmly, leaving sufficient space for a subsequent top-dressing. Water the plants thoroughly the day previous to potting them; when water becomes necessary again it should be applied in sufficient quantity to moisten the whole of the soil. Grow the plants in a temperature of 65°, and if the pots can be placed on a moderate hotbed, so much the better, as this will promote root action. They must be kept as near the roof-glass as possible in order to keep them from becoming drawn, and ventilation should be given with the same object in view.

LEEKS.—A small sowing of Leek seed may be made now to secure plants for early supplies. Sow the seeds thinly in boxes of fine, rich soil and germinate them in a slightly warm pit. As soon as the plants are large enough they should be transplanted into boxes. After they have commenced to make fresh growth they must be freely ventilated, but never subjected to cold draughts. When a few inches high they should be gradually hardened off and planted out as early in the season as circumstances will permit.

SPINACH.—A good sowing of summer Spinach should be made as soon as the soil is sufficiently dry, in order to obtain a supply of leaves very early in the season. Choose a sheltered border, and keep a careful watch for slugs, as the seedlings are liable to be destroyed by these pests as soon as they are through the surface. Frequent dustings of soot will serve to keep slugs in check.

PARSLEY.—Remove all decaying foliage from Parsley plants and stir the surface of the soil lightly with the Dutch hoe. Plants in pits must be freely ventilated, only closing the lights during sharp frosts or snow. If the supply of leaves is likely to be short, a sowing should be made in boxes or pans with a view to producing plants for pricking out into a cold frame or planting on a sheltered border. Sow thinly and germinate the seeds in a warm pit.

SMALL SALADS.—Make frequent small sowings of Mustard and Cress and make preparation for a continual supply of Radishes by forming a gentle hotbed on which to sow the seeds thinly. The warmth should be sufficient to repel frost.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would oblige delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR FEBRUARY.

MONDAY, FEBRUARY 5—
National Chrysanthemum Soc.'s Annual meet. at Cafe Restaurant, Strand, at 6 p.m.

WEDNESDAY, FEBRUARY 7—
Roy. Scottish Arboricultural Soc.'s annual meet.

FRIDAY, FEBRUARY 9—
Roy. Gardeners' Orphan Fund Annual meet. and Election of Candidates at Simpson's, Strand, at 3 p.m.

TUESDAY, FEBRUARY 13—
Roy. Hort. Soc.'s Coms. meet. Annual meeting of Fellows at 3 p.m.

THURSDAY, FEBRUARY 15—
Manchester Orchid Soc.'s meet.

TUESDAY, FEBRUARY 27—
Roy. Hort. Soc.'s Coms. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 39.4°.

VITAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, February 1 (8.0 a.m.): Bar, 29.5", temp. 35.5". Weather, Snow.

SALES FOR THE ENSUING WEEK.

MONDAY AND TUESDAY—
Clearance Sale of Nursery Stock at the Cannon Nursery, Richmond, by Protheroe and Morris at 12 o'clock.

WEDNESDAY—
Bulbs, Herbaceous Plants, Fruit Trees, Japanese Lilies, &c., at Protheroe and Morris's Rooms, 67 and 68, Chancery, at 12 and 3 o'clock.

WEDNESDAY AND THURSDAY—
Sale of Nursery Stock at Woodlands Nursery, Maresfield, at Protheroe and Morris's Rooms, at 12 o'clock.

THURSDAY—
Sale of Roses, at Protheroe and Morris's Rooms, at 1 o'clock.

FRIDAY—
Sale of Fruit Trees, Roses, Herbaceous Plants, &c., at Protheroe and Morris's Rooms, at 12 o'clock.

SATURDAY—
Sale of Nursery Stock, Greenhouses, &c., at Bionley Road, Shottlands, by Protheroe and Morris, at 12 o'clock.

Sports from Root Cuttings.

A year or two ago, in the course of a lecture before the Horticultural Club, Mr. C. E. Pearson drew attention to the fact that certain plants—some Bouvardias and Regal Pelargoniums—do not come true when propagated by means of root cuttings. Thus, among Bouvardias Mr. Pearson has records of root-cuttings of double-flowered plants of the varieties Alfred Neuner, President Garfield and Hogarth, producing single-flowered plants. These interesting facts have been investigated recently* by Professor Bateson, who has succeeded in both confirming and elucidating them.

He finds that the root-cuttings obtained from the Bouvardia Bridesmaid give flowers of a kind distinctly different from those of this variety and identical with

those of another variety, namely, Hogarth. The flowers of Bridesmaid are pink on the outer surface of the corolla and pinkish white on the inner surface, whereas the corolla of the sport is, like that of Hogarth, carnation-scarlet.

Now, it is well known that when a bud forms on a root-cutting it originates in a way different from that in which a bud arises on a stem. The bud of a stem is formed of the more superficial tissues—the epidermis and outer cortical layers—but a bud on a root originates from the deep layers and pushes its way to the surface through the cortical layers.

Hence it follows that the deeper tissues of the root of Bridesmaid from which the bud of the root-cutting arises do not possess the factor for producing the Bridesmaid colour, but only that which gives rise to the deep colour of Hogarth. Hence Bridesmaid is to be regarded as having a "skin" carrying one kind of colour factor and a "core" carrying colour factors of another kind, or, at all events, lacking the pale colour factor which imparts to normal Bridesmaids their proper blush.

Thus the phenomena presented by the sporting root-cuttings of this Bouvardia are brought into line with those exhibited by other natural and "artificial" "sports." Readers of this journal will remember (see *Gard. Chron.*, Sept. 2, 1911, p. 161, *et seq.*) the remarkable discovery made by Winkler and Baur of the nature of the plants obtained by grafting together *Tomato* and *Solanum nigrum*. Some of the plants produced in this way had a skin of *Tomato* on a core of *Nightshade*. Others had the outer tissues of *Nightshade* and the inner of *Tomato*. To these the name of Chimaeras was given, because of their monstrously dual nature; and because the layers belonging to the one plant fit over the core belonging to the other, they are known as periclinal Chimaeras. To keep a mental picture of them we may think of them as finger and glove Chimaeras.

Similar monstrous combinations of layers of different plants in one individual explain the wonderful behaviour of *Cytisus Adami* and the various other "graft hybrids," such as the *Bronvaux Medlars*. In *Cytisus Adami* the skin of *C. purpureus* covers the core of *C. Laburnum*, and in the *Bronvaux Medlars* the "glove" is *Crataegus mespilus* and the "finger" is *C. monogyna*.

Questions of great scientific interest are raised, but only in part answered, by these interesting observations of Prof. Bateson. One of the chief of these questions is, How comes it that the cells of the core of Bridesmaid carry factors different from those carried by the surface layers? Both superficial and deep cells arose by cell division from the single egg cell of the embryo. Those factors—at all events the flower colour-producing factors—would appear not to be distributed uniformly throughout all the cells of the plant, but to be distributed in such a way that some go only to the surface cells and not to the deep-lying cells. This, however, is a subject which, though

fundamentally important to the student of heredity, only remotely concerns the gardener. The facts, on the other hand, are interesting alike to gardeners and men of science, for they appear to settle once for all the much discussed and disputed question of the nature of graft-hybrids, and to show that the strange case of Dr. Jekyll and Mr. Hyde is almost a commonplace among plants.

RHODODENDRON MRS. STIRLING.—As a garden variety this beautiful pink-flowered *Rhododendron* occupies a very high position. It is true that the flowers are not so large as those of the Pink Pearl type, but the trusses are larger, and their very profusion almost hides the foliage. Another good quality of the variety is its vigorous growth, the tree making a large specimen in congenial soils. It is suitable for massing in large beds, and visitors to Kew may remember the fine effect in summer of massed plants of Mrs. Stirling in the Broad Walk. It was raised by Messrs. JOHN WATERER, SOSS AND CRISP, who exhibited magnificent specimens at the R.H.S. Chelsea Exhibition last year; it obtained the R.H.S. Award of Merit in May, 1906.

WAR HORTICULTURAL RELIEF FUND.—The Ladies' Committee of the War Horticultural Relief Fund has arranged for a series of lectures to be delivered in London on Thursday afternoons, at 3 p.m., during the coming season. Admission will be by ticket, which may be obtained from the members of the Entertainments Sub-Committee, or from the Secretary, R.H.S., Vincent Square, Westminster, S.W. The dates arranged so far are: February 8, The Hon. JOHN FORBESSTE, M.V.O., on "Wellington"; February 22, Sir OWEN SEAMAN, on "Parody"; March 1, Mr. JOHN BAILEY, on "Don Quixote"; March 29, Mr. STEPHEN GRAHAM, on "Russian Gardens and Wild Nature."

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual general meeting of the National Chrysanthemum Society will be held at Carr's Restaurant, 264, Strand, on Monday next, at 6 p.m.

APPOINTMENTS.—Mr. F. A. STOCKDALE, Director of Agriculture, Mauritius, has been appointed by the Secretary of State for the Colonies Director of Agriculture, Ceylon, and Dr. H. A. TEMpany, Government Chemist and Superintendent of Agriculture for the Leeward Islands, has been appointed to succeed Mr. F. A. STOCKDALE as Director of Agriculture, Mauritius.

THE DOUGLAS FIR IN CHALKY SOIL.—Analyses of soil in several situations in which the Douglas Fir is growing well demonstrates that, contrary to general opinion, this tree is tolerant of chalk even when the percentage of that substance present in the soil is very high. From his investigations Professor SOMERVILLE concludes that the Douglas Fir may be planted with confidence on soils overlying chalk, provided that the top 12 inches are thoroughly disintegrated, and especially if a previous crop of hardwoods or underwood has left the surface rich in humus.

ROYAL SCOTTISH ARBORICULTURAL SOCIETY.—The sixty-fourth annual business meeting of the Royal Scottish Arboricultural Society will be held in the Goad Hall, 5, St. Andrew Square, Edinburgh, on Wednesday next, at 12.45 p.m. Mr. SCHEER, F.R.S., of the Board of Agriculture for Scotland, will represent the Board at the Meeting, and Colonel McDONALD, director of the timber operations of the Canadian Overseas (Forestry)

* "Root Cuttings, Chimaeras and Sports," *Journal of Gen. Genet.*, Vol. VI, No. 2, December, 1916.

* "Relationship of the Douglas Fir to Lime in Soil," by Prof. Somerville, *Quarterly Journal of Forestry*, XI, 1, Jan., 1917.

Corps, has accepted the Council's invitation to be present. A discussion on our afforestation problems will be opened by Dr. BORTHWICK.

ROYAL GARDENERS' ORPHAN FUND.—The annual general meeting of the subscribers to this fund will be held at "Stapton's," Strand, on Friday next, the 9th inst., for the purpose of receiving the report of the committee and statement of accounts for the past year; to elect officers for the ensuing year; to authorize the secretary to suspend the publication of an annual statement of the names of subscribers and the amount of their subscriptions (as provided for in Rule 8) until further order; to elect sixteen children to the benefit of the fund; and to transact such other business as may arise. The chair will be taken by Mr. H. B. MAY at 3 p.m.

FLOWERS IN SEASON.—From Messrs. STUART LOW AND CO. we have received blooms of their new Carnations Red Ensign, a large variety of reddish-carmine colour; Countess of Wilton, a neat bloom of moderate size with petals of vinous-crimson colour; and Eileen, a shapely bloom of salmon-pink colour.

MR. C. T. DRUERY, V.M.H.—Readers of the *Gardeners' Chronicle* will hear with deepest regret that Mr. CHARLES T. DRUERY, who is in his 74th year, is entirely incapacitated by an affection of the heart that prevents him from leaving the house. Mr. DRUERY'S love for Ferns, and his labours to popularise the British species and varieties are well known, not only by his editorship of the *British Fern Gazette*, and his excellent *Book of British Ferns*, but also by the articles he has contributed to our own columns and those of our contemporaries. In the unfortunate circumstances that have overtaken Mr. DRUERY many of his friends see an opportunity to express in a practical manner their appreciation of the work he has done, and it has been determined to ask his acceptance of a presentation. Mr. W. B. CRANFIELD, East Lodge, Egham Chase, Middlessex, who has the matter in hand, will be glad to hear from all interested in the movement.

RETAIL PRICES OF SEED POTATOS. Mr. CHARLES E. PEARSON, secretary of the Horticultural Trade Association, asks us to state that most seedsmen had contracted or bought, and in most cases obtained delivery of, their season's supply of seed Potatos at prices which are in some cases more than 50 per cent. higher than the maximum figure recently reported in the Press, weeks or months before the question of the limitation of prices of seed Potatos was mooted. It will, therefore, states our correspondent, be impossible for these seed Potatos to be sold retail at anything less than the price already printed in the catalogues. The public should distinguish between seed Potatos offered by the leading seedsmen, which have been carefully cultivated for the purpose, and kept true to name, and the ordinary farm stocks grown with out special care and often very much mixed.

MR. HUGH F. MACMILLAN.—Amongst the passengers who left Liverpool on Thursday last were Mr. and Mrs. H. F. MACMILLAN, who are returning to Ceylon. Mr. MACMILLAN is now quite recovered from his recent operation, and on reaching Ceylon will resume his duties as Curator of Botanic Gardens.

WARM WATER FOR SPRAYING FRUIT.—Experiments in the use of warm water as a spray for destroying insect and fungus pests on fruit appear to have given satisfactory results. Warm water was sprayed on Grapes with no ill effects to the fruit, and the treated Grapes, enclosed immediately afterwards in bags, were found when ripe to be free from damage, whereas others, untreated and bagged at the same time, were found to be seriously damaged and disfigured. The warm-water spray was also tried on espalier Pears (Doyenné d'Etiver), the

leaves of which were badly attacked by a fungus (apothium). The fruits lagged after spraying remained perfectly clean. In the case of the vine the temperature found to be sufficient is 65° C. (150° F. in the tank of the spraying machine and 65° C. (154° F. as it issues from the nozzle). With Pears a higher temperature, 70° C. (156° F. in the tank and 66° C. (150° F. as it issues from the nozzle).

LUPINS AS POISONOUS PLANTS.—Lupins have played a part in European agriculture from the earliest times. Their use as a green manure

been much tried. Lupins contain specific alkaloids—among them being the substances mentioned above. The author has been divided as to whether or not the poisonous effects so frequently produced by Lupins are due to sheep and cattle poisoning by the so-called lupanine. The authors of the British Catalogue review have shown, however, that it is the alkaloid which is the toxic substance. They have, moreover, that animals may eat considerable quantities of Lupins without suffering ill effects, but that if the consumption pass a certain limit acute poison-



FIG. 19. RHODODENDRUMS. SEVERAL FLOWERS BRIGHT CLEAR PINK (See p. 50).

is described by Pliny, and Lupin meal was in common use among the poorer Greeks and Romans. The poisonous properties of Lupins were recognised, and precautions were taken before making Lupin meal to remove them. In modern times poisoning of stock by Lupins has often been recorded, and in some cases, for example, in Persia in 1830 the loss of sheep from this cause was widespread, amounting to nearly 6 per cent. of the flocks. Although it has long

ing results. Hence, with proper precautions, Lupins may be used as fodder with but little risk. The poison has, moreover, no cumulative effect. Of species demonstrated to be poisonous, the authors mention Lupinus albus, L. angustifolius (European species), L. leuropsis and L. luteophilus. L. luteus is much less toxic. Remedies are difficult of application, for the reason that the dose which is harmless is but little less than that which is fatal; but the authors suggest that sodium bicarbonate administered at frequent intervals may assist recovery. The seeds are most, the pods less, and the leaves least toxic.

* *Lupinus as Poisonous Plants.* By Messrs. C. D. Marsh, A. B. Clawson, and Halleigh Marsh. Bull. 408, U.S.A. Dept. of Agr.

Inasmuch as the poison is easily leached out by water, there is no danger to be apprehended from cooked Lupin seeds.

PLANT DISEASES IN QUEENSLAND. The Minister for Agriculture in Queensland, by the introduction of a new Diseases in Plants Bill, purposes taking stringent precautions with respect to the introduction and eradication of diseases affecting vegetation. The measure provides for the registration of orchards on or before March 31 of each year. Registration fees in the case of a Pineapple or Banana plantation, or vineyard, are 1s. per acre; in other cases, 2s. 6d. for every hundred trees or part thereof growing in such orchard. Nurserymen must also register their nurseries, and pay an annual registration fee of £2 in the case of a nursery not exceeding five acres, and £5 in the case of larger ones. Failure to comply with these provisions will render the occupier or owner liable to a fine of £5 for the first offence, and £10 for any subsequent offence. Every insect, fungus, tree, plant and vegetable introduced into Queensland, or removed out of any orchard or nursery, and every diseased tree, plant and vegetable introduced into the State; and every box, package, basket, or case harbouring any such insect, fungus, tree, plant or vegetable may forthwith be seized by an inspector, and dealt with as the Minister or inspector may direct. The owner or occupier of an orchard or nursery may be ordered to eradicate a disease at his own expense. If, however, an owner's property be destroyed in the eradication of the pest, compensation will be paid.

DOINGS OF LOCAL SOCIETIES.—At the annual meeting of the Lewisham Horticultural Society held recently it was announced that most of the 865 members were allotment holders. Since November 30 the Society has taken 16½ acres of additional land for cultivation, and the committee has in view another 30 or 40 acres for the members.

—The Croydon and District Horticultural Society has arranged a series of five lectures on vegetable cultivation. The lectures are being given each Friday evening in the Croydon Public Libraries.

—The Birmingham and Midland Counties Gardeners' Society has arranged a series of lectures for allotment holders and others interested in food production. Addresses will be given by gardeners and others on such subjects as Potatoes, the rotation of crops, allotment gardens, seed sowing, and diseases of vegetables.

—Lectures on gardening are being delivered by Mr. CYRIL HARDING in the Finchley District, where the allotments number as many as 1,000.

—Mr. B. A. GAGE has been engaged by the Bristol Education Committee to deliver a series of ten lectures to allotment holders.

—The Finchley Chrysanthemum Society has given £10 to the local War Relief Fund. The members have decided to hold two shows in 1917 with the special purpose of encouraging the growing of fruits and vegetables.

—The Royal Horticultural Society of Ireland has abandoned its spring show this year, but is making arrangements for an exhibition in August.

—Lidget Green Horticultural Society is encouraging the growing of vegetables by the members and others. A lecture on vegetables was delivered recently by Mr. G. DENSMORE, President of the Bradford Paxton Society.

—The East Oxford Horticultural Society has decided to hold an exhibition as usual this year, on Thursday, August 23. Last year's balance-sheet showed a profit of £29 18s.

—The University Extension Board of the University of London has arranged short courses of weekly lectures on garden cultivation and

how soils should be treated to secure large crops, by Mr. F. J. CHITTENDEN. The arrangements so far include one course in central London in the School of Arts and Crafts, Southampton Row, on Tuesdays at 6.15 p.m., beginning February 6, and another at the Ealing Technical Institute on Thursday evenings at 8 o'clock, beginning February 8.

—Out of a total income for 1916 of £69 13s., the Freshwater Horticultural Society has resolved to give all the profits, with the exception of £10 as a balance, to the D.C.L.I. Prisoners of War and Red Cross Funds.

—The Inverness Town Council has decided to plough about half of the public park and to sow it with oats.

PLANT NOTES.

CYCLAMEN.

THERE exists a very marked difference of opinion regarding the proper stage and the exact time for repotting old Cyclamen plants. It seems to be one of those differences which on the whole does not much affect the ultimate result—the quantity and quality of the flowers in winter and spring. I have been very successful with plants which had only a brief rest—just long enough to dry the soil—when they were repotted, with all the old leaves intact. Plants have done equally well when rested for a longer period, but not so long as some growers recommend. My observation tends to show that the Cyclamen needs a long season of growth to secure the best results, and if that is correct, then the longer the repotting of the plant is delayed, the greater the risk of failure, partial or complete. It is quite noticeable this year that plants which were shaken out and repotted with leaves on are superior to those which were kept till the foliage had gone, though the other treatment was similar. A number of young plants never got beyond 4-inch pots last summer, and these I hope to repot in 6-inch pots in spring, without disturbing the roots in any way. Those already in 6-inch or larger pots are usually the better for having a portion of the old soil removed. It does the plant no harm after a brief rest, and enables one to produce an equally good plant in a smaller pot. At one time I grew Cyclamens in cold frames during the spring and summer, but in these parts (E. Lothian) much more satisfactory results are obtained by growing the young plants in a stove temperature, while old plants pass the summer on a stage partially shaded by the foliage of Grape vines. When speaking in a comparative sense—growth is completed, plants of all ages do very well for a couple of months in a cold pit, giving them a little heat during the winter months, with the occasional aid of a stimulant to increase the size and brilliancy of the flowers. A source of danger to the plants arises from the assistant, when administering water, failing to allow for the corms taking up space not occupied by those of other plants, and so limiting the supply of water to an injurious extent. Large corms in 7 or 8-inch pots should therefore have the space available for water filled at least twice, and sometimes thrice, when water is required. *E. P. B. East Lothian, N.B.*

BRUGMANIA ARBOREA.

The beautiful flowering shrub, *Brugmansia arborea*, does not resent severe pruning, and can be kept in the desired shape and dimensions for the greenhouse by cutting back annually the spent flowering wood.

It flowers best in a restricted border made up of rich loam, with enough broken bricks or lime-rubble to ensure porosity, and once the roots take possession of the soil artificial manure can be used to advantage as a top-dressing in spring.

During the growing season moisture should be liberally supplied to the roots, but withheld in

winter. The latter is the proper time to prune, after which the stem and branches should be washed with insecticide to destroy any vermin lurking in the crevices of the bark.

B. arborea comes into flower about midsummer, and continues to produce an abundance of lovely white flowers well into the autumn. *M. M. Peck.*

VERONICA LA SEDUISANTE.

The varieties and hybrids of *Veronica speciosa* are usually regarded as tender and requiring the protection of a greenhouse, but *V. La Séduisante* has been flowering on the rockery at Holland House, Kensington, for some years. Usually it commences to bloom rather late in summer, and continues till severe weather stops growth, and last year this was well into December. The flower-spikes are moderate in length, as they are in all plants closely related to *V. speciosa*. The foliage throughout the summer is tinted with purple, and the under surface retains the hue till well into winter. This, coupled with the intense crimson-purple of the flowers and evergreen foliage, makes the shrub a highly ornamental one. The soil at Holland House is heavy and much inclined to clay, which would indicate that this and similar Veronicas are hardier than they are generally supposed to be. Quite a number of strong bushes line a ridge, fully exposed, on a part of the rockery. The variety was accorded an Award of Merit by the Royal Horticultural Society in July, 1897. *J. F.*

CONFESSIONS OF A NOVICE.—XIII.

In the intervals—and they were frequent and long—between spells of double digging, I have been exercising my brain and resting my back in trying to discover the precise and specific meaning of the terms commonly used to describe the different ways of digging. The terms which have been intriguing me are the familiar ones—trenching, bastard trenching and double digging. If I take out three spits, wheeling the first two from the trench to the "opposite end," as well as the top spit from the second trench, and if, having turned over spit 5 and thrown spit 2 from trench No. 2 on top of it and then, by yet more herculean labours, hurled the top spit of No. 3 trench a full yard, so that it—or some of it—reaches and covers trench 1—have I trenched my ground? My garden? world, I am well aware, answer emphatically, No! For he would claim, not without a solid foundation of truth, that he had done it. This, however, is quibbling. I admit that he performed most of the work, but, on the other hand, I became far more tired than he did. What I wish to ask is, whether trenching is a term that denotes depth, or does it connote the disturbance of the order of the several spits? Must I, in order to trench, bring spit No. 5 to the surface? It is only on behalf of terminological exactitude that I ask, for my gardener would no more allow me to bring to the surface the yellow, irony sand which lies beneath the painfully acquired loam of my garden than he would entrust me with ventilation of the frames or the pruning of my fruit trees. I do these good things by stealth, and in consequence gloom pervades the garden on Monday mornings. If trenching is only a measure of profundity—three spits deep—what is the name for trenching with inversion of the order of the spits? In other words, must we use the same word to describe the labours of Mr. Molyneux and those of Mr. Beckett? If not, which is trenching and which is the other?

I admit that in double-digging I am less out of my depth, but, nevertheless, there are difficulties even there. Is bastard trenching the same as double-digging, and is it double-digging when I merely poke about the second spit with a pronged fork, when I turn over the second

spit, or when I bury the top spit and bring the second to the surface?

Owing to my assiduity in digging up my lawn for Potatos I have gained a high reputation for patriotism, and admiring neighbours dropped in in relays on Boxing Day to watch, encourage and criticise. I have in consequence become—except among the real professional gardeners, who know better how to appraise my novitices—a horticultural Sir Oracle. I dared not confess that it was the temporary success which the lawn had gained over our efforts to subdue its grossness that weighed with me in digging the turf in and in turning it under for Potatos. Only when one of my neighbours—whom I wish to retain as a friend and whose grass is perfect—announced his determination to make like sacrifice of his croquet lawn did I confess to him that Plantains were no less responsible than patriotism for my turning my tennis racquet into a ploughshare. Nevertheless I am constantly appealed to as an authority on gardening, and so long as my questioners keep to problems of artificial manures I can—fortified by a recollection of university lectures in chemistry—come out of the ordeal without fatal loss of prestige, but when lawyers and keen business men pin me down to say what exactly trenching—legitimate and bastard—and double-digging are, I confess that—like the paths of the garden—I am gravelled. So far as I can compute, there are seven different operations which may be performed in digging a piece of ground from one to three spits deep. They are—3 spits dug and replaced in due order, 5 spits dug and the order reversed, 5 spits dug and the order made to run from below upwards, 7, 1, 2 (of course mathematicians could find other permutations beside these), 2 spits dug and the order maintained, 2 dug and the order reversed, one dug and second only broken, and 1 dug. Which is the name of which of these operations is as hard for me to understand as it was for the listener to solve the numerical conundrum of "We are Seven." I have learned so much from digging, the wonderful skill, address and economy of labour practised by the skilled man, the clumsy, laborious ineffectiveness of a willing and back-broken amateur, the extraordinary vitality of plants, enabling them to exist on a revealed in the turned-up soil, on a mere veneer of soil; and so, to round off this part of my education, I venture to ask for enlightenment as to the proper terms to apply to the four mentioned ways of treating soil. If, as I suspect, there are not enough terms to go round, nobody will be more pleased than I, for my grudge against Botany is Buffon's or Lamarck's—I forget which—"I forget which—"It is easier to learn the science than it is to master the nomenclature," and I would not have this become true of horticulture, even though they are beginning to teach it in universities. J. N.

BERBERIS SUBCAULIALATA.

AMONGST the recently introduced Berberries are some first-class garden shrubs, notably *Berberis Wilsonae*, *B. rubrostilla*, *B. Sargentiana*, *B. polyantha*, and the closely allied *B. subcaulialata*, of which a fruiting branch is illustrated in fig. 20. The last named has rounder berries than those of *B. polyantha*, and they are of a coral-red colour. The habit, too, is rather more elegant, and when seen side by side it is apparent that the species under notice is the better garden plant. The species is not common in gardens yet, but it will doubtless be grown extensively as it becomes more easy to obtain. There is a very large collection of these new Chinese Berberries at Aldenham, where *B. subcaulialata* has been selected as a companion to the Cedars in the avenue by the moats. The *Berberis* is set in rows, and

the plants are like pyramids in the grass compared to the Cedars, yet the branches, studded with golden flowers, and later with coral-red berries, serve to enliven and relieve the effect of their more sombre neighbours.

POTATOS AND PREJUDICE.

WITH all the attention which has sprung up around the Potato it is remarkable how little is known of its introduction. Historians, it has been said, finding that history does not repeat itself, have maintained the fable by repeating one another. To those who sumner in the byways of horticultural history there seems some truth in this. Raleigh, we were told at school, introduced the Potato from Catalina, but Raleigh never was at Catalina, nor does the Potato grow wild there, being a native of Peru, where it was found by Pedro Cieza de Leon about 1532. This Spanish traveller discovered Pizarro, whose conquest of Peru thus

is a fact of some 200 years that followed the victory of Waterloo.

Even then it did not lack detractors. Cobbett thundered against the "potantions" vegetable, which, with the use of tea, would reduce the sturdy English labourer to the level of the Irish peasant. The *Times*, in 1829, considered it as "a fit esculent to lower the food of the opulent," but its use among the working classes would lower them to "a nation of miserable, turbulent drunkards." In France it was considered "le plus mauvais de tous les légumes dans l'opinion générale." Cependant le peuple qui est la partie la plus nombreuse de l'humanité, s'en nourrit." This was written before 1879!

Parmentier, whose name still figures on our menus when Potato soup requires disguising, succeeded in introducing it to higher circles, and even persuaded Louis XVI to wear its flower in his buttonhole.

In Scotland the death of 1740 led to its introduction, and here, again, it met with the usual opposition. "Tatties, tatties," said one old native, "I ne'er sapped on them a' my days and winna' the night." The more philosophical

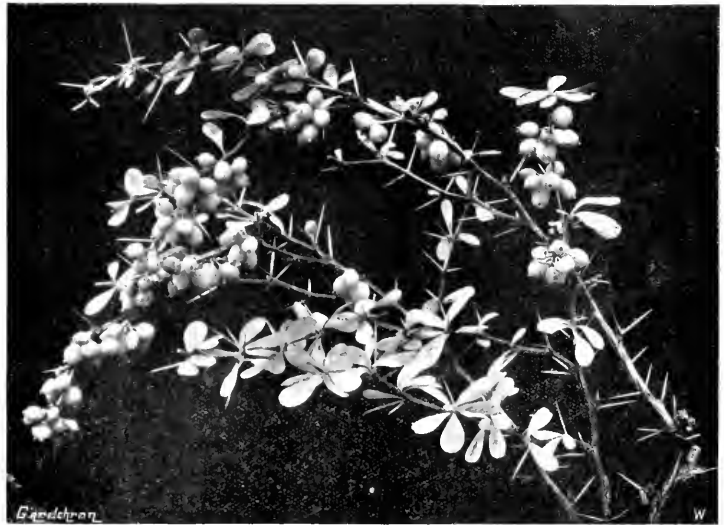


FIG. 20.—BERBERIS SUBCAULIALATA, A NEW CHINESE SPECIES WITH CORAL PINK BERRIES.

inquiry led to the introduction of the Potato into Europe. Its welcome in Spain was not warm, for long it was but a curiosity, and it is said, with what truth we dare not say, that the Church frowned upon it, seeing in it a competitor with the titiable wheat. In Italy its reception was hardly less cold, and as a food-plant its spread on the Continent was everywhere slow.

Its introduction into Ireland is said by many writers to be due to Hawkins, and if this be established, it seems probable that it was seized on one of the Spanish prizes. It soon became widely grown there, and spread thence to Leicestershire, the first part of England to undertake its culture on a large scale.

In England it did not lack supporters, and in 1665 the Royal Society listened to Mr. Buckland, who spoke long and warmly in its praise. How far this championship succeeded is doubtful. One witness tells us it was common in England in 1695, but a dozen contemporaries give him the lie. The Potato of Falstaff, it should be said, refers to a different plant altogether, a member of the *Convolvulus* family, whose edible tubers were grown and used, when candied, as a sweetmeat. The general trend of evidence is that the Potato did not come into anything like general

argued that Potatos were not mentioned in the Bible. However, the "tatties" made them selves at home, and have kept many a Scotchman from treading the "broad road that leads to England."

It is not perhaps difficult to understand some of the reasons which hindered the adoption of the Potato. Its resemblance to other members of the Solanum family, which are poisonous, and its insipid taste, were no small grounds for mistrust. Potatos are now a habit, but if we were to meet them for the first time should we give them an enthusiastic welcome? B.

THE ROSARY.

ROSE TRIER.

THIS variety of the multiflora scandens section is remarkable for its freedom and continuity of flower and its delightful fragrance. Commencing to flower in June, it continues into the autumn, finishing with a crop of hips. In colour the buds are pink, opening cream and developing paler with yellow anthers. It grows 6 feet, and forms a wide spreading bush. Where space can be given it requires but little pruning beyond

this removal of weakly growths from the centre of the bush.

ROSE AUGUSTUS HARTMANN

Those who are seeking a brilliantly coloured Rose, and one that will give plenty of well-formed blooms, should plant Augustus Hartmann. The growth is all that could be desired, with ample leafage, that is not subjected to attacks of mildew. The shapely blooms are borne freely on stiff, erect stems. The colour, cherry-red, is most striking. It is a good Rose for use as cut blooms, small buds developing into large blooms, which last a long time fresh.

ROSE LADY PLYMOUTH.

CUT blooms of this Rose deepen in colour as they develop in water, the pale creamy tint assuming a pleasing tinge of yellow. In the open this variety has all the characteristics of a good Rose. E. M.

FOREIGN CORRESPONDENCE.

THE PLANTING OF BEARDED IRISES.

MY experience and observation in regard to the planting of bearded Iris may be of interest to your readers as confirming Mr. Dykes' deductions rather than those of Mr. E. H. Jenkins.

Our climate is so much more severe than yours that nothing could be moved in March, perhaps not in April, in my garden, but it does not make much difference except to shorten the blooming time of the Pogonises, and affects the root growth, I imagine, in the same way.

During the first half of July, when I lift and divide Irises, I find them almost without roots; the old ones are shrivelled and dead, but holding the rhizome in place, and the new ones, just pushing out from the rhizome, are thick ($\frac{1}{2}$ -inch or more throughout, with a blunt end), and unbranched until full grown. It is not until well into September that you find the root system fully developed with a mass of fine branching root fibres as well.

The roots, if destroyed, are not renewed to any large extent until the next blooming season is past.

The buds for the coming season are formed before winter, usually one stalk to each sheaf of leaves, though some varieties have more, and my theory is that the March-planted ones in the table published in *Gard. Chron.*, December 2, 1916, are really one year ahead of the others; i.e., you have lost all but six of the blooms formed in 1912 from the March transplants, while you had bloom on the June ones before transplanting. Thus the March plants skipped one year's bloom, and naturally, with three months more of active growth in the new position the 1915 clump is larger, and you find more bloom to the March transplant's credit, but a lower average increase.

Irises can be shifted without a noticeable check if the work is done care-fully in one's own garden at almost any time, but where you divide them it is important to let them ripen and the old roots die off. This takes from four to six weeks after they blossom. When rhizomes are purchased and the roots cut off, the result is different. I had a curious example of this in the behaviour of a variety called Loreley. I had seen the table of the Wisley 1913 experiment last winter, and so purchased several hundred in March to compare with other plantings, and among them twenty-five of Loreley. They came and were planted in April. I never saw finer rhizomes, and although they were slow to start they grew wonderfully, but in August I noticed a flower or two close down in the leaves, and on examination I found every plant had, or had had, blossoms, but without stems long or strong enough to push them out of the clasping leaves, and, with the exception of those two or three, the flowers had died, and the whole mass inside of the leaves was rotten. In removing it I had to cut off most of the growth on the end of the rhizome, which could not be beneficial.

In the plot where I propagate my hybrids I had this year, much to my surprise, a sheet of bloom, five out of six of the plants having one or more flower-stalks, although the previous July I had broken up the rhizomes in as small natural divisions as possible. The bloom on the named varieties planted in September, 1915, had only scattered bloom, and the April, 1916, planting no bloom (until August, and then abnormal, as previously stated).

I look eagerly for the coming of the *Gardener's Chronicle* in the hope of finding a note on Iris, as I often do, and I am glad you do not restrict them to April and July; those may be the proper months (and better than that never), but they are such busy ones for the Iris grower that there is not much leisure for reading *Grove Street*, *Glen Road Iris Gardens*, *Wellesley Farms, Mass., U.S.A.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

BROWN ROT DISEASE OF FRUIT TREES.

The brown rot diseases of fruit trees often cause serious losses to fruit growers. The subject is now under investigation by the Research Department of Wye College, with a view of studying the various forms of the fungus concerned, and of devising the best methods of controlling the disease. We desire the co-operation of fruit growers in this matter, and would be glad if readers would give us an account of their experience of the disease by supplying answers to the following questions, which relate to the form of "brown rot" that produces "blossom wilt" and "canker" of Apple trees. 1. Are any of your Apple trees affected with a disease which causes the trusses of blossom, with the accompanying leaves, to "wilt" and finally to become brown and withered? 2. What varieties are attacked? 3. When did you first notice the disease? 4. Do you believe it to be getting worse year by year? 5. Can you supply an estimate of the damage done to your Apple trees by this "blossom wilt" disease, either on the crop as a whole or on particular varieties? E. S. *Sullivan*, *South Eastern Agricultural College, Wye, Kent.*

METHODS OF TRENCHING—It is a matter of some surprise to note that gardeners when undertaking trenching still indulge in the old-fashioned, laborious way advocated on p. 23, viz., "To mark out a trench 2 feet wide and wheel the whole of this soil to a depth of 2 feet to the opposite end of the plot." In a quarter of, say, 40 feet to 60 feet wide, the soil bulk to be removed would be considerable, requiring much time and labour, these latter increasing proportionately with the length of the plot. Many years ago, when breaking up an old pasture for the cultivation of Narcissi and other hardy plants, I hit upon a modification of the above old-fashioned method, and incidentally saved considerably thereby. The idea is simplicity itself, and is as follows: Running a line lengthwise through the centre of the plot, a cable was cut to assist straightforward work, and in order that instead of trenching the quarter its full width right away, the work could be done by forward and return halves. In opening the trench of the first, or "forward" half, the soil was turned over on to adjacent ground or path, the trench and-a-half system of opening being followed for obvious reasons. Reaching the other end of the "forward" half of the plot its trench was made good with the soil created by the opening of the trench of the "return" half, the material for the filling in of which was already in waiting at the opposite extreme—the starting point—of the quarter. In this way not only was the wheeling of a considerable bulk of soil from one end of the quarter to the other entirely dispensed with, but the need for the initial excavation of the soil from one half of the quarter—the final trench of the return half—did not arise. E. H. *Jenkins.*

ECONOMICAL POT-WASHING.—Pot washing tanks to-day, as it ever has done, among the most usual of a gardener's duties, reserved generally for wet and frosty days, and for the least skilful of the gardening staff. I moved at any time, it is particularly so in times of frost, unless heated potting shed or convenience in boiler shed exists for the work. For a considerable number of years, however, pot-washing by hand was entirely dispensed with by the writer. It was done just as effectually, and far more cheaply, by the elements. The finishing of crops of Chrysanthemums or Carnations always released a few thousand pots, and these, freed of soil, were taken direct to the then vacant standing ground and arranged close together. A few weeks thus exposed to the weather wrought a great change, the interiors being usually as clean as if thoroughly scrubbed. Inverting the batch, the exteriors were exposed, with similar cleansing results, frost playing a most important part in freeing them from moss or vegetable accumulations of any kind. In this way thousands of pots were cleansed at practically no cost, and the cleansing was even more thorough and complete than ordinary washing. In addition, I consider the pots are appreciably hardened by the exposure, while materially sweetened—disinfected if you will—by the action of the frost. In any case it is worthy of general adoption as a time-saver alone. I got the idea originally from observing the cleanliness of the exposed portions of the pots in the stacks. Doubtless other plant growers were similarly impressed, since for some years now it has been practised by market growers large and small. H.

OLD SEED AND PLANT CATALOGUES (see pp. 9, 29).—In the notes on the above by H. H. C., reference is made to Messrs. Rollinson's of Totting, and the fact that he failed to locate the site of that once famous nursery when last in the neighbourhood. Should he be in the locality again, and desire to do so, he has but to step out 80 yards or so in the direction of London from the monumental mason's still at the corner of "Totterdown," to bring him (approximately) opposite the iron gates which constituted the main entrance. Thirty-five yards more and your correspondent would be practically opposite the entrance to the big conservatory, another 30 yards bringing him to the yard entrance and offices. The Garratt Lane side—the fruit tree department—a portion of which was opposite Parker's nursery, also now covered with bricks and mortar, is readily fixed by the "Fountain Inn" at the corner of Cemetery Road, provided that name is still perpetuated. Reference is also made to Rollison's Telegraph Cucumber, "its advent" and its "raiser." I was not aware, however, that the latter was ever known. Messrs. Rollison obtained it from a private gardener, who himself distinctly told me at the time he was unaware of its origin. It had been given to him, he said, and so many years before, that he had quite forgotten by whom or where it came from. The gardener was at the time old and tottering, and of a type that always went to work in a "top-hat" of the "beaver" pattern. At and prior to the advent of Rollison's Telegraph Cucumber, I was herculean plant foreman for the firm, and well remember the first batches grown for seed before the variety was sent out. E.

"ONCE-GROWN" POTATO SEED.—The pronouncement of the Board of Agriculture and Fisheries in Leaflet No. 63 on this subject certainly stands in need of qualifying. In Southern districts, where the air and soil are generally dry in summer, it may be correct that Potato seed from Scotland yields the heaviest crop the first year and that there is a marked falling off in each succeeding year if home-saved seed from the Scottish stock is used. But in some other Southern districts, where the rainfall varies from 35 inches to 50 inches in a year, this statement does not hold good, in all cases at any rate. I have known very satisfactory crops of Potatoes grown in South Buckinghamshire, Middlesex, Surrey and Berkshire from home-saved seed to the third generation from Scottish and from Lincoln seed. But my most contrary experience was at Pinnerow, in Cornwall, where during twelve years I invariably failed to obtain even

moderate crops the first year from Scottish and from Lincoln seed, although the sets were sown and planted at the proper times for each variety. The new tubers were always small, approximately of seed size, and the crops distinctly "under." But these "one grown" varieties during the next two years were eminently satisfactory. There was a slight falling off in crop and quality in the third year, after which time the tubers would become mixed, pebble shaped and round, though all from kidney-shaped sorts, to from some reasons which I could never discover, the soil or climate, or maybe both, would not produce a good quality round or pebble shaped Potatoes, while many kidney shaped sorts were first-rate when cooked. This was distinctly unfortunate, because generally the "rounds" produce the heavier crops, but, like the de-zerter kidneys, when cooked were close and starchy. The vegetable ground at Penarth slopes to the north-west, the soil is a light, deeply-worked loam, rather under average quality, and the rainfall heavy. J. C. Bartlett

STANDARD RED, WHITE, AND BLACK CURRANTS.—I was greatly impressed by the excellent examples of these small fruits that I saw in the well cultivated fruit and kitchen gardens at Worsley Hall, near Manchester, the residence of the Earl of Ellesmere. Mr. Upjohn, the gardener, pointed them out with much gratification. The stems were about 5 feet tall, and they were carrying large heads that were bearing heavy crops of fruit. Mr. Upjohn informed me that the bunches kept much better than those on dwarf bushes or against walls. I have not seen any Black Currants grown in this fashion, but I do not doubt that they would be equally effective. I have grown both the Red and White Currant as short standards, and found them very useful in that way. J. H. Hudson, Gunnersbury House.

GARLIC. Surely Mr. J. Dunn's advice, on p. 25, to allow "a little more space between the rows for Garlic than for Sunflowers, as a slip of the pen, and he meant to have written rather less space. When one considers the two bulbs, which are, to the botanist, closely allied, but quite distinct to the cultivator, it is evident that the Garlic rows need be merely sufficiently far apart to allow the free use of the hoe, and that 6 inches from plant to plant is ample. Whereas the whole bulb of Shallot is planted and it forms a little colony of separated bulbs around it, the Garlic bulb is first pulled apart into "cloves," a good bulb contains as many as 15 cloves, and each clove also produces its little colony, but the individuals are packed closely together, and confined, sometimes very loosely, in a general covering. The so-called "bulb" of Garlic is in reality an aggregation of bulbs, and the base of each little bulb when separated is studded with fat, white root tips. There are two types of Garlic—the white-skinned, which is most used in this country, and the red-skinned sort, which, as in Onions, keeps longest. Although the best Garlic comes from France, quite good bulbs may be grown in England, as the sample I send from my own garden at Hamp ton Hill shows. In Southern France the growers still seriously and vehemently contend that the *gousse d'ail* must be set in November, whilst the moon is waxing, so that it may gain strength with the growing moon, otherwise failure is certain. The older cottager in Devon and Cornwall often treasures similar belief concerning sowing seeds and planting vegetables. Garlic succeeds well in a light, rich soil, which need not be pressed, as is general for Onions. The cloves should be pushed into the ground in lines 9 inches apart, allowing 6 inches in the rows. The earliest and largest bulbs are obtained by planting during the first half of November, but good bulbs may be grown from spring planting, and these will naturally keep longer. When planting in November the cloves should be pushed almost full length into the soil, merely leaving the tip exposed, but in the spring I prefer to bury only half the clove, as in this way the bulbs are cleaner and more attractive in appearance. The precise date for spring planting does not appear to be essential, though I like to plant during February, but the sample I send is from cloves planted on April 22 last. J. C. Bartlett

SOCIETIES.

ROYAL HORTICULTURAL.

JANUARY 30.—The fortnightly meeting held on Tuesday last in the Drill Hall of the London Scottish, Buckingham Gate, Westminster, was one of the smallest on record.

There were a few good exhibits of Orchids, only two collections in the floral section, and none of either fruits or vegetables. The rest of the exhibition was comprised of paintings, preserves, and sundries. The only award made by the Floral Committee was a Silver Bank Medal for a collection of Perpetual-flowering Carnations exhibited by Messrs. Atwood Bros., Hayward Heath. The other exhibit was a florist's group of *Eranthis* and *Acacia*, arranged by the excellent taste by Messrs. B. FLECK AND SONS, Hanover Square, London. A pale-flowered sport of *Primula malacoides*, with lighter green foliage and smaller leaves than the type, was the only novelty submitted to the Floral Committee. It was shown by Sir Wm. LAYBURN, Bart., Bureford, Dorking. No award was made to it.

Floral Committee.

President, Messrs. H. B. May (chairman), W. J. Bean, H. Green, Geo. Harlow, C. R. Fiddler, John Heal, Win. Howe, J. F. McLeod, E. Bowles, A. Turner, John Dickson, C. Dixon, H. J. Jones, Chas. E. Pearson, H. Cowley, W. P. Thomson, Geo. Paul, G. Routhie, Jas. Holson and E. H. Jenkins.

Orchid Committee.

President, Sir Jocelyn Colman, Bart. (in the chair); Sir Harry J. Veitch, Messrs. J. Wilson-Putner, Jas. O'Brien (hon. secretary), Frederick J. Hodgey, Patrick Rudi, F. R. Ashton, J. E. Sully, J. C. Cassels (with Arthur Dye, S. W. Foley, and R. A. Rolfe).

Eight novelties were entered to go before the committee, chiefly small plants flowering for the first time, but to a few was made.

Messrs. ARMSTRONG AND BROWN, Orchidhurst, Lurgidale, Wells, staged a selection of hybrid *Odontoglossum* and *Odontiodes* seedling plants with their first flowers, all of a high order of merit. The best varieties were *Odin*, Peerless, a standard *cymum* × *Ossulstunum*, a large and perfect white flower, with a large purple blotch in the middle of each segment; *Odin Peak*, a very large, white, with mahogany red markings; *Odin gaudyensis*, Orchidhurst variety, of fine shape, evenly spotted with clear red; *Odin Meteor*, Sandringham variety, large and finely blotched; *Odin ardentissim*, a pale, violet colour, with white spots; *Odontiodes Amethyst*, *Hall crispum* × *Bradshawiae*, with light yellow flowers bearing a horseshoe-shaped blotch in the middle of each segment.

Messrs. CHERRY-SMITH AND CO., Hayward Heath, showed *Odontoglossum crispum* var. *holtei*, a very fine typical form of *O. crispum*; the handsome *Odontiodes Florence*, *Odin Cooksoniae*, *Odin Doris*; *Laelia Cattleya*, *Sepha*, and *Cattleya Clotho*.

Messrs. HAYSON AND CO., Sandringham, staged a selection of hybrid *Cymbidiums*, including *C. Canbyi*, *C. Alexandri*, *C. Beatrice*, and *C. Schell*, the novelty being *C. Sybil sulphureum*, a large and upright flower tinged with yellow and having light rose markings on the lip.

Messrs. SANDER AND SONS, St. Albans, showed their new *Cymbidium Chaffinch* (*Cottianum* × *Doens*), with broad-petalled white flowers evenly spotted with purple, and showing well the good influence of *C. charnium*, obtained through *C. Cottianum*.

From Baron SINGHPOOR'S collection, The Dell, Englefield Green, came a fine flower of *Cypripedium Envybides*, *Shillanum*, one of the best of the batch raised at The Dell. The dorsal sepal, four inches and a quarter wide, was white with an emerald green base and densely spotted lines of rose purple. The broad petals and lip are yellow tinged with reddish purple, the petals being spotted with the same colour on the inner lobes.

Fruit and Vegetable Committee.

President, Messrs. Jas. C. Cheal (chairman), W. Pomart, J. W. Bates, Owen Thomas, F. A. Buryard, Ed. Harris, and Rev. W. Wilks.

SCOTTISH HORTICULTURAL.

JANUARY 16.—The annual business meeting of this Association was held on this date. Mr. Pirie, the president, was in the chair, and there was an attendance of sixty-five members.

The report by the Council for the session 1916 stated that, with the exception of the holding of its Chrysanthemum show, the ordinary work of the Association had been carried through in every detail, and it was also stated that the Council had decided to hold a series of four small exhibitions in conjunction with the monthly meetings in the current session, for which a schedule of prizes had been prepared.

The financial statement showed a deficit of £29 on the revenue, and that there was a considerable depreciation on the invested capital.

The Marquis of Linlithgow was re-elected honorary president for 1917; Mr. John Phillips, Granton Road Nurseries, Edinburgh, was elected president in succession to Mr. Pirie; and Miss Burton and Mr. M'Hattie were elected to the vacancies in the vice-presidencies. The seven vacancies in the Council were filled by the election of Miss Todd and Messrs. Crichton, Fife, Galloway, James, Macdonald and Taylor, and the secretary and treasurer and auditors were re-elected.

Beonia Mrs. J. A. Peterson was exhibited by Mr. John Downie, Edinburgh.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JANUARY 4. *Committee present*: The Rev. J. Crombholme (in the chair), Messrs. D. A. Cowan, J. Cypher, A. G. Ellwood, J. Evans, A. R. Handley, A. Hamner, D. McLeod, W. Shackleton, H. Thorp, and H. Arthur (secretary).

AWARDS.

FLESH-CLASS CERTIFICATES.

Cymbidium Schlegelii roseum (*Wipacium unguis*), *Odontoglossum Illustworth* (*Illustratum* × *Irreworth*), a finely formed flower of a deep purple colour, both from Dr. CRAVEN MOORE.

Laelia Cattleya Monae (*Octave Don* × *Lambertian*), a flower of perfect form, good colour, and well marked lip, from R. ASHWORTH, Esq.

Cypripedium Marshall Hay (*Chlo*, *The Strawberry* var. × *G. F. Moore*), a well shaped flower with round dorsal and beautifully spotted sepal, from TOM WORSLEY, Esq.

AWARDS OF MERIT.

Laelia Cattleya Sepha (*Islandiae*, *Odontoglossum Black*, *Watch*, and *Cypripedium inaequum* var.), all from R. ASHWORTH, Esq.

Cymbidium Schlegelii Conyngham var., and *Odontoglossum crispum tristes*, from Dr. CRAVEN MOORE.

Cypripedium Verdun (*Chlo* × *Lecanum Arabobryonum*), and *C. Traversyanum* var. *Pray*, from TOM WORSLEY, Esq.

CENTRAL CERTIFICATE.

To Mr. C. BRANCH (gr. to W. R. Lee, Esq.), for *Odontoglossum Colburni*, carrying a beautiful branched flower spike.

GROTES.

R. ASHWORTH, Esq., Newchurch (gr. Mr. Davyport), was awarded a Large Silver Medal for a group of *Cypripediums* and *Odontoglossum crispum*. TOM WORSLEY, Esq., Haslingden, was also awarded a Large Silver Medal for a group composed of *Cypripediums*. Messrs. CYRBER AND SOSS, Cheltenham, were awarded a Silver Medal for a group of *Cypripediums*, *Cattleya Trianae*, *Sophronitis grandiflora*, *Oncidium cheiphoerum* and others.

CROP AND STOCK ON THE HOME FARM.

DAIRY COWS.

The present easterly winds, accompanied with 10 frost, are all against the production of milk, grass is scarce, and hopes for even a fair yield of milk must be based on the supply of artificial food. There are many who think that extra food for cows is not necessary. In such weather as now it is essential. Where a combination of rich milk and a maximum quantity of butter are

required, the dairyman must keep pure-bred animals. Guernsey and Jersey cows are unequalled for high quality produce. I prefer the former breed for three reasons. First, they give more milk in bulk, the animals are hardier, more able to withstand cold, capable of succeeding on heavy soil, and, what is of much importance, they are of more value to the butcher when their milking days are ended, being of larger build. Jersey cows are a trifle richer in their milk and butter yields, but they are apt to grow coarse on heavy, cold soil. Where the highest quality only is considered Jerseys should be preferred.

A cow in full profit would be an animal such as we have here, which calved on December 20 last, and is now giving thirty-two pints (four gallons) milk per day. The eleven cows in milk are producing on an average 7 lbs. butter per week; some three of the animals are approaching the "dry" stage, having calved in March, 1916. In addition to the butter noted, twenty-seven gallons of milk are also consumed during the week from these cows. Does anyone think such results could be achieved by natural food—grass and hay? Such facts should convince the most sceptical of the desirability of high feeding.

I recommend the following food diet per day: Sliced Mangolds of the Tankard type, 50 lbs.; long Hay, 15 lbs.; Bibby dairy cake, 4 lbs.; crushed Oats, 4 lbs. If linseed and cotton cake is used in the place of Bibby cake (which I do not recommend), 2 lbs. each should be given.

The total amount of each is noted for the day, but it should be given to the animals in half quantity twice daily, morning and afternoon.

Some persons object to the use of Mangolds on the score of tainting the butter. If the animals are fed *after* milking no harm will result.

Pigs.

Never has the price of pork and bacon pigs been so high as at the present; small store-pigs may have been equally dear. Scarcity at home and lack of imports are no doubt the cause. To reduce prices the number reared should be largely increased. The high price of food no doubt deters many from increasing their stock. Many have said how valuable is the village pig tub—the offal collected from the cottages known as swill. When used properly with meals much may be done to cheapen the cost of pig food, but when people believe they can keep small pigs on such food alone there is certain to be trouble before long. One of the worst ingredients that all too often finds its way into the swill tub is common soda, used for washing up the dinner-utensils. I would urge a strong caution to all those of inexperience to use carefully such food.

A good type of sow commencing at eight months old will produce five litters within two years; these averaging nine or ten pigs to the litter, will be quite satisfactory. The question will be, what is the best breed to keep. For quick growth, selling as stores at eight weeks old, porkers of from three to four score pounds at four months, or bacon pigs up to ten score pounds. A combination of rate breeds is preferred. A Berkshire boar crossing a large Yorkshire White, or a Middle White Yorkshire with a Large White or Berkshire sow, or a Berkshire boar with a Sussex sow, produce good pigs. I need hardly say that much depends upon the management in judging or estimating results. A sow can be kept cheaply on bran with a small quantity of middlings, Cabbage and Mangold. A run on grass, or in an open yard is an advantage, as exercise is an absolute necessity, even if but for a short time during the day. When the little pigs are four weeks old they should be encouraged to eat in a separate trough away from the mother. Stew milk, with a small quantity of shavings, forms a suitable diet. At five weeks the boar pigs should be castrated; as six weeks, weaned. Feeding them in small quantities three and four times daily, progress will quickly be made. For fatten-

ing older pigs, Baileys meal, Maize meal, and sharps, mixed with milk, if available, is a good mixture.

RENOVATING PASTURES.

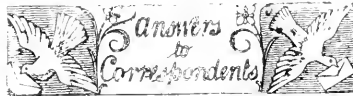
To increase the amount of grass for cattle and the supply of Hay for the Army are points of special importance; all pasture land should be made to yield a maximum quantity. If it will not do that it should be ploughed up and cultivated for a few years, when it might be relaid to grass.

Basic slag is one of the best of stimulants for grassland, especially chalk subsoils, but as it is now too late to apply it to show a beneficial result this season I should defer its use until November. For this season's crop farmyard manure pretty well decayed should be spread at the rate of fifteen tons per acre; failing this, superphosphate 4 cwt. per acre in March would be a good substitute.

Before applying the manure well stir the grass surface, using heavy iron harrows. This will admit the manure to the roots more quickly, and aid in eradicating moss, which in some fields is a nuisance. Until the manure disappears continue to harrow, and finally collect stones and rubbish, preparatory to rolling down firmly in this way consolidating the grass in such a manner that the roots will secure full advantage from the manure.

PEAS FOR STOCK.

The feeding value of Peas is so high that more ought to be grown. Sheep, horses and pigs specially appreciate them. A straw crop sown in the autumn is a good preparation. If farmyard manure was not then available, 4 cwt. superphosphate, sown when sowing the seed in March, is a good substitute. The harrowing necessary to bury the Peas will aid in burying the manure also. Three bushels, weighing 63 lbs. per bushel, per acre of seed is ample. Either drill or sow broadcast. The former is best, as it enables seeding to be more efficiently done. Early Dan is a good variety. *E. Molyneux*



CANADIAN VISITOR TO ENGLAND: *Private C. H.* There are many places in Britain where Fuchsias succeed sufficiently well out-of-doors to form hedges, though, of course, they are not the same varieties as those usually cultivated in glass-houses. Some of the best hedges we have seen are in the gardens at Penrhyn Castle, near Bangor, North Wales, and at the little village of Lee, in Devonshire, a short distance from Ilfracombe. Then in certain parts of Devonshire and Cornwall and in the Isle of Wight Fuchsia hedges may be seen, though not so big and flourishing as in North Wales and near Ilfracombe. In Britain the Mistletoe most commonly grows on Apple trees in the older orchards. It is no doubt common enough in some of the orchards in your present county, Hampshire. You would do well to call at some of the farms, and in this way we think you will easily obtain information of its whereabouts. The firm that distributed Clematis Jackman is G. Jackson and Sons, Woking, a firm that is still flourishing. When you speak of George Mawley we think you mean Edward Mawley, the late secretary of the National Rose Society, whose death occurred a few months ago. The late Mr. Mawley's residence was at "Rusbank," Berkhamsted, in Hertfordshire. If you happen to be in London in June or July you will find good displays of Dwarf Roses at the Royal Gardens, Kew, and the visit there would be interesting to you in many ways. You might also visit some of the Rose nurseries.

MUSHROOMS ON LAWNS. *H. B. H.* You could not expect much success in growing Mushrooms on lawns, unless the soil contains a good quantity of organic material in a suitable condition for the fungus. You would require to spawn the turf; the spawn may be purchased in "bricks," and these would require to be broken into pieces about the size of a Walnut and inserted two inches deep at intervals of a foot or so. It would not be advisable to mow the grass afterwards.

NAME OF FRUIT: *H. T. O.* Blenheim Pippin.

NAMES OF PLANTS: *G. P.* *Odontoglossum Andersonianum*, a natural hybrid between *O. crispum* and *O. gloriosum*.—*W. H. H.* *Asparagus decumbens*; not a rare species, although not so frequently met with in gardens as *A. plumosus*.—*Dublin*, *Skimmia japonica*.

SEED POTATOS: *Constant Reader*. Place the seed tubers of both the early and maincrop varieties in shallow boxes now, putting the boxes in a position where the light reaches them, in order that the shoots of the tubers may grow strong.

STRENGTHS OF LIME SULPHUR: *Enquirer*. Lime-sulphur as sent out by the firms who make it usually tests at 32° to 35°, as shown on the Baumé hydrometer scale, or at 1.2351 to 1.2946 on the ordinary specific gravity hydrometer. The former is much the easier to read. At such a strength one gallon of the concentrated lime-sulphur should be used with 12 to 12½ gallons of water, for use when the trees are dormant, just before the buds begin to burst. After leaves, or even their buds, show, the summer strength—one gallon of the fluid to 40 gallons of water—will be as strong as will be safe. The winter strength will serve for all varieties while they are dormant. The summer strength will serve for all varieties of Plums and for all kinds of Apples except Cox's Orange Pippin, which any wash at all caustic will partially defoliate. Possibly this variety might withstand a 1:50 dilution; but this is doubtful. It is questionable whether it will withstand a wash strong enough to check scab after the foliage is open. On other varieties the ordinary summer strength may be used, if they are subject to scab, just after the blossom has fallen, and again three weeks later.

WINTER WASH FOR FRUIT TREES: *E. H. H.* For old trees with rough bark, moss and lichen, especially when infested with the woolly aphid (the so-called American blight), caustic soda, 20 lb. to 100 gallons of water, is the most effective wash, and may be applied at any time after this while the trees are quite dormant. For trees not in such bad condition, and not affected with brown rot, linewash is preferable, as it cleanses trees of moss, and is believed by some authorities, including fruit growers, to check aphid attack, either by coating the eggs of the pest so as to stifle the aphides when just hatched, or at least to hamper them so that many of them perish. For the latter purpose the wash should be as thick as can be got through a sprayer with a coarse nozzle made especially for linewash, 1½ cwt. to 2 cwt. of quicklime to 100 gallons of water. The lime should be gradually slaked, stirring frequently, and not diluted more than necessary until it is fully slaked. For Apples or Plums affected with brown rot lime-sulphur is to be preferred as a possible though doubtful check, and this is the wash to use on Plums to prevent bud-eating by birds, immediately after an attack begins. Apart from its use against bud-eating, the best time to spray is when the buds are on the point of bursting, and this is the case also for linewash. For use while trees are dormant 12 gallons of lime-sulphur of the strength usually supplied by firms who make it should be used in 100 gallons of water. See answer to *Enquirer*.

Communications Received.—*W. Brooke*, G. Morgan, A. J. R. Fatio, A. O. J. J. M., H. P. E. L. T. M. R., W. F. E. A. H., W. C. G., S. R., F. W. W. L., A. S. P. R. Lovett, T. P. C. M., C. M. C. D., H. E. B. W. R., New York—*F. W. M.*

(Continued from page ii.)

WANTED, a WORKING HEAD GARDENER (ineligible for the Army), where two others are kept. Hardy Fruit & Vegetables a speciality; must be well recommended.—Apply to E. MOLINEUX, Swanmore Park, Bishop's Waltham, Hants.

WANTED, GARDENER (HEAD WORKING); ineligible; one under; understand land and stock; cowman kept; wife undertake small dairy; house in garden.—Write age, wages, family, &c., COLONEL STRATTON, Little Berkhamsted, Hertford, Herts.

WANTED, HEAD WORKING GARDENER, thoroughly experienced, and, if possible, with knowledge of stock; man and wife or son old enough to act as Second, and attend poultry and pigs preferred.—Write full experience, age, family, wages, with copies of testimonials (house, coals, wood, and vegetables free). PRES-COTT, Highlands, Wokingham.

WANTED, HEAD WORKING GARDENER, where 3 are kept; very little Glass; able to work electric light plant; situation close to small town in Hampshire; good house.—Apply, stating experience and wages required, J. P., c/o Stanesby's Library, 179, Sloane Street, S.W.

WANTED, by a Lady, a good HEAD WORKING GARDENER and four UNDER GARDENERS; lady gardeners may apply. — MRS. POLE, Beech Hill, Englefield Green, Surrey.

WANTED, a MAN to take charge of Vineries and Peach-houses; wages 50s. per week and Botby.—Apply, C. ALLEN, Estate Office, Worth Park, Crawley, Sussex.

WANTED, GARDENER (SINGLE-HANDED), Vegetables and Flowers; about half an acre; 2 Glass-houses; good wages to competent man. Apply, after 6, "Wentworth," Carshalton Road, Sutton, Surrey.

WANTED, SINGLE-HANDED GARDENER; married or single; ineligible; permanency; help given.—State wages to MR. GROTRIAN, Pirton Hall, Hitchin, Herts.

WANTED, SINGLE-HANDED GARDENER; wages 35s.—Apply, MISS HORNBY, Elen Dale, Creswick Road, Aston, W.

WANTED, GARDENER (SINGLE-HANDED); no glass. Kitchen and Flower Garden, ineligible, assistant, wages 22s. to 28s. and three-roomed cottage.—Apply, J. LOVELL PETERS, Charlwood, Oxshott, Surrey.

WANTED, Single-handed GARDENER; permanency; Flowers, Kitchen Garden, and Fruit; no Glass; cottage in garden. Apply, CHARLES NOAKES, Heronden, Basingstoke.

WANTED, SECOND GARDENER, in eligible, for Inside and Outside also to assist with electric light plant; wages 25s., with ledge, fuel, and light free.—Apply, ALFRED WILLIAMS, Wiltonghys, Oxshott, Surrey.

WANTED, GARDENER; good all-round; must understand Flowers under glass; ineligible; or woman would do; help given. State wages required. References to MR. BIRRELL, Bentley Heath, Barnet, Herts.

WANTED, GARDENER, during war, experienced, capable man; help given; very pretty place, Devonshire. State terms. Box 14, c/o W. H. SMITH & SON, Kingsway, London, W.C.

WANTED, GARDENER; used to Green-house work, &c.; Inside and Out; wages 30s. weekly.—TAYLOR, 85, Hook Road, Epsom.

WANTED, good WORKING GARDENER; not over 50; must thoroughly understand Vegetables and Flowers.—Apply, Wheatheaf Hotel, Virginia Water.

WANTED, a WORKING GARDENER; one with knowledge of Grapes, &c.; ineligible for the Army; 4-roomed cottage, with coals and gas, wages 24s.—Apply personally, or by letter, LYNDHURST, 46, Akrington Road, Streatham Park, S.W.

WANTED, immediately, UNDER GARDENER at Rydal Hall, Ambleside; no Botby.—Apply, stating age, experience, and wages required, to CLAUDE BARTON, Ingleborough Estate Office, Clepham, Yorks.

WANTED, UNDER GARDENER, for Inside and Outside; good wages to a competent man; comfortable Botby.—Reply, stating experience, to A. BRADBURY, Bryn Lapis, Llandudno.

WANTED, GARDENER-GROOM; cottage in Sussex; discharged soldier or sailor preferred; married.—Write, HONBLE MRS. MORRIS, 66A, Elizabeth Street, Eaton Square.

LADY GARDENERS are wanted for (1) Surrey, as UNDER, large estate, some previous experience essential, Head Man Gardener and 6 Under Gardeners kept. (2) Herts, as UNDER, 20 acres, Head Man Gardener and 4 other Gardeners kept, some previous experience and good knowledge of poultry essential. (3) Two wanted to work under Head Man Gardener for a military hospital, some experience. (4) Salop, two wanted as Head and Under; large garden, with grass and fruit; 3 Under Gardeners and boy kept. (5) Wales, two wanted, to work under Head Man Gardener, for a Market Garden, dig and use a mower, and keep-law in order. Lady Gardeners are wanted entirely free of charge.—MRS. HUNT, LTD., 55, High Street, Marylebone.

WANTED, for Large Gardens in the Midlands, TWO LADY GARDENERS, one Inside and one Out, to work under Head; must be experienced, furnished lodgings, and 30s. per week salary.—Write, T. H., Box 18, 41, Wellington Street, Covent Garden, W.C.

WANTED, Two WOMEN GARDENERS Inside and Out; must have practical experience; 12 Glass-houses. Particulars, wages, &c., with Botby, T. RIDLEY, The Gardens, Nidd Hall, Harrogate.

WANTED, a FOREMAN GARDENER, in Northumberland (single-hand); experienced. Inside and Out; good wages given; Botby and usual allowances.—Apply, stating age, experience, and particulars, with references, to N. D. COWANS, West Laburn, Alnwick.

WANTED, good KITCHEN GARDENER FOREMAN for gentlemen's place in Surrey; experienced in all kinds of Vegetables, early and late forcing, also salads; married man preferred; wages 20s. to 25s. weekly, with cottage.—Apply, stating full particulars, to W. GROOM, c/o Mr. Collyer, Dagnall, Great Berkhamsted, Herts.

SITUATIONS VACANT continued on page vii

STANDARD CURRANTS

We can offer fine trees with 4½ ft. stems, stout enough to stand without stakes, at 5/- each.

Extra strong heads 7/6 each.

GEORGE BUNYARD & CO., LTD.

Royal Nurseries, MAIDSTONE.

THOMSON'S VINE, PLANT & VEGETABLE MANURE

Famous for over 30 Years.

Ensures success in your garden; is compounded from the finest ingredients, procurable as to combine **STIMULATING** with **LASTING** effects, producing in every crop vigorous, healthy and fruitful growth.

THE DIRECT RESULT OF LONG PRACTICAL experience in gardening. Used by Amateur and Professional Gardeners the world over.

ALSO

THOMSON'S SPECIAL CHRYSANTHEMUM AND TOP DRESSING MANURE.

Prices—Vine, Plant and Vegetable Manure, 11 cwt., 20/-; 50 lbs., 12/6; 25 lbs., 7/6; 14 lbs., 4/6; 7 lbs., 2/6. This 2 1/2, and 1/2, and 1/4.

Car. paid anywhere on 50 lbs. and up.

Special Chrysanthemum and Top Dressing Manure—50 lbs., 20/-; 25 lbs., 11/6; 14 lbs., 6/-; 7 lbs., 3/6; 1 1/2, Car. pd anywhere on 25 lbs. and up.

Sold by all Seedsmen or FROM

SOLE MAKERS

W. THOMSON & SONS LTD CLIFTON, N.B.

Ammanford and Pontyberem Collieries.

SOLE AGENT:

T. T. PASCOE,

York Chambers,

SWANSEA.

Tele { phone 1048 Central.
grams Pascoe, Swansea.

Best Anthracite Large Coal for Horticultural purposes and Cobbles for House Furnaces.

Quick Despatch. Best Quality.

Lowest Prices.

MARKETS.

COVENT GARDEN, January 31

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eds.

Cut Flowers, &c.: Average Wholesale Prices.

Arums per doz.	s.d. s.d.	Lilium ..	s.d. s.d.
Azalea, white.	8 0 10 0	lancifolium	3 6 4 0
Camellia white	8 0 9 0	album long.	3 0 3 6
per doz. blms.	4 0 16	— short	3 0 3 6
Carnations, per		— rubrum.	
doz., blooms		per doz. long.	4 0 4 6
best American		— short	3 6 4 0
varieties ..	4 0 5 0	Lily-of-the-Valle	24 0 30 0
— Carolina (crim-)		Narcissus s. s.	
son) ex larg.	5 0 5 6	per doz. bus.	5 0 6 0
Chrysanthemum,		— Pheasant Eye	12 0 15 0
white per		per doz. bun.	12 0 15 0
doz. blooms.	4 0 5 0	— Soliel d'Or.	
Daffodil, single,		Guernsey, per	
per doz. bun.	12 0 15 0	doz. bun. ..	10 0 12 0
— double, D. R.		Orchids, per doz.	
doz. bun.	12 0 15 0	— Cattleya ..	15 0 18 0
Eucharis, per doz.	3 0 3 6	— Cypripedium	2 0 3 0
blooms ..		— Odontogloss-	
Freesia, per doz.		um crispum	3 0 4 0
bun. ..	3 0 3 6	Pelargonium, per	
Gardenias, per		doz. bunches,	
box of 12 and		double scarlet	15 0 18 0
18 blooms ..		Tulip, white, per	
Heather, white,		doz. bun.	30 0 36 0
per doz. bun.	12 0	— Violets, single	
Lilium longi-		Princess of	
florum, long	6 6 7 0	Wales ..	4 0 5 0
— short ..	6 6 7 0		

Cut Foliage, &c.: Average Wholesale Prices

Adiantum (Maiden-	s.d. s.d.	Cycas leaves, per	s.d. s.d.
hair Fern)		doz. ..	5 0 12 0
best, per doz.		Fern, French, per	
bunches	9 0 10 0	doz. bunches	0 6 0 8
Asparagus plu-		— common ..	3 0 4 0
mosus, long		Ivy leaves, per	
trails ..		doz. bun. ..	2 0 2 6
— half dozen	2 6 3 0	Moss, gross	
— medium,		per doz. bun.	7 0 8 0
doz. bunches	12 0 18 0	Myrtle, doz. bun.	
— Sprengerii ..	8 0 12 0	small-leaved	6 0 —
Bronze foliage ..	3 0 6 0	— French, per	
Carnation foliage,		doz. bunches	10 0 13
doz. bunches	4 0 5 0	Smilax	
Croton foliage		per doz. per bun.	
doz. bunches	12 0 15 0	of 6 trails ..	1 3 1 6

French Flowers, &c.: Average Wholesale Prices.

Ane none, double	s.d. s.d.	Narcissus, con.	s.d. s.d.
pink, per doz.		— Sol d'Or, per	
bun. ..	3 6 4 6	doz. bun. of 6	4 0 4 6
— single, mixed		Ranunculus, per	
per doz. bun.	12 0 15 0	doz. bun.	6 0 8 0
Lilac, white, per		— Carmine, per	
doz. spray ..	4 6 6 0	d. z. bun. ..	8 0 9 0
Mimosa (Acacia)		— R. v. a. n. g.	
per doz. bun.	10 0 12 0	scarlet, per	
Narcissus paper		doz. bun. ..	15 0 18 0
white, per doz.		Violets, single,	
bun. ..	3 6 4 0	per doz. bun.	3 0 4 0

REMARKS. It is many years since there was such a shortage of cut flowers in Covent Garden. Azaleas, Carnations, Daffodils, Richardias (Arums), Lilium longiflorum, L. lancifolium album, Lily-of-the-Valley, and a few Tulips are the principal flowers on sale from home growers, and there is only a limited supply of these. Prices are again higher generally. There is also a shortage of flowers from Guernsey and Sicily in flowers reached the market from these islands on Monday last. Practically all the French flowers that worked out and up to this morning reached the market in an almost unbreakable condition. The majority of the white Narcissus and Violets could be fitted out in the buckets in a solid top block. French flowers are more in demand at this time of the year, as Chrysanthemums are in shell and other home grown flowers, such as White Tulips, are almost unobtainable, and all white flowers are realising almost record prices.

Plants in Pots, &c.: Average Wholesale Prices.

Aralia Sieboldii,	s.d. s.d.	Cocos Weddell-	s.d. s.d.
dozen ..	5 0 6 0	ana, 48's, per	
Asparagus plu-		doz. ..	18 0 30 0
mosus nanaus,		— 60's per doz.	8 0 10 0
per doz.	10 0 12 0	Croton per doz.	18 0 30 0
— Sprengerii ..	8 0 10 0	Erica gracilis,	
Aspidistra, per		doz. ..	10 0 12
doz. green ..	4 0 36 0	— hyemalis, ..	
Cacti, various,		— hyemalis, in	
per tray of 15's	4 0	thumbs ..	4 0 16 0
— tray of 12's ..	5 0		

Plants in Pots, &c.: Average Wholesale Prices.—con.

Ferns, in thumbs,	s.d. s.d.	Lantana borbon-	s.d. s.d.
per 100, ..	10 0 15 0	ica, per doz.	12 0 30 0
— per 100, in		Lilium longi-	
small and		florum, per	
large 60's ..	14 0 24 0	doz. ..	36 0 42 0
— in 48's, per doz.	6 0 7 0	— lancifolium	
— in 32's, per	4 0 8 0	rubrum ..	24 0 30 0
— doz. ..	12 0 18 0	— album ..	24 0 30 0
— choicer sorts,		Marguerites, in	
per doz. 48's ..	8 0 12 0	48's, per doz.	12 0 —
Geonoms, gracilis,		Pandanus Veitchii,	
per doz. ..	6 0 8 0	per doz. ..	36 0 48 0
— larger, each ..	2 6 7 6	Phoenix rudi-	
Kentia Belmore-		cola, each ..	12 6 21 0
— larger, per		Roman Hyacinths	
doz. ..	18 0 36 0	per box 24's ..	8 0 10 0
— Forsteriana,		Spiraea, per doz.	12 0 15 0
60's, per doz. ..	5 0 8 0		

REMARKS. Owing to the cold weather business is at a standstill in this department.

Vegetables: Average Wholesale Prices.

Artichokes, Globe,	s.d. s.d.	Leeks, per doz.	s.d. s.d.
— Jerusalem,	4 0 6 0	Letting, Cablage,	6 0 8 0
per bag ..	10 0 —	per doz. ..	1 6 2 0
Asparagus Paris		Mustards and	
Green, per doz.	5 0 6 0	Cress, per doz.	
Beetroot, per bus.	4 6 6 0	bunnets ..	1 0 1 6
Beans, English,		Onions, per bag	18 0 22 0
per lb. ..	3 6 4 0	— spring, per	
Broccoli, purple		doz. bun. ..	8 0 —
sprouting, per		Parsnips, per bus.	4 0 6 0
bus. ..	4 6 —	Peas, per lb. ..	
Brussels Sprouts,		Potatoes, new,	
per bus. ..	7 6 —	per lb. ..	0 8 0 9
Calif. & G. per		Radishes, per	
tally ..	5 0 10 0	doz. bun. ..	1 6 2 6
Carrots, per bag	11 0 —	Rhubarb forced,	
Caulowers, per		per doz. ..	1 6 2 0
tally ..	10 0 30 0	Savoys, per tally	8 0 12 0
Celery, per doz.	2 0 6 0	Seakale, per doz.	
Cucumbers, per		bunnets ..	24 0 —
doz. ..	14 0 30 0	Shallots, per lb.	0 5 0 6
— doz. ..	12 0 24 0	Spinach, per bus.	12 0 —
Endive, per doz.	4 0 —	Swedes, per bag	6 0 —
Greens, per bag,	6 0 —	Tomatoes, Tene-	
Garlic, per cwt.	44 0 —	riffe, per	
Herbs, per doz.		bundle ..	18 0 28 0
bun. ..	2 0 6 0	Turnips, new, per	
Horseradish, per		bag ..	11 6 —
ton ..	42 0 —	— Tops, per bag	6 0 —
		Watercress, per	
		doz. ..	0 9 1 0

Fruit: Average Wholesale Prices.

Almonds, per	s.d. s.d.	Grapes: Almeria,	s.d. s.d.
cwt. ..	70 0 —	per brl. ..	16 0 25 0
Apples—		— Alicante ..	1 3 2 6
— Californian		— Gros Colman	1 4 3 0
New to wns,		per lb. ..	1 2 0 0
per doz. ..	12 6 14 0	— Muscats, per	
— English		lb. ..	12 0 15 0
Cooking, per		Grape Fruit, per	
bus. ..	11 0 12 0	case ..	16 0 20 0
— Scotch, ..		Kent Cobs, per lb.	1 0 1 3
barrels ..	29 0 38 0	Lemons, per case	14 0 25 0
— Oregon, per		Nectarines, per	
case ..	14 0 17 0	box ..	5 0 10 0
Appricots, per box	4 0 6 0	Nuts, Brazils,	
— Medium ..	18 0 —	new, per cwt.	90 0 —
— X-medium ..	18 0 —	— Coconut, per	
— Double X ..	24 0 —	100 ..	31 0 32 0
— Giants ..	28 0 30 0	Oranges, per case	16 0 42 0
— Red, per ton	£25 0	— Peaches, per box	4 0 10 0
— Jamaica, per		Pears—	
ton ..	£18 —	— Californian	15 0 22 0
Chestnuts, per		Pungers, per box	4 0 8 0
bag ..	22 0 26 0	Tangerines, per	
Cranberries, per		box ..	10 5 6
case ..	19 0 20 0	Walnuts ..	56 0 85 0
Dates, per doz.	7 0 7 6		

REMARKS. There are fewer supplies of English Apples, but imported Apples are fairly numerous; the over-sea fruits are sent principally in boxes. Pear-commodity stocks in London are very small. A consignment of fruit is due to arrive from Cape Colony. Old black grapes there are sufficient to the demand. Some good samples of Teneffe Tomatoes are obtainable. Canary Bananas continue to be a short supply. Vegetables, both dried and outdoor, are scarce and expensive. F. H. R. Covent Garden Market, January 31, 1917.

Potatoes.

Bedford—	s.d. s.d.	Lincoln—con.	s.d. s.d.
King Edward ..	10 6 11 6	Blackland ..	10 6 11 6
— Arran Chief ..	10 6 11 6	Evergood ..	10 6 11 6
Lincoln		King Edward ..	11 0 12 6
— Arran Chief ..	11 6 12 0	Queen ..	11 0 12 6

REMARKS. Trade is about the same as last week. Few buyers are arriving on account of the frost, consequently stocks in London are very small. Edward J. Venburn, Covent Garden and St. Pancras, January 31, 1917.

DEBATING SOCIETIES.

BRISTOL AND DISTRICT GARDENERS'. The usual monthly meeting of this Association was held at St. John's Parish Rooms on the 25th ult., Mr. V. Bernard presiding. There was an excellent attendance to hear Mr. B. T. Barker, M.A., give a lecture on "The Apple." The prizes, kindly given by Dr. Shingleton Smith, for two dishes of Apples, produced a good competition, and were won by Mr. Scott (1), Mr. Clark (2), and Mr. Bird (3).

CATALOGUES RECEIVED.

T. S. WADE, LTD., Feltham—Burgins.
JAMES H. DENN, Bourne-mouth—Fruit Seeds.

GARDENING APPOINTMENTS.

Mr. W. Payne, for the past 9 years Gardener to Sir H. F. and Lady DONALDSON, Wood Lodge, Shooters Hill, Kent, as Gardener to SIR WILLIAM CORRY, Bart., Norbury Park, Dorking, Surrey. [Thanks for donation to R.G.O.F. Eds.]
Mr. O. C. Walton for the past seven years at The Rookery Gardens, Westcott, Dorking, previously Head Gardener at Colley Manor, Reigate Heath, as Gardener to Col. O. H. OAKES, Newton Court, Bury St. Edmunds, Suffolk.

Do Not Forget the Gardener-Soldiers.

"Many thanks for the GARDENERS' CHRONICLE, which I have received safely each week through the kindness of Lady Theodora Guest. You will see that I am now in Mesopotamia. The CHRONICLE is very welcome to me out here; it seems good to read all the news in the old paper, and surely the GARDENERS' CHRONICLE is the king of all gardening papers."

This letter was sent us by a soldier in the Mesopotamia Force. YOUR soldier friend, who was a gardener before he went to the front, is a gardener still in sympathies and interests. HE longs to know what is going on in the gardening world now, and has no means of knowing unless YOU help him. Send him the GARDENERS' CHRONICLE. Keep him in touch with current gardening affairs. He will be most grateful for such an act of friendship. Send us a subscription for half-a-year—8s. 9d.—and we will take all the responsibility of sending the paper regularly to your friend, also reminding you patiently when the subscription is about to expire.

Write to us now, and give us his address.

41, WELLINGTON ST., STRAND, LONDON, W.C.

Continued from page v.

WANTED, a FOREMAN GARDENER, for large Gardens in the Midlands, to work under Head; must be well up in Grapes, Peaches and Chrysanthemums; wages, 30s. per week and good Body.—Write, S. M., Box 19, 41, Wellington Street, Covent Garden, W.C.

WANTED, FOREMAN (INSIDE); ineligible; wages 35s. per week; 1 p.m. Saturdays.—HEAD GARDENER, Caldecote Towers Gardens, Busby Heath, Watford.

WANTED, good PLEASURE GROUND FOREMAN for gentlemen's place in Surrey; experienced in all kinds of Shrubs and Herbaceous Borders, Flower Beds, &c.; wages, 30s. to 32s. weekly, with outwork. Apply, stating full particulars, to W. GROOM, c/o Mr. Golleyer, Duglall, Great Berkhamstead, Herts.

WANTED, a YOUNG MAN with some experience, for Inside chiefly; ineligible.—Full particulars to W. PHILLIPS, Leighton Hall Gardens, Ironbridge, Shropshire.

WANTED, Active Young Man for Pleasure Grounds and Rockery; able to take duty; Wages 21s. per week.—Apply, C. HOWES, Court Street House, Faversham, Kent.

WANTED, strong YOUTH, about 17 years; Inside; wages 20s., Botby, milk, vegetables; 3s. duty alternate weeks; 6d. per hour overtime; 1 o'clock Saturdays.—Apply, A. BALLARD, Glanusk Park Gardens, Crickhowell.

WANTED, in good garden, 2 experienced IMPROVERS for Inside; age 17; wages 18s., rising 19s. weekly; Botby, milk, vegetables; os. pd. duty every fourth week; 6d. per hour overtime; 1 o'clock Saturday.—Apply, H. LLOYD, Trewm Water Gardens, Welwyn, Herts.

WANTED, Three YOUTHS, about 16 years, for Inside work; 18s. per week; Botby, milk, and vegetables; duty 3s. overtime; 1 o'clock Saturday.—Full particulars, H. CHANDLER, Coombe Abbey Gardens, Coventry.

WANTED, YOUTH, age about 16, as IMPROVER (Inside and Out); wages 17s. and Botby.—E. MORGAN, Wassand Hall Gardens, Hull.

WANTED, active YOUTH, for Houses; wages to commence 15s.; Botby; Sunday duty paid; 1 o'clock Saturday.—Apply, J. HOWARD, Benham Park Gardens, Newbury.

WANTED, Married Couple, as CARE-TAKERS; man Working Gardener, willing to learn electric light plant; wife cook or housemaid; good wages.—ALYSSA WILLIAMS, Esq., Berkeley House, Hay Hill, W.

TRADE.

WANTED, MANAGER, for First-class Florist and Fruiterer's business in the provinces; must be good Salesman and thoroughly conversant with high-class trade; State salary, experience, age, &c., to B., Box 22, 41, Wellington Street, Covent Garden, W.C.

WANTED, as WORKING MANAGER of small Nursery under Glass; Tomato grower and practical man; wages 40s. per week and bonus; permanent.—Apply, ELMHURST NURSERY, LTD., Appley Street, Chesham.

WANTED, FOREMAN on Landscape work, to work with and look after his men; State age, wages required, references, and previous experience, to W. H., Box 3, 41, Wellington Street, Covent Garden, W.C.

EXPERIENCED CHARGE HANDS wanted for Palms, Ferns and Vines; wages 30s. per week and 6d. per hour overtime; Sunday duty extra.—THOMAS ROCHFORD & SONS, LTD., Turford Hill Nurseries, near Broxbourne, Herts

WANTED, a good PROPAGATOR and GROWER; one used to Roses, Clematis, Chrysanthemums, and General Nursery Stock.—Apply, with particulars, wages, &c., to THE DEVON ROSERY AND FRUIT FARM, LTD., Torquay.

ROSE PROPAGATOR & GROWER under Glass and Out-side. STUART LOW & CO have an opening for a capable man, consequent on their present Foreman being called to the Colonies.—Bush Hill Park, Middlesex.

WANTED, for large Midland Nursery, an experienced Budler and Grafter, with a good knowledge of Rhododendrons, Roses and Fruit Trees, also the experienced KNIFE-MAN. Apply by letter, stating age, references, and wages required, X., Box 21, 41, Wellington Street, Covent Garden, W.C.

WANTED, good KNIFE-MAN; well up in Budding, Grafting, and Training of Fruit Trees; permanent situation to reliable man; ineligible.—Full particulars as to references, wages, &c., to W. PEHRINS & SON, Billing, Road Nurseries, Northampton.

WANTED, a careful, WORKING GARDENER for trial grounds; testing and saving Seeds, growing Vegetables and Flowers, &c.—HARRISON & SOSS, Seed Merchants, Leicester.

WANTED, MEN well up in Tomatos and Cucumbers; cottages free.—Write, L. J., Box 2, 41, Wellington Street, Covent Garden, W.C.

WANTED, LADY GARDENER, Tomatos, Chloery, Asparagus, &c., grown.—State experience, age, refs., wages, to MANAGER, Clifton Fruit Growers, York.

WANTED, MEN, ineligible, for Soft-wooded stuff, Chrysanthemums, Tomatos and Cucumbers, &c.—G. BENNETT & SON, Hanwell, W.

WANTED, capable MAN, for Market Nursery; ineligible; used to Tomatos, Ferns, &c. State wages, age, with copies of refs., EWART COOK, Park Nurseries, Hutton, Essex.

WANTED, 4 good HANDYMEN for Gardening, good Spadenmen, for Jobbing; good wages.—Apply, WALLACE & SON, 191, Clarkston Road, Cathcart.

SEED TRADE.—Wanted, SHOP-MAN, with a good knowledge of Garden and Agricultural Seeds.—Apply, stating age, where last employed, and wages asked, to JOHN JEFFERIES & SON, LTD., Green-croft.

WANTED, ASSISTANT for busy Shop trade; well up in Seeds and Plants.—Apply, with full particulars, to E. PAUL & CO., Seedsmen, 6, Wormwood Street, E.C.

WANTED, MALE or FEMALE, for Seed and Florist shop.—State experience and full particulars to CUNDY, Nurseryman, Sudbury, Suffolk.

WANTED, YOUNG LADY, must be good Saleswoman.—CLEMENT LEROY, 153, Notting Hill Gate.

FLORIST, Young Lady ASSISTANT Wanted, good references, required.—Apply, G. CLARKE, 54, Rue Lane, Pockham, S.E.

SITUATIONS WANTED.

Twenty-six words for 1s, and 6d. for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

PRIVATE.

GARDENER BAILIFF; life experience in all branches; Gardening, Inside and Out; practical knowledge of stone and farm work; age 41; abstainer; married; state wages.—CULD, Rowington, Warwick.

MISS ANSON, Pusey House, Farnhamton, Berkshire, highly recommends her Head Gardener, C. JONES, to any lady or gentleman requiring a thoroughly experienced man as Head in large establishment, has been with the late Sir W. R. Anson, Bt, and Miss Anson, 14 years as Head, and leaves only because of age expiring; understands electric light plant and stock if required; age 43; ineligible.—Apply, C. JONES, as above.

GENTLEMAN recommends his GARDENER (HEAD), hard working; abstainer; age 43; one daughter (42 years).—F. FULLER, 2, The Lodge Cottage, North Malvern Road, Gt. Malvern.

HEAD GARDENER, Protestant, age 45, married; 12 years in present situation; discharged on 1st March owing to breaking-up of establishment; highest testimonials as to character and efficiency in all branches. Address, JAMES LAW, Glenarrig, Delganey, Co. Wicklow, Ireland.

GARDENER (HEAD), through breaking up establishment, seeks re-employment; 16 years last situation; good references; married.—D. BETTS, 8, St David's Terrace, Evesley.

W. HIGGS, HEAD GARDENER, Felcham Park, Leatherhead, seeks re-employment; life experience in all branches; successful exhibitor. Address as above.

GARDENER (HEAD) seeks Situation, experienced Glass, Flowers, Fruit, Vegetables (where Vegetables and Fruit is a speciality preferably); age 30; married; finally respected.—Apply, W. BINNING, 1, Kent Street, Chesham, Som.

GARDENER (HEAD, where 2 or 3 kept); good experience Inside and Out; married; in charge of H. GREEN, Myrtle Cottage, Medfield Road, Langley, Bucks.

GARDENER (HEAD OF SINGLE HANDED); experienced Inside and Out; age 47; married (no family); 5 and 7 years' excellent refs.; abstainer; liberty when suited; good cottage. — Apply, GARDENER, 20, Elmwood Road, Higher Tramere, Birkenhead.

GENTLEMAN highly recommends his GARDENER (HEAD WORKING); 3 or 4 kept; practical life experience; thoroughly reliable and industrious; married; age 40; ineligible. Please state wages.—BARRETT, Hatfield Heath, near Harlow.

GARDENER (HEAD WORKING) seeks Situation; good references; age 31; ineligible.—5, Westbrook Place, Ospringe, Faversham, Kent.

GARDENER (HEAD WORKING); 30 years all-round practical experience in gentlemen's large establishments; strongly recommended; management, trustworthiness, ability; tenantry Head here; 14 years' Head previous; age 45; two children.—E. RITLAND, The Gardens, High Ashurst, Dorking.

GARDENER (HEAD WORKING) seeks Situation, where 3 or 4 are kept; life experience Inside and Out; age 46; married (no family). Please state wages.—G. STEVENS, The Cottage, Heron Court, Brentwood, Essex.

GARDENER (HEAD WORKING); life experience in all branches; 12 years last place; good references; age 43; married.—J. ISON, Ryush Green, near Reading.

GARDENER (HEAD WORKING) seeks Re-employment; thoroughly experienced in all branches, including Orchids, Carnations, Herbaceous and Alpines; 17 years' Head in present situation; highly recommended; married; age 43.—H. F. WARREN, The Gardens, Hightield, Gainsborough.

GARDENER (HEAD WORKING), where several are kept; life experience in all branches; age 45; married (no family); 13 years in present place; Kent or Sussex preferred; discharged February 17. Please state wages. W. BARNES, St Leonard's Lodge, Clever, Windsor.

GARDENER (HEAD WORKING), where several are kept; life experience; excellent references; married; ineligible; age 39; 12 years in present situation.—CLEMENT, Gardens, Edgof, Tamworth, Staffs.

TWO LADY GARDENERS require situation in private country place, Glass preferred; good experience and references.—Apply, G. GARDENERS, Alchester, 30, Farnham Road, Guildford.

LADY desires Re-employment, COM-PANION-GARDENER, or work with other Ladies under Head; live in; excellent references, middle aged; Hampshire or Surrey.—MISS EGGAR, Longparish, Hants.

YOUNG WOMAN seeks Situation as UNDER GARDENER; under experienced Head, some experience; South preferred.—E. BROOKS, 50, Diamond Road, Slough, Bucks.

FOREMAN (GENERAL) in good establishment.—I will be pleased to recommend W. FARMER, King 31, who has been here over 2 years; exempted from military service.—Full particulars, MERRADLE, Kingswood, Englishfield Green, Surrey.

MAN (ineligible), 30, seeks situation in Gardens, London district, Inside or Out; some experience; understands duty; willing; good references.—W. G. BRISTOW, 48, Dymock Street, Fulham.

GARDENER'S SON seeks Situation as IMPROVER; age nearly 16; 2 years' experience Inside and Out; good character; state wages, with Body.—WATKINS, Grange Gardens, Claines, Worcester.

TRADE.

ADVERTISER, educated, would manage a development land for production, farm, garden produce, intensive crops, pigs, poultry, forage crops for dairy cows, Fruit, Tomatos, instruct disabled soldiers or women workers, could establish very profitable industry, employing women all year round.—Address, Strathmore, Lamberpath, Angsey.

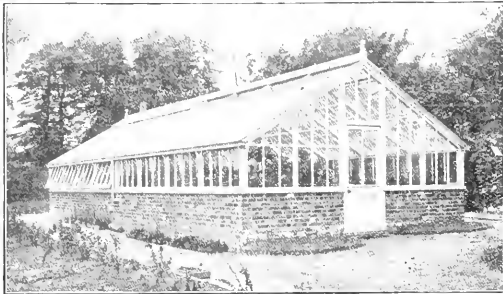
MANAGER, life experience, seeks Re-employment; full knowledge of Glass Culture, Tomatos, Cucumbers, Forced Fruit, Ferns, Palms, Flowers, &c.; also Fruit, Vegetables, Sheds, for outside growing and marketing same; married; age 44; not eligible. State wages and particulars.—L. F., Box 17, 41, Wellington Street, Covent Garden, W.C.

FLORIST, as Managers; high-class business, excellent references.—H. T., Box 1, 41, Wellington Street, Covent Garden, W.C.

YOUNG MAN, ineligible, wishes Situation; 5 years' experience Inside and Out; also discharged Soldier, with one year's experience; marked gardening preferred.—ERNEST MITCHELL, Burrough Hill, Milton Mowbray, Leicestershire.

TWO LADY GARDENERS (experienced) require Jobbing work in London and suburbs; Glass work, Potting, and all Vegetable specialities.—O. B., 7, Crown Office Row, Temple, London.

W. RICHARDSON & CO., DARLINGTON.



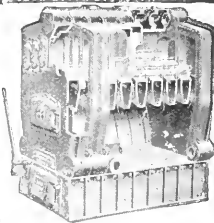
**HORTICULTURAL BUILDERS
and HEATING ENGINEERS.**

PLANS and ESTIMATES prepared free of cost.
REPRESENTATIVES sent to any part of the Kingdom to advise and take particulars.
LARGE CATALOGUE of photographic views of Horticultural Buildings free on application.
GARDEN FRAMES, GARDEN SEATS, &c., supplied from stock.

LONDON OFFICE: BELGRAVIA CHAMBERS, VICTORIA STREET, S.W.



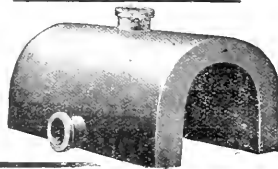
The "Horse Shoe" Boiler.
R.H.S. GOLD & SILVER MEDALS.



BOILERS.

For House and Greenhouse. ::
 Sectional, Saddle and other Patterns
 for Replacement, &c. ::

FROM STOCK.



List C2 Post Free. Phone: Hop 372.

C. P. KINNELL & CO., LD.,
 65a, SOUTHWARK ST., LONDON, S.E.
 (Close to Hop Exchange.)

SANKEY'S FAMOUS GARDEN POTS
 The **BEST** and **Cheapest**.
 State quantity of each size required and have "carriage paid" quotation ("carriage" frequently amounts to half value of goods) for water for Price List free.
SPECIAL POTS of all descriptions. Both Bowland Fern Pans from 2d. each.
RICHARD SANKEY & SON, LTD.
 Bulwell Potteries, NOTTINGHAM.

"They come out of their holes to die"
LIVERPOOL VIRUS
exterminates
RATS & MICE.
 No unpleasantness and danger from smells. It is quite harmless to man and domestic animals. Is thus ready prepared with bait; for Rats 2/6 & 8/-; for Mice 1/8. Of all chemists. Write for particulars to:
KYANG BONE DISCHER & WEBB, Ltd., 56, Manover St., Liverpool.

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
 per
 Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
 Now
 Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE EUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY By C. H. CURTIS, late Hon. Sec of the National Sweet Pea Society.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No 3972

No. 1572. VOL. LXI. {THIRD} SATURDAY, FEBRUARY 10, 1917. {Registered as a Newspaper. PRICE 3d.

SUBSCRIPTION—Inland, 15-1 Foreign, 17/6 (22/1r. 10c.) [\$4 26c.] per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543

For CONTENTS see page 57.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

BARR'S SEED GUIDE, now ready. Free. Vegetable and Flower Seeds of finest Selected Strains and Tested Growth at moderate prices. BARR & SONS, King Street, Covent Garden, London.

SANDER AND SONS, Orchid Growers, St. Albans.

BATH'S SELECT SEEDS. New Illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application.—(Dept. A.) R. H. BATH, LTD., The Floral Farms, Wilshech.

BATH'S CARNATIONS, PANSIES, DAHLIAS, CHRYSANTHEMUMS, and other flower varieties, with full cultural notes, is now ready, and will be sent post free on application.—(Dept. A.) R. H. BATH, LTD., The Floral Farms, Wilshech.

WELLS' Catalogue of Chrysanthemums and Perennial Carnations now ready, post free on application.—W. WELLS & CO., Merckham, Surrey.

GREENHOUSE PAINTING & GLAZING—"Vitrolite," superior to White Lead Paint, 15s. per gall. "Plastine" supersedes putty, 12s. per cwt. Full particulars from W. CARSON & SONS, Grove Works, Battersea. Agents throughout the country.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes, about 1lb., 3lb., and 12lb., by Dealers in Garden Sundries. Wholesale prices PATENT CANDLE CO., LTD., Battersea, London, S.W.

PEEDS' SEEDS FOR RICH CROPS. You want exceptional results from your garden this year. Write for our 1917 S.-4 List. We can give you the record crops you want.

JOHN PEED & SON, The King's Seeds-men and Nurserymen, WEST NORWOOD.

NOW IS THE TIME TO PLANT **KELWAY'S PERFECTLY GLORIOUS PAEONIES**.

Kelway's beautiful blue Dolphiniums. Kelway's brilliantly coloured Phloxes. Kelway's Colour Borders, ever in bloom. Kelway's new and choice hardy perennial plants of all kinds.

NOW IS THE TIME TO ORDER for Spring planting Kelway's famous Gladioli. Kelway's many coloured Pyrethroms. Kelway's gay Gallardias.

NOW IS THE TIME TO SEND for particulars to **KELWAY & SON**, Retail Plant Department, LANGFORD, SOMERSET.

SOW NOW UNDER GLASS TO OBTAIN EARLY SUPPLIES

SUTTON'S FORTING DWARF BEAN. The earliest and most profitable forcing variety. per pint as follows:
SUTTON'S EVERY DAY CUCUMBER. An all-season variety, per packet 2s. 6d.
SUTTON'S SELECTED ALSA CRAB-ONION. The best of its class, per packet 1s. 6d.
SUTTON'S PRINCESS OF WALES TOMATO. The earliest smooth variety, per packet 1s. 6d. Post free.

SUTTON & SONS, The King's Seeds-men, READING.

JAMES GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Batters Street, Chelsea, London, S.W. Wine, 201, Western London. Telephone: 201 Western.

WATERER'S ROSES & FRUIT TREES. Grand stocks of the best varieties. Lists free.—JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Layfield, Berk.

W.M. DUNCAN PECKER & SONS, LTD., Lawrence Road, South Tottenham. Conservatories, Winter Gardens, Vineries, Peach-houses, Portable Buildings, &c. Catalogues gratis.

COWAN'S NEW ORCHID MATERIAL. The best and most economical. Full particulars on application to JOHN COWAN & CO., Garden Nurseries, Glasgow, Liverpool.

BLACKMORE & LANGDON, Bath, will have pleasure in sending a copy of their 1917 Catalogue of Begonias and Delphiniums, &c., &c., free, if this paper is mentioned. Magnificent series of our most popular Delphiniums, in superb varieties.

DOBIE & CO. ROYAL SEEDSMEN, EDINBURGH, will send a copy of their 1917 Catalogue, and Guide to Gardening, 160 pages, nearly 150 illustrations, free, if this paper is mentioned.

PERPETUAL FLOWERING CARNATIONS, strong, healthy plants, now ready, amongst which are the following varieties: 1s. 6d. per doz. out of sand, 5s. 6d. per doz. in pots. Enchantress, Snow-stem, May, Lucy, Lady Northcliffe, Mikado, Rose Pink, Enchantress, 6s. per doz. out of sand, 7s. per doz. in pot. Enchantress Supreme, Salmon King Gardens, White Enchantress, Champion, Triumph. Price list of Latest Novelties on application.—J. C. JENNER, Ligoniel Nurseries, Rayleigh, Essex.

PERNS! FERNS!—Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogues free.—J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

ROCK GARDEN PLANTS, where and in "What Soils to Plant Them," with Catalogue, 2s. 6s. 6d., 5s. 12s. 6d., 10s. 25s. All different, named, strong stock; please state position and soil.—G. R. PHIPPS, Alpine Nursery, Barnham, Bognor.

FRUIT TREES, true to name, my speciality. Trained Trees, in well-grown, extra-sized specimens, with fibrous roots. Cordun Pears, Grape Vines, Orange Trees, Fig Trees, in pots, for fruiting. Catalogues.—WILL TAYLER, Hampton, Middlesex

For Advertisement Charges see page vi.

FIDLER'S NEW ILLUSTRATED CATALOGUE OF CHOICE GARDEN SEEDS will be sent, post free, to any address on receipt of postcard. Write at once for a copy. It may help you to save 50 per cent. on your seed bill this season.—FIDLER & SONS, Royal Berkshire Seed Stores, Reading.

LAXTON'S SEEDS AND FRUIT TREES.—New Catalogues of the above now issued gratis. Grand New Early Pea, Laxton's Supercy, &c., Fruit Trees. A fine stock to offer—may still be safely planted. Pamphlet on Cultivation on receipt of stamped envelope.—LAXTON BROTHERS, Nurserymen, Bedford.

CYCLAMEN SEEDLINGS, for potting up of our choice strains, Giant White, Deepsee Red, Rose, Perfection, or Mixed, 2s. 10d. per doz.; Salmon King, Cherry Rip, 3s. 6d. per doz., post free.—STUART LOW & CO., Bush Hill Park, Middlesex.

NEW PHLOXES. A GRAND STOCK of these Brilliant Flowers in all shades, now ready for delivery.—For lists with full particulars, apply GUNN & SONS, Otton, Warwickshire.

WATERER'S GOLD MEDAL RHODODENDRONS.—We cordially invite you to come and select any plants you require. We have over 60 acres, comprising the finest collection in cultivation. Catalogue free.—JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Bagshot, Surrey.

ALPINES, BOG PLANTS, from collection of 1,000 varieties, sold cheap. Choice plants exchanged. Send for list.—REV. ANDERSON, Glenn Hall, Leicester.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers; also Dickson's Improved Mushroom Brand. Pencil caricatures free on application to DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.

ORCHID PEAT, 6s. and 7s. 6d. per sack; in bags 2s. 9d. each, 3d. dozen. Oak and Beech Leaf Mould, Yellow Loam, Staked and Fresh Cuk, Silver Sand, 4-ton lots for 45s.; C.N. Fibre, 24s. dozen bags; list free.—J. HANDSCOMBE, F.R.H.S., Feltham, Middlesex

RARE BOTANICAL BOOKS FOR SALE.—Curios' *Botanical Magazine*, scarce, original 25 nice volumes, years 1767 to 1806, with 923 superb hand-coloured plates, £11. A great bargain, being only 1/2 price per plate. Also another set same publication, the scarce original 15 first volumes, 1767 to 1801, with 548 hand-coloured plates, £7. *Lodiges' Botanical Cabinet*, large paper edition, with fully coloured plates, 100 original 5s. parts as issued, containing 1,000 most exquisite hand-coloured plates, Cost 425s. A great bargain. *Botanical Cabinet*, 4 bound volumes, 1, 3, 4 and 6, small paper edition, containing 400 partly coloured plates, 30s. All duplicates from my private botanical library, and very cheap. W. C. G. LUDFORD, F.R.H.S., Four Oaks, Sutton Coldfield, Birmingham.

SPORTSMEN, Farmers, Horsemen.—Try our splendid Yorkshire Whipcord Tweed; wears like leather; showproof; 7 yards for 17s. 6d. Patterns free.—BRADFORD WOOLEN CO. (7), Bradford.

SALES BY AUCTION.

WEDNESDAY NEXT.

A quantity of Narcissus and Polyanthus Narcissus, Darwin and May-flowering Tulips, also Aponoensis and a selection of Japanese Lily Bulbs at 2 o'clock. Cases of Japanese Lilies, comprising L. speciosum Album, Rubrum, Magnificum, &c., at 3 o'clock.

MESSRS. PROTHEROE & MORRIS will sell as above at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. On view morning of sale and catalogues had.

BROXBOURNE.

Two days' sale of well-grown Nursery Stock, comprising thousands of evergreen and flowering Shrubs and Conifers, Deciduous Trees and Shrubs, Fruit Trees, Roses, &c.

MESSRS. PROTHEROE & MORRIS are instructed by Messrs. Wm. Paul & Son (Waltham Cross), Ltd., to sell the above by auction at the Broxbourne Nursery, Broxbourne.

On Tuesday and Wednesday, February 20th and 21st, at 12 o'clock precisely each day.

On view, Catalogues had on the premises, at the Royal Nursery, Waltham Cross, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

TUNBRIDGE WELLS.

Unreserved Clearance Sale of the erections of 16 Greenhouses, Hot-water Piping, Pits and Lights, Boilers, Staging and Brickwork, together with the Stock of Greenhouse Plants, and a further portion of the outdoor Nursery Stock, by order of the Trustee of Mr. L. R. Russell.

MESSRS. PROTHEROE & MORRIS have been instructed to sell the above by auction on the premises, the Tunbridge Wells Nurseries, Tunbridge Wells.

On Tuesday and Wednesday, February 13th and 14th, at 12 o'clock precisely each day.

May be viewed, Catalogues had on the premises, of P. Mason, Esq., the Trustee, 54, Gresham Street, E.C.; of C. Butcher, Esq., Solicitor, 32, Gresham Street, E.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

MILFORD, SURREY.

(One mile from Milford Station, L. & S.W. Rly.) Clearance Sale of 15,000 Rhododendrons, from layers, named varieties and potting, 10,000 Hardy Heaths, Privet, and other Stock; also a quantity of Manure and Loam.

MESSRS. PROTHEROE & MORRIS have been instructed by the Trustee of Mr. L. R. Russell to sell the above by auction at the American Nurseries, Milford, Surrey.

On Monday, February 19th, at 12 o'clock.

On view, Catalogues had on the premises, at Mr. Russell's Nurseries, Richmond; of P. Mason, Esq., F.C.A., the Trustee, 54, Gresham Street, E.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

SHORTLANDS, KENT.

Notice of Postponement.

MESSRS. PROTHEROE & MORRIS beg to announce that the sale of Nursery Stock, Greenhouses, &c., advertised to take place at Mr. J. B. Bryant's Nursery on the 10th inst. has been postponed to Saturday, February 24th, at 12 o'clock. Auction and Estate Offices, 67 and 68, Cheapside, E.C.

BUSINESSES TO LET.

NURSERY TO LET; commanding position; five minutes from rail at frame; 330ft Glass; 14 acres land, house, &c.—MILES, Royal Hotel, Sheerness.

BUSINESSES FOR SALE.

FOR DISPOSAL, a High-class Florist, Fruit, and Seed Business, doing a good trade in a busy town; through death of proprietor sole cause of relinquishing; easy terms—Y., Box 2, 41, Wellington Street, Covent Garden, W.C.

TOMATO GROWING AND OTHER FOOD CROPS—Attractive Freehold Nurseries for sale; 4 acres valuable land and modern Glass-houses; southern county. Price about £5,000 inclusive.—Particulars, in strict confidence, from X., Box 9, 41, Wellington Street, Covent Garden, W.C.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS. old plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Longborough Junction, London, S.W.

WANTED, TUBEROUS BEGONIAS AND KENTIA PALMS, 3 to 4R.—W. & J. BROWN, Stamford.

PLANTS, &c., FOR SALE.

100,000 LARGE GARDEN FERNS. 20s, 100; Palms, Begonias, Crotons, Dracaenas, Roses, Ericas, Gloxinas, Lilies, Hydrangeas, &c.; catalogues free.—J. E. SMITH, London Fern Nurseries, Longborough Junction, London, S.W.

AMARYLLIS (Hybrids of Vittata).—MORLE & CO. offer magnificent named sorts from Mr. W. Bull's celebrated Gold Medal prize collection, also flowering Bulbs, crossed with named sorts, at half usual prices. List free. 150-156, Finchley Road, N.W.

JAPANESE LILIUMS, just landed in splendid condition; large, firm Bulbs, Longiflorum giganteum, 3s. 6d., 6s. and 9s.; Speciosum Melbome and magnificum, and Album Kotszumi (the best), 5s., 8s. and 10s.; Anatum, 6s. and 10s.; Henryi, 4s. and 6s.; all per dozen; also others. List free.—MORLE & CO., as above.

LILY-OF-THE-VALLEY.—Extra special large forcing Victoria crowns, extremely scarce, offered at 10s. 100; planting ditto, 6s. 100; stock limited.—MORLE & CO., as above.

SEED POTATOS, Lincolnshire or Scotch, Myatt's Ash Leaf, Hebrons, Early Rose, Express, Royal Kidney, Up-to-Date, Sir J. Llewellyn, Arran Chief, King Edward, and others, per bush, or cwt.—MORLE & CO., as above. Our Seed and Plant List sent on application.

FOR SALE, 7½ Bushels of "TENDER AND TREE" Climbing Beans; grown in England from Guernsey seed. Price 60s. per bush, carriage paid.—GEO. MONRO, LTD., Covent Garden Market.

CARNATIONS, PERPETUAL FLOWERING.

FOR SALE, good clean plants, grown in thimbles and 60s, well broken ready for potting on. Coll. en, Enchantress Supreme, White Enchantress, White Wonder, Beacon, Mikado, Mayday, Scarlet Seedling, Enchantress, Salmon Enchantress and other good varieties.

4 - per dozen. Cash with order

MAYTHAM GARDENS, ROLVENDEN, KENT.

STANDARD CURRANTS

We can offer fine trees with 4½ ft. stems, stout enough to stand without stakes, at 5/- each.

Extra strong heads 7/6 each.

GEORGE BUNYARD
& CO., LTD.,
Royal Nurseries, MAIDSTONE.

VEITCH & SON, EXETER.

Vegetable and Flower Seeds.—Special Introductions and Novelty in Asters, &c., for this Season.

Fruit Trees.—Leading and profitable kinds of Cooking and Dessert Apples, Pears, Peaches, Plums, &c.

Hardy Ornamental Trees and Shrubs, Rhododendrons.—(Sikkim, Hybrids and Greenhouse.)

Roses.—Hybrid and Tea (all the newest). Alpines, Herbaceous and Bedding Plants, &c.

Catalogues of the above, separate, on application.

VEITCH & SON, EXETER.

Do Not Forget the Gardener-Soldiers.

"Many thanks for the GARDENERS' CHRONICLE, which I have received safely each week through the kindness of Lady Theodora Guest. You will see that I am now in Mesopotamia. The CHRONICLE is very welcome to me out here; it seems good to read all the news in the old paper, and surely the GARDENERS' CHRONICLE is the king of all gardening papers."

This letter was sent us by a soldier in the Mesopotamia Force. YOUR soldier friend, who was a gardener before he went to the front, is a gardener still in sympathies and interests. HE longs to know what is going on in the gardening world now, and has no means of knowing unless YOU help him. Send him the GARDENERS' CHRONICLE. Keep him in touch with current gardening affairs. He will be most grateful for such an act of friendship. Send us a subscription for half-a-year—8s. 9d.—and we will take all the responsibility of sending the paper regularly to your friend, also reminding you punctually when the subscription is about to expire.

Write to us now, and give us his address.

41, WELLINGTON ST., STRAND, LONDON, W.C.

ORDER OUR CELEBRATED FORCING ROOTS

Seakale, Asparagus,
Mint, Rhubarb, etc.
Also Fruit Bushes.

Write for Illustrated Catalogue, containing
PRACTICAL NOTES ON GROWING AND FORCING.
—Mann.

ESTABLISHED 1857.
MANN & SONS,
Whitton Road, Twickenham.

CHARLES TURNER'S Catalogue of GARDEN SEEDS FOR 1917

is now ready and can be
had on application. Also of

ROSES, FRUIT TREES, SHRUBS,
HARDY TREES, etc.

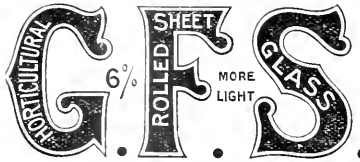
The Royal Nurseries, SLOUGH.

TURF LOAM.

Very Fibrous Yellow Turf Loam

For VINE BORDERS, CARNATIONS,
ROSES, MELONS, CHRYSANTHEMUMS,
FELT'S UNDER GLASS, etc., etc.
Quotations Carriage Paid or Delivered.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.



A SUBSTITUTE for ordinary 21 oz. glass, which is no longer so scarce. The new British Rolled Sheet is about 1/4 in. (or equal) to stout 21 oz. in thickness. Can be supplied to buyers sizes at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of
**GENUINE
WHITE LEAD
PAINT.**

"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cans.
AND
**BEST
LINSEED OIL
PUTTY.**



Complete Price List of
Paints, Colours, Varnishes, &c., on application.

GEORGE FARMLOE & SONS, Ltd.,
34, ST. JOHN'S STREET, WEST SMITFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

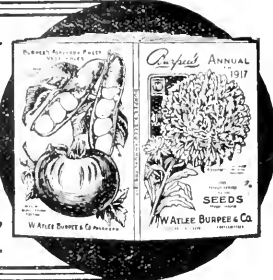
JAMES CYPHER & SONS,
Exotic Nurseries, GUELTFENHAM.

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
State quality of each size required and have "carriage paid" quotation ("carriage" frequently amounts to half value of goods), or write for Price List, free.
SPECIAL POTS of all descriptions. Best Bowls and Fern Pots from 2s. each.
RICHARD SANKEY & SON, LTP.
Bulwell Potteries, NOTTINGHAM.

Burpee's Seeds Grow

THE truth of this famous slogan is proved by thousands of pleased and permanent customers. The Burpee idea of Quality First—combined with efficient service has built the World's Greatest Mail-Order Seed Business. Burpee's Annual, The Leading American Seed Catalog for 1917 is a bright new book of 204 pages, in colors, and a Sale Guide to Success in the garden. Mailed free. Write for it today.

W. ATLEE BURPEE & CO., Seed Growers,
Burpee Buildings, Philadelphia, Pa., U. S. A.



SEEDS FOR 1917.

It is none too early for garden lovers to think of seeds, but be sure the seeds you buy are seeds of quality. It is a gardening axiom that

RYDERS SEEDS

are the best, and despite the fact of a War Time price of 13d. per packet, orders for these famous Flower and Vegetable seeds are daily growing in volume. Seeds of quality cannot now be supplied, even by Ryders, in Penny Packets.

Ryders Illustrated Seed Catalogue Free.

Ryders 1917 Catalogue contains a large number of choice varieties not found in other lists.

"Britain's Best" Tomato. The finest Tomato ever introduced.

Ryders New Snow-tail Scarlet Radish.
A remarkable new Three-podded Pea—
"Thousandfold".
A splendid New Oval-shaped Beet.

Novelties for 1917 include the New Pierre Sweet Peas (Pink, Pale Blue and Violet).
A wonderful new strain of Hybrid Cinerarias.
The "Asterum" in four lovely colours.
New Cyclamen, Mauve Queen.
New Hybrids of Trollius.

Send a post-card to-day for your free copy of this Catalogue. Remember the one and only address and beware of imitators—no agents.

RYDER & SON, Ltd., Seed Specialists, ST. ALBANS.

Grow Your Own Food by Sowing Ryders
Famous Vegetable Seeds.

RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges,
AND
Orchard House Trees.

A LARGE AND SELECT STOCK
ALWAYS ON VIEW.

ILLUSTRATED AND
DESCRIPTIVE CATALOGUE
POST FREE.

THOMAS RIVERS & SON Sawbridgeworth, Herts.

STATION: HARLOW, G.E.R.

ROYAL GARDENERS' ORPHAN FUND

B. WYNNE, Sec.,
19, Bedford Chambers, Covent Garden,
London, W.C.

EVERY
GARDENER
KNOWS
THAT

Clay's gets there

and makes the Garden
gay all the year round.

CLAY'S
LONDON
FERTILIZER

IT IS THE
STANDARD
FOOD FOR
PLANTS.

Sold everywhere in TINS at 6d. & 1s., and in BRANDED & SEALED BAGS: 7lbs., 2s. 6d., 14lbs., 4s. 6d., 28lbs., 7s. 6d., 56lbs., 12s. 6d., 112lbs., 20s. Or direct from the Works, Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).
CLAY & SON, Manure Mills & Bone Crushers, STRATFORD, LONDON, E.

THE NATIONAL FOOD SUPPLY.

MARROWFAT PEAS

The Most Nutritious Vegetable

and

one of the finest substitutes
for beef, mutton, etc.

DELICIOUS PEAS

from

MAY TO NOVEMBER.

Sutton's Special Collections

Consist of some of the best varieties
which under suitable conditions of
culture should produce a succession
of the finest Marrowfat Peas.

Sutton's Early Giant

- ” Ideal
- ” Centenary
- ” Seld. Duke of Albany
- ” Eureka
- ” Peerless
- ” Matchless
- ” Selected Gladstone

COLLECTION of
2 Quarts of
each, 48s.

COLLECTION of
1 quart of
each, 25s.

COLLECTION of
1 pint of
each, 14s. 6d.

Or other very choice varieties.

“The Collection of Garden Peas was everything that could be desired for a season's supply. The rows were magnificent, simply hanging with well-filled pods, which were greatly admired by members of the Ware Horticultural Society who paid a visit to these Gardens.”— Mr. F.W. MILES, Gardener to A. E. CUMBERBATCH, Esq.

SUTTON'S CENTENARY.

SUTTON & SONS, THE KING'S SEEDSMEN, READING.

nearly due to be executed, there was such a remunerative crop of Cox's Orange Pippin that a reprieve was granted, and now it is a question whether the Apples or the Plums will be removed.

BIRDS AND BUIES

Up to the end of January, birds had not begun to eat the buds of Plums. In the three preceding winters it was necessary to spray Monarch Plums before the middle of that month. Possibly the severity of the weather has induced the bullfinches to remain in the shelter of the woods. At any rate, very few have been seen in or near the orchards at present. *Southern Grower*.

ORCHID NOTES AND CLEANINGS.

TWO FINE ODONTOGLOSSUMS.

MR. W. H. WHITE, who has charge of the Orchid collection of Paulia Ralli, Esq., Ashted Park, Surrey, sends flowers of two remarkably fine *Odontoglossums* of extreme types, showing well the great work which the hybridist has done in extending the range of form and colour in this favourite cool-house genus.

blooms with pure white sepals and petals and rosy mauve lip, having good lines from the base. The new *C. Perenol* (*Percivaliana* × *Enid*) raised at Bleheim, which is an excellent improvement on *C. Percivaliana*, has good large bluish-pink flowers with purplish crimson lip. Other not-worthy Bleheim hybrids in bloom are *Saphro-Laelio-Cattleya Eriata* (S. L. C. Eros × *C. latifolia*) with pretty Cherry-red flowers, *Cattleya Faldahana* (*Fabia* × *Percivaliana*), and *Laelio-Cattleya Gothaura* (L. C. St. Gothard × *Daviana aurea*). The large batch of *Laelia anceps* is beginning to make a good show, and a fine *Sophronitis grandiflora* with thirty scarlet flowers is a perfect specimen.

PLANT NOTES.

EPACRIS PURPESCENTES FLORE PLENA.

THIS *Epacris* differs from the other species and garden forms of the genus in its double rosette-like blossoms, which are very freely borne. It was introduced from Australia by the late Mr. William Bull, of Chelsea, in the seventies of the last century, and was given a First-class Certi-

mer bedding, is also of considerable value for its winter-flowering qualities. Where a greenhouse or conservatory has to be kept gay at all seasons this *Calceolaria* is very useful, especially as specimens from 4 to 6 feet in height. As such it is particularly handy for grouping, for most winter-flowering plants are considerably less in stature than this. For blooming at this time of the year the plants may be struck from cuttings early in the spring, or older ones may be grown on for this purpose. They can, during the summer, be grown out-of-doors; indeed, if given much the same treatment as *Chrysanthemums*, they will be well suited. This *Calceolaria* was raised many years ago at Trinity College Gardens, Dublin, by the late Mr. F. W. Burbidge, after whom it is named. It was regarded by the raiser as a cross between *Calceolaria Pavonii* and *C. dellexa*, which was formerly known as *C. fuchsiaeifolia*. Doubts have, however, been expressed as to the correctness of this, for though, judging by appearances, there can be no question but that *C. Pavonii* is one parent, the general aspect of the plant would suggest *C. amplicaulis* as the other. In the *New Hand List of Tender Dicotyledons* the parentage is given as *C. amplicaulis* × *C. Pavonii*. W. T.

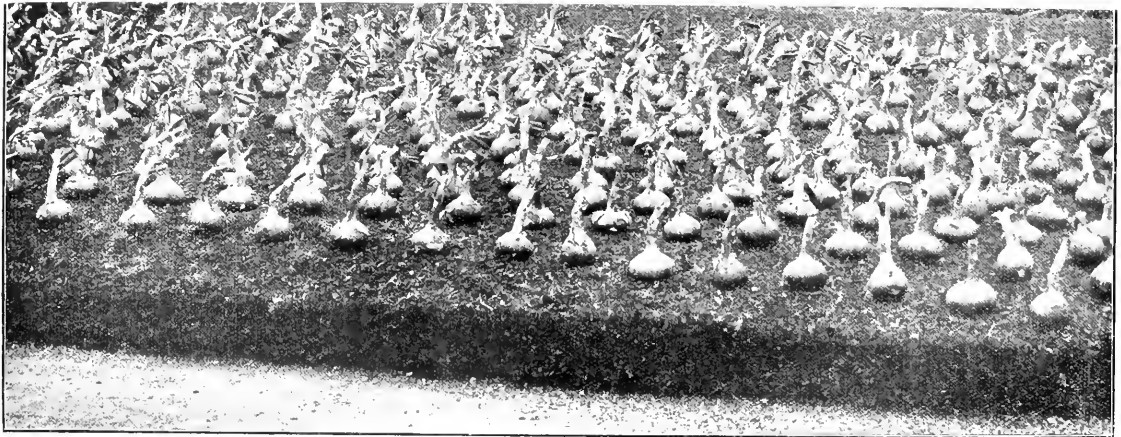


FIG. 21. ONIONS GROWN FROM TRANSPLANTED SEEDLINGS. (See p. 59.)

Odontoglossum Bronze Dragon, of unrecorded parentage, has large, broad-petalled flowers of a rich reddish-bronze colour, with slight white margins and tips to the sepals and petals. The lip is white with reddish-rose blotches in front of the crest.

Odontoglossum ardentissimum Johnsoni (*Pescatorei* × *crispum*) has beautifully-formed flowers $4\frac{1}{2}$ inches across, the ground colour being pure white, two-thirds of the surface bearing deep, claret-red blotches, which in the petals cover the inner half. The lip is white, with ruby red blotches in front of the yellow crest.

ORCHIDS AT BLEHEIM.

IN the gardens of the Duke of Marlborough, Bleheim Palace, Woodstock (Orchid grower, Mr. Jas. Smith), a large-house of *Cypripediums* contains plants plentifully supplied with flowers, some of them being hybrids raised at Bleheim. One of the prettiest is *Cypripedium Arthurianum* Bleheim variety (*Fairrieanum* × *insigne Sanderi*) quite distinct from ordinary forms and with much broader petals. The large white dorsal sepal is effectively marked with dotted purple lines, similar markings appearing on the Primrose-yellow petals and lip. Among the *Cattleyas* is a fine specimen of *C. Maggie Raphael alba* var. *Queen Mary* with five fine

tear by the Royal Horticultural Society on March 1, 1876, under the name of *Epacris onosmaeflora flore plena*. Owing to the working up of a sufficient stock being a slow matter, it was not distributed till the spring of 1883. Two plants were originally received from Australia, and in one of them the flowers were slightly suffused with blush, while those of the other were pure white. The two were sent out in 1883 as *Epacris onosmaeflora flore plena alba* and *nivalis*, at a price of one guinea each. There was a good demand for them, but *nivalis*, being the better of the two, was soon grown to the exclusion of the other. Apart from its rosette-like blossoms, which are closely packed for some distance along the erect shoots, the flowers themselves have a much shorter tube than the other species and varieties. Owing to the stout, almost succulent character of the main shoots, this *Epacris* cannot be propagated from cuttings so readily as the other kinds. In order to ensure success the stock plant or plants should be kept somewhat warmer than usual in order to weaken the young shoots. With this treatment they are not at all difficult to root.

CALCEOLARIA BURBIDGEI

THIS tall-growing hybrid *Calceolaria*, which is as large as specimens a good deal used for sum-

VEGETABLES.

SWEDDE TURNIPS

ON late years some of the leading seedsmen have made selections from the Swede Turnip, mostly grown for the feeding of cattle, quite suitable for growing in gardens. Varieties with white and yellow flesh respectively are obtainable, and are much harder than the ordinary garden Turnips. Seeds may be sown in drills 18 inches apart on ground that has been well worked; thin the seedlings out about 6 inches apart. For succession sow at the end of May and again the middle of July. I think this particular vegetable has not found a home in every garden, but it is well worth trying. When peeled and cooked it has a most pleasing flavour, which most persons enjoy. It is a vegetable for anybody during the winter and spring; for instance, the working man can have the best substitute for *Seakale* that is grown by placing a few Swedes together in a bed of soil or ashes in a frame or shed and excluding the light, when the roots will supply young shoots that will be most appreciated. There is no waste with the garden Swede, and it is excellent food, cooked or raw, for cattle, poultry, pigs and rabbits. *C. Davis, Holy Wells Park Gardens, Ipswich.*

ONCE GROWN POTATO SEED.

In this neighbourhood some of the growers contend that the best results from Scotch seed are obtained the second year. My experience is that the first year from Scotland gives the best result. In the selection of seed, as in all matters connected with the land, there are exceptions to every rule. A cottager close here grew Ringleader twenty years ago, and has continued to do so ever since from his own saved seed, and with good results. He selects the tubers carefully as he digs them, grows them thoroughly, and stores them carefully. *E. M., Bishop's Waltham*

UNDER-CROPPING ORCHARDS.

WHILE the market grower makes abundant use of all available ground under his standard fruit trees, this opportunity is usually left undeveloped in private gardens. As the recent correspondence in the *Gardeners' Chronicle* on intercropping shows, private gardeners as a class are too given to the opinion that "one plant, one crop" should be the golden rule in gardening. If space and labour were unlimited this, no doubt, would be ideal, but those conditions are but rarely found. It is also often contended that the digging needed to grow profitable crops in orchards would adversely affect the fruit trees. But if this were so the market grower would certainly abandon the practice, and, moreover, the great success which attends under-cropping a large Apple plantation at Gorton Park is also being able to show that it may be done in private gardens without detriment to fruit trees, for these same trees have furnished many of the dishes of fruit with which, in the recent past, Mr. Allan won so many prizes at the R.H.S. Shows and elsewhere. A few instances ago I greatly admired the appearance of the large breadths of "Winter Greens," Kale, Savoys, and Broccoli—in this orchard at Gorton Park, when Mr. Allan remarked that it was his general custom, and that it paid.

In the Plum orchards of Hounslow and Isleworth under-cropping is almost invariably the rule, and while such permanent crops as Gooseberries, Blueberries and Raspberries, the latter for supplying cut blooms or cut sprays of bright colour earlier in the year, are most generally, literally miles of Norwalk, Wallflower and various Brassicas which are annually planted may be seen in their respective series. It is more than probable that so far from the soil disturbance being harmful to the fruit trees, the reverse is the case, and that the loss of roots inevitable from the digging is amply repaid by the improvement of the surface soil and root action consequent on aeration of the soil, and the manure added for the under-crop. *F. C. Bartlett.*

SELECT VEGETABLES.

WHEN the cultivation of vegetables for the needs of the country is engaging general attention, it will be well to consider carefully those kinds and varieties which are not only the simplest to grow, but also most valuable as produce. To assist this selection I will state briefly my own experience. I am fully alive to the difficulty of advising alike for all parts of the country, for the reason that in some districts it is impossible to grow certain kinds of vegetables. To these objections, however, there is but one answer, and that is, "grow both the kinds and varieties which are best suited to the particular district."

POTATOES—There is no question as to Potatoes playing the most important part in providing vegetable food for the nation. In spite of the suggestion that Potato planting may be overdone, my advice is to plant largely. The ground must be well prepared. The varieties best for the locality should be planted, and the sets should be properly sprouted. Allow plenty of room both between rows and sets, and for preference grow early and mid season varieties, rather than late

ones, as these are not so susceptible to disease, and the ground can be cleared for other crops in the autumn. My favourite varieties are Midlothian Early, May Queen, Windsor Castle, Dobbie's Prolific, King Edward VII., Great Scott, and the Factor. Arran Chief, which does well in many places, is not worth growing here, the quality being of the worst.

ONIONS—These will unquestionably be planted in much larger quantities than has ever been the case before in this country. Both the land and the climatic conditions are suitable if the right methods of cultivation are adopted. My advice is, sow in boxes or cool frames early in February. Scatter the seeds thinly, and, when of sufficient size, plant them on well-prepared ground of a fine tilth, 4 to 6 inches from plant to plant, and 15 inches from row to row. If made firm and well watered in there is little fear of failure, as the Onion is very hardy, and, if properly prepared, no spring frost will injure the plants after the first week in April. By such a method as this the crop prac-

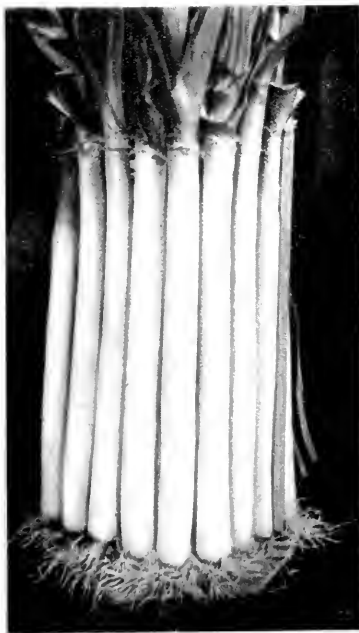


FIG. 22. LEEKS GROWN BY MR. W. ROBINSON, GORTON, LANCASHIRE. THE STEMS HAVE A LENGTH OF 22 INCHES AND A GIRTH OF 6 INCHES.

tically escapes the ravages of the Onion fly, a much heavier crop is assured, the bulbs mature earlier and keep better, and the ground is cleared sooner for succeeding crops. A crop raised in this manner is illustrated in fig. 21.

CABBAGE—This is one of the few vegetables which refuses to do well in many districts, especially the main crops, and unless the land and locality are suitable it is far better to employ the ground for other purposes, but as this vegetable is generally in large demand it should be grown more extensively in those parts which are favourable for it.

CABBAGE—As a green vegetable, the Cabbage has no equal. It can be grown by anyone, in any district, and by making various sowings throughout the year, there is no day or season when it cannot be had if required.

PARSNIPS are a nutritious and desirable vegetable. They require a long growth, and should be sown if possible in February, on deeply

worked, and not too rich a soil. The newer and better varieties only should be grown, as there is no comparison between these and some of the older sorts.

BRUSSELS SPROUTS are one of the most hardy and prolific vegetables for winter use, and should be grown by all. Two sowings should be made, one in March and one at the end of April. Early Dwarf Gem is quite the best variety I know.

CELERY—A vegetable generally in great demand. Nothing that I know of does the ground more good, and intercropping can be carried out. It is valuable both in a cooked and raw state. For winter use select a good strain of either a pink or red variety, which varieties are much more hardy than the white. There are many worthless varieties on the market.

CELERIC OR TURNIP-ROOTED CELERY—Celeric is not nearly so much grown in this country as it deserves. It should be treated in the young state precisely in the same way as Celery, but should be planted on the flat, the ground being deeply worked and heavily manured. It requires an abundance of water during dry spells. Lifted in autumn, it should be stored in sand or ashes, and will last good all the winter. It is appetising and nutritious, and has a flavour something between a Parsnip and Celery.

BETROOT—Though perhaps not so important as many other vegetables from a culinary point of view, a small quantity should be grown in every garden.

BURFOLE OR KALE. Both the Scotch and Cottage varieties should be grown for winter greens; each of these is very prolific, hardy, and of delicious flavour.

SAVOY—A very hardy vegetable which should be grown by all. It is often sown too early, and is spoiled before mid-winter. Savoys are certainly better cut after frost, and should be at their best during January and February.

LEEKS—We have much yet to learn from our friends over the Border as to the worth of Leeks as a vegetable. They should be grown by everyone possessing even the smallest garden. Well grown and nicely served, Leeks are most appetising. The plant is extremely hardy, and can be had in use from August to April. Most gardeners should grow more Leeks.

MUSHROOMS—Wherever fresh horse-droppings are procurable Mushrooms should be grown, either under cover or in the open. The manure is never wasted, and good Mushrooms are always in request. They are a nutritious and extremely palatable food, and will often take the place of more substantial dishes.

CUCURBIT. Sow in spring on well prepared ground. Dig up and blanch in a cellar, or Mushroom-house, at any time during the winter. Use both in a cooked and a raw state. This is a vegetable largely grown on the Continent, and deserves more extensive cultivation here.

PUMPKINS are one of our most valuable vegetables, but they are much neglected. They should be grown in a sunny position, and raised and cultivated like Vegetable Marrows. The Pumpkin may be trained up buildings and pergolas, grown on the flat, or planted on rubbish heaps in the summer. The fruits should be exposed to the sun after they have begun to swell. They should be cut and stored in a dry, frost-proof room before winter, and used as required. If they are cut in much the same way as a cheese, the same specimen, provided it is properly ripened, will keep in a good condition for a fortnight or three weeks.

SPINACH BEET. This is one of the most useful and prolific green vegetables grown, and when nicely cooked can hardly be told, except by experts, from ordinary Spinach. Sow early in the spring, and when quite fit for picking the plants will continue to supply fresh leaves for fully twelve months.

TURNSIPS.—Both Swedes and the white varieties of turnips, though not so nutritious as many other vegetables, are, nevertheless, valuable as a food during autumn and winter, and the greens in spring are much sought after. The best Turnips for winter use should not be sown before the end of August or the beginning of September.

TOMATOES.—Though frequently looked upon as a luxury, a well-ripened Tomato with a very moderate amount of cold meat, or even without it, will often make a good meal in the hot days of summer and autumn. Either under glass, or in the open where the plants can be trained against a building or wall, some should be cultivated. I have no hesitation in stating that my favourite variety, viz., Sunrise, and for a yellow one its golden sport named Golden Sunrise, is the finest all-round Tomato yet raised, either for the open or under glass, winter or summer.

KOHL-RABEL.—Some of the improved small varieties of this plant, which is generally cultivated on farms, are well worthy of a place in the garden, especially on hot, dry soils, where they do well, and make a splendid substitute for the Turnip. Sow at intervals during summer and autumn for winter use.

VEGETABLE MARROW.—This should be grown wherever possible. Endeavour to start the plants early by planting them out on mild beds in portable frames, removing the latter when it is safe to do so, thus prolonging the season. Ripe fruits may be used much in the same way as Pumpkins, and they make excellent jam.

JERUSALEM ARTICHOKES.—A most profitable crop to grow, as the plants need little attention after the ground is once planted, will thrive in any soil, and are well suited for making a screen. The white variety is much to be preferred to the red one.

There are, of course, other vegetables which may be grown according to requirements, but I have purposely dealt with those only which are likely to be most serviceable in assisting us to tide over a possible period of food shortage, *Edwin Beckett, Aldenham House Gardens, Herts.*

TREES AND SHRUBS.

VERONICA LA SÉDUISANTE

The last few winters have been so mild that the fact that this variety escaped injury when planted in an exposed position, as referred to by your correspondent, *J. F.*, page 52, may be thus accounted for. It yet remains to be seen how it has fared during the severe weather that we have so far experienced this year. While the different garden hybrids of *Veronica speciosa* are among the most handsome of autumn flowering shrubs in the favoured parts of these islands, they cannot be depended upon in colder districts, indeed, in the neighbourhood of London they are frequently injured, even if not killed outright, should a moderately severe winter be experienced. Some four years ago last autumn I saw several varieties doing well on the slopes of Coumbe Wood Nursery, but they were expected to suffer severely in the event of a sharp frost. Where they cannot be depended upon to hold their own out of doors, they are still extremely useful for the embellishment of the greenhouse or conservatory. They are very readily struck from cuttings in early spring, and if stopped when young, will make neat flowering plants by autumn. Apart from the variety *La Séduisante*, the following are also very desirable for pot culture. *Attraction*, deep violet; *Conquête*, pale lavender; *Diamond*, bright crimson; *Gabrielle*, rich pink; *Mauricie*, blue mauve; *Mont Blanc*, white; *Spéculend*, rich purplish mauve; and *Vallière*, blue. *H. T.*



THE FLOWER GARDEN.

By W. J. CRUISE, Gardener to Mrs DEMPSTER, Keele Hall, Staffordshire.

PROPAGATING BEDDING PLANTS.—The following plants may be propagated from cuttings during the next few weeks:—*Alternanthera*, *Heliotrope*, *Verbena*, *Lobelia*, *Marguerite*, *Coleus*, *Fuchsia*, *Ageratum*, *Tropaeolum*, *Salvia*, *Lantana*, *Petunia*, *Iresine*, and *Pelargonium*. Insert the cuttings in well-drained pans or boxes filled with light, sandy compost. Make the surface smooth, and cover it with a thin layer of sand. Make the cuttings firm in the soil, and water them through a fine rose. They should be rooted in a temperature of 65° to 70°. The *Pelargonium* cuttings should be inserted around the rims of 5-inch pots.

PLANTING HEDGES.—The present is a suitable time for planting most kinds of hedges. The ground should be well trenched and manured. *Ligustrum* (Privet), *Hawthorn* (mailed), *Beech*, and *Holly* are all suitable for making boundary hedges. Plant the Privet and Quick in single rows at 6 inches apart, treading the soil firmly about the roots. Cut the plants down to within 6 inches of the ground after they are planted. The common *Holly*, associated with Quick, makes a capital hedge. Evergreens, such as *Yew*, *Holly*, *Cupressus*, *Laurels*, and *Thuja* *Lobbi*, should be chosen for the flower garden and pleasure grounds. They should be planted 18 inches apart in single rows or the abutments, according to the size of the specimens and the purpose for which the hedge is required.

OVERGROWN SHRUBS.—Old, straggling shrubs or trees of *Laurel*, *Holly*, *Box*, *Yew*, *Ligustrum* (Privet), *Viburnum*, *Laurustinus*, and *Rhododendron* that it is not convenient to grub up and remove should be sawn off close to the trunk during the next few weeks, in mild weather. At the end of the season the stumps will be covered with young growths, and in two years the plants will be again in fair condition.

LAWNS.—Any necessary alterations to lawns that were not finished in the autumn should be completed forthwith. If new lawns are to be made, get the ground dug in preparation for sowing the seed next month. Should the soil be of poor quality, enrich it with a liberal amount of well-decayed manure. On no account should the soil be brought to the surface from a greater depth than 12 inches. Make the surface firm and smooth by repeated levelling and rolling. Existing lawns should be thoroughly brushed with *Birch* brooms to distribute worm-casts, and the turf rolled during mild weather. About the end of March apply a dressing of lawn manure mixed with an equal bulk of finely sifted soil. Give two or three dressings of this material in the early spring, using the compost at the rate of 1 lb. to four square yards.

THE ORCHID HOUSE.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gattop Park, Reigate.

DENDROCHILUM. Plants of *D. glimacomm* and the variety *validum* will now be developing new growths, and as soon as they reach a height of 2 or 3 inches will commence to push forth new roots, also their slender grass-like flower spikes; any that require fresh rooting material should receive attention at this stage. A suitable compost may consist of two-thirds *Osmania*-fibre, one-third fibrous loam with all the small particles removed, adding some chopped *Sphagnum*-moss and crushed crocks to render the soil porous; the plants should be given a moist position in the intermediate house.

DENDROBIUM. Many of the early-flowering species of this genus and their hybrids that have been resting in a house of comparatively low temperature, in which the flower-buds are well advanced, may now be placed in a warmer and

more moist atmosphere, but care must be taken that neither too much heat nor moisture is allowed, or they will start rapidly into growth, causing the flower-buds to turn yellow and drop off or produce flowers of inferior quality. Apply water sparingly at the roots, giving just sufficient to keep the pseudo-bulbs from shrivelling, affording a little extra as the flowers expand, but even then and until the flowers fade, and the young growths commence to develop new roots, watering must be done with great care. The Cattleya house is a very suitable place to grow the plants while the flowers are developing. Keep a sharp look-out for slugs, which damage the flower-buds as soon as the latter begin to develop; traps of damp bran and Lettuce leaves may be placed about the houses near the plants and the pests searched for at night and early in the morning.

SOPHRONITIS GRANDIFLORA.—This brilliant winter-flowering Orchid has been blooming for some time past, producing its flowers from the partly developed pseudo-bulbs. The plants should be kept sufficiently moist at the roots to maintain the *Sphagnum* moss on the surface of the pan in a green and healthy condition, taking care that the water does not lodge in the centre of the young growths, as this would cause the new pseudo-bulbs to decay. Plants requiring fresh rooting materials should receive attention when roots are seen to develop from the new pseudo-bulbs. They are best grown in shallow pans suspended well up to the light at the warmer end of the cool house.

MILTONIA.—Many of the Brazilian *Miltonias*, such as *M. Morelliana*, *M. spectabilis*, *M. Lubbersiana*, and *M. Bluntii*, will soon be developing new roots. Any that require it should be repotted as soon as the young roots appear above the base of the leading shoots. It is important that the young roots be not injured. The plants succeed best when grown in shallow pans in a compost of *Osmania*-fibre with a small quantity of *Sphagnum*-moss, chopped up moderately short, and a liberal amount of crushed crocks. Plants that have grown from the middle and/or the sides of the pans should be divided. Remove the old pseudo-bulbs, excepting for two or three behind each new growth, and arrange the plants fresh into shapely specimens. If the roots are not sufficient to hold the plants firmly in the pans, fix them to the soil by means of small wooden pegs. These plants should be given a shady position in the intermediate house. *Miltonia cavilliana* and *M. Blountia* are now growing freely. Plants that are well rooted will from now on and until they have completed their pseudo-bulbs, require an increased amount of water at the roots. Each plant should be watered thoroughly, and allowed to become dry between each application. A good preventive of thrips is to spray the plants overhead once a fortnight with a solution of *Ononis* Extract at the strength of half a pint of the infusion to three gallons of rain-water. Thrips, if present, may be destroyed by immersing the leaves and young growths in the insecticide.

PLANTS UNDER GLASS.

By J. G. WERTON, Gardener to Lady NORTHCOOTE, Eastwell Park, Kent.

THE PALM HOUSE.—All Palms should be looked over, and those needing a shift repotted. The others should be top-dressed with a little rich compost. It is not necessary to give Palms very large pots or tubs. As long as there is sufficient room in the pot to apply regular top dressings of manure, and abundant supplies of water, Palms may be kept quite healthy in the same pot for several years. But when the receptacles are crammed with roots watering must be very thorough; neglect in this respect will quickly show itself in the yellow and starved appearance of the leaves. Soot water and liquid manure are of great assistance in keeping the foliage a deep green. Much atmospheric moisture should be maintained in the Palm house, as tending to diminish insect pests. Scale insects and thrips are perhaps the most troublesome, and to keep these in check the plants must be regularly cleaned. See also the plants with water but

to 120° is an old and efficient method of killing scale insects. Sponge the leaves afterwards with an insecticide.

KENTIA.—When potting the stronger-rooting Palms, such as Kentia, Phoenix, Corypha, and Areca, the principal ingredient in the compost should be good fibrous loam, with the addition of a little sand, and charcoal. Good drainage is essential, as plenty of water is required when the plants are in full growth. The most useful varieties of Kentia are K. Forsteriana, K. Belmoreana, and K. australis.

COCOS WEDDELIANA AND GEONOMA GRACILIS.—These two Palms are good examples of the finer-leaved sorts, which should always be grown for table decoration. When potting these more delicate-rooted Palms, peat should be used in equal proportions with loam. Do not over-water the plants when small. They thrive best when plunged to the rim in a bed of Coconut-fibre refuse in the warmest part of the stove. Arrange them thinly, in order to preserve the lower leaves in perfect health. The daily syringing will probably provide sufficient water.

PHOENIX ROEBELINII.—This is one of the best of ornamental Palms. Being somewhat harder than the majority of Palms, it can be used in corridors and cold conservatories without fear of injury by cold.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. Arthur J. DEXY, Abbots Wood, Godalming, Surrey.

STRAWBERRIES.—In plantations which have not been mulched the surface soil should now be lightly forked up, and a good dressing of well decomposed manure placed over it. Failing this, a dressing of bonemeal and soot will be found beneficial. Weeds should be carefully picked up by hand. Prepare a plot of ground by turning it and adding manure, so that the soil will be ready to receive plants next month. Plants of Royal Sovereign which have been wintered in small pots will succeed well under this treatment. A good system for producing an early crop outside is to plant crowns on a south border, and cover them with frames, about the beginning of April. These fill up a gap between those which have been forced, and the general main crop outside.

COBNUITS AND FILBERTS. Cobnuts and Filberts should be pruned at once, standards, as well as bushes. Thin the branches out well in the centre of the trees. Nuts can be made a paying crop, and there is a likelihood of good crops this year, judging by the abundance of male catkins. A good dressing of old potting soil over the roots acts as an invigorator; old Chrysanthemum soil will do, or any that has been enriched with manure.

CRAB APPLES. It is not too late for intending growers of Crab Apples to plant trees. John Downe, The Dartmouth, Salsarian, and The Langley are all good varieties.

VINES.—Vines should be pruned at once. Cut the spurs back to one strong eye, and train the extension growths. Well trained vines are very ornamental in the garden. Royal Muscadine and Sweetwater are excellent for fruiting; these should be planted on warm walls in well drained soil.

APPLES.—If it is intended to plant Apples before the spring, I would strongly advise the selection of a few really good varieties, such as are known to do well in the district. Some of the old and well-tried varieties are hard to beat; for instance, Dumelow's Seedling. This fruit is about the best cooking Apple there is, and lasts for over four months in excellent condition when carefully gathered and properly stored.

FRUIT ROOM.—Keep an eye on all fruits, removing all mould and blighted specimens; admit a little air to the fruit room.

GENERAL REMARKS.—Push forward the work of pruning, tying and nailing trees on walls, and clean any that may require it. When the weather

is unsuitable for work in the open, prepare all kinds of stakes and sharpen and clean all tools. Spraying may be done now to kill insect pests and moss on the branches of fruit trees. Large orchard trees will be improved in appearance by spraying them with a weak alkali wash. Good results on the trunks of the trees should now be pressed. I have seen many codlin moths and other pests caught quite recently from the third application.

THE KITCHEN GARDEN.

By J. DEUX, Foreman, Royal Gard. Windsor.

ONIONS.—The plot on which Onion seeds are to be sown should be prepared as soon as the state of the soil will permit. If the ground was trenched and manured in the autumn, a light forking only is necessary, and the soil should be made as fine as possible as this work proceeds, after which it should be left until it is dry enough to crumble under the foot. It is better to leave the sowing for another month than to sow before the soil is suitable. After the bed has been thoroughly prepared, make drills at 15 inches apart and one inch deep, and sow the seeds thinly and evenly, making the surface moderately firm after the seeds are covered. To obtain very large bulbs sow seed in boxes fourth with to produce strong plants that will be suitable for transplanting in April. Fill the boxes with rich soil, which may consist of two thirds loam and one third decayed manure that has been passed through a 2 inch sieve. Scatter the seeds thinly, and cover them with fine soil. They should be germinated in a pit or house having a temperature of 60°. When the seedlings are about 3 inches high they should be transplanted carefully into boxes containing rich soil, and the boxes placed close to the roof glass. When the plants begin to mottle with admit air with caution to harden the plants gradually. They should be ready for planting in their permanent quarters at about the middle of April.

PEAS.—A hardy, quick maturing variety of Peas should be sown in a sheltered position out of the wind, where the soil has been previously prepared, sown and the Peas are two reliable varieties for early sowing. The first named is a variety sown at Farnham last season on the same date as Peas, and the pods were ready to gather several days in advance of that variety. The best time is one of the best about Peas for early sowing in the open. Those who prefer to sow in pots or boxes for starting out in April should sow the seeds thickly and germinate them either in gentle warmth in a cold house, cold pit, where the plants are partially exposed to the light. Ventilation is an important detail in their cultivation, as it is necessary to prevent them from becoming draught.

FRENCH BEANS. Make sowings of French Beans in pots on frequent occasions throughout the spring, in order to maintain a supply. Plants raised from a sowing made a month ago should be transplanted into fresh soil, and attend to the support of a few sticks. Syringe the plants freely on bright days in order to keep red spider in check, and water the roots with weak manure water from the farmyard. This crop should be grown in a house having a temperature of 60°.

TOMATOS. Tomato plants raised from seeds sown in January are ready for shifting singly into small pots. The soil for the purpose may consist of two thirds fine loam and one third leaf mould, and it should not be made very firm. Water the plants after they are potted, and place them close to the roof glass in a house having a temperature of 70°. Make another sowing to raise plants for successional cropping.

LETTUCE.—Seeds of Lettuce should be sown close to the glass in a cold frame in order to obtain sturdy plants that will be ready for planting by the beginning of April. Plants raised in previous sowings should be transplanted carefully in heated frames, allowing a space of 6 inches apart for small growing varieties, and 9 inches for the others. Autumn sown Lettuce growing in pots require ventilation when the weather is favourable. Stir the soil between

the plants on frequent occasions to prevent damping.

FRUITS UNDER GLASS.

By JAMES HUTTON, Gardener to LEOPOLD DE ROTHSCHILD, Esq., P.O. Box, Gunpowder Square, Acton, W.

VINES IN OUTSIDE BORDERS. Where the vines are not being forced, presumably the borders will be still exposed. There is still time to give attention to the soil; indeed, I prefer this season of the year for lightly forking up and adding either a top dressing of fresh loam or a mulch of cow manure. Should the surface of the borders be somewhat below the ordinary level the addition of about 3 inches of tarty loam with a fair sprinkling of old mortar rubble would be beneficial. Rather less rubble would be necessary if the loam were of a calcareous nature. At the same time, if the vines show symptoms of weakness, or if the crop of the past season was not all that could be desired, reliable vine manure may be applied, but in no greater quantity than is recommended by the vendor. Such a manure should have a good percentage both of phosphates and potash; it should be applied before the fresh top-dressing of loam is added. It is better to do all this work when the soil is fairly dry; then, after having added the essentials, the border can be made fairly firm. A light surface covering afterwards of stable litter would be advisable. But if a dressing of cowyard manure is contemplated, I should not now add the artificial. In this case it should be well broken up, preference being given to manure that has been taken from a stack; this will be in better working condition. A dressing about 3 inches in thickness will be sufficient, and nothing else need be added now. Examine the drainage system wherever it is possible to do so, for a waterlogged border would make success impossible. Vines that are now starting into growth may possibly have their roots in outside borders. If so, a fairly thick covering of stable litter should be put over them. In most cases this will be ample. But if it be known that the border is too much on the wet side, then it may be covered with one of the brown or gray coverings so much in use in our gardens at the present time. If this precaution be taken a heavy fall of snow will, as it thaws, run off rather than into the border.

ORCHARD HOUSES. The spell of cold weather has kept back the early varieties of Peaches, Nectarines and Plums. This is an advantage where no early forcing is contemplated.

STRAWBERRIES. Another batch of Strawberries in pots should be brought under cover as soon as possible. In frosty weather they should be best put in a cold or hard house so that they may thaw gradually. When not frozen they should be dipped in sulphur before placing them in position for starting. Pay close attention to the watering of those started earlier, and do not let them suffer from drought. Two or three batches may now be got into a cold house, being drawn from thence as occasion may require for succession.

WEATHER CONDITIONS.—In no department of gardening is the present severe weather felt more than in fruit culture. Those who cultivate fruit in the neighbourhood of a large city or manufacturing centre where fogs prevail, are at a special disadvantage. In such circumstances it is a mistake to start too early, and better to depend upon making up leeway later on. The north-easterly wind, bringing temperatures frequently below freezing point, has necessitated an unusual amount of fire heat. This has created an aridity in the atmosphere that is not congenial to plant life. It is to be feared that it will bring about an early attack of insect pests, if a close watch be not kept. As soon as a shower of rain occurs an effort should be made to clean the glass on the outside. A fall of snow will also sometimes assist in this respect. In either case a light brush passed up and down the glass will clear it to a great extent. The additional light will be an advantage. Take every advantage of a sunny day to raise the temperatures somewhat, but do not attempt to do this by too much fire heat.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would oblige by obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR THE ENSUING WEEK

TUESDAY, FEBRUARY 13—

Roy. Hort. Soc.'s Coms. meet. Annual meeting of Fellows at 5 p.m.

THURSDAY, FEBRUARY 15—

Manchester Orchid Soc.'s meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 39.1°.

ACTUAL TEMPERATURE—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, February 8 (10.0 a.m.): Bar, 30.0°; temp, 33.0°. Weather—Bright.

SALES FOR THE ENSUING WEEK.

TUESDAY AND WEDNESDAY—

Clearance Sale of greenhouses, hot-water Piping and Nursery Stock at the Tumbidge Wells Nurseries, at 12 o'clock, by Protheroe and Morris.

WEDNESDAY

Balls, including Japanese Lilies, at 67 and 68, Cheapside, London, by Protheroe and Morris, at 2 o'clock.

Gardeners and National Service.

Gardeners of military age have already responded to the call of their country. Now

those of maturer years and those exempted on grounds of physical unfitness are asked to contribute their share to the national service. We are sure that the response of the older men will be no less creditable than has been that of the younger gardeners. Each man is called upon to ask himself whether he is now spending his working days in occupations of direct service to the community.

In many cases the question admits of a clear and certain answer, for in the large majority of establishments work connected with luxury gardening has been given up altogether, and the depleted staffs are spending their time in the essential work of increasing food production, together with the maintenance of rare and valuable plants, the neglect and destruction of which the President of the Board of Agriculture has pronounced to be undesirable.

Gardeners so occupied will have to ask themselves whether by remaining in their present positions they will be doing more or less than they might do in other employments. For our part, we think the answer which they arrive at ought to be determined by the answer to this other question, Is the amount of intensively cultivated land and glass under their charge so large as to require their individual services? If it is not, they will be answered out of their own mouths. If it is—if they are unrectly engaged in the production of as much food as it is possible for them to produce—they will regard themselves as having already voluntarily enlisted in the national service.

Head gardeners who have charge of large establishments will have the grave

responsibility of once again revising their judgment of what constitutes the irreducible minimum of assistance they require. They should, and must, endeavour to make use, even more largely than at present, of women gardeners, and thereby release such able-bodied men as may still remain on their staffs. Prejudices, if any remain, must be thrown aside, and head gardeners must be prepared to utilise the less skilful services of women who have been hastily trained, or have received no training at all. Such drastic changes, which would appear absurd in peace time, are a stark necessity now.

On the other hand, we trust that the authorities, on their part, will understand that it is a procedure of very doubtful wisdom to take a man engaged all his time in intensive cultivation, and skilled at that art, for another form of national service. The productivity of gardens exceeds that of the average farm three or four-fold, and where intercropping and successional cropping are practised, the difference is yet greater.

To ask skilled men already engaged in food production to exchange their work for general labour on a farm or in a factory is not, we hope and believe, the intention of the authorities.

Rather should it be their aim to see to it that every gardener should be an active propagandist and assistant in the work of cultivating vegetable food in the largest area of land in his immediate neighbourhood in which such cultivation is possible.

All gardeners should give heed and full consideration to Mr. Neville Chamberlain's appeal, and everyone from the age of 18 to 61 who is not honestly convinced that his energies are at present fully engaged in work of urgent national importance should forthwith become a volunteer under the scheme of the Director-General of National Service.

SEED POTATOS FOR THE COUNTY OF LONDON.

We are asked to state that the London County Council is prepared, on behalf of the Board of Agriculture and Fisheries, to procure seed Potatos for small cultivators in the County of London, and to arrange, as far as practicable, for delivery. The price of the Potatos will be 1s. 10d. for 14 lbs., or 14s. a cwt., and not more than 5 cwt. will be supplied to any applicant. The supply of any particular kind of Potato cannot be guaranteed, and early sorts are particularly scarce. Purchasers must, therefore, be prepared to accept seed, sound seed of any maincrop variety which may be available. Forms of application should at once be obtained from the officer-in-charge of the nearest of the Council's parks or open spaces, or from the Chief Officer, Parks Department, 11, Regent Street, S.W.

THE LATE LORD HARRINGTON.—The late Earl of HARRINGTON, of Elvaston Hall, Derbyshire, whose unfortunate death occurred a day or two ago, was greatly respected by all gardeners. For a quarter of a century or longer Lord HARRINGTON's indoor fruits, as grown and staged by his famous gardener, Mr. J. H. Goodeney, have secured most of the best prizes at the larger exhibitions, the Elvaston produce being always of very high merit. Moreover, Lord HARRINGTON himself became a professional horticulturist many years ago, when he opened a shop at Charing Cross for the sale of fruits and flowers from the Elvaston gardens.

SOCIETY OF WHOLESALE FLORISTS.—On January 17 last a meeting of wholesale florists was held in the Essex Hall, Essex Street, Strand, when it was resolved to form an Association. We are now informed that the secretarial duties of the new society have been entrusted to Mr. C. H. CURTIS, until recently editor of the *Gardeners' Magazine*; the address of the Association is No. 4, Tavistock Street, Covent Garden.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting of the Surveyors' Institution will be held in the Lecture Hall of the Institution on Monday, the 12th inst., at 5 p.m. A paper, on the "Defence of the Realm (Acquisition of Land) Act, 1916," will be read by Mr. EDWIN SAVILE.

MR. W. H. DIVERS.—On the occasion of Mr. W. H. DIVERS leaving Belvoir Castle, where he held the position of head gardener for twenty-three years, a pair of silver candle-ticks was presented to him by a number of local friends.

THE "POTASH-LIBERATING" EFFECT OF LIME.

Many of the soils in Southern California devoted to the cultivation of Citrus fruits being of granitic origin, it occurred to Messrs. BRIGGS and BRUCEVALE to ascertain whether lime produces upon these soils the effect usually ascribed to it, namely, the liberation of potash. The results of the authors' experiments and analysis are entirely negative, and they conclude that the "availability" to plants of the potash in soils derived from orthoclase-bearing rocks is not increased by the addition of lime or gypsum.

THE SALE OF ORCHIDS AT WALTON GRANGE—

The sale of the Orchid collection which belonged to the late Mr. THOMPSON, Walton Grange, Stone, has been fixed for the 24th inst., at Walton Grange. We understand that Mr. JAMES HOWES, who has had charge of this fine collection, will shortly seek another appointment.

SHOVELLING SNOW.—

To prevent snow from sticking to the shovel it is recommended first to give the tool a coating of paraffin. The paraffin will adhere best if both the lipid and the shovel, whether of metal or wood, are warmed, when the oil may either be flowed on or applied with a brush. If allowed to "set" before the shovel is used one application of paraffin will serve for a couple of hours' hard shovelling.

LEGACY TO A GARDENER.—

The late A. C. FRASER, of Mougwell Park, Wallingford, has left a sum of £1,000 to his gardener, Mr. JAMES FORBES. Mr. FORBES was at one time secretary of the Reading and District Gardeners' Society.

THE BELGIAN COMMITTEE.—

The Secretary of the Belgian Agricultural and Horticultural Committee informs us that his office has been transferred from 6, Grosvenor Gardens, to 15, Grosvenor Crescent, S.W.

FOOD PRODUCTION IN SCOTTISH PUBLIC PARKS.—

Fifty additional garden plots have been provided at Tollcross Park, Glasgow. There were one hundred applications, but it is hoped that those disappointed will be given ground at Belvedere Hospital. Plots have also been provided at the Alexandra, Newlands, Plantation, and Victoria Parks, and all the applicants have been provided for. In Dumbartonshire the Alexandra, Boxhill, and Jamestown Parks will each have plots provided for rat-payers wishing allotments. It has been agreed by the committee responsible to recommend to Edinburgh Town Council that 20 acres of Saughton Park, 55 acres of Portobello Park, and 30 acres of the Brair Hills Golf Course be ploughed and cropped. Maxwelltown Parks Committee has arranged for four fields for allotments. Dum-

"Availability of Potash in certain Orthoclase-bearing Soils as affected by Lime or Gypsum," *Journal of Agric. Research*, Washington, VIII, 1.

trix's Town Council has secured nursery ground at Irving Place for garden allotments.

STREPTOCARPUS ORIENTALIS (see fig. 23).—This handsome species of *Streptocarpus* is of considerable botanical interest, from the fact that it is the only known representative of the genus in Asia. It was discovered by Dr. A. F. G. KERR, growing on rocks by streams on Mount Dou Sui, near Chiengmai, Siam, at an altitude of 1,800 feet above sea level. Dr. KERR sent seeds to Kew in 1912, and from these seeds plants were raised which flowered in the following spring. The flowers are borne on slender pedicels, on a solitary, much branched, erect stem, from 12 inches to 18 inches high. The corolla is purple outside, pale within the tube, $1\frac{1}{2}$ inch to 2 inches long, the limb being from $\frac{3}{4}$ inch to 1 inch across. The ovate, toothed leaves are from $1\frac{1}{2}$ inch to $3\frac{1}{2}$ inches long, and from 1 inch to 3 inches broad. The plant dies after flowering, but seeds ripen freely, enabling a supply of young plants to be obtained easily. The seeds should be sown in February, and the seedlings grown in a stove temperature. The plants commence to bloom the following September, when they should be placed in a cooler and drier atmosphere. In suitable conditions they will continue to flower freely for at least three months. As with other species of *Streptocarpus*, *S. orientalis* thrives in a light, rich compost. The plants should not be over-potted; good specimens may be grown in pots 5 inches in diameter. During the summer the plants should be placed in a shaded, moist position near the roof-glass. At this stage they should not be syringed overhead, but they should be given a liberal supply of water at the roots.

WAR GARDENING PAMPHLETS. Those who respond to the appeal to grow as many vegetables as possible will have no lack of guidance. Besides the advice in the horticultural journals and in the columns of the daily press, large numbers of excellent pamphlets are being issued from various sources, among others from firms of seedsmen. Messrs. STATION'S pamphlet is terse and clear, and describes in alphabetical order the chief garden crops. The instructions are excellent, and amateurs will in particular find the table for sowing and planting of great assistance. Messrs. AUSTIN and McALHAN'S pamphlet is on similar lines, and has been drawn up primarily for the use of Scotch amateur gardeners. Besides instructions in the growing of the several crops it contains useful hints on the choice of soil and manures.

VISITORS TO KEW. During the year 1916 713,922 persons visited Kew, the total receipts from admission fees during the period January 17 to December 31 (both dates inclusive) amounting to £5,792 13s. 6d.

MR. E. H. WILSON. Mr. WILSON is arranging a sixth journey to the East for the purpose of collecting plants. On this occasion he will explore the floras of Corea and Formosa.

WAR ITEMS.—Sergeant C. H. ANDERSON, of the London Scottish, and formerly a member of the garden staff at Kew, lost his life by an act of gallantry. An ignited bomb fell in the dug out where he and others were gathered; Sergeant ANDERSON poked it up and pushed to the door, but before he could dispose of it the bomb exploded, causing injuries from which he died an hour later. He enlisted in August, 1914, but an accident during training necessitated an operation, and he did not proceed to the Front until November, 1916.

—Captain CHARLES DUDLEY, an old student of Kew, and of the French National School of Horticulture, has been for a second time "cited in the Order of the Army," and has received

* *The Culture of Profitable Vegetables in Small Gardens*. By AUSTIN & SONS, London.
Allotments and Small Gardens in War-Time. Published by Austin & McAlhan, Glasgow.

the Cross of St. Anne of Russia for acts of conspicuous bravery in the field.

THE WAR LOAN.—Amongst the subscribers to the new War Loan we notice the firm of Messrs. EDWARD WEBB and SONS, SPURRINGBRIDGE, LTD., for the sum of £20,000.

THE FROST.—The prevailing frost appears to be more severe in the Midlands than in the more northern parts of the country. Thus 6° below zero, 38° Fahr. of frost, were recorded at Market Harborough during Sunday night. According to a correspondent, Mr. G. H. SIBBICK,

old-time gardener of the town, 54° or 55° Fahr. was recorded.

BULB-GROWING ON THE PACIFIC COAST.—It is claimed by Mr. J. W. VAN ALSTED, who is engaged in the bulb-growing industry in California, that bulbs grown on the Pacific coast are superior to those raised in Holland. How much farther the water has to be hauled is indicated by his statement that next year's planting in his nursery will be increased from 7,000,000 to 10,000,000 bulbs, and that he will import only from 5,000,000 to 7,000,000 from Holland, the rest to be raised at home.

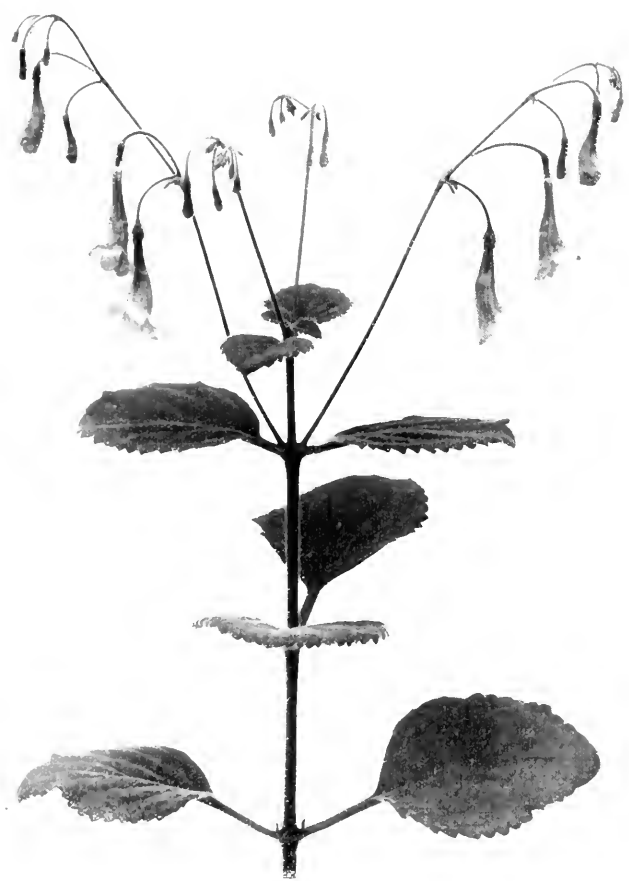


FIG. 23. STREPTOCARPUS ORIENTALIS. Photograph by C. P. Rolph.

LAND, the temperature at the Gardens, Alden Hall, Longroy Mill, Derbyshire, was 4° Fahr. below zero on the morning of February 5th. Mr. KENNEDY, Norton Priory Gardens, Runcorn, states that on the morning of the 6th inst. the reading there was 5° Fahr., or 29° of frost.

BULBS IN COLD STORAGE.—The temperatures at which it is found best to keep "bulbs" in cold storage* are for Lily of the Valley, 28° Fahr., i.e., 4.6° below freezing; but for Hyacinths, Tulips, Camas, and particularly Gladi-

THE LOCAL SOCIETIES.—The Chester Paxon Society has appointed a sub-committee, consisting of Mr. N. F. BARNES, gardener at Eaton Hall; Prof. or Prof. or BOMER, Newstead, Mr. A. W. ARMSTRONG (Messrs. McHAYLE and Co.), and the hon. secretary, Mr. G. P. MILN, to advise allotment holders and others as to the best and most practical methods of vegetable culture. The society will offer cultural certificates, and probably prizes, for the best equipped and most neatly kept garden allotments. Mr. BARNES is preparing a pamphlet giving prac-

* See *Cult.* a monthly pamphlet on cold storage published at Ocala, N.Y., and quoted in the *Florida Exchange*, Jan. 29, 1917.

tial hints on gardening subjects, which will be supplied free of charge to applicants.

— Fruits, flowers and vegetables exhibited at the meetings of the Twickenham Gardeners' Association in 1916 have been given, in almost every case, to St. John's Hospital. The profits of the annual exhibition, amounting to £5 5s. 6d., have also been handed to that Fund. The society is arranging to hold a special vegetable exhibition in 1917.

— Lee and Lewisham Horticultural Society has given the profits of the year's working, amounting to £10 15s. 10d., to St. John's Hospital. The society has affiliated with the local land cultivation society, and is in negotiation for land to be let in plots at a nominal rental. The society has lost, by death, a valued officer, in the late Mr. T. Atroy, who had been a member for over thirty-five years, and secretary since 1911.

PUBLICATIONS RECEIVED.—*The British Dominions Year Book*, 1917. (The British Dominions General Insurance Co., Ltd., London.) — *The Cultivation and Manuring of the Kitchen Garden*. (Royal Horticultural Society, London.) Price 3d.—*Nuts: A Profitable Crop for Waste Land*. (Geo. Bunyard & Co., Ltd., Maidstone.) Gratis.

AMERICAN NOTE.

NEPHROLEPIS VARIETIES AT THE BROOKLYN BOTANIC GARDEN.

In your issue for December 18, 1915, p. 584, you published an account of the *Nephrolepis* collection at the Brooklyn Botanic Garden, together with a suggestion I made for a means of co-operation between the Garden and florists which would be of mutual benefit. The offer made on behalf of the Garden was to send out small plants of named varieties from a list then published as far as duplicates were available, the purpose being to aid florists in building up collections and testing new varieties. Second, the Garden offered to act as a bureau of information regarding these Ferns, and, in this connection, offered to send out copies of a reprint of the *Nephrolepis* article from the *New Standard Cyclopedia of Horticulture*. Florists were asked in return to send information to correct or supplement the statements in the article, and also to send plants of varieties not on the list. The present statement is in the nature of a report on the results obtained, with a further offer of co-operation on the same lines as before.

About two hundred copies of the *Nephrolepis* article have been sent out, the great majority to commercial growers. Several hundred small plants have been distributed in lots varying from five to thirty different sorts, according to what was available. These have gone to all corners of the United States, and applications have come from Australia and New Zealand. A considerable number of florists have thus been able to build up collections for exhibition purposes.

The *Nephrolepis* investigation work at the Garden has also profited. The collection of *Nephrolepis* forms has more than doubled. The list previously published included forty named sports of *N. exaltata* *hastoniensis*. The present list includes seventy. Of varieties of other species, fifteen names were given before. Now there are fifty names. It should be noted that I say "fifty names," not fifty varieties. Some of these names are undoubtedly synonyms. The list of actually distinct forms may not be more than thirty, but it is yet impossible certainly to determine the proper names for these varieties or the exact number of different sorts. The difficulty in correctly classifying these forms is due in part to carelessness and inaccuracy on the part of the growers and others and in part to the fact that the classification of the original species of *Nephrolepis* is an unusually difficult problem.

Besides the named varieties at least fifty unnamed sorts have been sent in for experimental

growing. When full grown plants of all varieties are developed it will be found that some of these unnamed forms are duplicates of varieties already in the trade. It is safe to say, however, that the present living collection at the Garden includes at least one hundred and twenty five distinct varieties of *Nephrolepis*.

About thirty of this increase of sixty-odd sorts have been obtained by purchase from English and French growers. The remainder have been received through the co-operation of American growers and botanic gardens. The Bureau of Plant Industry, through its Office of Foreign Plant Introduction, is now co-operating through its agents in all parts of the tropics, who are collecting specimens of the wild forms to be grown and compared with the types under cultivation.

The writer has continued his visits to commercial establishments through the aid of a grant of one hundred dollars from the American Association for the Advancement of Science. Growers in Columbus and Springfield, Ohio, and in and about Boston, New York and Philadelphia, have been visited, some of them several times. A great deal of valuable information has been gained in this way. A scientific report of the study of these plants has been published in the May number of the *Bulletin of the Tarry Botanical Club*, and reprinted as contributions No. 15 of the Brooklyn Botanic Garden. Further reports are in preparation.

In the meantime, the facilities of the collection continue to be available for the benefit of florists. Small plants of named varieties will be sent on application so far as the stock of duplicates allows. Definite applications for few and specific varieties will receive preference over general application, but all will be served as far as possible. If general applications are made for the purpose of building up collections of varieties, the request for specimens should include a list of the sorts already being grown, to avoid duplication.

Not all the varieties listed here are available for distribution, although there is a much larger assortment than last year. Some have only recently been received from England, and there has been insufficient time for propagation of small plants. Others, especially some in the second group, are very slow to propagate, or are so large and require so much space that it has not been possible to give them bench room. In general, the varieties in the second group are mostly of little commercial value in the United States except for large collections.

Perhaps the collection can find its greatest value for florists as a clearing-house of information about *Nephrolepis* forms. How this might work out was suggested recently by a well-known grower, of the New York district. As president of one of the local growers' associations, he had had occasional requests for an opinion as to the value and distinctiveness of some supposedly new form of *Nephrolepis* sent in by some florist of the district. The only means of answering such a question would be by reference to some practically complete collection of these forms. The writer will be glad to answer questions along this line and regarding any other phase of interest in connection with these Ferns. Visitors are welcome at any time.

NEPHROLEPIS FALCATA AND ITS VARIETIES.

Once-pinnate forms

exaltata. Wild species; tropics generally.
hastoniensis. F. C. Becker, Cambridge, Mass., and others.
Childs. J. L. Childs, Floral Park, L.I.
Driver. Driver Brothers, White-tone, N.Y.
Dwart. Boston. F. R. Pierson, Tarrytown, N.Y.
obovatumensis. H. B. May and Sons, Upper Edmonton, England.
falcata. Peter Wagner, Brooklyn, N.Y. (There is also an English *falcata*.)
Gretna. B. M. Webers and Co. Gretna, Louisiana.
Gustaf. George Gustaf, West Hoboken, N.J.
Harris. Wm. K. Harris and Co., Philadelphia, Penn.
New York. George H. Harris, West Hoboken, N.J.
Randolph. Randolph and Sons, Verona, Penn.
Rosenfeldt. American Rose and Plant Co., Springfield, Ohio.

Schultze. Anton Schultze, College Point, N.Y.
Scott. John Scott Estate, Brooklyn, N.Y.
splendida. Good and Reese Co., Springfield, Ohio.
Teddy, Jr. American Rose and Plant Co., Springfield, Ohio.
variosissima. F. R. Pierson, Tarrytown, N.Y.
Wagner. Peter Wagner, Brooklyn, N.Y.
Wanamaker. Robert Craig, Philadelphia, Penn.

Twice-pinnate forms.

Anna Foster. Lucius Foster, Dorchester, Mass.
Baby Pierson. (Patentage uncertain).
Barrows. Henry H. Barrows and Son, Whitman, Mass.
Clark. E. Clark (?).
Duplex. Hermsfeldt (?).
Emsford. Scott Brothers, Elmford, N.Y.
Esteriana. (Same as Anna Foster).
Kingessing. Wm. K. Harris and Co., Philadelphia, Penn.
Miller. Wm. K. Harris and Co., Philadelphia, Penn.
Pierson. F. R. Pierson, Tarrytown, N.Y.
Pierson "improved". Good and Reese Co., Springfield, Ohio.
Roberta. Robert Craig, Philadelphia, Penn.
Schiller. J. L. Schiller, Toledo, Ohio.
Scholze. Herman Scholze, New Durham, N.J.
splendida. Good and Reese Co., Springfield, Ohio.
superbissima. F. R. Pierson, Tarrytown, N.Y.

Three-pinnate forms.

Clark. E. Clark (?).
elegantissima. F. R. Pierson, Tarrytown, N.Y.
elegantissima "improved". F. R. Pierson, Tarrytown, N.Y.
elegantissima compacta. F. R. Pierson, Tarrytown, N.Y.
elegantissima cristata (?). (English).
exaltata cristata (?). (English).
Galvestonia. J. D. Friesner, Galveston, Texas.
Iscopodoides. Thomas Reichford and Sons, Herts, England.
muscosa. F. R. Pierson, Tarrytown, N.Y.
Pierson *compacta* = *elegantissima compacta*
Pierson. J. D. Friesner, Galveston, Texas.
Scholze. Herman Scholze, New Durham, N.J.
superior. Superior Nurseries Los Angeles, Cal.
toboides. Thomas Reichford and Sons, Herts, England.
toboides compacta. Thomas Reichford and Sons, Herts, England.
toboides *spathula*. Thomas Reichford and Sons, Herts, England.
Verona. S. Randolph and Sons, Verona, Penn.
Whitman. Henry H. Barrows and Son, Whitman, Mass.
Whitman Improved. Henry H. Barrows and Son, Whitman, Mass.
Whitman *compacta*. Henry H. Barrows and Son, Whitman, Mass.
Webers. B. M. Webers and Co., Gretna, La.
Wedd. Thomas Reichford and Sons, Herts, England.

Four-pinnate forms.

Amorpha. Edward Amorpha, Janesville, Wis.
assorta. (English).
Good. Good and Reese Co., Springfield, Ohio.
graefiana. (Not certainly the original *graefiana* of Barrows.)
magnifica. Henry H. Barrows and Son, Whitman, Mass.
Marshall. H. B. May and Sons, Upper Edmonton, England.
Marshall compacta. H. B. May and Sons, Upper Edmonton, England.
Neuber. Neuber.
patuliflora. (English).
Reichford. Thomas Reichford and Sons, Herts, England.
Smith. L. Clark, Washington Botanic Garden.

Five-pinnate forms

Craig. Robert Craig, Philadelphia, Penn.
Whitman. H. B. May and Sons, Upper Edmonton, England.

NEPHROLEPIS VARIETIES AND SPORTS OTHER THAN EXALTATA.

acuminata
ovata
Barten
Biserrata
biserrata (*duralliodis*) fuscans
biserrata fuscans minor (*duralliodis fuscans minor*).
biserrata var. (Undetermined form.)
cauculata
concinna
cordata compacta = *cordifolia compacta*.
cordifolia compacta.
cordifolia gigantea.
cordifolia elegans.
cordifolia tessellata.
cristata = *angusta*.
duralliodis = *biserrata*.
duralliodis fuscans = *biserrata fuscans*.
Duffii
exaltata (= *cordifolia*).
exaltata fuscans = *biserrata fuscans*
exaltata grandiceps = *biserrata fuscans minor*.
fluorezera
fluorezera
"Zollingeriana" (= *Zollingeriana*?).
Hirsutula
hirsutula tripartita.
Longi (= *superba*).
Mayeri
Mayeri *cristata*.
Mayeri *ornata*
pedunculata.
philadelphensis.
* Produces some 2-pinnate leaves.
† As typically developed, 3-pinnate.

- ping variety, but the quality is not very good.
- 6 *Great Spot* (McAlister).—One of the best of the second early varieties. It is later than King George, and might even be regarded as an early maincrop. The haulm is tall, upright, and vigorous. The foliage is dark green and glossy. The flower is white. The tubers are round with moderately deep eyes. The skin and flesh are white. It is a very heavy cropping variety, and the quality is good.
- 7 *No Douglas Hay* (Sands).—Indistinguishable from Great Scot.
- 8 *Southampton Wonder* (Tosgood).—Indistinguishable from Great Scot.
- 9 *The Duchess* (Dobson).—The haulm is moderately vigorous and spreading. The tubers are round, skin white, flesh white, and eyes rather deep. It crops well.
- 10 *The Ally* (syn. The Allies).—Haulm vigorous and spreading. Flower white. The tubers are usually oval, but the shape varies. The skin and flesh are white; eyes shallow. It is a very heavy cropping variety, but the quality is only fair.

LATE OR MAINCROP VARIETIES

- ABUNDANCE TYPE. Nos. 12 to 13 resemble Abundance in most respects.
- 11 *Abundance* (Sutton).—An early maincrop, with strong upright haulm and dark green, glossy foliage. The flowers are white. The tubers are round to oval, and flat. The skin and flesh are white and the eyes shallow. The cooking quality is good. The variety crops well, but it is rather liable to the common Potato disease (*Phytophthora infestans*).
- 12 *Callies Castle* (G. R. Sharp).—An early maincrop which resembles Abundance.
- 13 *King Albert* (Sands).—An early maincrop which resembles Abundance.
- 14 *The Princess* (Dobson).—Of the Abundance type.
- 15 *Crofter* (Dobson).—Of the Abundance type.
- 16 *Joanna Deans* (Finlay).—Of the Abundance type.
- 17 *Favourite* or *Impaired Favourite* (Dobson).—A well known variety of the Abundance type.
- 18 *Twentieth Century*.—Resembles Abundance.
- THE ADMIRAL TYPE. 19 and 20.
- 19 *The Admiral* (Dobson).—An early maincrop with a tall, strong, upright haulm which becomes more spreading towards the end of the season. The flowers are white. The tubers are flatish-round with shallow eyes. The skin and flesh are white. The variety yields a good crop of moderate size tubers.
- 20 *Barnhouse Beauty*.—This variety does not appear to be so vigorous as the Admiral, and the foliage is inclined to curl. The flowers are lavender and white. The tubers are round or piddish-shaped. The skin and flesh are white and the eyes shallow.
- 21 *The Laird* (Davies).—A maincrop with a vigorous haulm and purple foliage. The tubers are round, larger than Admiral. The variety crops well on certain soils in many Midland districts.
- LANGWORTHY TYPE. 22 to 24.
- 22 *Langworthy* (Nixon).—A late maincrop with tall, vigorous, upright haulm. The leaves are slightly crinkled. The flowers are mauve tipped white. The tubers are kidney-shaped, often tapering at the "heel." The skin and flesh are white and the eyes shallow. It crops well on some soils, but it requires a long season of growth and good cultivation. If possible, the "seed" should be sprouted. The quality is excellent.
- 23 *Walt's Wanted* (Nixon).—Resembles Langworthy.
- 24 *Golden Wonder* (Brown).—The haulm, foliage and flowers are practically identical with those of Langworthy. The tubers are kidney-shaped, often tapering at the "heel." The skin has a characteristic yellowish-russet brown tinge. The flesh is white and the eyes shallow. The quality is excellent. The variety crops well on some of the soils of Lancashire, and it is one of the best late-

keeping varieties. It requires a long season of growth, and if possible the "seed" should be sprouted. Not suited for heavy soils.

WHITE ROUND OR OVAL SECTION.

- 25 *Rob Roy* (McAlister).—An early maincrop with a tall, vigorous haulm, inclined to spread. The tubers are flatish oval, with very shallow eyes. In size they are medium. The variety crops moderately well.
- 26 *The Lochan* (Farish).—Haulm of medium height and vigour, upright, with fine branches. The foliage has a characteristic delicate shade of green. The tubers are round, with eyes of medium depth. The skin is white, with a faint tinge of pink, especially around the eyes. The flesh is white. This variety yields a heavy crop of medium-sized tubers. Appears fairly resistant to common Potato disease (*P. infestans*).
- 27 *Woolley Bountiful*.—Resembles Lochan.
- 28 *Leicester Wonder* (Sands).—A very late maincrop, with a tall, upright, vigorous haulm and dark green foliage. The flowers are white, borne on long stalks. The tubers are round, with a white skin sometimes showing a faint trace of pink. The eyes are shallow. The flesh is white, tinged lemon. The variety crops well and appears to be fairly resistant to common Potato disease (*P. infestans*).
- 29 *The Templar* (Wilson).—A late variety with a very vigorous, tall, upright haulm and dark green foliage. The flowers are white and very numerous. The tubers are flattened oval, with eyes of medium depth. The skin is white and the flesh white. The variety yields a heavy crop of medium-sized tubers of very good quality. It appears to be fairly resistant to ordinary Potato disease (*P. infestans*).

COLOURED ROUND OR OVAL SECTION.

- 30 *Kerr's Pink*.—A late variety with a very strong, tall, upright haulm. The flowers are white and usually numerous. The tubers are round, with a light pink skin. The colour is so slight that it will not detract from its market value. The eyes are usually of medium depth, but on some tubers they are deeper. The flesh is white and the quality excellent. The variety yields a very heavy crop of good-sized tubers. It also appears to be fairly resistant to ordinary Potato disease (*P. infestans*).
- 31 *The Border* (Wilson).—Tall, upright, strong haulm, with darkish green foliage. Flowers rose purple, tipped white. The tubers are round, with rather deep eyes. The skin is red and the flesh white. It yields a heavy crop of medium-sized tubers which are of excellent quality. The variety appears to be highly resistant to ordinary Potato disease (*P. infestans*). Its colour will probably detract from its value as a market potato, but it can be thoroughly recommended to growers who require a good-keeping potato of first-class quality.
- 32 *Lish Queen* (Sands).—A main crop, with a tall, vigorous, upright haulm, and large medium green leaves. The flowers are purple. The tubers are round, with a pink skin and very deep eyes. The crop is fairly heavy, and the variety will keep late.
- 33 *Sherlock* (Sands).—A very late variety, with moderately vigorous, tall haulm, which becomes spreading at end of season. The foliage is dark green. The flowers are white and usually numerous. The tubers round, rather rough in shape, with a reddish pink skin. The eyes are numerous and deep and the flesh white.
- 34 *White City* (Sutton).—A variety with tall, vigorous upright haulm, usually with three or four strong branches. The foliage is darkish green. The flowers are large, tipped a lighter shade. The tubers are long, flat, kidney-shaped, and tapering, with very shallow eyes and a russet skin. The flesh is white and the quality good. The variety crops well. Unfortunately many of the stocks of this variety are very mixed, gene-

rally with a smooth-skinned variety very susceptible to wart disease.

- 35 *St. Malo Kidney*.—The haulm is tall, upright and strong, and the foliage dark green. The tubers are kidney-shaped and large, with shallow eyes. The skin and flesh are white. The variety crops well, but it is advisable to sprout the "seed" before planting.
- 36 *Dominion* (Pond).—A late variety with a tall, vigorous, somewhat spreading haulm, with dark green foliage. The flowers are white. The tubers are flattened oval, often elongated, in many respects resembling the tubers of the Up-to-Date. The skin and flesh are white and the eyes shallow. The variety crops well.

There are several other immune varieties for which approval may be obtained if desired, such as

SECOND EARLY VARIETIES

Aberlady early, Mr. Bresse, Border Queen, Snowball, Entente-Cordiale (Finlay).

LATE VARIETIES.

Supreme (Sutton), Flourball (Sutton), Adiron dack.

Occupiers of wart disease infected premises are reminded that it is illegal to plant any Potatoes on their premises, whether of the above-named varieties or not, except with the licence of the Board of Agriculture and Fisheries.

The following varieties are highly susceptible to wart disease of Potatoes and cannot be planted on infected premises:—

Early Puritan, Epicure, Midlothian Early, British Queen, Duke of York, Sharpe's Express, Sharpe's Victor, Sir John Llewellyn, Evergood, Cona, Cigarette, King Edward VII., Up-to-Date, Dalhousie, Duchess of Cornwall, Ayrton Chief, Factor, Prolific.

CROPS AND STOCK ON THE HOME FARM.

POULTRY.

If all who manage a farm would keep a reasonable number of fowls of the best breeds and manage them sensibly poultry would be found to pay very well. Too many persons think if they cannot obtain a full supply of eggs during November and December by very little trouble and expense the fowls are not worth looking after. Close to where I write a village policeman last year made £8 from his few hens, kept in the backyard and a part of the garden attached to his house. The common fault of inexperienced poultry keepers is that of overcrowding. Far better keep fewer birds and attend to them properly. For the winter production of eggs the semi-intensive method of management is the most satisfactory. Ten March or early April hatched pullets, with one year old male bird, in a house 12 feet by 10 feet, will give better results than three times the number kept in unfavourable conditions, such as too little space, tainted soil, want of exercise, and indifferent feeding.

HATCHING CHICKENS

For early February and March hatching in quantity an incubator is a necessity, so difficult is it at that time to obtain broody hens. An incubator of the best make, properly managed, ensures success, with good eggs, provided the directions issued with the incubator as to temperature and the manipulation of the eggs are correctly followed. With an incubator a foster mother is a necessity. Ducks and turkeys also can be equally well hatched in an incubator.

Many are apt to think the hatching of chickens under hens involves no risk. The nests should be made with soil on the ground in the open, protected from cold wind, wet, and hot sun during May and June. Setting the hens on eggs on the ground ensures a regular supply of moisture to the eggs by the aid of capillary attraction, which dispenses with the necessity of damping the eggs daily, as must be done when the nests are made on a dry floor.

During a spell of dry weather in April or May, a week before the date of hatching, the eggs should be sprinkled with tepid water every morning immediately before the hens return to their nest, after being off the allotted quarter of an hour for food and water. Early in the year twelve eggs are sufficient for a hen to cover properly; later, when the weather is warmer, fourteen is not too many. A common mistake is that of putting the eggs under the hen the moment she shows signs of broodiness. All hens do not take to the eggs at once—some will sit on them two days, when, through no apparent cause, they will leave the nest, and eggs so treated are generally useless. The correct method is to set the hen for three days on false eggs before committing good eggs to her charge. The hens should be taken off regularly each day for food. If this detail is attended to irregularly the hens, after a stated time, become restless, and often are found standing up off the eggs waiting to be released. In this way, if nothing worse happens, the outer eggs become unduly cold, making the hatching irregular, and may spoil the lot. As each hen is lifted from her nest she should be tethered to a stick thrust in the ground, a loop passing round one leg. Such a method as this must be practised where a number of hens are sitting together. Some person may say, "What difference does it make which nest a hen returns to?" All hens are not of the same body temperature, and as eggs require regularity of temperature it will be seen how important it is that each hen has her own nest continuously. Maize is the best food for sitting hens, as it provides the most warmth from food. Clean drinking water, too, is important.

BEANS FOR CATTLE.

The common Horse Bean (*Faba vulgaris*) when split, is excellent for horses in hard work, fed with Oats and chaff. Bean meal is capital for fattening stock, as it is rich in nitrogenous as well as starchy foods. For cows in milk a little with the cake ration adds richness to the milk. For lambs fattening after they are three months old split Beans give a great fillip to other foods for putting on flesh. The best Beans are grown on heavy soil, say following a Wheat crop, and, if not wet, land should be sown in October, and the crop is then ready for harvesting sooner than the spring sown crop, which is known as the Spring, or Lark Bean. The winter Bean is smaller than the spring variety. If the soil is light in character the winter variety should be sown. The yield per acre is uncertain; five quarters is good; adverse weather—drought especially—may reduce the amount to six sacks per acre. Good Beans should give 64 lb. per bushel, 2½ bushels per acre is required for seed. The land should be deeply ploughed in the autumn and well cultivated in the spring for the summer variety. There are many methods of sowing Beans. Broadcasting is easy, but prevents being afterwards. Drilling the seed deeply 18 inches wide is the quicker method. Dribbling the Beans two in a hole is also a good plan. *E. Molington*

SPRING WHEATS.

The Royal Agricultural Society of England, on the recommendation of the War Emergency Committee appointed in December last, has issued a leaflet prepared by the Botanist of the Society—Professor R. H. Biffen, F.R.S.—giving advice to farmers in connection with the sowing of spring Wheats. The society states that the question is one of great importance in view of the country's requirements in the matter of food supply, and hopes that advantage will be widely taken of the information which has been prepared to assist agriculturists in maintaining the maximum growth of Wheat. Copies of the leaflet can be had on application to the Secretary, Royal Agricultural Society of England, 16, Bedford Square, London, W.C.

Obituary.

CHARLES ROSS.—It is with regret that we announce the death of the veteran gardener, Mr. Chas. Ross, whose work in raising new fruits, principally Apples, has obtained for him wide fame. He died at Westgate-on-Sea on the 4th inst., aged 92 years. Mr. Ross was for many years gardener at Welford Park, Berkshire. He was born on the Dalmeiy Estate, Midlothian, where his father was head gardener to the then Earl of Rosburgh. He was employed in early youth at Messrs. Dickson and Sons' nursery, Edinburgh, and in several private gardens, notably that of Dalkeith. His first position as head gardener was at Fairhawn, Tonbridge, Kent, where he remained for six years. In 1860 he went to Welford Park, where he remained until 1903, when he retired. Deceased attained wide fame chiefly in connection with the raising of new Apples. It was about 1826 that his famous cross between Cox's Orange Pippin and Peasgood's Nonesuch was effected, and from that cross have been obtained several very fine varieties, including Charles Ross, a beautiful Apple, which worthily perpetuates the raiser's



THE LATE CHARLES ROSS, A.M.I.

name. Its original name was Thomas Andrew Knight, under which title it received an Award of Merit from the R.H.S. Some years after the name had been changed to Charles Ross it obtained a First-class Certificate. Immediately before the granting of the latter award, the variety received 1st prize for flavour in a class for dessert Apples at the R.H.S. Fruit Show. From the same cross came The Houbdon, Royal, and Renown, three superb Apples. Other excellent Apples raised by Mr. Ross are Paragon, famed for its luscious colour; Hector Macdonald, a seedling from Lane's Prince Albert; Encore, from Warner's King and Old Northern Greening; Excelor, from Peasgood's Nonesuch and Duke of Devonshire, a fine, roundish Apple, with a small oval at the stem; and many others not so well known. Altogether Mr. Ross obtained for his seedlings three First-class Certificates and ten Awards of Merit.

ALFRED HEMSLEY.—We regret to record the death from cancer in the throat of Alfred Hemsley, which occurred at his residence, Wistaria Road, Lusham, on the 50th ult. He was born on January 7, 1851, so that he had completed his 66th year. He commenced his gardening career in a general market garden nursery at Haslemere, Sussex, where his father was manager. He passed through the various departments, and became well grounded in practical knowledge and especially in the forcing of Grapes, Peaches and

Cucumbers. He entered the R.H.S. Gardens at Chiswick in 1876, and was soon promoted to the position of foreman plant grower, and his skill as a grower and his taste in displaying his plants, both in the conservatories and at the shows, was generally acknowledged. He left the R.H.S. in 1902, and after a short engagement at the residence of the secretary of Mr. H. E. May, Edmonstone, with whom he remained until 1909. His name is well known as a Fern grower was well known in the trade as Mr. Hemsley wrote articles for the Horticultural Press for many years, and from 1903 he devoted himself entirely to the literary side of his profession. Besides contributing to English journals, including the *Gardener's Chronicle*, he wrote for the *American Florist and Flowerer's Exchange*, and was author of the *Book of Fern Culture*, of John Lane's series of "Handbooks," and joint author with Mr. John Fraser of an edition of *Johnson's Gardeners' Dictionary*, which has been published only a few days. About 1910 his health failed, and he accomplished little work after that. He married in 1885, and leaves a widow, three daughters, and two sons, the younger of whom is a second lieutenant in the 15 London Regiment. Mr. Hemsley was an enthusiastic cultivator of Carnations, and his familiarity with the various branches of market gardening was exceptional.

RICHARD J. DONAVAN.—The *American Florist* announces the death of Mr. Richard J. Donovan, a florist of Chicago, which occurred on January 3 last. Mr. Donovan was born in Cork, Ireland, in 1843, and was employed for a time in London nurseries. He settled in the United States in 1871, at Philadelphia, and later moved to Chicago, where he was first employed in the Ros Hill cemetery. In 1879 he started a commercial establishment on Ravenswood Avenue, where he built up a prosperous business.

H. WITTE.—M. H. Witte, whose death is announced in the Dutch Press, was born in 1829. He became curator of the Botanical Garden at Rotterdam, and was transferred in 1854 to Leiden Botanical Gardens, where he remained till his retirement in 1893. He was succeeded at Leiden by his son, M. E. T. H. Witte, who is still in office there. Deceased, who died on January 9 ult., in his 83rd year, was a corresponding member of several horticultural bodies, including the Royal Horticultural Society (London). He played a prominent part in the creation of many Dutch horticultural associations, and although he was deaf and nearly blind in his later years, he continued a contributor to the horticultural Press until a few days before his death.

DR. N. H. J. MILLER.—Dr. Miller, whose death took place on January 12 at Harpenden, had worked at Rothamsted for 50 years. One of his main investigations, described in the course of a sympathetic obituary notice by Dr. E. J. Russell, consisted in demonstrating, by analytical measurements of the amounts of ammonia in rain, the falseness of Liebig's assertion that plants derive their nitrogen from the ammonia brought down in rain. Dr. Miller also made important contributions to our knowledge of the quantity of nitrogen lost to the soil in drainage water, showing that land loses nitrogen in the form of nitrates at the rate of from 35-40 lb. per annum.

FRANK SOMERFORD. We learn with regret that Mr. Frank Somerford died on the 26th ult. at Bromsgrove Cottage Hospital. Mr. Somerford was a native of Kent, and he started his gardening career in a nursery at Deal. Afterwards he was appointed foreman at Charlton House, Kent. Later, for twelve years, he held the post of gardener to the late Mr. Bittie Wrightson, Gosworth Hill, Doncaster, and from 1897 to 1904 was gardener to the Rt. Hon. the Earl of Shrewsbury and Talbot at Ingestre Hall, Stafford. In recent years he was engaged in business on his own account.

MONSIEUR E. T. TOURET. Monsieur Eugene Toiret, the well-known French landscape gardener, died at Paris on January 29 after a long illness. M. Toiret's son Eugene, Chevalier of the Legion of Honour, who follows the same profession as his father, was for some time a student of the R.H.S. Gardens, Wisley

MARKETS.

Plants in Pots, &c.: Average Wholesale Prices—con't.

THE WEATHER.

COVENT GARDEN, February 9. We cannot accept any responsibility for the statements...

Table listing plants in pots and their average wholesale prices, including Ferns, Lantana, Lillium, and others.

THE WEATHER IN SCOTLAND. As the day lengthens the cold strengthens... [Detailed weather report for Scotland]

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers and their average wholesale prices, including Arums, Azalea, Camellias, Carnations, and others.

REMARKS.—Owing to the sharp frosts growers are not sending to market, therefore this department is quite empty.

Vegetables: Average Wholesale Prices.

Table listing vegetables and their average wholesale prices, including Artichokes, Broccoli, Cabbages, and others.

As the day lengthens the cold strengthens... [Continuation of weather report]

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage and their average wholesale prices, including Adiantum, Cycas leaves, Fern, and others.

Fruit: Average Wholesale Prices.

Table listing fruits and their average wholesale prices, including Almonds, Apples, Grapes, and others.

DEBATING SOCIETIES. WINCHESTER GARDENERS. The annual meeting of the above Association took place on January 23...

BURGESS HILL HORTICULTURAL. At the annual meeting of this society, which took place on the 22nd ult., Mr. W. Goating, Chairman...

WAGRAVE AND DISTRICT GARDENERS. The first meeting of the new spring season took place on the 31st ult., Mr. R. Dow, of Parkwood Gardens...

REMARKS.—Owing to the severe weather very few cut flowers are coming from home growers...

REMARKS.—The market is well supplied with imported Apples in boxes and cases...

ANSWERS TO CORRESPONDENTS.

CARBIDE ROOF FLY. S. T. The cardboard collar fits. I will prevent the grub from ascending the stem...

CHRYSANTHEMUM 'O. B. L.' The variety is that known as Nagoya. FOOD CROPS FOR WALL. Ardou. There are other food crops that sweet fruits you might grow...

NAMES OF FRUITS: G. M. We compared the specimen you sent us with fruits of Chelmsford Wonder and Wadhurst Pippin...

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots and their average wholesale prices, including Aralia, Asparagus, Aspidistra, and others.

Potatoes.

Table listing potato varieties and their average wholesale prices, including Adair, Belfast, and others.

REMARKS.—Trade has improved since we are about the same as the other week. The growers are extremely busy, difficulty in getting supplies to market...

REMARKS.—Trade has improved since we are about the same as the other week. The growers are extremely busy, difficulty in getting supplies to market...

COMMUNICATIONS RECEIVED. I. B. R. A. J. C. A. D. C. B. J. D. F. N. A. S. C. W. J. S. C. W. M. W. C. T. K. W. J. M. C. G. W. E. M. S. F. C. W. H. M. B. L. F. F. B. C. T. J. E.



Webb's Exhibit at the R.H.S. Vegetable Exhibition, 1916, which obtained THE ONLY GOLD MEDAL awarded at this Show *Gardeners' Magazine*. "A very fine display and greatly admired." *The Gardener*. "A magnificent collection of exceptional quality."

WEBB'S HIGH-CLASS VEGETABLES.

Awarded the R.H.S. and R.A.S.E. GOLD MEDALS (Highest Honours) in 1916

Quick-Growing Strains specially recommended for Early Work.

Webb's Little Marvel Pea	3-quart.	Webb's Royal Favorite Cauliflower	16-pkt.
Webb's Pommer Pea	3-quart.	Webb's Early Favorite Tomato	16-pkt.
Webb's Surprise Pea	2-6 "	Webb's First of All Broccoli	16-ounce
Webb's Harbinger Dwarf Bean	2-6 "	Webb's Favorite Radish	84 "
Webb's Reliance Globe Beet	16-ounce	Webb's Half Long Forcing Turnip	16-pkt.
Webb's Early Frame Cauliflower	16-pkt.	Webb's Silver Bell Turnip	16-pkt.
Webb's Wonderful Carrot	13-ounce	Webb's For a Green Lettuce	16-pkt.

WEBB'S COLLECTIONS of VEGETABLE SEEDS.

Finest Quality and Best Value obtainable.

- 7-6 Collection contains 75 varieties.
 - 12-6 Collection contains 43 varieties.
 - 15-6 Collection contains 39 varieties.
 - 21-6 Collection contains 66 varieties.
 - 42-6 Collection contains 95 varieties.
 - 65-6 Collection contains 110 varieties.
- CARRIAGE FREE. Contents on application.

WEBB'S MARROWFAT PEAS.

Collectors to Produce a Successional Supply.

21 quarts of Peas, 12 fine sorts	38-
12 quarts of Peas, 12 fine sorts	23-
6 quarts of Peas, 6 fine sorts	12-
12 pints of Peas, 12 fine sorts	12-6
6 pints of Peas, 6 fine sorts	6-6
4 pints of Peas, 4 fine sorts	4-6

CARRIAGE FREE. Our selection.

WEBB'S ILLUSTRATED CATALOGUE of

- VEGETABLE SEEDS
- SEED POTATOS
- FLOWER SEEDS
- LAWN SEEDS
- GARDEN MANURES

Free on request.

Mention "Gard. Chron."



WEBB & SONS, Ltd.
The King's Seedsmen,
STOURBRIDGE.



Food Production on Farms & in Gardens.

To obtain the best results sow **Dicksons Seeds** which are all carefully selected from the finest and most productive strains, and are always reliable.

Prices moderate. Catalogues free.

Dicksons Seed Growers, Chester.



That Concave Bottom

with the three channels, in "Cret" Pots, takes all the water off, and lets fresh air in! To this great advantage, Crets add maximum root room, strength, uniformity. New health and brightness on your staging.

Two Specimen Prices 2 1/2 ins. 4/- per 100; 7 1/2 ins. 21/- Carriage Paid on all orders over 20/-.

FREE SAMPLE "CRET" will be sent you on request—with explanatory Booklet, all prices per 100 and 5 Special Assortment Offers. Send a postcard now.

PETER BAILEY & SONS, LTD.,
2, Heaton Mersey Pottery, near Manchester.

CARTERS TESTED SEEDS

SOW VEGETABLE SEEDS of the highest productive value.

"When it comes to production, every available square yard of land must be made to produce food." *Mr. Lloyd George, Dec. 19, 1916.*

ILLUSTRATED CATALOGUE POST FREE.

Seedsmen to H.M. the King.

Carters
TESTED SEEDS

RAYNES PARK, LONDON, S.W.

Branches 1237 and 238, High Holborn, W.C.
53a, Queen Victoria Street, E.C.

The Gardeners' Chronicle

SCALE OF CHARGES FOR
ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than
WEDNESDAY, 5 p.m.

	£	s.	d.
Ordinary Positions per page	10	10	0
Facing matter and Back Page	12	12	0
Half and quarter pages, column and half column spaces, pro rata.			
1 line space not exceeding 20 words	£	s.	d.
Per inch, single column	7	0	
Per inch, across 2 columns	14	0	
Per inch, across 3 columns	1	1	0

Front page (no display allowed) 1/- per line space,
(Headline counted as two lines.)

For discounts apply to address below.

SITUATIONS WANTED.

26 words, 1s. 6d., and 6d. for every additional 8 words or fewer

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM	per annum.	
ABROAD		17 6

Cheques and P.O.s are made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET,
COVENT GARDEN, LONDON, W.C.

Telegrams: 1543 "GARDENERS, RAND, LONDON"
Telephone: 1543 "ERRARD."

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two).
6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

UNIVERSITY COLLEGE OF NORTH WALES
DEPARTMENT OF AGRICULTURE

IN ASSOCIATION WITH THE FORTNITE OF AGRICULTURE,
DUBLINSHIRE, AND FENISHIRE

TWO ASSISTANT INSTRUCTORS in Horticulture required at once. Salary £100 per annum rising to £150. Further particulars may be obtained from the REGISTRAR, University College, Old Buildings, Bangor, to whom applications should be sent not later than Wednesday, February 22nd.

WANTED, immediately, a HEAD KITCHEN GARDENER to take over a post of about 1.50 in. long by 7.50 in. long, which is to be occupied for the growing of Vegetables in connection with the poultry industry at Linton in the West London district. Must be able to control 1 lb. of Milk, starting in a 100 lb. tub. Single experience, also wages required, at P. K. Box 25, 11, Wellington Street, Covent Garden, W.C.

WANTED, HEAD WORKING GARDENER for a place in Sussex; thoroughly understanding the routine of a gentleman's Garden and able to take charge of electric light installation.—For particulars, address A. D., Box 5, 41, Wellington Street, Covent Garden, W.C.

WANTED, HEAD WORKING GARDENER, wages 35s. per week, with house, coal, and gas.—Apply, STUART, Fitcham Estate Office, Leachhead.

WANTED, GARDENER (HEAD WORKING), meligible, 1 under, understand land and stock, woman kept, etc. undertake small dairy cottage in garden.—Write age, wages, family, &c. COLONEL STRAITON, Little Berkhamsted, Hertford, Herts.

WANTED, a MAN to take charge of Vineyard and Peach houses, wages 30s. per week and Botley.—Apply, G. ALLEN, Estate Office, Worth Park, Crowley, Sussex.

WANTED, Single-handed GARDENER; permanent, Flowers, Kitchen Garden, and Fruit, no Glass cottage in garden.—Apply, CHARLES MOKES, Hernden, Basingstoke.

WANTED, Single-handed GARDENER, who can work small oil engine, electric plant, or willing to learn same. A LEE, Burnside, Hatfield, Herts.

WANTED, GARDENER (SINGLE-HANDED), Lawns, Vegetables, and 1 job, wages 25s., long day cottage, and 5s. war bonus weekly. Apply, SECRETARY, Copples Home, Windmore Hill.

WANTED, SINGLE-HANDED GARDENER, with wife, head of cottage bond, no glass to be as caretakers in winter. Apply, J. B. & S. SCOTTER & LAW, Belgrave Mansions, S.W.

WANTED, SECOND GARDENER, 11 single, for Inside and Outside, also to assist with electric light plant; wages 25s., and light free.—Apply, ALFRED WILLIAMS, Woburn, Oxshott, Surrey.

WANTED, SECOND GARDENER for Kitchen and Fruit Tree work, Outdoors, excellent cottage, wages 40s. vegetables, long coal.—Apply, HEAD GARDENER, SIX WATER PUBLISHERS, The Copple, Henley on Thames.

WANTED, GARDENER, experienced man, chiefly inside, meligible, wages 24s. weekly, with Botley, &c.—Apply, C. BARNARD, The Lodge Gate, Eppingham, Surrey.

WANTED, GARDENER, for private Garden, must be experienced with Vegetables, and Fruit, little Glass, box kept. Apply, stating age and wages required, to A. GORDON SMITH, Oakfield, Bead by Hill, Kildermunster.

WANTED, good WORKING GARDENER, Flowers and Vegetables, must be sober and good character, live in, good wages and help given.—RHRK, St. Catherine's End, Romp, Middlesex.

WANTED, GARDENER, or LADY GARDENER, with help, for Moonmountaine Apply, with references, SIR ARTHUR HERBERT, 1, Hill Street, Knightsbridge, London.

WANTED, immediately, UNDER GARDENER at Rydal Hall, Ambleside; no Botley.—Apply, stating age, experience, and wages required, to CLAUDE BARTON, Ingleborough Estate Office, Clapham, Yorks.

WANTED, good UNDER GARDENER; Fruit, Vegetables, Pleasure Grounds, meligible, house and 2 Acres wages, and references, MILTON ROBE, Wolsen, Caversham, Reading.

GARDENER (Under single) wanted, chiefly Outside work, good wages, Botley, coal, & Apples.—Apply, GARDENER, Oakley Cottage, Maidenhead.

WANTED, UNDER GARDENER, for Fruit and Out-door House, good wages and help given. Apply, J. WATSON, Home Farm, Bletchley Park, Bucks.

WANTED, by a Lady, 3 UNDER GARDENERS, Lady Gardeners may apply, MRS. POLE, Beech Hill, Englefield Green, Surrey.

WANTED, for Large Gardens in the Midlands, TWO LADY GARDENERS, one Inside and one Out, to work under Head, must be experienced, furnished lodgings, and 30s. per week salary. Write, T. H., Box 18, 41, Wellington Street, Covent Garden, W.C.

WANTED, LADY GARDENER, experienced or not, milk or 10-odd, help given Apply, MRS. A. DE LAS CASAS, Worth, Tiverton.

WANTED, a good WOMAN GARDENER for the Houses, under Forewoman. State age and experience.—Apply, A. FRESHWATER, Pains Hill Gardens, Cobham, Surrey.

WANTED, Young Woman UNDER GARDENER, Outside work; wages 25s. week; live out.—Apply, giving full particulars, G. COPE, Manor House Gardens, Northfield, Birmingham.

WANTED, a FOREMAN GARDENER, for large Gardens in the Midlands, to work under Head; must be well up in Grapes, Peaches and Chrysanthemums; wages, 30s. per week and good Botley.—Write, S. M., Box 19, 41, Wellington Street, Covent Garden, W.C.

WANTED, FOREMAN (INSIDE); good Fruit Grower, wages 30s. per week. Also Two sharp YOU THIS, 16-17, for Grapes; wages 17s. per week, highly milk and vegetables; full pay for work; 1 s/week Saturdays; travelling expenses paid.—BEN ASHTON, Latham Park Gardens, Omkirk, Lancs.

WANTED, a WORKING FOREMAN; live in Garden Botley.—MRS. LAMPTON, Redford, Winslow.

WANTED, FOREMAN or JOURNEYMAN (INSIDE) for Plant and Fruit Houses; good wages, 1 p.m. Saturdays; meligible.—T. BIRKINSHAW, Caldecote Towrys Gardens, Bushey Heath, Watford.

WANTED, Active MAN (single), over military age or meligible, by Inside and Out, with good general knowledge of Tomatos, Fruit, &c., take duty, wages 30s. weekly. Also active young woman, with some experience, for the Houses—State wages required to A. L. SPATHAM, Tynon Coast Gardens, near Llandudno.

WANTED, Active Young Man for Pleasure Grounds and Rookery; able to take duty, wages 21s. per week.—Apply, C. HOWES, Court Street House, Faversham, Kent.

BOROUGH OF BERMOUNDSEY. Good Spade Hand wanted (temporarily); meligible, wages 37s. inclusive.—W. H. AGGETT (Supt.), Office, Thurford Road, St. James' Churchyard.

WANTED, an IMPROVER for the Houses, to live in Botley, able to take duty, &c.; milk and vegetables found and woman to look after Botley.—T. DOWN, Basing Park Gardens, Alton, Hants.

WANTED, Youth, age about 16, as IMPROVER, Inside and out, wages 17s. and Botley.—E. MORGAN, Wassand Hall Gardens, Hill.

WANTED, LAD, about 16, or discharged soldier, for Kitchen Garden chiefly; duty, State wage, with good Botley, &c.—H. BROOMFIELD, Ellis Field Manor Gardens, Basingstoke, Hants.

TRADE.

WANTED, as WORKING MANAGER of small Nursery under Glass; Tomato grower and practical man; wages 40s. per week and bonus; permanent.—Apply, ELMHURST NURSERY, LTD., Appleby Street, Chesham.

WANTED, Experienced Man, meligible for service, as FOREMAN of Alpine and Herbaceous Department. Full particulars, as to conditions, wages, &c., to KING'S ACRE NURSERIES, LTD., Hereford.

WANTED, WORKING FOREMAN, for home and garden provided, must be meligible for Army.—Apply, with testimonials and State wages required, to JOHN PERKINS & SON, 52, Market Square, Northampton.

EXPERIENCED CHARGE HANDS wanted for Palms, Ferns and Vines; wages 30s. per week and 6d. per hour overtime; Sunday duty extra.—THOMAS ROCHFORD & SONS, LTD., Tunford Hall Nurseries, near Brockbourne, Herts.

WANTED, a good PROPAGATOR and GROWER; one used to Roses, Clematis, Chrysanthemums, and General Nursery Stock.—Apply, with particulars, wages, etc., to THE DEVON ROSERY AND FRUIT FARM, LTD., Torquay.

WANTED, good KNIFESEMAN; well up in Budding, Grafting, and Training of Fruit Trees, permanent situation to reliable man; meligible. Full particulars as to references, wages, &c., to JOHN PERKINS & SON, Billing Road, Northampton.

WANTED, Two Good KNIFESEMAN, experienced in Budding, Grafting and Training of Fruit Trees, must be meligible for service. Also Two Experienced MEN for Rose Department.—Apply, with particulars as to wages, &c., to KING'S ACRE NURSERIES, LTD., Hereford.

WANTED. for large Midland Nursery, an experienced Budder and Grafter, with a good knowledge of Rhododendrons, Roses and Fruit Trees, also two experienced KNIFEMEN—Apply by letter, stating age, references, and wages preferred, A. Box 21, 41, Wellington Street, Covent Garden, W.C.

WANTED. a PRUNER for Bush Orchards, and later for Grafting, for two months, or, if preferable, for a permanency, age above 45 or ineligible; good wages and cottage.—Write, A. B., Box 10 41, Wellington Street, Covent Garden, W.C.

WANTED, an experienced, reliable MAN for jobbing and nursery work; permanency for suitable man; good wages.—W. H. SHARPE, Nurseryman, Hythe, Kent.

WANTED, MEN well up in Tomatos and Cucumbers; cottages free.—Write, L. J., Box 2, 41, Wellington Street, Covent Garden, W.C.

WANTED, MEN, ineligible, for Soft-wooded staff, Greenhouses, Tomatos and Cucumbers, &c.—G. BENNETT & SON, Hanwell, W.

SEED TRADE.—Wanted, SHOPMAN, with a good knowledge of Garden and Agricultural Seeds.—Apply, stating age, where last employed, and wages asked, to JOHN JEFFERIES & SON, LTD., Gloucester.

SEED TRADE.—Wanted, ASSISTANT or SHOPMAN; used to retail Garden Seed trade.—CARTER PAGE & CO., LTD, 52 and 53, London Wall, London.

WANTED, BOOK KEEPER and INVOICE CLERK; ineligible. State wages required and enclose copies of refs. Apply to JOHN FEED & SON, The Nurseries, West Norwood, S.E.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

GARDENER, GARDENER BAILIFF; age 46, life experience all branches, thorough practical knowledge Lamp work, stocks; got 17 awards. Kindly state wages.—WILLIAMS, 50, London Road, Ipswich.

GARDENER (HEAD).—The Earl of ABINGDON desires to strongly recommend W. BROWN as an experienced all-round WORKING GARDENER, inside and out; has been 12 years at Wytham Abbey, Oxford, with 5 men under; age 43; married (1 boy, 15); disengaged.—Write, W. BROWN, Cookham Dean, Maidenhead.

MRS. L. SALOMONS recommends her **HEAD GARDENER,** 20 years N-orbury Park; life experience all branches; good manager.—Apply, G. KENT, 15, Pitham Lane, Dorking.

GENTLEMAN recommends his **HEAD WORKING GARDENER,** whose several are kept in supply, under Council or private; Royal Hort. Society's Silver Medal for the highest cultural skill.

MRS. A. VINCE (Head Gardener), Overthorpe House, Barbary, Oxon, is open to engage as a first-class Vegetable Grower for the National Food Supply, under Council or private; Royal Hort. Society's Silver Medal for the highest cultural skill.

GARDENER (HEAD WORKING), where 2 or 3 kept; life experience in all branches; 16 years present place; married (no family); age 50.—BRUCE, Vineyards, Ely, Cambs.

GARDENER (HEAD WORKING) seeks Re-engagement, thoroughly experienced in all branches, including Orchids, Carnations, Herbaceous and Alpines, 17 years Head in present situation, highly recommended, married; age 43.—H. F. WARREN, The Gardens, Highfield, Garbushough

GARDENER (HEAD WORKING) seeks situation where 3 to 6 kept; practical life experience, inside and out; married, age 46; abstainer; energetic, enthusiastic, full worked; good references.—M. TAYLOR, The Gardens, Huntsham Court, Bampton, N. Devon.

GARDENER (HEAD WORKING).—Life experience in all branches; married; ineligible; age 55, 74 years in present situation as Head. CLEMENT, Gardens, Elford, Tamworth, Staffs.

GARDENER (HEAD WORKING), where several are kept; life experience in all branches, age 45; married (no family); 15 years in present place, Kent, Surrey, or Sussex preferred. Please state wages.—W. BARNES, 87, Leonards Lodge, Chesser, Windsor.

GARDENER (HEAD WORKING).—Thoroughly experienced in all branches of Gardening, inside and out, 15 years as Head; age 46; married (no family)—HEATH, Hatfield Broad Oak, Harlow, Essex.

GARDENER (HEAD WORKING); life experience in all branches, aged 46; married (5 children), 3 years in present situation, 9 previous; good references.—A. L. STATION ROAD, CAYOTE, Surrey.

GARDENER (HEAD WORKING) seeks situation where 3 or 4 are kept; life experience inside and out; age 46; married (no family). Please apply to G. STERNY, The Cottage, Heron Court, Bromley, Brentwood.

GARDENER (HEAD WORKING), where 2 or 3 are kept; thoroughly experienced inside and out; married; age 49, excellent refs.—W. LAMPARD, The Gardens, Foxleigh, Helyport, Maidenhead.

GARDENER, Good Plain, where Wife and several sons, members, no family. Address, GARDNER, Box 4, 41, Wellington Street, Covent Garden, W.C.

TWO LADY GARDENERS require situation in private country place, Glas preferred, 3-4 experience and references.—MRS. J. PARK DENNIS, Alchester, 50, Fairham Road, Guildford.

TWO WOMEN require Work in Private or Market Gardens, little experience.—MORGAN, 11, P. Ave., Col. Ave., Harlow.

FOREMAN (INSIDE or OUT); 42; single; life experience, 20 years experience in good establishments, 2 years in present. Domestic, Fruit, Vegetables, all fruit, good refs., best London preferred, male but not necessarily available. State wages.—C. FOX, 64, Cumberland Street, Plumstead, S.W.

JOURNEYMAN (INSIDE), age 22. Mr. MENNINGS, Account, Park Gardens, Folkingham, Lincs, would be pleased to recommend A. MEYERHIS as above, in garden on Army, Leicestershire preferred.

MAN (ineligible) seeks Situation, inside or Glass of outside, Roses, Rockery, Herbaceous Borders, in Lawn work, London, south or south-west. W. G. BRISTOW, 46, Dymock Street, Fulham.

TRADE.

POSITION Required as **MANAGER** of orchard, many years' experience, and thorough knowledge of Fruit Growing, obtained both at home and abroad, ineligible. B. A., Box 25, 41, Wellington Street, Covent Garden, W.C.

MANAGER or FOREMAN; life expert in all Market and Private Gardens, Funnings, Fox P., and out, Fowerton, Fruit, Vegetables, Solids, married; age 41, good references, not eligible. State prices and wages. E., Box 5, 41, Wellington Street, Covent Garden, W.C.

GENTLEMAN would manage development of crops, pigs, poultry, sewage crops for dairy cows, Fruit, Tomatoes, Mushrooms; could establish very profitable industry, converting fruit, vegetable, and animal products into unique articles of food.—Address, Strathmore, Lintonpall, Anglesey.

FOREMAN (WORKING); life experience (Cucumbers, Tomatos, Vines, &c.); age 54.—P. HANSON, 3, Elsen Road, Bruce Grove, Tottenham, N.

MAN, 29, Ineligible, seeks situation as GROWER Cucumbers and Tomatos in Market Nursery; 10 years' experience; country preferred.—Apply, G. HOWARD, c/o Mrs. Atkins, 2, Twyford Abbey Cottages, Park Royal, near Walsden, London.

LADY GARDENERS (Two) require Posts in Nursery or Head and Second in private; would consider post under good Head. State salary, &c.—P. A., Box 8, 41, Wellington Street, Covent Garden, W.C.

GENTLEMAN, educated but inexperienced, seeks employment in Nursery or Private Gardens; reasonable remuneration accepted. CHARLES LETT, Rectory, Usk, Mon.

MY GARDEN SERIES

MY GARDEN IN SPRING.

By E. A. BOWLES, M.A.

Acting Chairman of the Scientific Committee of the Royal Horticultural Society.

MY GARDEN IN SUMMER.

By the Same Author.

MY GARDEN IN AUTUMN AND WINTER.

By the Same Author.

Price 5/6 each post free from—

THE PUBLISHER,

THE "GARDENERS' CHRONICLE," LTD.,

11, WELLINGTON ST., COVENT GARDEN, LONDON, W.C.

THE HORTICULTURAL DIRECTORY AND YEAR BOOK.

We much regret that the publication of the Horticultural Directory and Year Book for 1917 has been delayed by unforeseen and unavoidable circumstances. First, the difficulties in regard to printing and paper supplies have increased greatly of late; and secondly, the number of corrections that have to be made this year is altogether unusual, owing to the fact that so many gardeners have joined the Army. To those who have already sent us prepaid orders we offer our apologies for the delay, and assure them that everything possible is being done to expedite publication.

GARDENERS' CHRONICLE, Ltd.,

41, WELLINGTON STREET, COVENT GARDEN.

LONDON, W.C.

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Orchids, Fertilisation of.** By Chas. Darwin. Illustrated. 3s. 11d.
- Orchid Growers' Manual.** By the late B. S. Williams. 800 pages. Numerous Illustrations. 16s. 8d.
- Pansies and Violets.** By D. B. Crane. Paper. 1s. 2d.; cloth, 1s. 9d.
- Pears and Plums, The Book of.** By the Rev. E. Bartrum, D.D. Illustrated. 2s. 9d.
- Pinus, The Genus.** By George Russell Shaw. Price £2 15s. 6d.
- Plant Breeding.** Being Five Lectures upon the Amelioration of Domestic Plants. By Prof. L. H. Bailey. Illustrated. 5s. 4d.
- Plant Life.** By C. A. Hall. £1 0s. 6d.
- Plants and Trees, Diseases of Cultivated.** By George Massee. Well Illustrated. 7s. 11d.
- Plants, A Popular Treatise on the Physiology of.** By Dr. Paul Srauer. Translated by F. E. Weiss, D.Sc. With 35 Illustrations. 9s. 6d.
- Practical Plant Physiology.** By Frederick Keeble, F.R.S. Illustrated. 3s. 10d.
- Practical Tree Repair.** By Elbert Peets. The Physical Repair of Trees—Bracing and the Treatment of Wounds and Cavities. Illustrated. 7s. 11d.
- PRESENT-DAY GARDENING.** Edited by R. Hooper Pearson, Managing Editor of the GARDENERS' CHRONICLE. Each of the seventeen volumes following contains 8 full-page Coloured Plates. 1s. 10d. each.
- Sweet Peas.** (Second and Revised Edition, 1914.) By Horace J. Wright, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by Thos. Stevenson.
- Pansies, Violas, and Violets.** By William Cuthbertson and R. Hooper Pearson.
- Daffodils.** By the Rev. J. Jacob. With Preface by the Rev. W. Wilks, M.A.
- Orchids.** By James O'Brien, V.M.H. Secretary of the Orchid Committee of the Royal Horticultural Society.
- Root and Stem Vegetables.** By the late Alexander Dean.
- Carnations and Pinks.** By T. H. Cook, Head Gardener at Sandringham; James Douglas, V.M.H.; and J. F. McLeod, Head Gardener to the late Mr. Pierpont Morgan.
- Rhododendrons and Azaleas.** By W. Watson. With Preface by Sir F. W. Moore, M.A. (The first popular volume published on this subject.)
- Lilies.** By A. Grove. With Preface by H. J. Flwee, F.R.S.
- Apples and Pears.** By George Bunyard, V.M.H., Chairman of R.H.S. Fruit Committee.
- Irises.** By W. R. Dykes, M.A. With Preface by Prof. Bayley Balfour, F.R.S.
- Annuals.** By Charles H. Curtis.
- Rock Gardens.** By Reginald Farrer. With Preface by Dr. J. Bretland Farmer, F.R.S.
- Chrysanthemums.** By Thomas Stevenson. With Chapters by Charles E. Shea and C. Harman Payne.
- Tulips.** By Rev. Joseph Jacob, member of R.H.S. Tulip and Daffodil Committee.
- Dahlias.** By George Gordon, President of the National Dahlia Society.
- Roses.** By H. R. Darlington. A double volume, 2s. 10d. and 3s. 10d.
- Climbing Plants.** By William Watson, A.L.S. With introduction by William Robinson, author of "The English Flower Garden." 2s. 10d. and 3s. 10d.
- Primula, Handbook of the Hardy.** By H. M. Paul. An Illustrated Work on the Culture, Mode of Growth and Utility of Primulas. 1s. 11d.
- Pruning.** A Compendium of Outdoor Work, with special chapter for Small Holders. Reprinted from the "Fruit Trades' Journal." Illustrated. 1s. 1d.
- Pruning, The Handy Book of.** With Chapters on Grafting and Budding. By James Udale, with introduction by the Right Hon. Viscount Colham. New Edition. Illustrated. 1s. 9d.
- Rock and Alpine Gardening.** By H. Hensley, rockwork expert. A practical guide to the making of Rock, Alpine, Wall and Water Gardens. Profusely Illustrated. 1s. 3d.
- Rock Garden, The English.** By Reginald Farrer. A complete dictionary of Hardy Plants suitable for Rock Garden Culture. Contains 500,000 words and 300 Illustrations. In 2 Vols. Price, £2 2s. 10d. post free (in the press).
- Rose, The Book of the.** By Rev. A. Foster-Melher, M.A. Illustrated. New Edition. 5s. 5d.
- Roses for the Garden and Greenhouse.** By John Weathers. Description, Culture, Propagation, Manures, etc. Coloured Illustrations. 5s. 4d.
- Roses in Pots.** By Wm. Paul. Ninth Edition. An invaluable Guide to the Cultivation of Roses in Pots, whether for forcing or otherwise. 2s. 2d.
- Salads and their Cultivation.** By T. W. Sanders. How to grow them in the Open, on Hot Beds, and under Glass, etc. Freely Illustrated. Paper, 1s. 2d.; cloth, 1s. 9d.
- Saxifrages or Rockfoils.** By W. Irving and R. A. Malby. A practical work on the Culture of Saxifrages. Well Illustrated in Colour and Half-tones. 2s. 10d.
- Soil, The.** By A. D. Hall, F.R.S. An introduction to the Scientific Study of the Growth of Crops. New Edition. 5s. 5d.
- Species and Varieties, their Origin by Mutation.** By Prof. Hugo De Vries. Second Edition. 21s. 6d.
- Strawberry Cultivar, The Illustrated.** A Book worthy of the attention of Raisers of New Varieties, as of the General Cultivator. 1s. 7d.
- Strawberry, The Book of the.** With Chapters on the Raspberry, Blackberry, Loganberry, Japanese Wineberry, and Allied Fruits. By Edwin Beckett. Illustrated. 2s. 9d.
- Sweet Peas.** (Second and Revised Edition.) By Horace J. Wright. Contains 8 Coloured tui-page Plates. With Chapter on Sweet Peas for Exhibition by T. Stevenson. 1s. 10d.
- Sweet Peas and Antirrhinums.** By William Cuthbertson. 1s. 3d.
- Teratology, The Principles of Plant.** By W. C. Worsdell, F.L.S. Containing a large amount of new and interesting information. Illustrated. Price 25s. 8d.
- Tomato Culture for Amateurs.** By B. C. Ravenscroft. Illustrated. New Edition. In paper, 1s. 3d.
- Tomato Culture for Market.** By J. Stoddart. 1s. 1d.
- Topiary, The Book of.** By C. H. Curtis and W. Gibson, of Levens Hall. 2s. 10d.
- Trapping of Vermin and Birds, Practical.** By W. Carnegie. 1s. 3d.
- Trees: A Woodland Notebook.** By the Rt. Hon. Sir Herbert Maxwell, Bart., F.R.S., LL.D. 2s.
- Trees and Shrubs, Beautiful Flowering, for British and Irish Gardens.** By John Weathers. Description, Culture, Planting, Pruning, Propagation, etc. Coloured Illustrations. 3s. 10d.
- Trees and Shrubs Hardy in the British Isles.** By W. J. Bean, Asst. Curator of Kew Botanic Gardens. In two volumes, with Illustrations and Index. 43s.
- Tropical Gardening and Planting.** By H. F. MacMillan. Second Edition. Revised and Enlarged, with many new features added. 14s. 11d.
- Variation, Heredity and Evolution.** By R. H. Locke. 5s. 4d.
- Vegetable Culture for Amateurs.** By Trevor Monmouth, arranged alphabetically with a calendar of operations for the year. New Edition. Illustrated. 1s. 3d.
- Vegetable Garden, The.** By Henry de Vilmorin and W. Robinson. New Edition. 15s. 7d.
- Vegetable Gardening, The Principles of.** By Prof. L. H. Bailey. 6s. 11d.
- Vegetables and Flowers, the Culture of, from Seeds in Tropical, Semi-Tropical, and Temperate Climates.** By Sutton & Sons. Reading. 320 pages. With numerous Illustrations. 5s. 6d. England; 5s. 9d. Abroad.
- Vegetables, The Book of.** By George Wythes, V.M.H. 2s. 9d.
- Villa Garden, My.** By S. Graveson. Illustrated. 2s. 10d.
- Vines and Vine Culture.** By the late Archibald F. Barrow, V.M.H. New Edition. Revised and Enlarged. Illustrated. 5s. 5d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No 3973

No. 1573. VOL. LXI. (THIRD SERIES) SATURDAY, FEBRUARY 17, 1917. {Registered as a Newspaper. (PRICE 3d. POST-FREE, 3d.)

SUBSCRIPTION—Inland, 15/-; Foreign, 17/6 (22/r. 10c.) [\$4 26c.] per annum. Entered at New York Post Office as second-class matter.
 Postal Address—41, Wellington Street, Covent Garden, W.C. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 69.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

WEBBS' HIGH-CLASS GARDEN PEAS.

The following have acquired 2nd-class reputations amongst gardeners throughout the country for remarkable productivity and delicious flavor:

Webbs Little Marvel	1st-class 1/3 quart.
Webbs Pioneer	Early 1/3 quart.
Webbs Stoutbridge Marrow	Second 1/3 quart.
Webbs' Excellence Marrowfat	Early 1/3 quart.
Webbs Senator	Main 1/2 quart.
Webbs King George	Crop 1/2 pint.
Webbs Masterpiece	Late 1/3 quart.
Webbs' Selected Gladstone	Crop 1/2 quart.

Post free. For particulars and testimonials see WEBBS' GARDEN CATALOGUE, post free.

WEBB & SONS, LTD., The King's Seedsmen, STOURBRIDGE.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers; also Dickson's Improved Mushroom Spawn. Free circulars free on application to DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.

WATERER'S GOLD MEDAL RHODO DENDRONS.—We cordially invite you to come and select any plants you require. We have over 60 acres, comprising the finest collection in cultivation. Catalogue free.—JOHN WATERER, SONS & CO., LTD., The Nurseries, Bagshot, Surrey.

NEW PHLOEXES

A GRAND STOCK of these Brilliant Flowers in all shades, now ready for delivery.—For lists, with full particulars, apply GUNN & SONS, Olton, Warwickshire.

CYCLAMEN SEEDLINGS, for potting up of our choice strains. Giant White, Deepest Red, Rose, Persicum, or Mixed, 2s. 10d. per doz. Salmon King, Cherry Ripe, 3s. 6d. per doz. post free.—STUART LOW & CO., Bush Hill Park, Middlesex.

FIDLER'S NEW ILLUSTRATED CATALOGUE OF CHOICE GARDEN SEEDS will be sent, post free, to any address on receipt of postcard. Write at once for a copy. It may help you to save 50 per cent. on your seed bill this season.—FIDLER & SONS, Royal Berkshire Seed Stores, Reading.

DOBBIE & CO., ROYAL SEEDSMEN, EDINBURGH, will send a copy of their 1917 Catalogue, and Guide to Gardening, 160 pages, nearly 150 illustrations, free, if this paper is mentioned.

BLACKMORE & LANGDON, Bath, will have pleasure in sending a copy of their 1917 Catalogue of Begonias and Delphiniums, &c., &c., free, if this paper is mentioned. Magnificent series of our unequalled Delphiniums, in superb varieties.

SANDER AND SONS, Orchid Growers, St. Albans.

SOW NOW UNDER GLASS TO OBTAIN EARLY SUFFLERS.

SUTTON'S FORCING DWARF BEAN
 The earliest and most prolific forcing variety.
 per pint 2s.
STEPHEN'S EVERY DAY CUCUMBER
 An all-season's variety, per packet 2s. 6d.
SUTTON'S SELECTED ALBA CRAB APPLE
 The leavesy crapper, per packet 1s. 6d.
SUTTON'S PRINCESS OF WALES TOMATO
 The earliest smooth variety, per packet 1s. 6d.
 Post free.

SUTTON & SONS, The King's Seedsmen, READING.

GREENHOUSE PAINTING & GLAZING

Vitreoline, superior to White Lead Paint, 15s. per gallon. "Fastness" superseding putty, 18s. per cwt. Full particulars to Mr. W. CARSON & SONS, Grove Works, Battersea. Agents throughout the country.

WELLS' Catalogue of Chrysanthemums and Perpetual Geraniums now ready, post free on application. W. WELLS & CO., Meridian, Surrey.

LAXTON'S SEEDS AND FRUIT TREES.

New Catalogue of the above now issued gratis. Grand New Early Pea, Laxton's Superb, &c., Fruit Trees. A fine stock to offer may still be stamped. Pamphlet on Cultivation on a slip of stationery, envelope. LAXTON BROTHERS, Nurseries, Redditch.

BATH'S SELECT SEEDS. Now Illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application. Dept. A, R. H. BATH LTD., The Floral Farms, Wisbech.

BATH'S CARNATIONS, PANSIES, DAHLIAS, CHRYSANTHEMUMS, and other flowers. New Illustrated Catalogue of the best new and standard varieties is ready, and will be sent post free on application. Dept. A, R. H. BATH LTD., The Floral Farms, Wisbech.

JAMES GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineer, Bagners Street, Chelsea, London, S.W. Wire, 201. West in London. Telephone 291 Western.

WATERER'S ROSES & FRUIT TREES.

Grand stocks of the best varieties. Lists free.—JOHN WATERER, SONS & CO., LTD., The Nurseries, Twickenham, Berks.

PERPETUAL FLOWERING CARNATIONS strong healthy plant, now ready, amongst which are the following varieties: 1s. 6d. per doz. out of sand, 5s. 6d. per doz. in pots. Enchantress, Snowstorm, May Day, Lady Northcliffe, Mikado, Rose Pink, Enchantress, 6s. per doz. out of sand, 7s. per doz. in pot. Enchantress Supreme, Salmon King, Golden White, Enchantress, Champion, Triumph. Price List of latest Novelties on application. J. C. JENNER, Letchworth Nurseries, Rayleigh, Essex.

FERNS—FERNS! Tree Ferns, Climbing Ferns, Basket Ferns, Stone and Greenhouse Ferns. Herby Garden Ferns, catalogues free. J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

GERANIUMS, strong July struck, Champion, Denmark, Jasper, Peacock, Mythen, Whites-Raspail, Turner, Grogone, 12s. 10d.—PARMENTER & CORNEY, Basildon, Essex.

For Advertisement Charges see page 11.

NOW IS THE TIME TO PLANT KELWAY'S PERFECTLY GLORIOUS PABONIES.

Ke-way's beautiful blue Delphiniums. Ke-way's brilliantly coloured Phloxes. Ke-way's Colour Borders, ever in bloom. Ke-way's new and choice hardy perennial plants of all kinds.

NOW is the time to ORDER for Spring planting. Ke-way's famous Gladioli. Ke-way's many coloured Pyrethrums. Ke-way's Ivy Galleries.

NOW is the time to SEND for particulars to **KELWAY & SON, Retail Plant Department, LANGPORT, SOMERSET.**

PEEDS' SEEDS. PEEDS' SEEDS FOR RICH CROPS.

You want exceptional results from your garden this year. Write for our 1917 Seed List. We can give you the record crops you want.

JOHN PEED & SON, The King's Seedsmen and Nurserymen, WEST NORWICH.

GISHURST COMPOUND.—Insecticide and Fungicide.—Over 50 years' reputation; highly Commended. R.H.S. Scientifically controlled Trials at Welley, 1914-15. Sold by Dealers in Garden Supplies. Wholesale: PRICES PATENT CANDLE CO., LTD., Battersea, London, S.W.

BARR'S VEGETABLE and FLOWER SEEDS of finest selected strains and tested growth. Usually moderate prices. Descriptive Catalogue free.

BARR'S Beautiful LILIES, GLADIOLI, CARNATIONS, MIMULUS, TIGRIDIAS, ANEMONES, Ranunculus, &c., for Spring Planting. Catalogue free. BARR & SONS, King Street, Covent Garden, London.

COWAN'S NEW ORCHID MATERIAL.

The best and much the cheapest! Full particulars on application to JOHN COWAN & CO., Gateacre Nurseries, Gateacre, Liverpool.

W.M. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham. Conservatories, Winter Gardens, Vinceries, Peach houses, Portable Buildings, &c. Catalogues gratis.

BERBERIS AQUIFOLIA (ALADONIA) WANTED, any quantity.—Write, ROBINSON'S, Upper Broughton, Melton Mowbray.

GENUINE OLD YORK STONE PAVING for Rose Walks, Terraces, Lily Ponds, &c., rectangular or crazy, delivered in large or small quantities.—H. BROOK, Quarry Owner, 40, Valley Road, Stratham, S.W.

ORCHID PEAT, 6s. and 7s. 6d. per sack: Brown Peat, 10s. 6d. per yoad in trucks; in bags 2s. 6d. each, 30s. dozen. Oak and Beech Leaf Mould, Yellow Loam, Stoked and Fresh Cut, Silver Sand, 4 ton lots for 4s. C.N. Fibre, 24s. dozen bags; Hat free.—J. HANDSCOMBE, F.R.H.S., Feltham, Middlesex.

SPORTSMEN, Farmers, Horsemen.—Try our splendid Yorkshire Whippet Patters; wears no leather; showerproof; 7 yards for 17s. 6d. Tweeds free.—BRADFORD WOOLLEN CO. (71), Bradford.



BENTLEY'S WEED DESTROYERS :

Liquid : Concentrated Strength 1 to 80.
Double Strength 1 to 50.
Patent Powder : 1 to 25.

BENTLEY'S DAISY KILLER
(LAWN SAND).

BENTLEY'S INSECTICIDES.

BENTLEY'S FUNGICIDES.

BENTLEY'S FUMIGANTS.

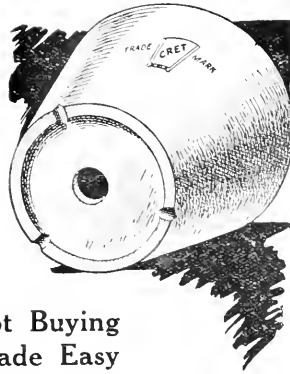
BENTLEY'S MANURES.

Catalogue on application.

JOSEPH BENTLEY, Ltd.,
Chemical Works,
Barrow-on-Humber, HULL.

CARNATIONS, PERPETUAL FLOWERING.

FOR SALE, good clean plants, grown in thimbles and 60s, well broken ready for potting on.
Culden, Enchantress Supreme, White Enchantress, White Wonder, Beacon, Mikado, Mayday, Scarlet Seedling, Enchantress, Salmon Enchantress and other good varieties.
4 - per dozen. Cash with order.
MAYTHAM GARDENS, ROLVENDEN, KENT.



Pot Buying Made Easy

When you buy the properly drained, root-roomy Cret Pots you have not to worry about the number of pots to a "piece" or "cast."

Crets are sold on the definite per-hundred basis—you get just what you want—reliable, uniform, healthful pots too.

FREE SAMPLE "Cret" Pot, and interesting Descriptive Booklet giving all prices, and 5 Special Assortment Offers. Carriage Paid on all orders over 20/- Write to-day.

PETER BAILEY & SONS, LTD.,
2, Heaton Mersey Pottery, near Manchester.

SEEDS FOR 1917.

It is none too early for garden lovers to think of seeds, but be sure the seeds you buy are seeds of quality. It is a gardening axiom that

RYDERS SEEDS

are the best, and despite the fact of a War Time price of 14d. per packet, orders for these famous Flower and Vegetable Seeds are daily growing in volume. Seeds of quality cannot now be supplied, even by Ryders, in Penny Packets.

Ryders Illustrated Seed Catalogue Free.

Ryders 1917 Catalogue contains a large number of choice varieties not found in other lists.

Ryders offer in 1std. packets such standard novelties as :—

Tomato Bide's Recruit, 8 seeds for 1std.

"All the Year Round" Cauliflower.

The New Chinese Celery-Cabbage "Pe Tsai."

Kychnis Arkwrightii.

Calecularia Veitchii.

New Double Cosmos, pink and white.

Such Sweet Peas as Jean Ireland, President, Fiery Cross, The Lady Eveline, Yarrowa, and over 200 others.

Send a post-card to-day for your free copy of this Catalogue. Remember the one and only address and beware of imitators—no agents.

RYDER & SON, Ltd.,
Seed Specialists,
ST. ALBANS.

Grow Your Own Food by Sowing Ryders Famous Vegetable Seeds.

VEITCH & SON, EXETER.

Vegetable and Flower Seeds.—Special Introductions and Novelties in Asters, &c., for this Season.

Fruit Trees.—Leading and profitable kinds of Cooking and Dessert Apples, Pears, Peaches, Plums, &c.

Hardy Ornamental Trees and Shrubs, Rhododendrons.—(Sikkim, Hybrids and Greenhouse.)

Roses.—Hybrid and Tea (all the newest), Alpines, Herbaceous and Bedding Plants, &c.

Catalogues of the above, separate, on application.

VEITCH & SON, EXETER.

Burpee's Seeds Grow

THE truth of this famous slogan is proved by thousands of pleased and permanent customers. The Burpee Idea of Quality First,—combined with efficient service has built the World's Greatest Mail-Order Seed Business. Burpee's Annual, The Leading American Seed Catalog for 1917 is a bright new book of 204 pages, in colors, and a Sale Guide to Success in the garden. Mailed free. Write for it today.

W. ATLEE BURPEE & CO., Seed Growers,
Burpee Buildings, Philadelphia, Pa., U. S. A.



Food Production on Farms & in Gardens.

To obtain the best results sow **Dicksons Seeds**

which are all carefully selected from the finest and most productive strains, and are always reliable. Prices moderate. Catalogues free.

Dicksons Seed Growers Chester.

ORDER OUR CELEBRATED

FORCING ROOTS

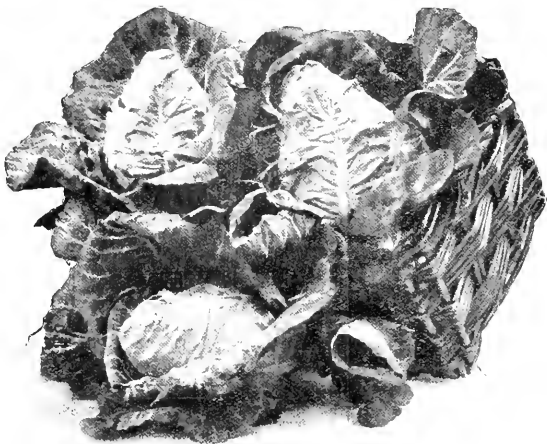
Seakale, Asparagus, Mint, Rhubarb, etc. Also Fruit Bushes.

Write for illustrated Catalogue, containing PRACTICAL NOTES ON GROWING AND FORCING.

ESTABLISHED 1857.

MANN & SONS,
Whitton Road, Twickenham.

TO REPLACE SPRING CABBAGES & LETTUCES



SUTTON'S EARLIEST.

destroyed by the exceptional severe weather

SOW AT ONCE UNDER GLASS

Sutton's Earliest Cabbage,

The quickest growing variety, per pkt. 1/-

Sutton's Commodore Nutt Lettuce,

A compact early variety, per pkt. 1/6

These will then be fit for use almost as soon as those planted in the Autumn.

Sutton's Collections of Cabbage.

The finest varieties for Spring and August sowing.

8 ounces in 8 sorts, our selection.

8 half-ounces, in 8 sorts, our selection.

4 half-ounces, in 4 sorts, our selection.

SUTTON & SONS, THE KING'S SEEDSMEN, READING.



1lb.
Sealed
Packets,
5..

BULL'S PLANT
FOOD Co.,
536, King's Rd.,
Chelsea,
LONDON.

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

LETHORION ::

VAPOUR
CONE **Fumigant**



Introduced 1885.

The marvellous effect of this simple and cheap method of Fumigating Greenhouses is fully borne out by the enormous increase of sales year by year.

Only a match required for starting the Cone. Full directions for use on each Cone.

Thousands of testimonials received from all parts.

Prices. No. 1, 500 to 1,000 cubic ft., 6d.; No. 2, 1,500 cubic ft., 8d.; No. 3, for 2,000 to 2,500 cubic ft., 1..

"TENAX" THE NEW AND MOST SUCCESSFUL Grafting Wax

It is a much required "HOME-MADE" article to meet the requirements of all Nurserymen and Gardeners.

It is rapidly taking the place of all Foreign and other preparations for all Grafting and Budding Purposes.

In Tins, each 6d., 1-, 2-, 4-, 6-. Also in bulk at reduced rates.

To be obtained through the Nursery and Seed Trade generally.

CORRY & CO., Ltd.,

Bonded Chemical Works, Shad Thames,
LONDON, S.E.

THOMSON'S VINE, PLANT & VEGETABLE MANURE

Also
Famous
for over 30 Years.
Ensures success in your
garden; so compounded from
the finest ingredients procurable
as to combine **STIMULATING**
with **LASTING** effects, producing
in every crop vigorous, healthy and
fruitful growth.
The direct result of **LONG PRACTICAL**
experience in gardening.
Used by Amateur and Professional
Gardeners the world over.

**THOMSON'S SPECIAL
CHRYSAETHUMUM
AND TOP DRESSING MANURE.**

Prices—Vine, Plant and Vegetable Manure,
1 cwt., 20/-; 66 lbs., 12/6; 28 lbs., 7/6;
14 lbs., 4/6; 7 lbs., 2/6; tins 2/6, 1/-, and 6d.
Carr. paid anywhere on 66 lbs. and up.
Special Chrysaethumum and Top
Dressing Manure—66 lbs., 20/-;
28 lbs., 11/-; 14 lbs., 6/-;
7 lbs., 3/-; tins, 1/-; Carr. pd.
anywhere on 28 lbs. and up.
Sold by all Seedsmen

SOLE
MAKERS

W. THOMSON & SONS LTD. CLOVENFORDS, N.B.

Exterminated by
"LIVERPOOL" VIRUS

RATS

No Danger to Animals
NO SMELL.
In Tins baited for Rats 2/6
and 6/-; for Mice 1/8.
Of all chemists, or write for
particulars to—Dept. C.

EVANS, SONS, LESCHER & WEBB Ltd.,
26, Hanover Street, LIVERPOOL.

SANKEY'S FAMOUS GARDEN POTS

Give the **BEST** and **CHEAPEST**.
State quantity of each size required and have "express" and
quotation "Carriage" frequently amounts to half value of
goods, so write for Price List, from
SPECIAL POTTS of all descriptions. Bells Bowls and Fern
Pots from 2d. each.
RICHARD SANKEY & SON, LTD.
Bulwell Potteries, NOTTINGHAM.

THE

Gardeners' Chronicle

No. 1573.—SATURDAY, FEBRUARY 17, 1917.

CONTENTS.

Books, notices of—	
Cyclopedia of Horticulture	74
Calceolaria Burbridgei	76
Dutch flowers, imports of	74
Frost at new	75
Galloway garden, notes from a	68
Greville Banksii	71
Home farm, crops and stock on the	79
Bonous for agriculture	74
Hybridisation notes	76
La Mortella, the weather at	75
Moles and frost	76
Ostrava	79
Oliver, Joseph	80
Tressler, Edward J.	80
Orchid notes and gleanings	70
'Orchid Review,' the	70
Orphan Fund, Royal Gardeners'	79
Palms, potting	76
Potash from seaweed	75
Potosi, seed	76
Pumila, the wild Chinese	75
Rosa Appleaphis	71
Horticultural Club	74
National Chrysanthemum	76
Royal Horticultural	76
Societies—	
Societies, local	76
Vegetables	71
War items	75
Week's work, the	74, 75
Worshippers, educational gardens in	70

ILLUSTRATIONS.

Greville Banksii	71
Hensley, portrait of the late Alfred	80
Laelia Cattleya Trident	75
Pieris japonica	79

NOTES FROM A GALLOWAY GARDEN.

CONTRIVANCES for the dispersal of seed are so manifold, so ingenious, and so effective in most plants, that one cannot but be puzzled by the mechanism in the various species of Cyclamen, which almost seems to have been devised as a hindrance to dispersal. No sooner does the flower fade than the peduncle coils itself spirally, tucking away the fruit tightly against the spherical root-stock. As the said root-stock often increases to a breadth of six or eight inches, most of the ripe seeds are discharged on its flattened top, germinate there in a crowded clump, and, if left alone, generally die of congestion. Is it possible that in the Mediterranean region, whence most of the hardy species have come to us, Cyclamens depend for the dispersal of their seeds on the intervention of ants or other insects? Swine are said to be very fond of the aerial root-stock (whence the English name "sow-bread"), and no doubt they scatter the seeds when rooting out the roots; but this seems an auxiliary too fortuitous to be trusted for sure propagation of the plant.

Whether in flower or in leaf, the beauty of both spring and autumn Cyclamens is so fascinating that it is strange that they are so comparatively seldom grown. No one who has seen the autumn display under the trees at Westonbirt, or the spring bloom on the roadside banks at Trenough, but must have envied the owners of these places. It is in the power of any owner of a garden to enjoy the like, for all that these hardy little plants require is good drainage, some lime in a poorish soil, and freedom from competition with rank vegetation. Even rats and mice leave the roots alone. It is certain, however, that much disappointment has been incurred in planting purchased roots. Rootlets are thrown out chiefly from the upper part of the tuber-

like stock, wherefore one is very apt to condemn the plants to a lingering death by planting them upside down. I speak feelingly, having sacrificed many Cyclamens to this blunder years ago. To-day I have been saving the lives of scores of seedling *C. europæum*, the offspring of flowers that bloomed in the autumn of 1915. Each of them consists of a tiny, translucent globe, with a few root fibres and a miniature leaf. All would have perished had they been left clustering on their parent's corky bosom; but, being pricked on the barish ground under a Pine tree, with some sifted fine rubbish added to the soil, they may be trusted to make a pretty display a couple of autumns hence. I have described this species as *C. europæum*; we used to call it *hederacifolium*, a most appropriate name, so near is the resemblance of its leaves to those of some forms of Ivy, and I know not how to distinguish it from *neapolitanum*. Most of our plants have rose-coloured blooms, descended from parents which I grubbed out of a loose stone wall near Ragusa, in Dalmatia; but a seedling with pure white flowers sprang up at the edge of a gravel walk, and has produced a numerous progeny of the same colour. Gerard tradeth this innocent plant, declaring that it was most injurious to women in delicate health. "About the place where it groweth in my garden," he says, "I have fastened stakes in the ground, and some other stakes, I have fastened also crosswires over them, lest any woman by lamentable experiment find my words to be true by their stepping over the same."

I had written so far before the mercury tumbled down at the end of January with the severest frost that we have experienced since 1895. In that memorable winter a thick mantle of snow protected vegetation; there is none now, and the danger to tender things is aggravated by splendid sunshine, which thaws frozen shoots and redoubles the risk; so we must prepare to put up with some loss.

The mischievous effect of sunshine upon frozen plants is well shown to-day (Feb. 1) by *Rhododendron barbatum*. This fine species protects itself against frost by rolling its leaves backwards upon their midrib, so tightly that they look like a lot of very dark green pencils. That was the aspect presented by a fine bush about nine feet high at 9 a.m.; it had then little resemblance to an evergreen; but now, about midday, the sun has beguiled it, the leaves are as broad and green as they are at mid-summer, and the whole process has to be gone over again. Others of its kind, protected by trees or a north exposure from the sun, remain in an attitude of defence. Moral: plant the choicer early-flowering *Rhododendrons* where the sun of February will not strike them.

It is interesting to note the attitudes of defence against cold adopted by different evergreen species of the genus *Rhododendron*. Taking two of the largest-leaved species, *R. Hodgsonii* presents a most singular appearance, rolling back its magnificent leaves, eight to ten inches long, into narrow cylinders, whereas *R. Falconeri*

folds them not at all, but simply hangs them vertically. *R. Stairnovii*, *caucasicum*, *ponicum*, *pachytrichum*, also hang their leaves uncurled; *R. Thomsonii* and *arborescens* depress them, but while the former curls them moderately backward, the latter advances the outer margins. Of the smaller-leaved species, *R. emmabarinum* behaves like *R. barbatum*; but *R. indicum*, *ciliatum*, *glaucum*, *hirsutum*, and *ferrugineum* do not alter the position or form of their leaves with the mercury at 18° Fahr.

Pieris (*Andromeda*) *formosa* meets frost by depressing its leaves and curling the outer margins forward; while *Myrtus Lunna*, strange to say, sets its leaves upright and contracts the margins.

There is no more beautiful object in the garden at present than *Pieris japonica* (see fig. 24), thickly set with clustered racemes of ruddy flower-buds, which in the bright sunshine are nearly as showy as the alabaster blossoms which they contain will be presently. It is a pity that this shrub is not more commonly planted, for it is infinitely more lovely than the pallid *P. floribunda*, which one meets constantly. *P. japonica*, however, demands choicer lodging than the other, for it is impatient of cold winds.

This frost has put an end, for the nonce, to the flowering of *Abutilon vexillarium* (by the by, we are enjoined now, for some occult reason, to speak of it as *A. megapotamicum*). Of all shrubs known to me, this is, I think, the most persistent bloomer. Give it a place against a warm wall facing south—if it is the wall of a greenhouse or stove-house, so much the better—and this Chilean beauty will never be without some of its scarlet and yellow tassels, except when these get frozen to death. I saw it first in Mr. Gerald Loder's garden at Wakehurst Place, and retain a lively sense of gratitude for the cuttings he bestowed on me. It is one of the numerous American plants which produce scarlet flowers, a colour, so far as I know, confined in the British flora to the Corn Poppy and common Pimpernel (*Anagallis arvensis*), both of them probably weeds of cultivation imported from sunnier climes. Our sunshine seems to be too intermittent and watery to light up the scarlet flame; we have plenty of good pink wild flowers, but in the stronger tones of red there is always an admixture of blue, bringing them perversely near magenta. We have nothing to match the lines of *Desfontainia*, *Lobelia cardinalis*, *Delphinium nudicaule*, *Salvia splendens*, *Castilleja minima*, *Bravaya genimiflora*, and a host of others that could be named. Neither is orange to be found in the corolla of any of our native flowers, except some splashes of that bright tint on the standards of Bird's-foot Trefoil (*Lotus corniculatus*). There is, indeed, an orange form of the Welsh Poppy (*Meconopsis cambrica*), but that is probably a garden sport. Luckily, the exotics which fly these gay colours can thrive in our climate lose nothing of their splendour under our cloudy firmament. *Herbert Maxwell, Monroith, Wigtonshire*

ORCHID NOTES AND CLEANINGS.

LAELIA JESSICA.

A PRETTY canary-yellow hybrid, *Laelia Jessica*, is sent by Eustace F. Clark, Esq., Evershot, Dorset, who is uncertain as to the exact parentage. The pollen proved true *Laelia*, and the probable

parentage is *L. coronet* × *L. jougheana*. *Laelia coronet* resulted from crossing *L. harpophylla* with *L. cumularina*; and in the flower sent by Eustace F. Clark, Esq., Evershot, Dorset, who is uncertain as to the exact parentage. The pollen proved true *Laelia*, and the probable

ODONTOGLOSSUM LADY ROXBURGH.

THIS little known *Odontoglossum* was raised in the gardens of Sir Jeremiah Colman, Bart., Gatton Park, Surrey (gr. Mr. Collier). It is now in flower, and although there is some variation with nearly equal segments. The crimped labellum is reflexed at the tip.

of *O. cirrhosum* in the sudden contraction of the broad petals, forming a short apiculate termination. Through *O. ardentissimum* and *O. Rolfeae*, *O. Pescatorei* enters twice into the composition of *Odm Lady Roxburgh*, and *O. Harryanum* and *O. crispum* once each. Both parents can be readily traced, and it would be interesting to note the results of further crossing.

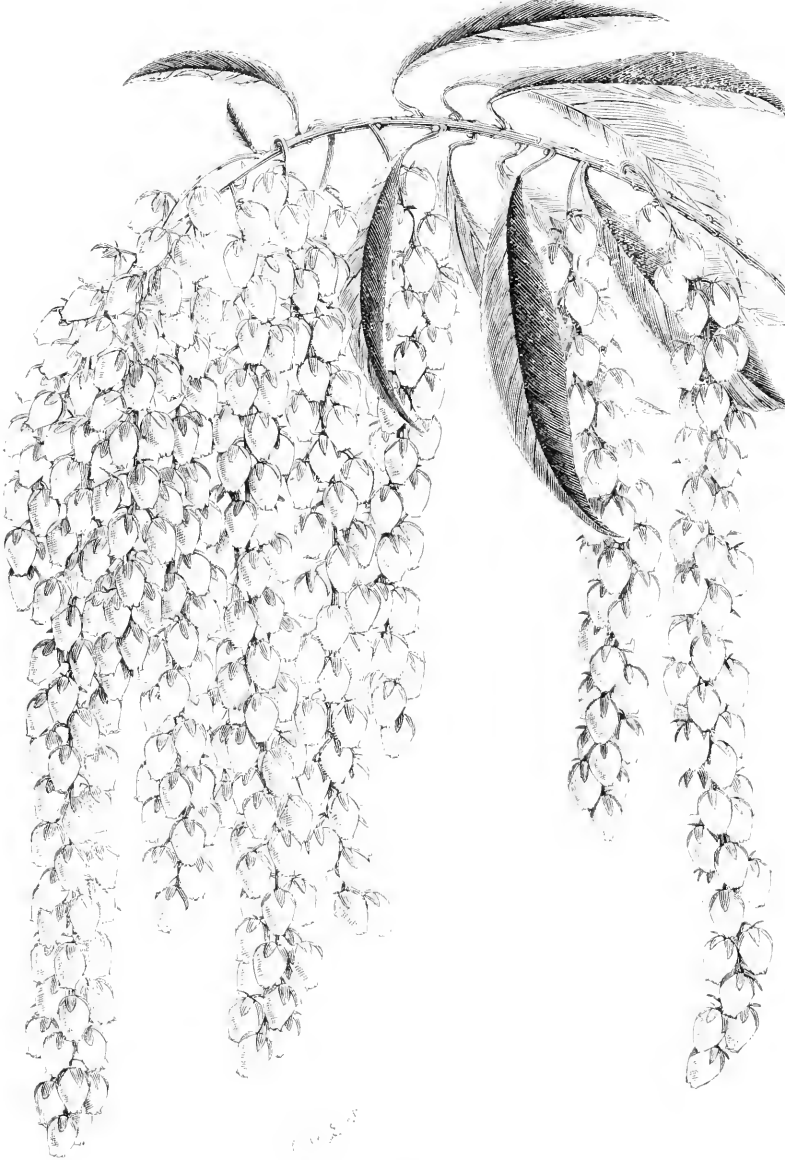


FIG. 24.—*PRIMULA JAPONICA*. FLOWERS WHITE.
(See p. 68.)

parentage is *L. coronet* × *L. jougheana*. *Laelia coronet* resulted from crossing *L. harpophylla* with *L. cumularina*; and in the flower sent by Eustace F. Clark, Esq., Evershot, Dorset, who is uncertain as to the exact parentage. The pollen proved true *Laelia*, and the probable

parentage is *L. coronet* × *L. jougheana*. *Laelia coronet* resulted from crossing *L. harpophylla* with *L. cumularina*; and in the flower sent by Eustace F. Clark, Esq., Evershot, Dorset, who is uncertain as to the exact parentage. The pollen proved true *Laelia*, and the probable

HYBRIDISATION NOTES.

CHINESE SPECIES OF PRIMULA.

VERY little progress has been attained by crosses between these species, which do not seem to lend themselves readily to hybridisation. A great number of crosses were made, but the results are very limited. *P. pulverulenta* crossed with *P. Cockburniana* is the only one amongst the many that proved a success. This hybrid was exhibited at the Temple Show, May, 1907, under the name of *P. Unique*. It received an Award of Merit, and was figured in the *Gardeners' Chronicle* the following week. This was considered the most interesting hybrid exhibited. Since then the reverse cross produced a variety named *P. Unique Improved*; it has proved to be a better grower than the former. The flowers of both are a rich rosy-red, intermediate between the parents. The following crosses, made at the same time, produced seed. They were sown, and plants grown on. All bore flowers similar to those of the seed parent.

<i>P. Cockburniana</i>	×	with <i>Veitchii</i>
" "	×	" <i>obconica</i>
" "	×	" <i>japonica</i>
" "	×	" <i>Kewensis</i>
" <i>dellexa</i>	×	" <i>Cockburniana</i>
" "	×	" <i>pulverulenta</i>
" "	×	" <i>Veitchii</i>
" <i>pulverulenta</i>	×	" <i>tangutica</i>
" <i>tangutica</i>	×	" <i>Cockburniana</i>
" "	×	" <i>japonica</i>
" <i>Veitchii</i>	×	" <i>Cockburniana</i>
" "	×	" <i>pulverulenta</i>
" "	×	" <i>vittata</i>
" <i>vittata</i>	×	" <i>dellexa</i>
" "	×	" <i>pulverulenta</i>
" "	×	" <i>tangutica</i>
" "	×	" <i>Veitchii</i>
" "	×	" <i>japonica</i>
" <i>japonica</i>	×	" <i>Cockburniana</i>
" "	×	" <i>dellexa</i>
" "	×	" <i>tangutica</i>
" "	×	" <i>vittata</i>
" "	×	" <i>Veitchii</i>
" "	×	" <i>Kewensis</i>
" <i>Kewensis</i>	×	" <i>obconica</i>
" "	×	" <i>japonica</i>

In the reverse crosses *P. japonica*, *obconica*, *pulverulenta*, and *Kewensis* only produced seed. These bore flowers similar to those of the seed parent. *P. sinensis*, when crossed with the other species, did not give seed. The improvement in this species is due to careful selection and hybridisation, and when the colours are well fixed they come true from seed. Great strides have been made, both in size and colour, especially in the giant strain.

April and May are good times to sow seed for autumn and winter flowering, and July and August for flowering in spring. Sow in 5-inch pots or pans, well drained, in soil consisting of two-thirds light loam, one-third leaf-mould or peat, with silver sand added. Only a very slight covering of soil or sand is required. Water the soil well and keep it moderately moist; cover with a piece of tiffany or other light material until the seed germinates, then gradually give air. As soon as sufficiently strong prick the seedlings off and pot them on as required. When established, place them in a cool house and grow them on. Winter

temperature 40° to 45° at night, 50° to 55° during the day.

P. obconica does not lend itself to hybridisation, but the strain has been greatly improved. The grandiflora strain has flowers as large as the ordinary *P. sinensis*, and is most useful for cutting purposes. Some have an idea that the size is due to crossing them with *P. sinensis*, but this is unlikely. The size and colour are produced by selection. At present there are eight or nine distinct colours, which are now fixed and come true from seed. The colours include lavender-blue, pink, rose, orange, reddish-crimson, bluish, mauve, and pure white. *P. obconica* is of easier cultivation than *P. sinensis*. It can be induced to bloom from spring to autumn, and the flowers last a very long time. *John Hall, F.M.H.*

GREVILLEA BANKSII.

The genus *Grevillea*, a member of the Proteaceae, includes upwards of 150 species, which, if we except half a dozen, are all natives of Australia. It is surprising that so few of the plants are in cultivation, as many of them are remarkably handsome, in respect either to the foliage or to the flowers. *G. Banksii* (see fig. 25) is a robust plant, forming a tall shrub or slender tree, from 15 feet to 20 feet high. The foliage is ornamental, and young plants are of a very decorative appearance, although scarcely equal in this respect to the better known *G. robusta*. It flowers, however, much more freely. The bright red blooms are produced in dense, terminal racemes, from 2 inches to 4 inches long. The silvery leaves are deeply pinnatifid, and measure from 4 inches to 9 inches. The plant succeeds in a sunny position in a cool greenhouse; but in summer it should be placed out-of-doors to ensure thorough ripening of the wood. The compost for potting should consist of equal parts of peat and loam, with sufficient sand to render it porous. As with all hard-wooded plants, care in watering is essential, as the roots must never be allowed to become dry.

VEGETABLES.

SELECTION OF POTATO TUBERS FOR PLANTING.

DURING the time of the Potato boom in 1903-4, when the variety Northern Star was sold for more than £200 a ton, my then employer purchased two pounds of the tubers. These were planted early in April, and produced 120 pounds of Potatoes, nearly all of which were large enough for planting. The following season we had a heavy crop of much larger tubers. I found Northern Star the most prolific variety I have grown, a good keeper, being in its best condition from Christmas to mid-February. Our method of selecting the seed tubers may be useful to others. When lifting we gathered the tubers into trays, being careful not to bruise them. They were then placed in a cool, airy shed facing north, and from thence removed into an underground root-house, which was well ventilated and cool, fresh air being admitted when the weather permitted. We considered that plenty of fresh air was essential to the health of the tubers, as it prevented the spread of disease; it prevented the seed from becoming heated, provided more natural conditions, and was an aid to disease resistance; it prevented the seed tubers from making growth until required for planting; and it gave the maximum strength to the tuber, enabling the young plant to grow freely. We found that seed Potatoes treated in this way, if any which showed signs of disease were removed before Christmas, often gave us better returns for several years than did seed tubers from fresh sources. *J. E.*

SELECT VEGETABLES.

MR. BECKETT'S remarks on p. 59 are of special value at the present time. Rather than plant early and mid-season Potatoes, I would recommend the planting of early and late varieties in alternate rows. Those who have not the convenience of a cold frame should plant Onion sets, which will escape injury by the maggot of the Onion fly. Growers of Cabbage, or any of the Brassica family, must remember to apply lime, or the crop will be likely to be affected by club-foot disease. It is especially necessary to apply lime to new land; in fact, almost any soil is benefited by a dressing of lime. *Scotch and Cottagers'*

Beckett did not mention the value of Peas, Broad Beans, Dwarf French, and Runner Beans. Scarlet Runners are grown on the roofs of houses, garages, stables, and in back gardens in London. The surplus pods may be salted down for winter use. It is to be hoped that better methods will be found to preserve vegetables for next winter than those in general use. I should like advice as to where reliable seed of Haricot and Butter Beans may be obtained, and the best varieties to grow of these legumes. *J.*

"ONCE-GROWN" POTATO SEED.

My own small experience with saving seed in tubers is limited to Golden Perfection, and was



Photograph by C. P. Roffill.

FIG. 25. GREVILLEA BANKSII: FLOWERS RED.

Kales are both good vegetables, but I prefer Asparagus Kale to either, on account of its greater productiveness and lasting qualities. Bandelions may be used in the same way as Chicory. Manure used for Mushroom beds has two values: (1) To grow the Mushrooms, and (2) the preparation of the manure fixes the nitrogen, which would otherwise be driven off by the heat of fermentation. Those residing near cavalry camps should make the best use of the horse-droppings. A good substitute for Spinach is Meverary, or Lincolnshire Spinach, Chenopodium Bonum-Henricum. The plant is perennial, and may be propagated by division of the roots, or from seed, but old seed does not readily germinate. This crop will succeed in almost any corner. Mr

not succeed. From the second lot that I had from the firm I saved seed three successive years; as the crop was very uneven, perhaps one plant in ten giving a yield, I made a very careful selection from those plants which gave a good number of even-sized tubers from the second crop. The result was little better than nothing. The third was made from tubers which were left in the ground till planting out, to see if this might make a difference, as thorough greening and exposure had possibly had a bad effect. The result from a dozen plants was that there was not a Potato for the table. The inference I make is that the stiffish soil and conditions in my Herefordshire garden are not suited for seed saving. *H. E. D.*

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMY COLMAN, Bart., Gaitton Park, Reigate.

CYPRIPEDIUM.—The winter flowering section of this Orchid will now be passing out of bloom, and as soon as the flowers are cut any necessary repotting may be done. If it is not desired to increase the stock, the plants may be transferred into pots two sizes larger. The pots should be filled to about one-third of their depth with drainage material, covering the crocks with rough particles of the potting soil. The plants should be placed in the pots with the roots spread and the compost carefully worked in between them. Press rather firmly, and fill up to near the rim of the pot, taking care not to break the roots.

By giving these plants a fair amount of pot-room, better flowers, with longer stems, can be obtained than from specimens that are in a pot-bound condition. Plants that have been newly potted will be benefited by rather more heat than is required for established specimens. If the potting material is already moist, the plants will not require much water, but should be sprayed overhead two or three times daily until they develop new roots. Specimens already in large pots may be resurfaced with new compost, first picking out some of the old soil from between the roots and replacing it with new material. A suitable potting medium consists of three parts of good fibrous loam and one part peat or Osmunda-fibre broken up rather roughly. Remove all the small particles, and add some crushed crocks and silver sand to ensure a free passage of water. The compost should be allowed to become warm before using. The night temperature most suitable to these plants is from 55° to 60°, with a rise of 5° or 10° on sunny days. The above remarks apply to such *Cypripediums* as *C. insigne* and its varieties *Harefield*, *Sanderac*, *Laura Kimball*, and *Sanderianum*, and the hybrid *Leucanum*; also *C. Sallieri*, *C. Thompsonii*, *C. Eurvades*, *C. Mons. de Curte*, *C. G. F. Moore*, *C. Thalia*, *C. elatior*, *C. Hitchinsiae*, *C. Beckmannii*, *C. Waterloo*, etc.

ZYGOPETALUM.—When the plants of *Zygopetalum Mackayi*, *Z. Wigianianum*, *Z. crinitum* and others of that section pass out of cover they may be repotted. These Orchids resent frequent disturbance at the roots, therefore they should not be repotted until it is absolutely necessary. They produce large roots like those of *Cattleyas*, and require more rooting space than is generally necessary for other Orchids; the pots should be at least two sizes larger than those they formerly occupied. Let the pots be well drained with a double layer of crocks over the bottom; the method of potting should be similar to that for ordinary greenhouse plants. A suitable compost consists of equal parts good, fibrous loam and Osmunda-fibre chopped rather roughly, with a liberal addition of crushed crocks, crushed bones, charcoal and Sphagnum-moss. *Zygopetalum Ballii*, *Z. rostratum* and *Z. Recklingianum* are best grown in shallow pans and suspended from the roof rafters in a moist, shady position in the intermediate house. Employ as a rooting medium for these a mixture of Osmunda-fibre, A1 fibre, and Sphagnum-moss chopped rather short. *Z. Perrenoudii*, *Z. Clayi*, *Z. leucocillium* and *Z. Protherocanum* are best grown in pots in a similar compost. The more scendent-growing species, such as *Z. Sanderianum*, *Z. maxillare*, and its variety *Gartneri*, should be given attention as soon as the new growths begin to develop. These plants succeed best when fastened to portions of the stems of Ferns, to which the roots will adhere. Do not disturb the roots unnecessarily. The plants that have outgrown their spaces should be given a new piece of Fern stem fastened to the one on which the roots are already clinging; the young roots will soon adhere to the added portion. The plants should be grown in a moist, shady part of the intermediate house close to the roof-glass.

PLEIONE.—Plants of *Pleione maculata*, *P. Wallichiana*, *P. praecox* and *P. lagenaria* that are passing out of flower will soon be developing new roots from the base of the young growths, and at that stage they require repotting. The plants should be removed from their pots, and, after shaking away the greater portion of the old soil and separating the pseudo-bulbs, potted afresh, care being taken not to injure the roots. First, several plants together according to the size of the pan, allowing a space of about 1 inch between each pseudo-bulb. These Orchids are best grown on a shelf near the roof-glass or suspended from the roof rafters in an intermediate house. Afford water sparingly until the new roots have grown well in fresh compost, after which they will require copious supplies of moisture until the new pseudo-bulbs are fully matured. Syringe the plants overhead on bright days in order to ward off attacks of red spider. A suitable compost consists of good fibrous loam and peat or Osmunda-fibre in equal parts, mixed with a little powdered cow manure, crushed crocks and silver sand.

SHADING.—If the outside blinds were removed at the end of last summer they should be fixed again in position without delay, for in bright weather shading will be necessary for a short time during the middle of the day. This applies especially to houses containing such plants as *Odontoglossum crispum*, *O. Pescatorei*, and their many hybrids; *Masdevallia* and *Phalaenopsis*; *Dendrobium*, *Cattleya*, *Laelia* and their hybrid; will be safe without shading until a later period.

HOT WATER SYSTEM.—Exercise great caution in stoking the fires in the furnaces, taking care that the pipes are not unduly hot on bright mornings, as sunshine would cause the temperature to rise too high. Economy in fuel should at all times be considered, and it is more important than ever now.

FRUITS UNDER GLASS.

By JAMES HUDSON, Gardener to LEOPOLD DE ROTHSCHILD, Esq., F.R.S., Gunnersbury House, Acton, W.

EARLY MELONS.—Those who sowed their first batches of Melons in January will do well to watch the progress that is being made. If not very satisfactory it will be well to sow again. In doing this, still keep to Ringleader or any other reliable and favourite variety. Ringleader will thrive well in a slightly lower temperature than many others. Those who have a good, healthy, early stock should now set about preparing a bed for them, if planting out is contemplated. Bottom heat will be desirable. This may be produced by good, sweet horse manure and warm pipes, and can be combined, if desired, with warm pipes. I advise those who have not tried pot culture to do so, still depending upon bottom heat. If ordinary flower-pots be lacking, make use of "sunk" pots. In every case press the loam firmly.

VINES IN POTS.—Those who rely on vines in pots for the earliest bunches, and who raise vines for the purpose, should start a suitable number of the plants which were pruned hard back in November or thereabouts. Early pruning will have induced the buds to plump up to some extent. Let these young vines have all the light possible, and do not grow them in a very warm temperature at the commencement of forcing. A minimum temperature of 55° will suffice, rising 10° to 15° in the daytime. Before the present month has expired the vines should be transferred to their fruiting pots, those 13 inches in diameter (6's) being suitable. I prefer pots of this size to those of 12 inches diameter (5's), which is the usual size adopted by trade growers, but to those who raise their own vines I recommend the larger size. The soil should consist of rich, yellow, fibrous loam of a calcareous nature, which is easily obtainable. Mix with it well-crushed mortar rubble and a small quantity of charcoal about the size of nuts. Do not add a concentrated fertiliser until growth is well advanced. If the pots are new ones let them be well soaked before they are used. The compost will be in a suitable condition for use when it does not cling to the hands if pressed. Pot

firmly, and allow room in the pot for a surface dressing later.

GRAPES IN STORE.—Give every attention to Grapes in the store, and see that no decaying berry remains even for one day. Some of the water in the bottles will have evaporated, and must be replaced. I find that a new oil-feeder can is the best thing to use as a filler. See that the temperature of the room is maintained as nearly at 45° as is possible. Late Grapes do not keep satisfactorily in an ordinary fruit-room with Apples and Pears.

EARLY VINERY.—The earliest vines have made good growth, and the laterals should be stopped at two joints beyond the bunch to be retained. Do not stop all the shoots at the same time, but pinch first those that are gaining strength most rapidly. All the shoots will be stopped, probably, in about three operations. Guard against an excess of atmospheric moisture in dull, cloudless weather, and when but little ventilation can be given, for too much moisture at such times favours the development of warty excrescences on the under sides of the leaves. This complaint will often occur on leaves that are not fully grown and will stop their growth. Continue to disbud the vines as growth proceeds, but leave at least two shoots where there appears to be any doubt as to which is the better of the two. A week's time will decide this question, and no harm will have been done meanwhile.

THE FLOWER GARDEN.

By W. J. CRUSE, Gardener to Mrs. DEMPSTER, Keele Hall, Staffordshire.

DAHLIA.—If the remainder of the old *Dahlia* tubers are placed in a light compost on stages in a warm house or pit, plenty of cuttings will soon be available for propagating. Spray the roots daily, but on no account should they be saturated with moisture, or the young growths will be soft and sappy, eventually turning yellow. Select short-jointed shoots for cuttings, and insert them singly in small pots filled with a light compost. Root the shoots in a brisk temperature, and afterwards remove them to a cooler house, shifting them into larger pots as required. The present is a suitable time to sow *Dahlia* seed thinly in pans or boxes filled with a rich compost, covering them lightly with fine, sifted soil. Directly the seedlings are large enough to handle, transfer them singly to small pots, and treat them as advised for cuttings. The stronger seedlings will not necessarily give the best flowers, and the less robust ones should not be discarded.

BEGONIA.—The tubers of *Begonia*s which have been stored through the winter should be placed in boxes in a compost of leaf-mould and sand. A similar position to that advised for *Canas* will suit them. Do not start them in a high temperature. The largest tubers may be divided to increase the stock, if necessary, and this should be done directly a little growth has developed.

CANNAS.—Old stools of *Canas* that were lifted last autumn and stored for the winter should receive attention. Shake the old soil from the roots, and place them in boxes or pots, using a light compost. A fruit-house that has just been started for forcing is suitable, as only a moderate amount of heat is necessary. To increase the stock divide the roots into single crowns, and pot them directly they have made a little growth.

CARNATIONS.—Carnations that have been wintered in cold frames may be planted in mild weather, but if the soil is wet or sticky defer the work until the ground is in a more favourable condition. Plants that were set out-of-doors last autumn should be examined after frost to see if they are loose, in which case they need pressing in the soil firmly with the foot.

FREMONTIA CALIFORNICA.—This deciduous flowering shrub is not difficult to grow, and is much hardier than is generally supposed. The

undersides of the thick, heart-shaped leaves are covered with dark brown hairs, and the young shoots have a rich brown, woolly appearance. The trusses of yellow flowers develop in April, and the plant continues in flower for a long period. The flowers are often 2 inches in diameter, and they will keep fresh for a long period after they are cut. The plant grows best in a rich, sandy loam, and established specimens make rapid growth. Plants may be raised either from seeds or cuttings; the latter should be inserted in the spring.

THE KITCHEN GARDEN.

By J. DEXS, Foreman, Royal Gardens, Windsor.

CUCUMBERS.—Plants of Cucumbers raised from seeds sown early in January will soon be ready for planting. Let the house in which they are to be grown be cleaned thoroughly, the walls whitewashed with hot lime, and, if Cucumbers have been grown in it recently, fumigated with sulphur to destroy red spider and thrips. When the fermenting material has been prepared, make up a hotbed to within 2 feet of the trellis and tread the materials firmly to prevent the bed from sinking. The soil may consist of equal parts of good turfy loam and leaf-mould, which should be placed on the bed a few days before the plants are inserted. Exercise great care in planting, so that the roots may not be broken. If the temperature of the bed is too high bore a few holes in each mound of soil to allow some of the heat to escape. When the roots appear through the surface top-dress them lightly with rich soil and a light sprinkling of bone-dust. Promote a moist atmosphere by the frequent use of the syringe. The night temperature should be 70°, rising to 85° by day with sun. Very little ventilation is necessary for some time, provided the fins are stopped during sunny weather. Plants in fruit should be thinned carefully of superfluous growth, and the shoots tied in position. Do not allow the foliage to become crowded, but remove all worthless shoots and rough leaves, which harbour insect pests. Top-dress the plants with light, rich soil as often as they grow through the surface. A sowing of Cucumber seeds should be made to raise plants for occasional cropping. Sow the seeds singly in small, clean pots and germinate them in a temperature of 70°. Every Day and All the Year Round are suitable varieties for present sowing.

ONIONS.—As soon as the frost is at an end and the soil is in a workable condition autumn-sown Onions should be transplanted. If the ground was trenched and manured in the autumn the recent frosts will have acted beneficially on it. When sufficient plants are available a large plantation should be made, as home-grown Onions will be very valuable. Plant in rows made 16 inches apart and allow from 6 inches to 9 inches between the plants in the row, according to the size of the bulbs required. Lift the plants from the seed bed with great care, and make the soil firm about the bulbs in planting. Water the roots copiously with clear, soft water. When growth commences stir the soil lightly with the Dutch hoe and give frequent dressings of soot during the growing season, choosing showery weather for its time of application.

CHICORY.—Fresh batches of Chicory roots should be placed in a temperature of 55° or 60° in order to maintain an unbroken supply. Perfect darkness is necessary to produce thoroughly blanching heads. The atmosphere should not be excessively damp, as the tender young shoots are harmed by too much moisture. A small supply of Chicory may be produced from roots forced in pots in a Mushroom-house or similar structure. One copious watering at the time of potting should suffice.

CELERY.—Make a small sowing of Celery with a view to producing plants for autumn supplies. Sow the seeds in pans filled with finely sifted soil, and cover them very lightly with soil. When the seedlings appear place the pans close to the roof-glass, and never allow the roots to suffer from want of water.

ROOTS IN STORE.—Beet and other roots in store should be examined and all young growth removed. Keep the roots as cool as possible, without allowing them to become frost-d. Onions should be examined and all decaying bulbs removed; bulbs showing signs of growth should be selected for present consumption. Potatoes in store should be picked over during inclement weather, and seed tubers selected and placed in single layers in a frost-proof shed where light and air can be admitted during favourable weather. Much depends on the proper selection and care of seed Potatoes, and no time should be lost in securing the necessary quantity.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHCOTE, Eastwell Park, Kent.

WINTER-FLOWERING BEGONIAS.—The beautiful Begonias are deservedly popular, and should be grown in all gardens to produce brightly-coloured flowering plants in mid-winter. Plants in flower now can be maintained in good health by keeping all the old blooms picked off and giving the plants a little liquid manure-water weekly. The plants should not be over-watered, but must not be allowed to become extremely dry. A fairly dry atmosphere is best for plants in bloom, ventilating a little each day, if possible, with a temperature of 55° to 60°.

BEGONIA GLOIRE DE LORRAINE. This is the oldest of winter-flowering Begonias, and still one of the most satisfactory for general decorative purposes. If propagated early in the season, and grown without a check, plants will come into bloom early in the autumn, and by propagating a later batch a continuous supply of flowering plants can be maintained for at least six months. Plants that are now past their prime should be removed from the flowering house or conservatory, and the healthiest plants reserved for the production of cuttings. All the flowering growths should be cut off, but the plants must not be pruned too severely, or they will fail to start again into growth. Place the plants in a warm, light house, near the glass, so that the cuttings may be sturdy and vigorous when the time for propagating arrives. Very few root waterings will be necessary at this stage, but maintain plenty of atmospheric moisture by spraying the plants every day in bright weather. Other varieties of this type, such as the white-flowering *Tunford Hill*, will require similar treatment.

BEGONIA GLOIRE DE SCEAUX. This variety forms a contrast to the one named above, and is well worthy of cultivation. The beautiful bronzed foliage, of perfect shape, shows up the panicles of rose-pink flowers to perfection. Grown in ordinary conditions, this Begonia is at its best in the spring, and plants coming into bloom now should be assisted with a little artificial manure or other stimulant, such as soot or liquid manure. By propagating early, and getting strong plants of firm growth ready to place in a little extra heat in autumn, a batch of plants may be forced into bloom by Christmas. Well-grown and shapely plants are first-class subjects for decoration in warm, light rooms, but these Begonias must never be placed in cold and draughty corridors.

BEGONIA NITIDA AND B. NITIDA ALBA. These Begonias, with the varieties named above, make a selection that will bloom nearly the whole year. They succeed in similar conditions, well-cultivated plants in pots reaching a height of 4 or 5 feet when trained to pillars in the stove or warm plant house.

TUBEROUS BEGONIAS. The newer hybrids obtained by crossing *B. socotrana* with the summer-flowering tuberous Begonias should be kept somewhat drier after the flowering period is over. Stand them in a warm, light place, reducing the water supply gradually, but avoid drying them off suddenly. Some of the best varieties are *Optima*, *Mrs. Heal*, *Ensign*, *Elatior*, *Winter Cheer* and *Emita*.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbots Wood, Godalming, Surrey.

MULCHING FRUIT TREES.—The mulching of fruit trees has great value, and especially to trees growing in light or shallow soils. Mulching may be done at two seasons; at the present time, for strengthening the flowers and early growth, and when the fruits are swelling and approaching maturity. Well-decomposed cow or farmyard manure forms the best material for mulching trees. The dung should be used liberally—say to the depth of 1 inch and a half over all the surface of the rooting area, and it should be well beaten to pieces with a fork before it is spread. Do not apply a mulch of this nature to newly planted trees, but place a sprinkling of straw litter over the roots. All bush fruits, and especially Gooseberries, Raspberries and Currants, are much benefited by annual dressings of animal manure.

STANDARD TREES OF APPLE AND PEAR.—The present is a suitable time to overhaul the orchard, pruning where necessary, to relieve the trees of superfluous wood, dead and decaying branches, and weak growths. Trees that are sprayed with caustic alkali wash will not show much foreign growth upon them, but scrape any lichen growth there may be present on the stems. The frost has probably destroyed many insect pests, we recorded 20° of frost on several mornings. But do not trust to the frost to clear the trees of pests, which hide in crevices and other sheltered places.

ARRAIRS OF WORK.—Work of all kinds has been retarded by the wintry weather, and especially the pruning, tying, staking, and planting of the trees. The days are lengthening fast, and every month in spring brings important work to be done. Make up for the loss of time by increased efforts, remembering that it is our serious duty to grow as much food—of which fruit is an important item—as possible.

GENERAL REMARKS.—Prepare stakes for use when required, also shreds for nailing, and place them in bundles. Overhaul all netting and make repairs where necessary. Materials used for shooling should be put in order, to save time later in the busy season.

ROSY APPLE APHIS.—The Rosy Apple aphid, the life history of which has been described recently by Messrs. BAKER and TURNER,* attacks the foliage of Apples, and deforms the growing tree as well as the fruits. The authors conclude that the proper name for this aphid is *A. malifoliae*, of which name *A. sorbi* is to be regarded as a synonym. The species occurs both in Europe and in North America. Eggs are found on the Apple in winter lodged generally on small twigs under buds or in crevices of the bark. The eggs begin to hatch early in April, and the stem-mother wanders about the twigs till it reaches a bud, where it settles and feeds, crowding into the bursting bud. After their last moult the stem-mothers begin to reproduce, and an individual may produce 260 young in the course of twenty days. The length of life of a stem-mother is at the most forty-five days. Several generations, in which both wingless and winged forms appear, occur on the Apple, the proportion of winged insects increasing with the successive generations. Migration to the Plantain begins towards the middle of May, and most of the insects have left the Apple by June 20. So many as fourteen generations of the summer form of the aphid occur—practically all wingless. The autumn migrants become adult in September, and remain in the trees until after the beginning of November. Oviparous females begin to be produced in mid-September, but their numbers are greater later on—in October—at which period males are numerous. Oviposition begins in the middle of October and continues until all the oviparous females are dead.

* "Rosy Apple Aphid," *Journal of Agric. Research*, VII., 7 Dept. of Agric., Washington.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W. C.

Editors and Publisher.—Our correspondents would obtain delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and such unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, FEBRUARY 27.—
Roy. Hort. Soc.'s Coms. meet.
Hort. Club's annual meeting, dinner and lecture.

AVERAGE MEAN TEMPERATURE for the ensuing week obtained from observations during the last fifty years at Greenwich, 39.6°.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, February 15 (10.0 a.m.): Bar, 29.6", temp. 38.5". Weather—Bright.

SALES FOR THE ENSUING WEEK.

MONDAY.—
Rhododendrons, Hardy Heaths, &c., at the American Nurseries, Mifflin, Surrey, by Protheroe and Morris, at 12 o'clock.

TUESDAY and WEDNESDAY.—
General Nursery Stock, Fruit Trees, &c., at the Box-Johnie Nursery, Boxbourne, by Protheroe and Morris, at 12 o'clock each day.

WEDNESDAY.—
Hortacoon Plants, Roses, Fruit Trees, Bulbs, &c., at Protheroe and Morris's Rooms, 67 and 68, Cheap-side, at 12 o'clock. Lilies in cases at 3 p.m.

THURSDAY.—
Standard, Dwarf, and Climbing Roses, at Protheroe and Morris's Rooms, at 1 p.m.

FRIDAY.—
Herbaceous Plants, Roses, Fruit Trees, and Bulbs, at Protheroe and Morris's Rooms, at 12 noon.

A Cyclopædia of Horticulture.*

The fifth volume of this comprehensive work is carried out on similar lines to those explained in these pages on June 17 last. Primarily the book is written for the benefit of American readers with a vast continental country and a great variety of climates, in which they cultivate very varied plants that succeed in one or other of the respective areas embraced. In the matter of cultivation only broad and general instructions can be given, so that there is room for a number of smaller books to be written by local cultivators who are conversant with the peculiarities of their particular part of the country. Special lists of trees, shrubs, and climbers, suitable for different latitudes and climates, however, will help the uninitiated to plant their estates suitably. Hints are given under the descriptions of species whether they are likely to succeed in the north, south, east or west, or in any particular part of the area embraced by the work as a whole. Readers in this country will find much to interest them, for constant reference is made to European works, including British, whether the plants cultivated are native or introduced. The origin of the

Shirley Poppy, as described by the Rev. W. Wilks, many years ago, is recorded, and the characters and range of variation or limitation of admissible colour are as accurately defined as a florist's flower. It is a remarkable type of concentric variegation, and the albium may be regarded as centripetal, for it commenced at the margin of the petals and proceeded to the centre of the flower.

The intention throughout is to confine the *Cyclopædia* to the plants that are actually in cultivation, though a few doubtful ones are included, and some that have not even been introduced. Apparently there is a field for the cultivation of Primulas in America, for Mr. Bailey himself has described no fewer than 200 species. Though these are in cultivation at present, it is unlikely that a title of them are likely to attain the popularity of *P. sinensis*, *P. obconica*, *P. Auricula*, the Primrose and the Polyanthus.

Incidentally, it is interesting to note that *Platanus occidentalis* is, perhaps, the tallest deciduous tree in America, attaining a height in exceptional cases of 170 feet. It is not so reliable a tree to plant as *P. orientalis*, because liable to be much injured by the disease *Gloeosporium nervisequum*, whereas the oriental species is not. The suitability of the London Plane for street planting is commented upon, because of its amenability to pruning and transplanting.

The important genus, *Prunus*, is divided into four groups or sections, namely, (1) Plums and Apricots, (2) Almonds and Peaches, (3) Cerisees, and (4) Padus or racemose Cherries. Though Plums and Apricots have much in common, the downy skin of the fruit of the latter, not to mention other characters, might have been sufficient to warrant a separate class for them. The mature fruit, whether raw, boiled, or canned, is as distinct from a Plum as from a Peach. The purple-leaved Plum is recognisable under the name of *P. cerasifera* var. *Pissartii*, the latter being the best-known garden name; and *P. divaricata* has been reduced to *P. cerasifera* var. *divaricata*, Bailey. The systematic position of many of the common Plums has often been the subject of contention, and this is largely due to matters of opinion rather than of fact. *P. insititia*, Linn. (Bullace), is here recorded under the name of *P. domestica*, Linn., var. *insititia*, Bailey, and is made to include the Damson, Bullace, probably also St. Julien, and other Plums. Some of the reasons adduced for this opinion are that the Bullace is a form with small leaves, small, firm, oval, or ovoid fruits borne mostly in clusters, and "when the Plum runs wild it usually reverts to this form." Now, the Bullace has globular fruits, with an ovoid stone, and a downy peduncle, produced singly or in pairs, and this latter character applies to all Plums. Only the buds from which the fruits arise are crowded, for the flowers are never in umbellate clusters. Damsons were cultivated at Damascus before the Christian era and introduced from thence to this country.

It is quite reasonable to assume that seedling Plums, escaped from gardens and orchards, revert to degenerate types, resembling the Damson. In like manner *P. Cerasus* (Wild Dwarf Cherry) is made to include *P. acida*, the origin of which is unknown. Would it not be better to retain the old type under the name *P. Cerasus*, Linn., than to say *P. Cerasus* var. *typica*, Schneid.? It would certainly be more conducive to simplicity. *P. acida* is rendered by *P. Cerasus* var. *frutescens*, Schneider. The latter is distinguished by its dwarfer habit, smaller leaves and a longer stone. Each of these types of Cherry has varieties that can be ranged under them.

The numerous and important species of *Pyrus* have also been grouped in sections, which are commendable, because they retain the identity of Pears and Apples. The Ornamental Crab, well known as *Pyrus floribunda*, has its name changed to *P. pulcherrima*, Achers and Graebn., who evidently consider the better-known one a *nomen confusum*, because Lindley had used *P. floribunda* for a member of the section *Aronia*. The hybrid *P. Scheideckeri* has been reduced to a variety of *P. pulcherrima*, from which it was a seedling, possibly as the result of a cross, or pointing to the hybrid origin of *P. pulcherrima* itself.

The use of such names as *Pelargonium domesticum*, to include the hybrid race of show and fancy varieties, and *Penstemon gloxinioideus* for the florist's varieties, is peculiar. *Pelargonium vitifolium* is said to differ from *P. cordatum* by its erect habit and less deeply cut leaves. This is an obvious mistake, for the leaves of *P. cordatum* are usually merely dentifolate. There is but a remote comparison between the two, and the writer probably meant to compare *P. vitifolium* with *P. capitatum*, for that is where the comparison lies. Apart from this, errors of fact are evidently few, and the editing has been carefully carried out.

HONOURS FOR AGRICULTURE.—We are glad to observe that the Colonial Office list of honours contains the names of two gentlemen who have rendered conspicuous service to agricultural or botanical science. Dr. FRANCIS WATTS, Imperial Commissioner of Agriculture for the West Indies, becomes K.C.M.G., and a like honour is conferred on LEONARD ROWAY, Esq., Government Botanist to the State of Tasmania.

HORTICULTURAL CLUB ANNUAL MEETING.—The annual general meeting of the members of the Horticultural Club will take place in the Club Room, Hotel Windsor, Westminster, on Tuesday, the 27th inst., at 6 p.m. There will be a dinner at 6.30, and afterwards Mr. JAMES HYDSON, V.M.H., will speak upon "Select Varieties of Water Lilies," illustrating his remarks with a series of slides showing these gorgeous flowers in their natural colours. The president, Sir FRANK CRISP, Bt., will preside. Members intending to be present are asked to communicate with the hon. secretary, Mr. HOOVER PEARSON.

IMPORTS OF DUTCH FLOWERS.—A deputation from the British Wholesale Florists' Federation, consisting of Mr. GEORGE MONRO, jun. (chairman), W. H. PAGE, GEORGE SHAWYER, W. A. SHERWOOD and C. H. CURTIS (secretary), together with Mr.

* The Standard Cyclopædia of Horticulture. By L. H. Bailey. Vol. V., P. R. Pages 2425-3041. Figures 2094-3315. (The Macmillan Company, New York; Macmillan & Co., Ltd., London.) 25s. net.

G. H. BARR, who represented the Horticultural Trades' Association, attended at the Offices of the Imports Restrictions Committee, Board of Trade, a few days ago, and was received by H. J. PHILLIPS, Esq., secretary of the committee. The matter under consideration was the importation of flowers grown in Holland from bulbs which were excluded under the Order prohibiting the importation of Dutch bulbs. The tonnage now occupied and which would possibly be occupied in the near future; the fact that the imports of Dutch flowers would mean the sending of considerable sums of money out of this country;

THE WEATHER AT LA MORTOLA. Mr. BENBOW, superintendent of Lady HASBURY'S gardens at La Mortola, informs us that the weather in the closing months of 1916 was very wet, and that the heavy rains were accompanied by boisterous gales. These culminated on December 15, about midday, in a storm of cyclonic violence, which lasted about an hour. The area visited by the gale was very restricted, but it did much damage, stripping away branches and uprooting many specimen trees. Outside the gardens Olive trees were torn from their roots and many houses of the village had their roofs

would take place on the 24th inst., whereas the dates that should have been printed are April 24, 25 and 26.

THE WILD CHINESE PRIMULA.—In the conservatory (No. 4 greenhouse) at Kew is a group of some fifty plants of the Chinese Primrose, *Primula sinensis*, the majority being in 5-inch pots. The plants are very decorative, with their light green foliage and dainty, pale lilac flowers.

CULTIVATION OF VACANT LAND.—In answer to a question in the House of Commons, Sir R. WINFREY stated that the number of plots



FIG. 26. *TALHO VITTEVA* (ORCHID). See Vol. 1, p. 37, the Orchid Committee, p. 37.

that such imports would very seriously affect home flower producers who had purchased British grown bulbs at enhanced prices; and the injurious effect all this would have upon the future of the British bulb-growing industry, were points put forward by the Deputation for the consideration of the Imports Restrictions Committee.

WEATHER AT KEW. It is interesting to compare the Kew records of the hard frosts of February, 1895, twenty two years ago, with the same dates on five consecutive days of the present month, the degrees of frost registered being as follows: 1895, February 5, 12½; 6, 24½; 7, 27½; 8, 28½; 9, 27. 1917, February 5, 16; 6, 10; 7, 25; 8, 20; 9, 17.

blew off. The amount of rainfall at La Mortola, the total being 1537.9 mm., of 55.7 inches. The previous record year was 1907, when the rainfall was 1192.2 mm., or 47.9 inches.

POTASH FROM SEAWEED. According to the *Salt World* U.S.A. plans are completed for harvesting the seaweed in the Sargasso Sea to obtain potash. The plant is said to have a capacity of 200 tons of ash per day and a storage capacity for two weeks' supply. The seaweed is said to contain 9 per cent of potash.

THE WALTON GRANGE ORCHIDS. By a mischance it was stated in these pages last week that the sale of the Walton Grange Orchids

known to the Board that have been already taken up under the Cultivation of Lands Order (1916) is 6,682.

EDUCATIONAL GARDENS IN YORKSHIRE.—At Stamford, near Halifax, a complete scheme of educational gardens has been in existence for several years, and has been found very successful. The elementary education authorities provide the first plots, on which the children in the schools begin their training; land, tuition, tools, manure, seeds, and all other materials are provided free of charge, the children only supply the labour, and working during school hours. The profits of the gardens are, however, sold to defray a part of the expenses. There are also

plots for evening school students, the conditions being the same as for the day scholars, except that here the produce becomes the property of the student. Beyond this, there is a set of plots for adults, on which everything is paid for by the holder of the allotment, all the profit being his own. The whole scheme has been found a success, and has had a considerable moral influence, especially on adolescent youths, to whom the plot is the only alternative to the street corner.

WAR ITEMS.—Second Lieutenant DORRIS CURTIS, Middlesex Regiment, son of Mr. and Mrs. W. H. CURTIS, of the Nurseries, Barnet, has been awarded the Military Cross for brave and distinguished conduct in the field. In January, 1916, he received a bullet wound in the thigh, and was in hospital.

—Lieut. E. L. BENOUE, son of Mr. BENOUE, of La Mortola, has been awarded the Military Cross for brave conduct. He volunteered at the beginning of the war, joining the Royal Field Artillery, and was granted a commission in October, 1914. He is a pilot in the Royal Flying Corps, where he earned his distinction.

THE "ORCHID REVIEW."—The twenty-fourth volume of the *Orchid Review* is dedicated to O. O. WINGLEY, Esq., Bridge Hall, Bury, "an enthusiastic and highly successful amateur of Orchids for a period of over half a century," which reminds us that the *Review* has flourished for a period nearly equalling that for which the Reichensbachian Herbarium was sealed up. The interest is well maintained, this and the two later numbers containing articles on Albinism and Colour in Orchids, by R. G. THWAITES, Esq., and M. CH. MARON; a Parasitic Orchid Fungus which has been identified from Ghazevain; the Glympton collection of Orchids, in which the experiences of an amateur are detailed; a review of Dr. Lorz's recent work, "Evolution by Hybridization"; Orchids fifty years ago, based on records in our own pages of that period; and numerous other interesting notes and figures. We congratulate the Editor on his continued success.

THE LOCAL SOCIETIES.—The Executive Council of the British Gardeners' Association is asking the Government to release skilled gardeners at present serving in the Army and Non-Combatant Corps, and who are not in classes A or B, in order that they may assist in the work of speeding up the cultivation of food crops.

—Lidget Green Horticultural Society is sending a petition to the Board of Agriculture on the question of the refusal of the local Parks Committee to entertain a suggestion made by the society, and in ignoring the claim to use the Corporation land adjoining the present allotments at Lidget Green, and instead using land for allotments which, in the opinion of the society, is unsuitable for the purpose.

—The third lecture of a series of twelve on vegetable production was delivered by Mr. E. R. JAMES at the Hall of University College, Reading, on the 7th inst. The lecturer dealt with methods of sowing Peas and Beans under glass or in cold frames in order to compensate for the loss of time occasioned by the severe weather. The cultivation of Parsnips and Jerusalem Artichokes was also described, and methods suitable for different types of soil were given.

—A public meeting, under the auspices of the Town Council of Dalbeattie and the Uir and Dalbeattie Horticultural Society, was held in the Town Hall, Dalbeattie, on the 6th inst. Addresses were delivered by PROVISOR AINSFORD, Maxwelltown, and Mr. WILLIAM HUTCHINSON, Termegles Gardens, the latter dealing with the cultivation of vegetables. At a meeting held afterwards it was agreed to form a food production society for the district.

PUBLICATIONS RECEIVED.—*The Fruit, Flower, and Vegetable Trades Year Book and Diary*, (London: The Lockwood Press, Mitre Court, Fleet Street.) Price 1s. net.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

CALECOLARIA BURBIDGEI.—In reference to the note by H. T., on p. 58, respecting the parentage of this useful decorative plant, I am able to say that Mr. Burbidge's statement is correct. In 1915 I crossed *C. tubasi-aeolia* with pollen of *C. Pavonii*, raising a number of seedlings identical with *C. Burbidgei*. (The reciprocal cross gave me no good seed.) Like the original, my plants were all sterile when crossed inter se, or with their parents; neither have I been able to effect a cross with it and any other species or variety, of which I have tried many. Nicholson's *Dictionary of Gardening* gives the correct parentage, but if it is intended to be understood that the first name is that of the female parent, the original *C. Burbidgei* was made in the reverse way. As H. T. points out, the *Key Hand-List* gives the parentage of *C. amplexicaulis* and *C. Pavonii*, and it was these conflicting statements which led me to try to settle the matter definitely. E. J. Allard, *Merton*.

POTTING PALMS.—Mr. Weston, on p. 60, gives sound advice on the potting of Palms. As he states, Palms may be kept in a healthy condition in the same pot for years, provided they are watered properly and given an occasional stimulant. There comes a time, however, when it is necessary to repot them, for most of the stronger growing Palms, such as Kentias, the different kinds of Phoenix, *Corypha*, and *Chamaerops*, send many of their stout roots right to the bottom of the ball of earth, where they coil round, and in time lift the entire mass. The difficulty, then, with pots of ordinary make, is to get one deep enough to take the ball without being too wide for the welfare of the plant, which so treated looks what is commonly termed over-hatted. To avoid this difficulty I induced the potters to make the pots intended for Palms of this class deeper in proportion to their width than those for ordinary purposes. This proved in every way satisfactory, and greatly simplified the work of potting. Another point to be considered when the Palms are employed for decorative purposes is that these narrower pots, containing as they do less soil, are lighter to lift about than those of ordinary shape. They, too, contain as much of the potting compost where it is needed as do the wider ones. This difficulty with regard to pots is not so marked in the case of the more delicate rooted sorts. W. T.

CHANGE OF SEED POTATO.—Appreciation of the remark of E. M. regarding the cottager who has continued sowing his own seed of Potato Ring-leader for twenty years with good results. I grew Pink Beauty of Hebron for a number of years from my own saved seed, originally procured from a cottager in the same neighbourhood, who had saved it from his own crop for several years. The results were good, but I ceased growing that variety some time ago in favour of a slightly earlier sort. The practice of growing has been making headway, even among cottagers, although the seed I obtained from the cottager had not been grown, but kept in baskets under his bed! S. L. Duntriss.

MOLES AND FROST.—On the 3rd inst. I was in Epping Forest sprinkling food for the benefit of the wild birds, and in the course of my wanderings came across a little grassy spot amongst bushes on the outskirts of the wood, and there I was astonished to see two or three fresh molehills amongst several others of older date, the latter, of course, being white with frost or snow, and the brown soil of the fresh ones contrasting strongly therewith. Marvelling at first that moles should be able to throw up their hillocks—one of these, by the way, was very large, and undoubtedly the nest, or so-called "fortress"—through six or more inches of frozen soil, I afterwards came to the conclusion that probably the grass, although not dead and dry, afforded some protection from the frost, and so the depth of frozen soil was not so great. I am glad to see in your current issue (p. 65) so opportune a confirmation of my conclusion. C. N. Hole End.

SOCIETIES.

ROYAL HORTICULTURAL.

FEBRUARY 15.—The one hundred and thirteenth annual meeting of the Society was held at 3 p.m. on Tuesday last, in the Council Chamber in the Vincent Square Hall. The exhibition took place in the Drill Hall of the London Scottish, Buckingham Gate, and was much smaller than usual for an annual meeting.

The Floral Committee recommended two Awards of Merit to novelties, and four medals to groups.

The Orchid Committee recommended one Award of Merit and one Preliminary Commendation to novelties, and two medals to groups.

The only award made by the Fruit and Vegetable Committee was a Silver Knight Medal to a collection of Apples.

The Narcissus Committee met for the first time this season.

Floral Committee.

President. Messrs. E. A. Bowles (vice-chairman), W. P. Thomson, E. H. Jenkins, G. Paul, W. J. Bean, John Green, W. B. Cranfield, G. R. Uthe, G. Harrow, J. W. Moorman, J. Heal, E. F. Hazelton, C. R. Fielder, J. Jennings, W. Howe, H. Cowley, J. Dickson, A. Turner, C. Dixon, W. H. Page, Chas. E. Pearson, R. C. Nottcutt, and G. W. Barr.

AWARDS OF MERIT.

Freesia La France.—A variety with large, open flowers, of soft lavender colour, borne on long, branching stalks. The interior of the throat is faint yellow, with a few lines of lavender colour. The individual blooms measure 1½ inch across, and were not unlike those of a small *Streptocarpus*. The variety is a notable advance in this useful bulbous plant. Shown by Messrs. H. CHAPMAN, LTD.

Primula intermedia alba plena.—A pale variety, with a double row of petals, produced by splitting of the original petal-ridges. The petals are not dead white, but show a faint trace of colour, and there is a little yellow in the eye. The foliage is pale green, and of the "Fern" type. The plant is very floriferous, and makes a highly decorative subject. Two other varieties of the same breed were shown, named *Albina* and *Mauve Queen* respectively. Exhibited by Messrs. W. and J. Brown, Stamford.

GROUPS.

Mr. J. MacDONALD, Harpenden, exhibited dried and herbarium specimens of grasses, the latter being some of the finest examples of pressed and mounted plants we have seen. There were in all about 100 species and varieties, many of them being rare grasses. Some of the more interesting were *Milium verticillatum*, the smallest grass, with spikes tinted violet; *Aira caryophylloides*, taller than *A. praecox*, and with more elegant, laxer spikes; *Festuca amethystina*, a fine leaved species; the rare *Lolium tenuistylum*; *Poa bulbosa* var. *viparina*; *P. alpina*, which is also viviparous, these mountainous species relying on this means of reproduction owing to the disadvantage in high altitudes for seed production; and *P. nemoralis*, that grows well in the shade. (Silver-gilt Flora Medal.)

Mr. J. SIMMONS, The Nurseries, Hounslow, was awarded a Silver Flora Medal for a group of Hyacinths, Tulips and Daffodils.

Messrs. H. CHAPMAN, LTD., Ryve, were awarded a Silver Banksian Medal for hybrid *Freesias* and seedlings of King Alfred Narsissus.

A collection of Perpetual-flowering Carnations, exhibited by Messrs. ALLWOOD BROS., Wivelsfield, Haywards Heath, was awarded a Bronze Banksian Medal.

Other exhibits were winter-flowering Sweet Peas of Messrs. Morse's strain, shown by Messrs. DOBBIE AND CO., Edinburgh, and Perpetual-flowering Carnations, exhibited by Messrs. STUART LOW AND CO., Enfield. The Sweet Peas represent the best of the winter-flowering type grown in America, and included the varieties Early Heatherbell, soft rose, with deeper coloured edge; Early Morning Star, a large flower, with carmine-coloured standard, paler wings; Early Snowflake, white, the biggest

blooms: Early Spring Maid, cream, ground pink; and Early Melody, bluish pink, similar in colour to Elfreda Pearson. The flowers were much frilled and the foliage distinct from that of ordinary Sweet Peas.

Orchid Committee.

Present. Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Veitch, Messrs. J. A. O'Brien (hon. secretary), Walter Cobb, William Bolton, R. A. Rolfe, Frederick J. Hanbury, R. G. Thwaites, Burtin Rallo, E. R. Ashton, E. H. Davidson, Arthur Dyer, H. Curtis, J. Charlesworth, R. Brown and White, and T. Armstrong.

AWARDS.

AWARD OF MERIT.

Laelio-Cattleya Trident (L. Dana × C. Trianae *Burckhausiana* (see fig. 26) from Messrs. FLOXY AND BLACK, Orchid Nursery, Slough. A remarkable and showy hybrid, disclosing in a very interesting manner the effect of heredity. The flowers are equal in size to those of C. Trianae, and the petals develop in a very effective manner; the narrow purple feather on the petals of C.T. *Burckhausiana* so that the colouring takes up three-fourths of the area of the petals (the shaded portion of the figure), leaving the upper third and margin white. The lip, which is deep ruby-crimson with chrome-yellow base, shows the influence of *Laelia Dyanum*, which, with L. purpurata, produced L. Diana, in the tubular form of its base and in the raised lines running into the disc.

PRELIMINARY COMMENDATION.

Odontoglossum Altrichii (var. *eximium* × *lucidum* awarded), from Messrs. ARMSTRONG AND BROWN, Orchidist, Tunbridge Wells. A large flower of perfect form, white, with the inner halves of the segments closely blotched with light claret colour.

CULTURAL COMMENDATION.

To Messrs. ARMSTRONG AND BROWN for a specimen of *Epidendrum polyblabum*, and another still larger of the variety album which has pale yellow sepals and petals and pure white lip. Each plant bore over 100 flowers. The plants were imported from Jamaica about fifteen years ago.

GENERAL EXHIBITS.

MESSRS. ARMSTRONG AND BROWN, Orchidist, Tunbridge Wells, were awarded a Silver Flora Medal for a group containing a fine selection of their new hybrid *Odontoglossum*, together with some of their stock plants used for hybridising, one of which is *Odontoglossum orchidiflorum* variety *humboldtii* a fine spike of reddish-lavender coloured flowers with a gold tint, the tip of the lip only being white. The best of the hybrids were *Odontoglossum Fabia* (Aglao × eximium), a charming dark flower showing the O. *Vuytsteke*, obtained through O. Aglao, in the lip; and O. *Aurea* (Mars × odontoglossum), the flowers of which are dark chocolate-purple with white margins and bases to the segments.

MESSRS. CHARLESWORTH AND CO., Hayward Heath, were awarded a Silver Flora Medal for a group which included splendid examples of varieties of *Odontoglossum*, of which one blotched form was equal to the best shown. There was also a selection of brightly-coloured *Odontodias*, two good forms of *Brasso Laelio Cattleya Joan*, one of them of a deep yellow colour, fine forms of *Laelio-Cattleya Serbia*, L.C. *Daphne* (L.C. *Gottioiana* × C. *Trianae*), a snowy, bluish-white flower with crimson lip; L.C. *Bella alba* and the new and pretty L.C. *Miranda* (*Dominiana* × St. Gothard), a rose coloured flower with purple lip changing to lilac towards the margin, and having fine gold lines from the base.

MESSRS. FLOXY AND BLACK, Slough, showed a selection of hybrids, including their new *Sophron Laelio-Cattleya Myra* (L.C. *Myra* × S.L. C. *Althea*), the copper-tinted light-rose coloured flowers having a neatly formed ruby-crimson lip with yellow base.

DR. MICHEL LACROZE, Southampton, showed *Laelio-Cattleya Santa-Fe* (L.C. *Copia* × C. *Enid*), a large bluish-white flower with fine purple lip, crimped at the edge and having gold lines at the base.

C. B. HAYWOOD, Esq., Woodhatch Lodge, Reigate (gr. Mr. J. Harris), showed a hybrid *Cypripedium Mary* of unseeded parentage,

showing the influence of C. *Harrisianum superbum* in the dorsal sepal.

J. ANSALDO, Esq., Rosebank, Mumbles, South Wales, exhibited a *Cypripedium* of the C. Baron Schroder class, which had developed three perfect flowers from a noded base produced from the centre of the growth, and each borne on a separate stem, as is the case when only one flower is produced.

MESSRS. SANDER AND SONS, St. Albans, showed a good form of their handsome *Laelio-Cattleya* Sir Douglas Haug, for which they had previously secured an Award of Merit.

Narcissus Committee.

President. Messrs. E. A. Bowles (chairman), W. Pompart, J. Jacob, P. B. Barr, F. H. Chapman, W. W. Cranfield, G. Reuther, and C. H. Curtis.

MESSRS. H. CHAPMAN, LTD., Ryde, showed plants of *Tripp Kaufmanniana* under the varietal name *gwynsis*. They were flowering with freedom, and said to reproduce freely. The Committee regarded them as representing the true type, and recommended a Botanical Certificate.

Fruit and Vegetable Committee.

President. Messrs. J. Cheal (vice-chairman) W. Wilks, H. Markham, A. Bullock, J. G. Weston, W. Humphreys, W. H. Divers, J. C. Algotov, P. C. M. Vetch, E. A. Buxard, F. Perkins, F. Beckett, W. Bates, H. Somers Rivers, W. Pompart and John Harrison.

MESSRS. J. CHEAL AND SONS, Crawley, were awarded a Silver Knightlet Medal for a collection of Apples, of which the more notable varieties were Bramley's Seedling, Emperor, Auro-Elizabeth, Humbly's Seedling, Ayrshire, Blenheim Pippin, and Cradley Bunt.

ANNUAL MEETING.

The one-hundred and thirtieth annual general meeting of the Royal Horticultural Society was held at 5 p.m. in the Central Council Chamber of the Victoria Square Hall, Sir Harry J. Veitch occupied the chair, and there were about eighty Fellows present. The secretaries apologized for the inconvenience caused by the necessity of meeting in so small a room, which the members could understand was due to the occupation of the hall by the military authorities. He then proceeded to read the minutes of the last annual meeting, and moved the election of nineteen new Fellows. These were unanimously elected, and the minutes adopted.

Before presenting the annual report of the Council Sir Harry Veitch stated that the president, Field-Marshal Lord Grenfell, much regretted his inability to be present, owing to his indisposition. In regard to the report for the past year, it showed how very difficult a year the Society had passed through. On a review of the year's work, however, the Council felt much satisfaction in being able to point to the continued progress, increased activity and extended influence of the Society's work.

During the year the Society had been called upon to widen its rôle in assisting the horticultural activity of the country. The changed conditions of shipping had gradually made themselves felt, and the call for increased production of home-grown food-stuffs had made itself more and more loudly heard.

The letter addressed to the Fellows, and sent out with the book of arrangements, showed that the Council anticipated the need conditions of today. A deputation, urging the adoption of measures to meet these conditions and offering the assistance of the Society, waited upon the Board of Trade and the Board of Agriculture in November last. The Order in Council of December 3, authorising Local Authorities to acquire land, break it up into plots, and distribute it amongst the inhabitants for the cultivation of vegetables, was due to the visit of that deputation.

The Society's war pamphlets had met a wide-felt need for simple information and instruction on matters of gardening, no fewer than 90,000 copies having been issued last year.

It had come to the Council's knowledge that the Society was being misapprehended by both Fellows and non-Fellows alike. References in conversation and in letters which reached Vincent Square

suggested in some cases inactivity and in others extravagance. Both these criticisms admitted of complete answers. If any truth existed in either charge its germ was to be found in the relation of one to the other, the Society having been as active as its financial conditions allowed. The country had this year made greatly increased National demands on the Society, but without supplying one penny of financial support through Government channels.

The Council was grateful for the loyal support the Fellows of the Society had given, and was confident it would be continued. At the close of the year the list of Fellows showed a falling off of only twenty-six. That the Fellowship of the Society could be thus sustained through the most difficult of all periods in our national history was a marked proof of the Society's strength and usefulness. He explained, however, that there were great numbers of Fellows on active service whose subscriptions were for the time being in suspension, involving a loss of £900.

In the earlier part of the year the Council was called upon to fill two vacancies in its own body, caused by the death of Mr. J. Gurney Fowler, and the resignation of Baron Bruno Schroder. To fill these two vacancies the Council co-opted Sir David Prain, the eminent Director of the Royal Gardens at Kew, and Mr. Frederick Hanbury, a well-known amateur gardener of great knowledge and experience. Later in the year they received the resignation of Sir Daniel Morris, who found it more and more difficult to get up to the meetings from Bournemouth. The Council accepted his resignation with very great regret. Sir Daniel's connection with the Society in an official capacity dated back to the time of the Society's leaving South Kensington and turning to the old Horticultural policy. In those far-away days Sir Daniel did youn's services as treasurer, and he would ask those present to prise a very hearty vote of thanks to Sir Daniel for his long and constant service. The Council had co-opted Sir Daniel a vice-president of the Society.

The Council had co-opted the Rt. Hon. James Lowther, M.P., Speaker of the House of Commons, to Sir Daniel's seat on the Council. Mr. Lowther was an ardent garden lover, hardly ever missing one of the meetings, and in these difficult days the Society was most fortunate in securing his cooperation and assistance.

Some statement relative to the Hall would doubtless be expected. When the demand for large buildings became acute, as it did last summer, and it came to the knowledge of the Council that the Military were seeking in all directions for large buildings, the Council felt there would be no reluctance whatever on the part of the Fellows to the Society's building being surrendered if arrangements could be made to protect the interests of the Society in so far as the urgent needs of the war would permit. The Hall was accordingly offered, the War Office met the Council gratefully and generously, and promised that the Society's work should suffer as little inconvenience and interruption as possible if the Hall were handed over to them. They further promised that another building should be provided for the fortnightly meetings, and asked if the Council had any preference in the matter. The Hall of the London Scottish Volunteers in Buckingham Gate having been the home of the Society's meetings from 1888 to 1904; it was felt that no better selection could be made as a temporary measure. In due course formalities were completed, the Drill Hall was given to the Society, and then, and not till then, did the Australians, who had acted most honourably throughout, think of entering into occupation. As regards terms for the occupation, the War Office promised that the Society should be left in practically the same position financially in respect of the building as it was in 1915. At the close of the occupation, the Hall would be handed back with compensation for dilapidations.

The Red Cross Sale held in June had proved a greater success than could have been anticipated, and £2,205 had been sent to the Red Cross Society. The Council was deeply grateful to all the Fellows and friends of the society who supported it, and especially to those who had so generously purchased at the sale.

The new laboratories at Wisley had been completed during the year, and work, with such staff as was available, had commenced. The work in the gardens had naturally been very much handicapped for want of labour. They were, however, quite as largely visited as usual.

In deciding to suspend for this year the shows at Chelsea and Holland House the Council had responded to what they plainly saw to be a sacrifice demanded of the society on national grounds. The Council felt sure they would have the support of the Fellows in so doing. It was, therefore, regrettable that a few letters had recently reached Vincent Square, in a somewhat complaining tone on this score. The suspension of the spring and summer shows, and the transference of the fortnightly meeting to the Drill Hall were only temporary measures during the war, after which it was hoped to resume the usual programme, so that Fellows might confidently look forward to a return of their full privileges.

The Dry Bulb Show was a marked success. It was hoped that it, and the Conference held on the same day, would make their influence felt in a greatly increased home-grown bulb industry in the future.

During the war the Council felt that a certain measure of curtailment in the building-up of the Lindley Library was necessary, as economy must be brought to bear upon every branch of the society's work; for one reason, amongst others, that there was a certain falling off in the society's income, both from subscriptions and dividends, and that the increased work thrown upon the different departments, both at Vincent Square and at Wisley, as a result of war conditions and war needs, was involving extra expenditure which previously did not fall upon the society. No rare or valuable book would, however, be allowed to go by if offered at a reasonable price.

The Council felt sure that the Fellows and the trade would support their action in suspending, for the time of the war, the issue of further Gold Medals in the actual metal in view of the Government's requirements that it should be used as little as possible. The Gold Medal would continue to be awarded as heretofore, and Medal Cards would be issued to recipients, but not the medal itself.

It had been found necessary to put a check upon the indiscriminate use of the vases by asking of all exhibitors a small deposit when borrowing them. At the close of the meetings exhibitors were asked to return the vases to the attendant in charge, when the deposit money would be refunded, less the value of any vases broken or lost.

It would be hard to imagine a sadder blow to the Society than that so unexpectedly sustained by the sudden death of the treasurer, Mr. J. Gurney Fowler, at the beginning of the year. He had for many years been a familiar figure to all associated with the fortnightly meetings, and especially those of the Orchid Committee, of which he was chairman. As a member of the Council for 18 years, his strength of character and his unflinching decisions were a great support. He handled the finances in a manner which contributed very largely to the stable position which the Society now held, and the heavy work which fell upon him in connection with the International Exhibition of 1912 will always keep his memory green in horticultural circles.

Major C. G. A. Nix, a member of the Council, and Chairman of the Fruit and Vegetable Committee, had accepted the office of treasurer as Mr. Gurney Fowler's successor. Major Nix was at present absent on military duties, and, in the interim, the speaker (Sir Harry Veitch) was acting in his place.

As already stated, owing to many of the subscriptions of Fellows on active service being in suspension, there was a decrease of income under this head of nearly £900. The impending military occupation of the hall had also interfered with the income from lettings to the extent of about £1,000. In these circumstances the balance-sheet was awaited with a certain measure of anxiety. It was with no little relief that a cash balance of about £1,700 remained, but it was only right to remark that at the beginning of the year the balance in hand was £2,700, so that there had really been an actual decrease of £1,000

in the twelve months. £8,000 of the income had been devoted to the building of the Wisley Laboratory, which is now completely paid for except the comparatively small amount of £870 called "retention money," which would fall due in May next.

Though the Society stood to-day above high-water mark, it would not be long before an adverse balance would appear if, year by year, the income thus continued to decrease.

He formally moved the adoption of the report, and called upon Dr. F. Keeble to second it.

Dr. Keeble said that he was glad to have this opportunity of giving some account of the activities of the Royal Horticultural Society during the past year. It would be recognised that the work had been carried out under very difficult conditions. Of the Wisley staff, every member of military age, except one, the vegetable and fruit foreman, whom they regarded as indispensable, had been released for military service. Still, even with their depleted staff, they had been able to carry on not only the routine work of the gardens, but also a certain amount of research. Mr. Ramsbottom, who had been released for military service, was investigating the diseases of Narcissus, and for the information of any Daffodil enthusiasts who might be present he would say that three distinct diseases had already been discovered.

The seriousness of the situation as regarded food supplies had been recognised by the Society at an early date, and the record of their activities in this direction was one of which they might well be proud. On the outbreak of war, propaganda for the increased production of home-grown foodstuffs was undertaken, and work in this direction was extended until the Society received evidence that the Government itself was taking up the work. He regretted, however, that Government action fell short of what the situation appeared to demand, but the excuse might be urged that the overworked officials of the State could hardly be expected to take the same detailed interest in such work as those who could have devoted their whole energies to the task. He could claim that the present far-reaching scheme for the use of uncultivated land which the Government had instituted all over the country, was the outcome of a deputation sent by the Society to wait upon the authorities. The Society further undertook and carried out with the greatest success the issuing of a series of simply written and useful pamphlets, each dealing with vegetable culture; and much advice has also been given to enquirers, both at Wisley and at Vincent Square.

In further reference to the scheme for the cultivation of waste land, a second deputation waited upon Sir Sydney Olivier of the Board of Agriculture with an offer to supervise the thorough and efficient cultivation of all waste land appropriated to the purpose. He regretted that they were still awaiting a reply to their offer. They had, however, themselves made a move in this direction by issuing an urgent appeal to all professional gardeners to do what they could to help and advise allotment holders in their own districts, and to place at their disposal surplus seedlings of such crops as Brassicas. Another piece of work which the Society had carried out was the supplying of plants, vegetable and flower seeds and bulbs to military camps in France, and they were now awaiting the decision of the War Office as to whether the Society should be enabled to continue this useful work during the coming season. He had great pleasure in formally recording the adoption of the report.

At this stage of the proceedings the chairman announced the names of the recipients of the Victoria Medal of Honour. They were as follows:—

The Hon. Vicary Gibbs, W. Watson,
E. A. Bowles, W. Slocock,
P. C. M. Veitch.

The chairman invited comments on the report, and the Rev. Joseph Jacob said he would ask the members of the Council whether they did not consider the time had arrived for a revision of the charter and by-laws. He urged that they by altered so as to give greater power to the various committees, to which some of the work now done by the Council might be delegated.

He suggested that the procedure at the annual meeting be amended so as to give the members rather more voice in the decisions come to at these meetings. For instance, he himself was not satisfied with the expenditure upon books for the Library, which he considered too small; but there was at present no opportunity for members to control the policy adopted in this or any other matter. Seeing that the Library Committee only met once last year there had been very little opportunity for them to consider the purchase of any books they might require. He suggested that the Council might consider the advisability during the coming year of acquiring more rare and valuable books, many of which were at present leaving these shores. Again, Daffodil growers had been disappointed that the Council had made no provision for money prizes at the Daffodil Show. He also regretted that the Daffodil Year-book had not been published in 1916, and asked that that publication might be resumed.

Mr. Oak, Southampton, rose to support Mr. Jacobs in his remarks on the subject of the library, and suggested that the society should announce in its publications the names of books needed for the library, as this might result in many cases in gifts of such books by Fellows who possessed more than one copy.

Mr. R. W. Wallace regretted that there was no indication in the report that any money had been invested in the War Loan. (The acting treasurer, Sir Harry Veitch, replied to this that it was proposed to invest £10,000. Mr. Wallace, continuing, said he considered this sum inadequate, and that the amount should be at least £25,000, in view of the fact that the investments of the society amounted to more than £42,000. It was reasonable to suppose that on the securities now available the bankers of the society would place at their disposal the sum he had mentioned at a favourable rate; and he would answer for it that such an action on the part of the Council would be approved by every Fellow of the society. He proposed that the following resolution be submitted to the Council:—"That in the opinion of this meeting the Council would be well advised to increase the society's investment in the War Loan from £10,000 to £20,000."

Mr. Thomas Lewis supported Mr. Wallace's contention, and urged that to invest every available shilling in the War Loan was the patriotic duty of the society.

Mr. Oak proposed an amendment:—"That the matter be left to the discretion of the Council." This was negatived, and the resolution was adopted after further discussion.

Sir Harry Veitch proposed the election of the president, vice-presidents, members of the Council, and officers, as published in the list of nominations, which was agreed to.

NATIONAL CHRYSANTHEMUM ANNUAL GENERAL MEETING.

FEBRUARY 5.—The annual general meeting of the National Chrysanthemum Society was held on the 5th inst. at Carr's Restaurant, London. Mr. Thomas Bevan presided.

The annual report of the Executive Committee was presented, the following being extracts:—

EXTRACTS FROM THE REPORT.

After the successful experiment of 1915 the Committee were able to make arrangements for a Show in 1916 adjusted to the requirements of wartime and yet ensuring an exhibition which should be a worthy successor to those of previous years. Her Excellency Countess Chinda, wife of the Japanese Ambassador, opened the Show with a few well-chosen remarks on an introductory speech by the President. To commemorate this unique occasion the Society's medal, suitably engraved, was subsequently presented to Countess Chinda, and to the President. The entries at the Show were slightly lower than in the previous year, but the quality of the blooms staged certainly showed no decline. Sixty meetings of the Floral Committee were held, and 90 new varieties were staged, as compared with 102 during the 1915 session and 103 during the 1914 season. Of the 90 varieties which were staged, 24 were awarded First-class Certificates, 40 were Commended, and 26 were Commended as a Market Variety. 3 received the Award for Colour, and the Committee desired to see several varieties again. During the season there was not a single new variety of an Incurved Chrysanthemum staged for the consideration of the Committee.

The Floral Committee decided to recommend the Executive Committee to include a class in the next season for English-bred Pompons, and this recommendation has been adopted. The Floral Commit-

hens the grain increases egg production; ground fine, husks included, they form one of the most important fattening poultry foods. Eggs in milk show their appreciation of oats by giving an increased yield for the benefit of the lambs.

Directly a change in the weather takes place and the land is dry enough, sowing should commence, as the early sown plots are much more certain of success than those sown in April or May, for the roots obtain a firmer hold of the soil, and thus withstand drought, which is all too often experienced in June and July.

The preparation for an Oat crop is purely a question of circumstances. On large farms where a definite course of cropping is the rule, the rotation for the Oat crop is a settled problem. On small farms, or where a few acres are attached to the garden, the circumstances are entirely different: the Oat and other crops have to be managed with unusual care.

If the previous year's Wheat crop was successful, and the land is clean, Oats will follow admirably, and so they will after sheeped Turnips or Swedes. A Mangold or Potato crop is also a good preparation for Oats.

A stale fallow, autumn-ploughed, is an advantage, as the seed "goes in" well, the surface tith being so satisfactory after a spell of frost and a good seed bed is of great importance. When the seed is "muddled in," owing to an unsatisfactory preparation of the soil, perhaps occasioned by showery weather, a bad start is made.

Good seed should weigh 40lbs. per bushel, and of a deep black colour in the Tartarian variety. The ears should be short and thick, not long, narrow, and light in colour and weight.

There are various methods of sowing Oats. Drilling is perhaps the best; the seed is buried at a uniform depth. Where a large acreage has to be sown, a broadcaster is employed, which covers from 16 feet to 20 feet of ground. A Massy-Harris cultivator, with a seed box attached, is also a good method of sowing. The seed is dropped evenly in front of the cultivator tines, which bury the seed effectively.

By this method of sowing the land does not require so much harrowing afterwards. Iron or wood harrows should be drawn over the plot at least three times if the soil is fairly dry, as it should be, to effectively bury the seed and under the surface line, taking care to finish off the furrows thoroughly to ensure their not being left too deep to interfere with the self-binder at harvest time. If the surface soil is "cloddy," a roller should be used to make a fine surface; the Oat plant emerges from the soil so much more evenly through a fine surface. Stiff soil should not be left in a rolled-down condition. It is so liable to bake and callus on the surface during an immediate spell of dry weather, which hinders even growth. Always finish off such soil with the harrows.

SUGAR BEET

Last year I grew several acres of this root for sugar production, but owing to shortage of labour or some other cause, the factory to which I intended to send the roots was closed. I am now feeding the roots to fattening cattle with satisfactory results: the roots apparently contain much saccharine or feeding matter, aiding considerably the putting on of flesh. So encouraging was this crop that I hope to extend it in the future.

A fairly heavy bulk of roots can be grown with no more trouble or expense than Mangold Soil that will grow the latter root will grow Sugar Beet. Soil containing few stones is an advantage, as the roots being to get one top root. Loam of medium texture, heavily manured and deeply ploughed in the autumn, would be an ideal site and a good preparation. To obtain a good tith in the spring, which hastens the germination of the seed, the cultivator should be freely used. 3 lb. of seed per acre, drilled as Mangold, and at the same time, is sufficient *E. Molynear*.

*NEW POSTAL RATES.—Contributors and correspondents are reminded that under the new postal rates, letters bearing a penny stamp must not weigh more than one ounce. The postal charge for letters exceeding one ounce, but not exceeding two ounces, is twopence, and thereafter at the rate of 3d. every two ounces.

Obituary.

EDWARD J. TRESSEDER.—We regret to learn that Mr. Edward J. Tresseder, only son of Mr. J. Tresseder, late proprietor of Heath and Son, Musgrave, died at Cheltenham on the 3rd inst., of cancer, aged 42 years. Mr. E. J. Tresseder for many years represented Messrs. Harrison and Sons, seed merchants, Leicester, and latterly was employed by Messrs. Watkins and Simpson.

JOSEPH OLIVER.—We learn with regret that Mr. Joseph Oliver, a well-known Northampton gardener, died a fortnight ago, aged 80-1. He retired from the duties of bailiff at Estington Park in 1910, having been appointed gardener there in succession to his father, who filled the position from 1825 to 1882. In 1882 Mr. Oliver commenced work with his father, and never left Estington; his brother William also spent his life on the same estate. In his early days Mr. Oliver was a keen lover of florists' flowers, and when an apprentice he cultivated

and cow dung, apart from their physical effect on the soil, the following table, from Griffiths' *Treatise on Manures*, shows that horse dung is the rich in plant foods:—

Sheep dung gave	244 lb. of barley
Pig dung gave	236 " "
Horse dung gave	226 " "
Cow dung gave	167 " "

GARDENER'S ILLNESS.—X. F. Z. Gardeners in permanent employment are usually paid their wages during temporary illnesses. In respect to what you say about exceptional circumstances, it is, of course, possible that in isolated cases the privilege may be abused, but the employer seldom lacks means of informing himself of such instances.

HORSE CHESTNUT FAILING TO FLOWER.—C. O. Without seeing the Horse Chestnut tree it is difficult to account for its non-flowering. Non-flowering is, however, often the result of the tree growing in an unsuitable soil or position, and insect attacks usually follow the unhealthy condition. In two cases of non-flowering in northern London good results followed substituting fresh loam for the poor, exhausted soil in which the trees were growing. In another instance an escape of gas in the soil kept the trees in a sickly condition, when they were attacked by the wool leopold moth, and rarely produced flowers. The trees, five in number, are now in a sound, healthy condition, and flower freely.

NAMES OF PLANTS.—J. E. L. 1, *Phyllanthus nyctaginis*; 2, *Dracaena Godseffiana*; 3, *Allamanda Hendersonii*; 4, probably *Hibiscus Rosa sinensis*. All require warm-house treatment in winter, but may be placed in the conservatory or greenhouse in summer if necessary.

PEACHES SUITABLE FOR A CLAY SOIL IN HUNTINGDONSHIRE.—F. de H. B. The following varieties are all suitable for your clay soil: *Alexandra* Noblesse, *Barrington*, *Goshawk* Noblesse, *Prince of Wales* and *Royal George*.

SEED POTATO FOR PLANTING ONE SQUARE ROD OF GROUND.—*Beginnion*. The quantity of seed tubers will vary according to whether the varieties are early, mid-season, or late. Early varieties are usually planted in rows made 2 feet apart, and 1 foot apart in the rows, and you would require a little more than one peck of seed (16 lb.), taking the average weight of the individual tubers at 2 oz. For mid-season varieties 1½ gallon (10½ lb.) will plant one rod of land; whilst for late or main-crop varieties rather less than that amount (7½ lb.) would suffice.

SILVER LEAF AND SOAR DISEASES.—J. S. No certain cures for silver leaf is known. Some who have made the disease the subject of careful investigation have tried the injection of sulphate of iron into the roots, stem, or branches of the tree, or mixing it with the soil; but, unfortunately, though in some cases an improvement was noted, it was not completely established that it was due to the sulphate of iron, and the only point on which all were agreed was that, whether it was a remedy or not, it could in no circumstances be considered a cure in the sense that it rendered the tree immune from future attacks. Spraying has been found completely unsatisfactory, even with strong Bordeaux mixture. Most growers find that the only means of checking the spread of the disease is to cut back the affected trees well beyond the first discoloration of the wood, and burn the cuttings; but this is scarcely a solution of the problem. Pear scab is caused by the fungus *Venturia pirina*. Spray diseased trees with dilute Bordeaux mixture, not more than half strength, when the buds are beginning to open, repeating the operation when the petals are falling from the blossoms, and again when the young fruits have attained the size of Peas. The trees should also be syringed thoroughly in winter with a solution of sulphate of iron.

Communications Received.—F. C. Colburnson, San Francisco—H. V. D. G. H. Miss J.—H. S.—W. D. Dr. W. B. H. R. H. M. (Thanks for plan). R. P. A. W. A. J. B. B. I.—D. E. D.—W. J. J.—R. P. R.—D. B. A. Mrs. M.—E. M. E. F. H.—A. D. W.—S. A.—S. B. A.—A. O.



MR. EDWARD J. TRESSEDER.
(See Obituary notice in last issue.)

Dalbus in his leisure hours. Vegetables were also well grown by him, and he possessed old and very estimable strains of these. Long before Antirrhinum became popular bedding plants, these flowers were largely used in the flower garden at Estington.

ENQUIRY.

I shall be obliged to any reader will inform me where I can obtain Allbagen, a composition for painting trees to prevent rabbits from moping the bark. N.

ANSWERS TO CORRESPONDENTS.

COW AND HORSE MANURES.—J. M. C. You ask what is the growing power of one ton of horse manure compared with one ton of cow manure. The question does not admit of a definite answer, for, as you are doubtless aware, the effect of the respective manures varies according to the character of the soil. For example, cow manure would be most beneficial on light soils, because of its value in holding moisture and giving the soil a greater consistency. Horse manure would be most valuable on heavy land, as it would tend to lighten the texture, enabling air to enter more freely. With regard to the manurial value of horse

(Continued from page ii)

GLAMORGAN COUNTY COUNCIL. HORTICULTURAL DEMONSTRATORS AND ADVISERS.

The Glamorgan County Council invite Applications for the Appointment of a Horticultural Demonstrator and Adviser for assisting the proprietors of Cottage Gardens, Allotments, and Small Holdings in such areas as will from year to year be selected within the Administrative County of Glamorgan.

Applicants must possess an Examination Certificate of the Royal Horticultural Society, and have served as apprentices to gardeners, and have held situations in which they were in charge of and responsible as Foreman or Head Gardeners for Flowers, Fruit, vegetables, and household work.

Experience as journeymen in vegetable gardens will be deemed an additional qualification.

Applicants must provide and be able to make a liability of £5s. per week, with an allowance of the rate of £5 per annum in addition for the upkeep of a liability. The appointment will be for one year, subject to one month's notice on either side, and will be renewable annually.

The person appointed will be required to give his whole time to the service of the county, and to reside there from time to time directed.

Applications, stating previous experience and age, with copies of three recent testimonials, must be received by the Chief Education Officer, Glamorgan County Hall, Cardiff, on or before 10 a.m. on the 7th day of March, 1917.

T. MAXSELL FRANKLIN,
Clerk of the County Council.

Glamorgan County Hall, Cardiff.
12th February, 1917.

WANTED, HEAD GARDENER and **UNDER GARDENER** (ineligible), used to Fruit, Flowers, and Vegetables, good wages, to practical man, house and vegetables bound.—Write wages required and full particulars, F. L. RAWSON, Barwell Court, Chessington, Surrey.

WANTED, HEAD GARDENER, for small garden, good cottage, wages according to experience.—Apply, REV. P. ARMITAGE, Nethfield Vicarage, Henley-on-Thames.

WANTED, GARDENER (HEAD) one or other kept, compact place, must be a worker and thoroughly understand Vegetables, Apples, Fruit Trees, and Ferns; comfortable house, 5 rooms, heated by radiators, fuel, light, and vegetables; good references, state wages.—MRS. J. H. MOORE, Hillfield, Leatherhead.

WANTED, WORKING HEAD GARDENER, for 4 or 5 (temporary), must be thoroughly competent with glass and outdoor work. Write, stating full particulars, to MRS. C. PHIPPS, Chalfont, Westbury, Wilt.

WANTED, HEAD WORKING GARDENER, also **SECOND**, good references, experienced in all branches, inside and out. State wages and full particulars.—Apply, C. H. ALLEN, Helvidale, Weston, Kent.

WANTED, GARDENER (HEAD WORKING), for duration of war, must be fully experienced in all branches, inside and out. State wages expected and full particulars to MRS. CROZIER, Weald, 14 month, Isle of Wight.

WANTED, immediately, GARDENER (HEAD WORKING), experienced, and 2 **UNDER GARDENERS** (ineligible) only to apply for girls' school, cottage for Head Man, good wages. Apply, by letter, stating age, experience, and qualifications, to MISS BERRYON, St. Monica's, Burch Heath, Tadworth, Surrey.

WANTED, SINGLE-HANDED GARDENER, boy kept to give help.—C. H. CAVE, Red way Hill House, Mangotsfield, near Bristol.

WANTED, by a Lady, a good SINGLE-HANDED GARDENER, with help occasionally, in eligible for Army.—MRS. TOLE, Church Speen Lodge, Newbury, Berks.

WANTED, GARDENER (SINGLE-HANDED), boy assists, small Greenhouse, large garden.—N. Priory House, Gosdole.

WANTED, GARDENER, for permanency (SINGLE-HANDED), private garden, ineligible Army, wages 30s. or 20s. and cottage.—Apply, The Lawn, Colbrook.

WANTED, SINGLE-HANDED GARDENER, Permanency, Kitchen and Flower Garden. Glass; help given spring and summer; good wages to competent man.—CHURCHILL, Clarendon Crescent Road, Epsom.

WANTED at once, Experienced SINGLE-HANDED GARDENER (male or female), garden 3 acres, 2 houses, very good wages to suitable person. Write, making appointment, to Grove End, Grove Park, Chiswick.

WANTED, GARDENER, Man or Lady; SINGLE-HANDED, cottage; 5/3 rates Glass. State full particulars, BRIG-GENERAL GIBBON, Hughenden, Peterborough, Salisbury.

WANTED at once, SINGLE-HANDED GARDENER, over military age or discharged from Army, (but do only strong and active); good Vegetable and Fruit grower. State wages and full particulars, COLONEL PARRY, D.S.O., Peigween, Rhododan, Flint.

WANTED, WORKING GARDENER; Flowers, Shrubs, Rock Garden, no Kitchen; good assistant, 25s. and out, cottage and wood.—MRS. JOHNSTONE, Bignor Park, Pillingborough, Sussex.

WANTED, GARDENER, ineligible; Flower and Vegetable Garden, small Greenhouse, willing to be useful, boy under; cottage and garden.—Crownville Cottage, Tipton, Somerset.

MIDDLE-AGED, Handy Married GARDENER wanted for small place in Berks, 22s. a week, with cottage, would have to bring wood and coal into the house and attend to the pumping engine daily before breakfast, must be a good Vegetable grower and understand Trees and Shrubs, no Glass and very little Flower Garden, will assist look after house when empty. Address, by letter, MRS. A. F. WALTER, St. Catherine's, Bear Wood, Wokingham.

WANTED, GARDENER; good vegetable grower, help given, small cottage and garden close to work.—Patrolists to MRS. BROOKS, Keybold House, Frome, Somerset.

ASSISTANT GARDENER wanted, at White Oak, Sissing, Sturley, Kent, wages according to qualifications, war bonus; men on Government work not eligible for H.M. Forces need not apply. Apply to the MATRON.

WANTED, GARDENER (UNDER) SINGLE, handy, outside work, good wages, incl. cottage and references to WIGGINS, Holly Hill, Bostwick, Surrey.

WANTED, UNDER GARDENER, for Kitchen and Pleasure Garden, if married rooms provided, Apply, H. R. INMAN, The Grange, Hampstead Heath, London.

WANTED, experienced HEAD GARDENER (likely) to take charge of Gardens, no Glass, Vegetables and Fruit grown in quantities to supply large establishment; also able to organise installed labour and to instruct classes of boys and girls in practical horticulture; salary starting £150, or £100 resident. Apply, stating qualifications and experience, J. H. BARKER, Beckles School, Petersfield, Hants.

WANTED, immediately, HEAD WOMAN GARDENER and 2 **ASSISTANT WOMEN GARDENERS** for girls' school; furnished cottage provided, salaries £100, £70, and £60 respectively. Apply by letter, stating experience and qualifications, to MISS BRIDGON, St. Monica's, Burch Heath, Tadworth, Surrey.

LADY GARDENER wanted at the Children's Home, Hove, W. (under the Metropolitan Asylums Board), about 3 acres, including 2 acres Vegetables; no Glass. Apply, stating age, experience, and wages required, to the CLERK TO THE METROPOLITAN ASYLUMS BOARD, Embankment, London, E.C.

10th February, 1916.

WANTED, for Large Gardens in the Midlands, TWO LADY GARDENERS, one inside and one out, to work under Head; must be experienced, furnished lodgings, and 30s. per week salary.—Write, T. H. Box 18, 41, Wellington Street, Covent Garden, W.C.

WANTED LADY GARDENER, with some experience, for the Houses, no Boy. State wages and experience to R. ALLDAY, Chancellor House, Timbridge Wells.

WANTED, WOMEN GARDENERS, inside and out, both cool, light, and vegetables; half-day Saturdays, duty paid. Wages and particulars to W. R. WRIGHT, The Gardens, Ashby Saint Ledgers, Rugby.

WANTED, LADY UNDER-GARDENER; work mostly Lady Gardener and share furnished lodge with her, and be on electric light engine.—MISS MRS. HAMILTON RUSSELL, Yalvington House, Wincanton, Somerset.

WANTED, FOREMAN GARDENER, in Northumberland, ineligible, experienced Inside and Out, good wages given, as may be agreed upon, both and usual allowances.—Apply, stating age and full particulars, to X. D. COWAN, West Lillburn, Alnwick.

WANTED, FOREMAN, of good experience, to take charge of Glasshouses; Bothy; good wages.—A. HENDERSON, Mableton Park Gardens, Tonbridge, Kent.

WANTED, good FOREMAN for Pleasure Grounds, Shrubs, Flower Beds, Herbaceous Borders, &c.; must have good experience; wages 32s. weekly, with cottage.—Apply, with full particulars, to W. GROOM, The Gardens, Upper Gattin Park, Merstham, Surrey. Will former applicants please apply again?

WANTED, a FOREMAN GARDENER, for large Gardens in the Midlands, to work under Head; must be well up in Grapes, Peaches and Chrysanthemums; wages 30s. per week and good Bothy.—Write, S. M. Box 19, 41, Wellington Street, Covent Garden, W.C.

WANTED, good KITCHEN GARDENER FOREMAN, experienced in all kinds of Fruit and Vegetables, early and late forcing, salads; wages 32s. weekly, with cottage.—Apply, with full particulars, to W. GROOM, The Gardens, Upper Gattin Park, Merstham. Will former applicants please apply again?

WANTED, GARDENER, as Foreman or Journeyman, ineligible; Glass; experience; character.—Apply, W. COPLEY, Thorntonhouse, Cheshire.

WANTED, MAN for Pleasure Ground; ineligible or discharged soldier, wages 25s. per week.—Apply, WM. HOWE, The Gardens, Park Hill, Streatham Common.

WANTED, a MARRIED MAN, experienced with Cucumbers and Fruit under Glass; good cottage near Garden.—Apply, with particulars of experience, wages expected, to H. ROGERS, Reddisham Gardens, Woodbridge.

WANTED, good MAN; Inside and Out; take duty, good wages and overtime paid, hours 7 to 5, 1 p.m. Saturdays, fare paid.—Apply, with references, to J. M. HUGHARDS, Bookhampton Park Gardens, Andoverford, Glou.

WANTED, an IMPROVER, with some experience; age about 17, wages 17s. per week, Bothy, milk, and vegetables; 2s. 6d. for Sunday duty.—Apply, W. WEXMAN, Huckleton, Dorchester.

WANTED, IMPROVER (INSIDE), under 18 years, 17s. per week, 2s. war bonus; good Bothy, milk, and vegetables, half day on Saturdays; travelling expenses paid.—Apply, with copies of references, to JAMES B. ALLAN, Osberton Gardens, Worksop, Notts.

WANTED, a good, strong Youth as IMPROVER, for general inside work; good wages, with Bothy, milk, and vegetables.—Apply, stating wages and experience, W. H. ALLEN, Minley Manor Gardens, Farnborough, Hants.

WANTED, IMPROVER (16), for Inside; wages 18s. per week, Bothy, milk, vegetables, alternate duties; duty, overtime, and fare paid.—D. ROBERTS, Prestwood, Longborough.

WANTED, IMPROVER for Kitchen Garden, able to take light duty.—Apply, with particulars and wages required, to HEAD GARDENER, Blethen, Woodstock, Oxon.

WANTED, IMPROVER; Inside the Houses and out, age about 17, wages 17s. and Bothy. E. MORGAN, Wassand Hall Gardens, Hants.

WANTED, TWO YOUTHS (16 to 17) for the Houses, wages 18s and Bothy, duty and overtime paid; 1 o'clock Saturdays.—C. GARRAIT, Camwell Hall Gardens, Sutton Coldfield, Birmingham.

WANTED, YOUTH, age about 16, for Kitchen Garden chiefly; 18s. per week; Bothy, milk and vegetables and attendance.—Apply, J. SHENNAN, Haldenby, Northampton.

WANTED, LADY, about 16, or discharged soldier, for Kitchen Garden chiefly; duty, state wage, with good Bothy, &c.—H. BROWFIELD, Ellsfield Manor Gardens, Basinstoke, Hants.

WANTED, strong, active YOUNG WOMAN for the Houses, with some knowledge of Tomatoes, Cucumbers, wreath-making, &c.; good wages to suitable person, no Bothy. State wages expected, with particulars, to A. L. STATHAM, Tony-Cod Gardens, near Hlandun.

WANTED, TWO YOUNG WOMEN for Glass Department, good modern Bothy.—Furnishers of experience, J. FODMORE, Manor Gardens, Little Berkhamstead, Hertford.

WANTED, MAN or WOMAN to look after two cows and poultry, fill up time in Garden.—Reply, stating wages, &c., to GARDENER, Feltham Lodge, Feltham.

TRADE.

WANTED, WORKING FOREMAN, for branch Nursery, Plant and Forest Trees only; house and garden provided, must be eligible for Army.—Apply, with testimonials and state wages required, to JOHN PERRINS & SON, 52, Market Square, Northampton.

WANTED, Experienced Man, ineligible for service, as FOREMAN of Alpine and Herbaria, nursery Department.—Full particulars as to reference, wages, &c., to KINGS ACRE NURSERIES, LTD., Hereford.

FOREMAN for Fruit Trees and Roses. Please state wages required, age, and send references.—WILL TAYLER, Hampton, Middlesex

WANTED, a good PROPAGATOR and GROWER, one used to Roses, Clematis, Chrysanthemums, and General Nursery Stock.—Apply, with particulars, as to wages, &c., to THE DEVON ROSERY AND FRUIT FARM, LTD., Torquay.

WANTED, good KNIFEMAN; well up in Budding, Grafting, and Training of Fruit Trees; permanent situation to reliable man, ineligible.—Full particulars as to references, wages, &c., to JOHN PERRINS & SON, Billing Road Nurseries, Northampton.

WANTED, Two Good KNIFEMEN, experienced in Budding, Grafting and Training of Fruit Trees, must be ineligible to serve. Also Two Experienced MEN for Rose Department. Apply with particulars, as to wages, &c., to KINGS ACRE NURSERIES, LTD., Hereford.

WANTED, for large Midland Nursery, an experienced Budder and Graftor, with a good knowledge of Rhododendrons, Roses and Fruit Trees, also two experienced KNIFEMEN. Apply by letter, stating age, references, and wages required. X. B. 21, 41, Wellington Street, Covent Garden, W.C.

WANTED, a PRUNER for Bush and Tree, and later for Grafting for two months, or, if preferable, for a permanent, age above 45 or ineligible; good wages and cottage. Write A. B. Box 10, 41, Wellington Street, Covent Garden, W.C.

WANTED, Two or Three MEN (one or two) as BOBBING GARDENERS (HIBBEN), No. 50, LITTLEHAMPTON.

HANDS Wanted for Market Nurseries, Coventry, and London, under 35, age 17 to 21, week and morning (MOR), previous experience preferred, but not imperative. S. H. 22, 2, ANGLIA WAY, 1, 11, 13, Brook Street, Waltham Cross, Herts.

WANTED, 3 CUMBER HANDS, 42s. weekly, expense home overtime, 1 day/week Saturdays. H. WATFIELD, Spring Gardens, Kent, WORTH.

WANTED, MEN, ineligible, for Soft-wooded staff, Chrysanthemums, Tomatoes and Cucumbers, &c. G. BENNETT & SON, Hanwell, W.

WANTED, MEN well up in Tomatoes and Cucumbers; cottages free.—Write, L. J., Box 2, 41, Wellington Street, Covent Garden, W.C.

WANTED, MAN for small Nursery, one for Cuttings and all round experienced, wages 75s. per week and overtime, CHIPPERSHILL, Hampton Hill, Middlesex.

WANTED, SELDSMAN, well up in all kinds of Plants, and Sundries.—Send to business card. Apply, even time, to L. B., Box 1, 41, Wellington Street, Covent Garden, W.C.

SEED TRADE. Wanted, SIBTHAM, with a good knowledge of Garden and Agricultural Seeds. Apply, stating age, where last employed, and wages asked, to JOHN JEFFERIES & SON, LTD., Church Croft, York.

SEED TRADE. Wanted, TRAVELLER, experienced and energetic, good position, for middle class with full particulars. WYRMS & SIMPSON, LTD., 27/29, Dunc Lane, London, W.C.

WANTED, experienced PACKER for Orchard Nursery, in the neighbourhood of London.—Write "ORCHID" Box 17, 41, Wellington Street, Covent Garden, W.C.

FLORIST wanted for Ireland (male preferred), must be a thorough artist in making up flower board designs, bouquets, &c.; good salary.—Write "Alpha," Box 12, 41, Wellington Street, Covent Garden, W.C.

FLORIST and FRUIT. Young Lady wanted, March 11, must be quick at making up; go-1 wages.—E. COX, Aldwick Road, Bognor.

SITUATIONS WANTED.

Twenty-six words for 1s, and 6d. for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

MRS. L. SALOMONS Recommends her HUSBAND, GARDENER, 20 years, 8, Liberty Park, 10, experience of all branches, good manager.—Apply, to KENT, 25, Falm Lane, Dorking.

GARDENER (HEAD of 2), or with help, thoroughly experienced Inside and Out, especially Ageing and Fruit, age 40, married, lived in Coventry, Staffs., previous place Staffs., to W. A. B. Box 1, 41, Wellington Street, Covent Garden, W.C.

GARDENER (HEAD), his experience Inside and Out, gained by good work in a private garden, 15 years, 15 years, married, ineligible, R. M., Box 11, 41, Wellington Street, Covent Garden, W.C.

GENTLEMAN recommends his HEAD WORKING GARDENER, eleven several an expert, been a London 10 years, thoroughly experienced in all branches, age 42, married, of Mrs. B. B. 10, 10, Edgware Road, London.

GENTLEMAN recommends his HEAD WORKING GARDENER, 12 years, previous experience in Private Gardens, reliable and tried, 40, married, age 40, married, of BARRETT, Hatfield, Herts.

GARDENER (HEAD WORKING), where 2 or 2 are kept, thorough, experienced Inside and Out, married, abstarmer, age 39, excellent ref., W. LAMPARD, The Gardens, Foxleighs, Holport, Manchester.

GARDENER (HEAD WORKING), his experience of all branches, married, single, age 42, 2 years in present situation as Head, CLEMENT GARDEN, Laurel, Tunworth, Staffs.

GARDENER (HEAD WORKING), thoroughly practical, experienced in all branches, 15 years Head position, 12 years in present situation, abstarmer, age 40, married, of H. I. WARRIN, Highfield Gardens, Gainsborough.

GARDENER (HEAD WORKING), well used to supplying large quantities of high-class Fruit, Plants, Plants, Potatoes, Sundries, and Vegetables from limited space, highly recommended, abstarmer, single, age 40, 2 years in present situation, abstarmer, of J. S. SHAKELTON, Ladbroke, Chert. Staffs.

GARDENER (HEAD WORKING), where 2 or 2 are kept, life experience in all branches, 16 years last place, age 50, married (no family), abstarmer, BRUCE, Gardens, Edg. Cambs.

GARDENER (HEAD WORKING), thoroughly experienced in all branches of Gardening, Inside and Out, 15 years as Head, age 46, married the family, —BEATH, Hatfield Broad Oak, Harlow, Essex.

GARDENER (HEAD WORKING), 28 years' experience Inside and Out, 4 years present situation, good references, age 44, married (no family), C. DODMAN, 55, Agmonion Road, W. Hampstead, A.W. No. 10, 10, 10.

GARDENER (HEAD WORKING), practical experience in all branches, very highly recommended, —J. BROWN, The Gardens, Tisbury, York, B. 10, B. 10, B. 10.

GARDENER (HEAD WORKING), where several are kept, 15 years' experience in all branches, age 30, single, Army discharge, excellent references, would undertake Vegetable growing for National Food Supply, A. HENLEY, Marlow Cottages, Church Road, Marlow.

GARDENER (HEAD WORKING), where 2 or more are kept, married (no family), age 45, experienced Inside and Out, good references, leaving through breaking up of establishment, 14 years with present employer, abstarmer, March 25, F. W. BUSSON, Westey, Stoddam, Midhurst, Sussex.

YOUNG MAN (26), ineligible, seeks situation as GARDENER (SMALL HANDS), good references.—E. L., 1, Painter's Cottages, Ham Street, Ham, Surrey.

GARDENER (Swed.); aged 27; has been 1 year in England, abstarmer, seeks re-employment as SINGLE HANDED or UNDER GARDENER, 15 years' experience in all branches of Gardening, please state wages, Apply, R. E. ANDERSON, Scandinavian Sailors' Home, Poplar, London, E.

GARDENER; 10 years' experience Inside and Out, where several are kept, B. Box 15, 41, Wellington Street, Covent Garden, W.C.

FOREMAN (INSIDE), 29, ineligible; life experience Vines, Potches, Plants, &c., house and garden abstarmer, abstarmer, A. BARKER, 7, The Chambers, Shaftesbury Estate, Battersea, S.W.

WOMAN, no experience, wants work as UNDER GARDENER in private garden; South preferred. State wages, &c., MCGOUGH, 175, Gasson Road, Bunting Green, London.

TRADE.

MANAGER of INSIDE FOREMAN, qualified to take entire responsibility, good references from up-to-date London and Provincial Nurseries, W. H., Box 2, 41, Wellington Street, Covent Garden, W.C.

MANAGER or FOREMAN; Market or Retail Nursery, thoroughly understands all general culture, Inside and Out, 17 years' good references, married, age 45, abstarmer, not eligible, disengaged when suited, FOSTER, The Nurseries, Cemetery Road, Holbach, H.

MANAGER or WORKING FOREMAN, thoroughly practical, educated man; London experience, both up-to-date lines, Inside and Out, capable of giving an optional reference as above; partnership abstarmer, age 45, —RELIABLE, Box 16, 41, Wellington Street, Covent Garden, W.C.

MANAGER or FOREMAN; life experience in growing Cucumbers, Tomatoes, Pot Plants, Vegetables, in large quantities, for market, good organization, 25 years' experience, F. W., 16, Dacre Park, Lee, S.E.

MANAGER or GENERAL FOREMAN, in good Trade of Market Nursery, fully qualified over military age, A. B., Box 30, 41, Wellington Street, Covent Garden, W.C.

FOREMAN; over 30 years' experience wholesale and retail Market Nurseries, well up in Chrysanthemums, Tomatoes, Cucumbers, Potatoes, Plants, Cut Blooms, Potting, over military age, single, 5 years present place, E. WOODS, Hopwas Nurseries, Tamworth, Staffs.

YOUNG MAN (ineligible) wants Engagement in Nursery office; experienced typewriter, knowledge about export business.—Apply, A. TIB, Post Office, Uxbridge Hill, Windsorham.

By Special Appointment to



His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams : "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated
with Eight Plates Reproduced from Colour Photo-
graphs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H.,
Secretary of the Orchid Committee of the
Royal Horticultural Society.

APPLES and PEARS. By GEORGE
BUNYARD, V.M.H., late Chairman of R.H.S.
Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By
C. H. CURTIS, late Hon. Sec of the National
Sweet Pea Society.

ROOT and STEM VEGETABLES. By
ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB,
Chairman of Committee of the Midland
Daffodil Society. With preface by the Rev.
W. WILKS, M.A.

CARNATIONS and PINKS. By T. H.
COOK, Head Gardener at Sandringham;
JAMES DOUGLAS, V.M.H., and J. F.
MCLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

CHRYSANTHEMUMS. By THOMAS
STEVENSON, with Chapters by CHARLES
SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with
preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD
FARRER, with preface by Dr. J. BRET-
LAND FARMEK, F.R.S.

DAHLIAS. By GEORGE GORDON,
V.M.H.

IRISES. By W. R. DYKES, M.A., with preface
by Prof BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT,
late Secretary and Chairman of the National Sweet
Pea Society. With Chapter on "Sweet Peas for
Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By
WILLIAM CUTHBERTSON, V.M.H. and R.
HOOPER PEARSON.

RHODODENDRONS and AZALEAS.
By W. WATSON, with preface by Sir F. W.
MOORE, M.A. (the only volume published on
this subject).

ROSES (double volume 2/6). By H. R.
DARLINGTON, Joint Secretary of the
National Rose Society.

CLIMBING PLANTS. By W. WATSON
with introduction by WM. ROBINSON,
Author of "The English Flower Garden."
(Double volume 2/6.)

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No 3974

No. 1574. Vol. LXI. {THIRD SERIES} SATURDAY, FEBRUARY 24, 1917. {Registered as a Newspaper. {PRICE 3d. {POST-FREE, 3rd.

SUBSCRIPTION—Inland, 15-1 Foreign, 17/6 (22fr. 10c.) [\$4 20c.] per annum. Entered at New York Post Office as second-class matter. Postal Address—41, Wellington Street, Covent Garden, W.C. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 81.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

WM. DUNCAN TUCKER & SONS LTD., Lawrence Road, South Tottenham (Conseriators, Winter Gardens, Vinerias, Peach-houses, Portable Buildings, &c. Catalogues gratis

BARR'S VEGETABLE and FLOWER SEEDS of finest selected strains and tested growth at strictly moderate prices. Descriptive Catalogue free.

BARR'S Beautiful LILIES, GLADIOLI, Cannas, Monardella, Tigridias, Anemone, Ranunculus, &c., for Spring Planting Catalogue free. **BARR & SONS**, King Street, Covent Garden, London.

PEEDS' SEEDS.

PEEDS' SEEDS FOR RICH CROPS. The Last ounce is required from Kitchen Gardens this year. Write for our 1917 Seed List. We can give you the bumper crops you look for.

JOHN PEED & SON, The King's Seedsmen and Nurserymen, WEST NORWOOD.

SANDER AND SONS, Orchid Growers, St. Albans.

BLACKMORE & LANGDON, Bath, will have pleasure in sending a copy of their 1917 Catalogue of Begonias and Delphiniums, &c. &c., free, if this paper is mentioned. Magnificent strong roots of our unequalled Delphiniums, in superb variety.

DOBIE & CO., ROYAL SEEDSMEN, EDINBURGH, will send a copy of their 1917 Catalogue, and Guide to Gardening, 160 pages, nearly 150 illustrations, free, if this paper is mentioned.

FIDLER'S NEW ILLUSTRATED CATALOGUE OF CHOICE GARDEN SEEDS will be sent post free, to any address on receipt of postcard. Write at once for a copy. It may help you to save 50 per cent. on your seed bill this season.—**FIDLER & SONS**, Royal Berkshire Seed Stores, Reading.

NEW PILONES

A GRAND STOCK of these Brilliant Flowers in all shades, now ready for delivery.—For lists, with full particulars, apply **GUNN & SONS**, Olton, Warwickshire.

WATERER'S GOLD MEDAL RHODODENDRONS. We cordially invite you to compare and select any plants you require. We have over 60 acres, comprising the finest collection in cultivation Catalogue free. **JOHN WATERER, SONS & CRISP, LTD.**, The Nurseries, Bagshot, Surrey.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers; also Dickson's Improved Mushroom Spaw. Priced circulars free on application to **DICKSON'S**, Royal Seed Ware, house and Nurseries, Chester.

To replace Spring Cabbages and Lettuces destroyed by the exceptional severe weather. Sow at once in sheltered glass.

SUTTON'S EARLIEST CABBAGE. The quickest growing variety, per packet 1s. **SUTTON'S COMMODORE SUTTON LETTUCE.** A compact early variety, per packet 1s. 6d. These will then be fit for use almost as soon as those planted in the autumn.

SUTTON & SONS, The King's Seedsmen, READING.

WATERER'S ROSES & FRUIT TREES. Grand stocks of the best varieties. Lists free.—**JOHN WATERER, SONS & CRISP, LTD.**, The Nurseries, Twickenham, Berks.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes, about 2lb., 3lb., and 12lb., by Dealers in Garden Supplies. Wholesale: **PRICES PATENT CANDLE CO., LTD.**, Battersea, London, S.W.

THE GRAND NEW CHINESE

PRIMULA HELODOXA, A.M., R.H.S. 1015. Other few Chinese Primulas, &c. **BERBERIS, NEW CHINESE SPECIES.** **LILIES—GLADIOLI, BEGONIAS.** are a few of the items offered and described in our **SPRING CATALOGUE**, post free on application. **R. WALLACE & CO., LTD.**, 4, Abchurch Lane, Colchester, Essex.

OMISSIONS and Failures made good by introducing **Storr's Seedlings**, just ready for planting out or potting on at earlier dates for last possible results, all popular Greenhouse plants, Summer Bedding and Hardy Border Flowers, &c. Grand lot of Cyclamen now ready. Write for catalogue. **STORR & STORR**, Flower Seeds, Specialists, Gloucester, Berkeley.

ROCK GARDEN PLANTS. Where and in What Soils to Plant Them," with Catalogue, free on application. Special selections, 12s., 3s., 6d., 7s., 9s., 5d., 10s., 12s., 6d., 10s., &c. All different, named, strong stock; please state position and soil.—**R. PHIPPS**, Alpine Nursery, Barnham, Bognor.

A MARYLLIS (Hybrids of Vittata).—**A. MOYLE & CO.** offer magnificent named sorts from Mr. W. Bull's celebrated Gold Medal prize collection, also Flowering Bulbs, crossed with named sorts, at half usual prices. List free. 150 156, Finsley Road, N.W.

JAPANESE LILICUMS, just landed in splendid condition; large Fern Bulbs, Long-tail rana giganteum, 3s., 6d., 8s., and 8s.; Spiermann Mid pomene and magnificum, and Album Ketzneri (the best), 5s., 6s. and 10s.; Auratum, 6s. and 10s.; Henry, 4s. and 6s.; all per dozen; also others. List free.—**MOYLE & CO.**, as above.

SEED POTATOS, Lincolnshire or Scotch, Myatt's Ash Leaf, Hebrons, Early Rose, Express, Royal Komek, Up to Date, Sir J. Llewellyn, Arran Chief, King Edward, and others, per bush, or cwt. **MOYLE & CO.**, as above. Our Seed and Plant list sent on application.

BERBERIS AQUIFOLIA (MAHONIA) WANTED, any quantity.—Write. **ROBINSON'S**, Upper Broughton, Melton Mowbray.

For Advertisement Charges see page 11.

LAXTON'S SEEDS AND FRUIT TREES.—New Catalogue of the above now issued gratis. Grand New Early Pea, Laxton's Superior, &c., Fruit Trees. A fine stock to offer—may still be safely planted. Pamphlet on Cultivation on receipt of stamped envelope.—**LAXTON BROTHERS**, Nurserymen, Bedford.

BATH'S SELECT SEEDS.—New Illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready and will be sent post free on application.—(Dept. A), R. H. BATH, LTD., The Floral Farms, Wistech.

BATH'S CARNATIONS, PANSIES, DAMIAS, CHRYSANTHEMUMS, and other flowers. New Illustrated Catalogue of the best new and standard varieties is ready, and will be sent post free on application.—(Dept. A) R. H. BATH, LTD., The Floral Farms, Wistech.

JAMES GRAY, LTD., Builder of Conseriators, Greenhouses, &c., and Heating Engineer, Danvers Street, Chelsea, London, S.W. Wire, 201, Western London. Telephone: 201 Western.

GREENHOUSE PAINTING & GLAZING "Vitrolite," superior to White Lead Paint, 15s. per gal. "Plastine" supercedes putty, 3s. per cwt.—Full particulars from **W. CARSON & SONS**, Grove Works, Battersea. Agents throughout the country.

NOW IS THE TIME TO PLANT **KELWAY'S PERFECTLY GLORIOUS DELPHINIUMS.** Kelway's beautiful blue Delphiniums. Kelway's brilliantly coloured Phloxes. Kelway's Colour Borders, ever in bloom. Kelway's new and choice hardy perennial plants of all kinds.

NOW is the time to ORDER for Spring planting Kelway's famous Gladioli. Kelway's many coloured Pyrethrums. Kelway's gay Galliarus.

NOW IS THE TIME TO SEND for particulars to **KELWAY & SON**, Retail Plant Department, LANGFORTH, SOMERSET.

FERN'S! FERN'S!—Tree Ferns, Charming Ferns, Basket Ferns, Store and Greenhouse Ferns, Hardy Garden Ferns; catalogues free.—**J. E. SMITH**, London Fern Nursery, Loughborough Junction, London, S.W.

ORCHID PEAT, 6s. and 7s. 6d. per sack: Brown Peat, 10s. 6d. per yard in trucks; in bags 2s. 6d. each, 30s. dozen; Oak and Beech Leaf Mould, Yellow Loam, Stacked and Fresh Out, Silver Sand; 4 ton lots for 45s.; C.M. Fibre, 25s. dozen bags; 1st free.—**J. HANDSOME, E.R.H.S.**, Feltham, Middlesex.

SPORTSMEN, Farmers, Horsemen.—Try our splendid Yorkshire Whipcord Tweed; wears like leather; shoozer-proof; 7 yards for 17s. 6d. Patterns free.—**BRADFORD WOOLLEN CO. (7), Bradford.**

FOR SALE, Larch Poles, suitable for rustic work, &c.; 10 to 25ft. long.—**CECIL TURNER**, Welwyn.

WANTED, by a Gentleman, to BOARD in family of Horticulturist in Broxbourne or Chessington district; not too far from station.—Full particulars to **V. H. B.**, Box 1, 41, Wellington Street, Covent Garden, W.C.

SALES BY AUCTION.

WEDNESDAY AND FRIDAY NEXT.

A Choice collection of Herbaceous and Rock Plants, Rhododendrons, Roses, Fruit Trees, Lily of the Valley, Carnations, Lilies, and Gladioli in variety, and other Bulbs.

At 12 o'clock each day, and on Wednesday at 3 o'clock.

JAPANESE LILIES in cases, including 25 cases of **LILY OF THE VALLEY** in cases, all in the finest possible condition, also 3,000 Eucharis Amazonica, very fine bulbs, and others for the trade.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. On view mornings of sale and catalogues had.

ROSES.

THURSDAY NEXT.

MESSRS. PROTHEROE & MORRIS will sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on Thursday, March 1st, and every succeeding Thursday at 1 o'clock, consignments of well-grown **ROSES**, especially suited to suit all buyers.

On view morning of sale and catalogues had.

FRIDAY NEXT.

A choice collection of Established Orchids from various sources, together with many in flower and bud. Also a beautifully carved **CHINESE TWO-FOLD SCREEN** and a superb and finely carved **JAPANESE JUNK**.

MESSRS. PROTHEROE & MORRIS will sell the above at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

On Friday, March 2nd at 1 o'clock.

On view morning of sale and catalogues had.

CHISLEHURST.

One mile from Chislehurst Station (S.E. & C. Ry.). Second Annual Sale of Nursery Stock, comprising 1,500 English Yews, 2,500 Golden and Green Pines, 1,500 Laurels, Standard and Trained Fruit Trees, Ornamental and Flowering Shrubs, Standard and Dwarf Roses, Climbing Plants, 5,000 Alpine and Rock Plants, and 3,500 Herbaceous Plants.

MESSRS. PROTHEROE & MORRIS are instructed by Messrs. Whitelegg & Co. to sell the above by auction at the Nurseries, Willow Grove, Chislehurst.

On Thursday and Friday, March 1st and 2nd, at 11.30 o'clock each day.

On view. Catalogues can be obtained on the premises of the Auctioneers, 67 and 68, Cheapside, London, E.C.

BUSINESSES TO LET.

NURSERY TO LET: commanding position; five minutes from rail and tram; 3,000 Glass; 1½ acres land, house, &c.—Apply, JOHN SHEERNESS.

BARNES, SURREY.

TO LET, NURSERY; 8 Greenhouses, 100 feet long, heated, and one acre of land; reasonable offer accepted.—Apply **MESSRS. RICHARDS & CO.**, 62, Church Road, Barnes, Surrey.

BUSINESSES FOR SALE.

TO BE SOLD, as going concern, Business of Nurseryman, Florist, and Seedsman. E. Licensed 35 years. 1½ acres Leasehold; 360ft. run of Greenhouses (all heated); 400ft. run of Brick Frames; and 75 Lamps Lights—Also Stock, and together with good 6-roomed House, 7 minutes' walk from railway station.—Apply, **JOHN ELLIS & SON**, Vale View Nursery, Clitheroe, Lancs.

COMPACT NURSERY; 4 Acres Fruit and Garden, 500ft. Glass; local trade; good house, lawns and meadow; good opportunity.—**FERRY**, Hill Grove Nursery, Kidderminster.

NOTICE.

CHESTER HORTICULTURAL COLLEGE—Chairman of Committee, His Highness the Duchess of Teck, provides PRACTICAL TRAINING of women in the production of Vegetables and Fruit, &c., thus enabling them to assist their country by increasing the food supply.—Prospectus, with full particulars, on application to the Hon. Secretary, **MRS. E. D. DICKSON**, 16, Sunny Bank Queens Park, Chester.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for 2s. 6d. each or exchange. See other advertisements; get lowest price.—**SMITH**, London Fern Nurseries, Loughborough Junction, London, S.W.

PLANTS, &c., FOR SALE.

100,000 LARGE GARDEN FERNS. 20s. 100; Palms, Begonias, Crotons, Dracaenas, Roses, Ericas, Gloxinias, Lilies, Hydrangeas, &c.; catalogues free.—**J. E. SMITH**, London Fern Nurseries, Loughborough Junction, London, S.W.

GERANIUMS, strong July struck, Cran- pel, Denmark, Jacoby, Pollock, M'Mahon, Whites, Raspall, Turner, Crousse, 12s. 100.—**PARMENTER & CORNEY**, Basildon, Essex.

FRUIT TREES, true to name, my speciality. Trained trees, in well-grown, extra-sized specimens, with fibrous roots; Gordon Pear, Grape Vine, Orange Trees, Fig Trees in pots for fruiting. Catalogues.—**WILL TAYLER**, Hampton, Middlesex.

PERPETUAL FLOWERING CARNATIONS, strong, healthy plants, now ready, amongst which are the following varieties: 4s. 6d. per doz. out of sand, 5s. 6d. per doz. in pots—Eucharis, Snowstorm, May Day, Lady Northcliffe, Mikado, Rose Pink Eucharis; 6s. per doz. out of sand, 7s. per doz. in pots—Eucharis Supreme, Salmon King, George White Eucharis, Champion, Triumph. Price List of Latest Novelties on application.—**J. C. JENNER**, Lynwood Nurseries, Rayleigh, Essex.

MISCELLANEOUS.

BUSINESS METHODS.—Experience in the world of commerce shows that there are two ways of conducting a business, the one being to charge as much as possible for what is sold, exacting a high rate from one customer and a low price from another, and the other to have a fixed price for everything and stick to it. The first method is to be condemned from every point of view, but mainly because it punishes the best purchasers, those who are ready to pay what is reasonably asked when the goods are marked in plain figures. The *Gardeners' Chronicle* adopts the alternative. It guarantees that its advertisement rates are not altered for any customer, big or little, old or new; all pay the same price for a similar thing. Consequently, whilst it is not possible to grant concessions, it is nevertheless the privilege of the paper to be in the position to assure each advertiser that he pays no more than anyone else.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue **MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.**

Ordinary Positions	per page	10	10	0
Facing matter and Back Page	per page	12	12	0
Half and quarter pages, column and half column spaces, pro rata.				
4 line space not exceeding 20 words	per line	3	0	0
Per inch, single column	per line	7	0	0
Per inch, across 2 columns	per line	14	0	0
Per inch, across 3 columns	per line	16	0	0

Front page (no display allowed) 1/- per line space. (Headline counted as two lines.)

For discounts apply to address below.

SITUATIONS WANTED.

26 years, 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM	15/- per annum.
ABROAD	17/6 "

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C.

Telegrams: 1545 "GARDENERS, LONDON." Telephone: 1543 GERRARD.

Do Not Forget the Gardener-Soldiers.

"Many thanks for the *GARDENERS' CHRONICLE*, which I have received safely each week through the kindness of Lady Theodora Guest. You will see that I am now in Mesopotamia. The *CHRONICLE* is very welcome to me out here; it seems good to read all the news in the old paper, and surely the *GARDENERS' CHRONICLE* is the king of all gardening papers."

This letter was sent us by a soldier in the Mesopotamia Force. YOUR soldier friend, who was a gardener before he went to the front, is a gardener still in sympathies and interests. HE longs to know what is going on in the gardening world now, and has no means of knowing unless YOU help him. Send him the *GARDENERS' CHRONICLE*. Keep him in touch with current gardening affairs. He will be most grateful for such an act of friendship. Send us a subscription for half-a-year—8/9—and we will take all the responsibility of sending the paper regularly to your friend, also reminding you punctually when the subscription is about to expire.

Write to us now, and give us his address.

41, WELLINGTON ST., STRAND, LONDON, W.C.

CLIMBING PLANTS

(Present-Day Gardening Series)
 By WILLIAM WATSON.
 (Introduction by William Robinson.)

A Practical Handbook on the Treatment of Climbing Plants, both hardy and tender species. Illustrated with 24 full page plates, 8 of which are reproduced in colour.

Price 2/10 post free from:

The PUBLISHING DEPT.,
 "GARDENERS' CHRONICLE" OFFICES,
 41, Wellington Street, Covent Garden, W.C.

MY GARDEN SERIES

MY GARDEN IN SPRING.

By E. A. BOWLES, M.A.

Acting Chairman of the Scientific Committee of the Royal Horticultural Society.

MY GARDEN IN SUMMER.

By the Same Author.

MY GARDEN IN AUTUMN AND WINTER.

By the Same Author.

Price 5/6 each post free from—

THE PUBLISHER,

THE "GARDENERS' CHRONICLE," LTD.,

41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C.

THE HORTICULTURAL

DIRECTORY AND YEAR BOOK.

We much regret that the publication of the Horticultural Directory and Year Book for 1917 has been delayed by unforeseen and unavoidable circumstances. First, the difficulties in regard to printing and paper supplies have increased greatly of late; and secondly, the number of corrections that have to be made this year is altogether unusual, owing to the fact that so many gardeners have joined the Army. To those who have already sent us prepaid orders we offer our apologies for the delay, and assure them that everything possible is being done to expedite publication.

GARDENERS' CHRONICLE, Ltd.,
 41, WELLINGTON STREET, COVENT GARDEN,
 LONDON, W.C.

Horse Shoe

Boilers

Foremost for 30 Years.

For Economy.
 As used in the Botanical and Zoological Gardens.

COMPLETE APPARATUS FROM STOCK.

C. P. KINNELL & CO., Ltd.,
 Southwark St., LONDON, S.E.



SANKEY'S FAMOUS GARDEN POTS
 The BEST and Cheapest.
 State quantity of each size required and have carriage paid quotation. Carriage or (if necessary) amounts to half value of goods, or write for Price List, free.
 SPECIAL POTS of all descriptions. Pots for Seed, Plants, Bulbs and Ferns.
RICHARD SANKEY & SON, LTD.
 Dulwell Potteries, NOTTINGHAM.

ORCHIDS,

Clean, well-grown and cheap, also Many Rare and Choice Varieties. STOVE AND GREENHOUSE PLANTS OF ALL KINDS. Kindly send for Catalogue.

JAMES CYPHER & SONS, Exotic Nurseries, CHELTENHAM.

CARNATIONS. PERPETUAL FLOWERING.

FOR SALE, good clean plants, grown in 3in. and 6in. pots, well broken ready for potting. Golden, Enchantress Supreme, White Enchantress, White Wonder, Boston, Mikado, Mayday, Scarlet Scrolling, Enchantress, salmon Enchantress and other good varieties. 4/- per dozen. Cash with order. MAYTHAM GARDENS, ROLVENDEN, KENT.

ROSES

(Vol. 10 of PRESENT DAY GARDENING), by H. R. DARLINGTON Edited by E. HOOPER PEARSON, Managing Editor of "Gardeners' Chronicle." A good practical book for all Rose lovers. Contains much valuable information. In full-page coloured plates. A double volume. Price 2/10, post free. Special presentation edition with beautiful cover design, in cloth gilt, gilt top, price 3/10 post free. THE PUBLISHER, "Gardeners' Chronicle" Offices, 41, Wellington Street, Covent Garden, London, W.C. NOW READY.

Root & Stem Vegetables

WRITTEN by the late Alexander Dean, will be a valuable companion to the grower of Vegetables. It has a calendar of operations that will prove a useful guide to both the amateur and professional gardener, and the many hints given in the chapter on growing for Exhibition are invaluable. The work is beautifully illustrated by 8 plates in colour. Price 1/10 post free.

THE PUBLISHER,
 "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

ROYAL GARDENERS' ORPHAN FUND
 B. WYNNE, Sec.,
 19, Bedford Chambers, Covent Garden, London, W.C.

SEEDS FOR 1917.

It is none too early for garden lovers to think of seeds, but be sure the seeds you buy are seeds of quality. It is a gardening axiom that

RYDERS SEEDS

are the best, and despite the fact of a War Time price of 1/6 per packet, orders for these famous Flower and Vegetable seeds are daily growing in volume. Seeds of quality cannot now be supplied, even by Ryders, in Penny Packets.

Ryders Illustrated Seed Catalogue Free.

Ryders 1917 Catalogue contains a large number of choice varieties not found in other lists.

"Britain's Best" Tomato. The finest Tomato ever introduced.

Ryders New Snow-tail Scarlet Radish. A remarkable new Three-podded Pea—"Thousandfold."

A splendid New Oval-shaped Beet. Novelties for 1917 include the New Prince Sweet Peas (Pink, Pale Blue and V. olet).

A Wonderful new strain of Hybrid Cinerarias. The "Asterum" in four lovely colours. New Cyclamen, Mauve Queen. New Hybrids of Trollius.

Send a post-card to-day for your free copy of this Catalogue. Remember the one and only address and beware of imitations—no agents.

RYDER & SON, Ltd., Seed Specialists, ST. ALBANS.

Grow Your Own Food by Sowing Ryders Famous Vegetable Seeds.

A. F. DUTTON'S Noted Carnations.

Strong flowering plants in 5in. pots. In 6 good Standard varieties. 15/- per doz., 96/- per 100. In 6 good Novelties. 20/- per doz., 128/- per 100. Packed free for cash, carr. forward.

The Nurseries, IVER, BUCKS.

RIVERS'

Fruit Trees, Roses, Vines, Figs, Oranges, AND Orchard House Trees.

A LARGE AND SELECT STOCK ALWAYS ON VIEW.

ILLUSTRATED AND DESCRIPTIVE CATALOGUE POST FREE.

THOMAS RIVERS & SON
 Sawbridgeworth, Herts.
 STATION: HARLOW, G.E.R.

SOW SUTTON'S SEEDS

but not in the cold soil. Wait till the frost is completely gone, then sow immediately on your warmest borders.



SUTTON'S EARLY GEM.

Sutton's
Sons

The King's Seedsmen,
READING.

PEAS.

Sutton's Little Marvel.		
An extraordinary cropper	Per pint	2/-
Sutton's Hundred-fold.		
Very prolific, good flavour	Per pint	2/6
Sutton's Early Giant.		
A popular early variety.. .. .	Per pint	1/9
Sutton's Up-to-Date.		
One of the largest of the giant-podded varieties	Per pint	2/6
Sutton's Selected Duke of Albany.		
"The Amateur's Pea par excellence" ..	Per pint	1/9

CARROT.

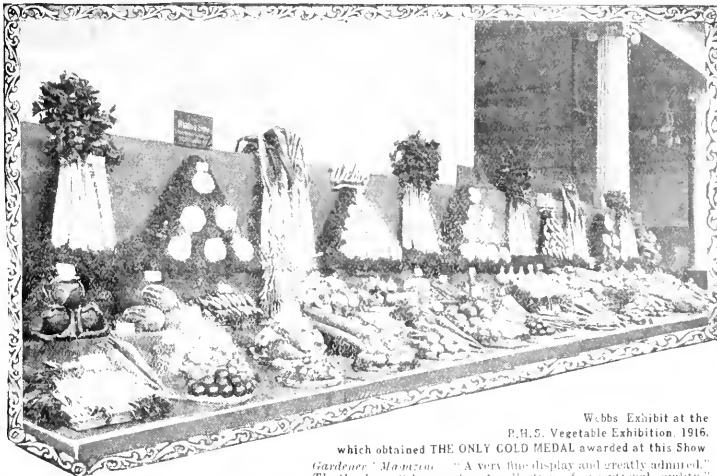
Sutton's Early Gem.		
Quality first rate, very tender	Per pkt.	1/-

ONION.

Sutton's Improved Reading.		
An extra good keeper	Per pkt.	1/-

PARSNIP.

Sutton's Tender and True.		
Of white flesh and delicate flavour	Per ounce	10d.



Webbs Exhibit at the
P.H.S. Vegetable Exhibition, 1916,
which obtained THE ONLY GOLD MEDAL awarded at this Show.
Gardener Magazine—"A very fine display and greatly admired."
The Gardener—"A magnificent collection of exceptional quality."

WEBBS' HIGH-CLASS VEGETABLES.

Awarded the R.H.S. and R.A.S.E. GOLD MEDALS (Highest Honours) in 1916

Quick-Growing Strains specially recommended for Early Work.

Webbs' Little Marvel Pea	3½ quart.	Webbs' Royal Favour Cucumber	1½ pkt.
Webbs' Pioneer Pea	3½ "	Webbs' Early Favourite Tomato	1½ "
Webbs' Surprise Pea	2 6 "	Webbs' First of All Cabbage	1½ ounce
Webbs' Harbinger Dwarf Bean	2 6 "	Webbs' Favourite Radish	8d. "
Webbs' Reliance Globe Beet	1 6 ounce	Webbs' Half-Long Forcing Turnip	8d. "
Webbs' Early Frame Cauliflower	1 6 pkt.	Webbs' Silver Ball Turnip	6d. "
Webbs' Wonderful Carrot	1 3 ounce	Webbs' Forcing Gem Lettuce	1 ½ pkt.

WEBBS' COLLECTIONS of VEGETABLE SEEDS.

Finest Quality and Best Value obtainable.

7/6 Collection contains	33 varieties.
12/6 Collection contains	43 varieties.
15/- Collection contains	49 varieties.
21/- Collection contains	66 varieties.
42/- Collection contains	95 varieties.
85/- Collection contains	110 varieties.

CARRIAGE FREE. Contents on application.

WEBBS' MARROWFAT PEAS.

Collections to Produce a Successional Supply.

21 quarts of Peas, 12 fine sorts	38/-
12 quarts of Peas, 12 fine sorts	23/-
6 quarts of Peas, 6 fine sorts	12/-
12 pints of Peas, 12 fine sorts	12/6
6 pints of Peas, 6 fine sorts	6/6
4 pints of Peas, 4 fine sorts	4/6

CARRIAGE FREE. Our selection.

WEBBS' ILLUSTRATED CATALOGUE of

VEGETABLE SEEDS
SEED POTATOS
FLOWER SEEDS
LAWN SEEDS
GARDEN MANURES.

Free on request.

Mention "Gard. Chron."



WEBB & SONS, Ltd.,
The King's Seedsmen,
STOURBRIDGE.

THE

Gardeners' Chronicle

No. 1574.—SATURDAY, FEBRUARY 24, 1917.

CONTENTS.

Anemone vitifolia ..	55	Paris Spring Show ..	50
Belgian gardening at		Plant notes—	
Leit-dworth ..	57	<i>Burdellia capensis</i> ..	54
Board of Agriculture		Potato in 1900, the ..	57
appointments ..	56	Potato prices ..	57
Cypripedium, hybrid ..	57	Potatos and diseases ..	56
Farm, crops and stock		Potatos and prelude ..	58
on the home ..	50	Pruning in frosty weather ..	55
France, agricultural or-		Railway lime-side gar-	
ganization in ..	56	dens ..	56
French note—		Scotland, allotments in ..	57
Fanyan, Mons, Ozean ..	54	Seeds, proportion of ..	58
Hong Kong, State horti-		Societies—	
culture in ..	57	Manchester and North	
Land cultivation, me-		of England Orchid ..	50
chanical ..	57	National Chrysanthem-	
Lilies in 1916 ..	51	num ..	50
Manure, artificial ..	55	Royal Horticultural ..	59
Moles in pots, early ..	52	Scottish Horticultural ..	59
Moles ..	58	Societies, the local ..	58
New Year Honours, the		Strawberry, White Wood ..	58
Charity ..	56	Trees and shrubs ..	50
Fanyan, Ozean ..	54	Bamboo in shade ..	53
Gale, John ..	91	Vegetables ..	51
Masse, George ..	91	Vegetables, food value ..	51
Manure, George ..	91	of different ..	51
Walpole, Edward ..	91	Vegetables, select ..	58
Palms, potting ..	58	Week's work, the ..	54, 55

ILLUSTRATIONS.

Anemone vitifolia ..	57
Lilium, a new, from Western China ..	52
Lilium Henry ..	52
Lilium, seed capsules of ..	52, 53
Masse, George, portrait of the late ..	91

LILIES IN 1916.

AS far as the southern half of England is concerned, 1916 was both and nurtured in rain, while in adolescence and decay its footsteps were dogged by lowering clouds and leaden skies. Under the circumstances, no amateur of Lilies is likely to have shed any tears over the passing of such a depressing year, and the memory that can recall anything like it must be a tenacious one. It is, perhaps, needless to say that the season was an exceptionally trying one for a genus that rejoices in the sun, and includes in its ranks no single species of aquatic tendencies.

Except for a nip of frost in November, 1915, last winter proved as mild as any of the cycle of which—if we are to judge by our experience of the harsh weather of the past few weeks—it may turn out to be the last. Ushered in by the phenomenal rainfall with which 1916 ended, the beginning of 1916 was remarkable for the extraordinarily precocious condition of vegetation, and the little bulbous friends one begins to look for once the sun resumes his upward course were in much more of a hurry to show themselves twelve months ago than they have been of late.

Not only were Snowdrops, Aconites, and the other first-comers from three to four weeks ahead of the average timetable, but they remained in bloom far longer than usual, so that for the first time for many a year the Yellow Crocus and his reticulate were crowding on to the stage before the early-comers had done their turn. In every direction signs of quickening life came thick and fast, and staid old Elms that had seen a century go by were cozened into bloom before St. Hilary's Day. Even the birds

fell under the warm and wondrous spell, and, all preliminary pipings finished weeks before, thrush and blackbird hailed the New Year with full-throated song. Wiseacres wagged their heads and prophesied disaster, but, though the pace seemed too good to last, the first seven weeks passed without a trace of frost.

Then came a change, for, with a rainfall that has seldom been equalled in the third month during the past forty years, March mothered the damp and chilly air which was so insistent a feature of last year. As if that were not enough, the second half of the month saw the country treated to every sort and kind of noxious weather: snow, rain, hail, frost, and thaw followed each other with bewildering rapidity, the whole culminating on the 28th-29th in a blizzard that tore the face of the land to pieces and littered the countryside with fallen trees.

Up to about the beginning of the vernal equinox, Lilies shared in the general hurry-scurry and made unusually rapid progress; *L. Hansonii* outgrew all others, and was in such uncommon hurry that by March 25 scores of stems had overtopped the three-foot mark, and so completed more than half their upward growth. The fact that four days later, during the blizzard, every one of these Lilies was prone upon the ground, weighed down by snow and frozen where it lay, may seem to point the moral, but *L. Hansonii* is the hardiest of plants, and makes light even of treatment as rough as that.

For the rest of the season the record was a dismal one, brightened all too seldom, as at the end of May and the middle of July, by short bursts of summer. Even August failed us, and though September brought relief, of which, to be sure, *L. Henryi* took full advantage by flowering more bravely than the writer has known it flower before, the change came too late to save the situation.

Such seasons are a trial to the most philosophically minded grower of Lilies, but, even if skilled in all the arts and artifices of the cultivator, he finds himself and his treasures helpless when Providence casts a misty and persistent veil 'twixt sun and earth. But, after all, down and dripping summers are few and far between; they damp enthusiasm, no doubt, and are the undoing of the chicken-hearted gardener, but they have their uses, and it were churlish to complain.

It is pleasant to be able to record that nothing our climate can do seems sensibly to affect the stream of newcomers to the Lily world, and it rolls on in placid, if somewhat sluggish, fashion. Few are the years now that do not bring some new species or variety to light, help us to elucidate some doubtful point in nomenclature, or make us acquainted with some species that has hitherto been no more than a name, perhaps, or a number attached to a herbarium specimen, dried and difficult of identification or description to a degree that would cause even the spirit of Franchet to shudder.

To the first category belongs a little

Lily collected by Forrest in Western China, which has been wrongly identified as *L. apertum* var. *tibeticum* (Fr.). The bulbs, originally received from Prof. Bayley Balfour, as well as from Messrs. Bees, three years ago, began to bloom last last summer, and these, together with a specimen kindly sent by Messrs. Wallace, will, no doubt, provide ample material for critical examination and description during the coming season. Meanwhile, as the illustration (fig. 27) shows, the Lily is distinct in leaf and flower from any other known to cultivation. The bulb, too, of which, unfortunately, a photograph is not yet available, is unique in that the length is more than three times the diameter, the latter being about an inch; it is composed of a few long, fleshy, leaf-like scales loosely folded one on to the other, white in the lower part and tinged with purple at the apex. It approaches that of *L. polyphyllum* in general outline, though a good deal longer.

A consideration of this species, which falls into the *Notholirion* group, and of some other Chinese Lilies, renders it difficult to understand how the accepted technical distinction between Lilies and Fritillaries is to be maintained.

During the year it has been possible to set at rest all doubt as to the specific distinction between two Western Chinese Lilies, *L. Thayerae* and *Willmottiae*, concerning the relationship of which there has been a good deal of doubt since Wilson put them into Western hands some years ago.

Though there has never been any difficulty in distinguishing typical plants one from the other, a general and superficial family resemblance is probably responsible for the notion that the two plants are but forms of the same thing. If all else failed, however, it seems clear from an examination of the capsules, of which Mr. Malby has made such excellent photographs (fig. 28), that the two Lilies should be kept apart.

L. Thayerae originally came into cultivation from Messrs. Veitch's nursery as *L. sutchuenense* (Franchet), under which name it is grown at Kew, and it has always been a little difficult to understand how the robust and floriferous plants one may see in bloom at Kew ever came to be regarded as identical with Hooker's dwarf and lax-stemmed *L. sutchuenense* of the *Bot. Mag.*, t. 7715.

The identity of *L. Willmottiae* (Wilson) is even now not certain, and Wilson inclines to the view that it may be the true *L. sutchuenense* of Franchet, not to be confused with *L. sutchuenense* of the *Bot. Mag.* around which a fog of uncertainty and doubt has gathered. The point will doubtless be cleared up ere long, and, however that may be, there is no question but that *L. Willmottiae*, as we must continue to call it for the present, is a remarkably fine garden plant, distinct from any others of the pseudo-tigrinum section which have come under our notice up to the present.

Reference has already been made to *L.*



FIG. 27.—A NEW SPECIES OF LILIAM FROM WESTERN CHINA. PETALS WHITE, DOTTED WITH ROSE. ANTHERS YELLOW.

Henry, which quite outdid itself last year. Though one of the first of the Lilies to spear through the earth in spring, it is a great deal more leisurely about the business of life above ground than most, taking quite seven months to do it. It has, however, such a tough constitution, when soil and other factors are to its liking, as to be independent of climatic conditions that prove too much for many other species; indeed, it can be said with truth that not only did *L. Henryi* come through the ordeal of last season unscathed, but, while many other species were giving up the fight, it grew and grew till at last it was able to look over a wall 8 feet high; not satisfied with that, during a blistering fortnight in early September it burst into the mass of bloom portrayed in the photograph (fig. 29). So floriferous was it that numerous examples were to be seen carrying two flowers on a pedicel.

And this is the Lily Dr. Henry never saw more than 4 feet high, or bearing more than four flowers, on the limestone bluffs of Ichang.

The bulbs of these astonishing plants have been in the ground no more than five years, and are now little less than the span of a hand in diameter. They are in thin and hungry calcareous ground in which one would hesitate to plant anything except some of the Western Chinese Rhododendrons, which, as experience has shown, thrive in it.

Several correspondents have written about a form of *L. giganteum* that has cropped up here and there of late years, and is not identical with *L. giganteum* of gardens, a familiar friend and originally a plant of Nepal and the Himalaya.

The form in question has been dubbed *L. giganteum yunnanense*, apparently on the authority of Max Leichtlin, who distributed seed of it to a few correspondents in 1908; but, even if Leichtlin was responsible for the name, it is doubtful if at that time he could have been in a position to express a definite opinion as to the identity of the plant.

Moreover, in sending seed to the writer, he labelled it "*cardiocrinum* from Yunnan, possibly *cordifolium*." Leichtlin had a penchant for *L. cordifolium*, a species by no means always easy to come by, and seldom passed on seed he received from his missionary correspondents of the *cardiocrinum* section of *Lilium* without hazarding the suggestion that it might be *L. cordifolium*.

A general review of the Lily season is not the place for a critical exposition of any particular species, but one may perhaps be allowed to express the opinion that, on the evidence before us, the so-called *L. giganteum yunnanense* leans more to *L. cordifolium* than to *giganteum*. At any rate, the capsules of the two are very different (see figs. 30 and 31), and there is no difficulty in finding capsules of the newcomer from which the figure of that of *L. cordifolium* in the *Monograph of the Genus Lilium* might have been drawn.

Broadly speaking, and apart from the marked difference between the capsules of the two,



FIG. 28.—SEED CAPSULES. ABOVE, LILIAM THAYERAE. BELOW, L. WILLMOTIAE.

the form under notice may readily be distinguished from the Himalayan Lily by a comparative want of stature; it reaches to the shoulders only of the latter—a far more erect position of the flowers. For they are almost horizontal, and the fact that it comes into bloom about three weeks before the other. The paucity of foliage on the lower part of the stem is a marked characteristic of *L. cordifolium*, and this Lily of Leichtlin's shares the peculiarity.

Another noticeable feature of this stranger, as grown in Great Britain, is that the stems are very dark in colour, almost black, in fact, and while, to be sure, a specimen with more or less dark stem is to be found wherever *giganteum* congregates, it is the exception and not the rule.

Some day, perhaps, when the flora of the wild country that stretches for more than 600 miles east of Sikkim has been systematically investi-

gated, it may be possible to study step by step the changes that *local* and climatic conditions have imposed on *L. giganteum* on its way from India through the heart of China till it turns up in Japan, more than a couple of thousand miles away from the Eastern Himalaya, in the forms known to botanists as *L. cordifolium* and *L. Glehnii*.

During the year specimens were received from Messrs. Bees of what appeared to be *L. mirabile*, an addition to the small section of Lilies with heart-shaped leaves. According to Franchet, the distinguishing peculiarity of the species, and one on which he seems to have founded it, is the centrifugal habit of flowering. The single specimen the writer has had under observation undoubtedly possessed this peculiarity in a regular and marked degree, so much so in fact that the petals of the uppermost flowers had fallen before the lower had properly expanded. Messrs. Bees, too, who raised the Lily from seed sent home by Forrest, noticed the same character in the plants that flowered last year at Sealand. No definite conclusion, however, on a point of this kind can be arrived at from the examination of a few specimens, and time alone can show if this unusual habit is fixed.

In *A Naturalist in Western China*, Wilson refers to *L. mirabile* as common about Wapeng, on the Hupeh-Szechuan frontier, and tells the present writer that it is a distinct species. Comparison of the capsule of this Lily with that of *L. giganteum* seems to bear out this view.

L. Duchartrei has never been more than a bird of passage in this country, possibly because of the difficulty of obtaining bulbs of it, but, thanks to the good offices of Mr. Wilson, the species flowered in the writer's garden last summer, and, it is to be hoped, may come to maturity in due course and furnish that need of seed without which it is so difficult to raise Lilies from regions far away. *L. Duchartrei* is a most desirable Lily. *J. G. G. Kents, Hedley-on-Thames, Feb. 14.*



FIG. 29.—LILIAM HENRYI BEARING 55 FLOWERS AND DOUBLE-FLOWERED PEDICELS.

TREES AND SHRUBS.

BAMBOOS GROWN IN SHADE.

FAILING to come across anyone who had had any experience of Bamboo-growing in shade, and finding here conditions otherwise ideal, I determined to make the experiment, and it has been an unexpected success.

The collection is only a small one, comprising some seventeen species—and those mostly such as are common, and seen to advantage at Kew. The only uncommon ones are *Arundinaria Fortunei*, *Phyllostachys mitis*, *P. aristata*, and Messrs. V. N. Gauntlett's new *Arundinaria insignis*.

The Bamboos grow in a small valley or dell three hundred yards long by one hundred broad, sheltered from every breath of wind, but completely overshadowed by tall Beech trees so drawn that they have developed no branches. The soil is deep, black leaf-mould, watered by two small streams.

The entire collection has grown normally except *P. mitis* and *P. viridiglaucensens*. The former grows normally, but the culms fail to ripen, and are cut down by the first frost; the latter responds sensitively to shade conditions; in dense shade it refuses to send up any culms, in shade less dense it grows freely; in semi-shade, viz. at the north-end of the dell, where it gets sun for an hour a day at midsummer, it grows copiously. In the densest shade, where it is, in fact, almost dark in summer, *P. Quilloyi* grows splendidly and is 10 feet high. *A. Simoni* grows better in shade than in the sun. *P. japonica* and *P. aristata* have both put out fresh foliage right through the frost, which has reached 10° to 14° night after night.

The question arises as to how all these Bamboos ripen their last year's culms so as to be able to resist the frost. One answer is that perhaps they do not ripen them but that the overhanging trees keep the frost off. Only one last year's culm has been cut down, and that belonged to a plant of *P. fastosa*, the hardiest Bamboo there is; but it was not a fully developed culm; it had not developed its top leaf, which, I believe, not a true leaf. In the other cases, even in that of *A. insignis*, which has no overhead shelter, all the last year's culms had developed the terminal leaf, and with the exception of *P. mitis*, when they reach that terminal growth they seem quite hardy.

A. insignis is certainly the glory of all Bamboos. For the man in the street it might be described as a glorified *A. nitida*, but very glorified; it has three times the grace of *A. nitida*; it grows three times as fast, it is apparently hardy if sheltered from the least suspicion of wind, and its foliage is a most brilliant light green.

The many *Rhododendron* species now grown in the temperate house at Kew must be much hardier than supposed anyhow, if sheltered from wind; *R. arboreum*, *R. Camellia*, and even *R. grande*, *syn. argenteum*, have won all the first prizes lately. *Rosal Lovett, Media, Wambourne.*

VEGETABLES.

SEA KALE.

This useful and delicious vegetable should be grown by everyone possessing a kitchen garden, as it is one of the simplest crops to produce, and is available all a season when other vegetables are scarce. Its propagation is quite simple, as every small rootlet, if properly treated, will form eyes and produce crowns, during the spring and summer, suitable for forcing in winter.

The present is the best time to select the root cuttings from plants which are being lifted. The cuttings are made from the smaller roots, and should be from 4 to 6 inches long. Tie them in small bundles of from 15 to 25,



FIG. 30. SEED CAPSULE OF THE SO-CALLED LILIUM GIANTUM YUNNANENSE.

(See p. 82.)

place them in a box, well packed with fine soil, and start them in a cold frame, or a strong proof building.

After hardening them, plant them in April in well-prepared, heavily manured ground, at a distance of 1 foot 2 inches from row to row and 1 foot from plant to plant. Insert the roots with the use of a dibber, and make the soil about them very firm. Place a few fine cinder ashes round each plant.

Beyond reducing the number of growths to one, and leaving the surface frequently, no other attention is needed. Immediately the summer growth is completed, and the foliage dies down, the whole of the top should be lifted, trimming off and saving the rootlets for the following year's supply. These rootlets may be prepared and stored in a cool place, ready for starting in early spring. Store the crowns in ashes under a north wall, and introduce them to the forcing pit for blanching as required. See *Kale* p. 81.



FIG. 31. SEED CAPSULE OF LILIUM GIANTUM (OF GARDENS).

(See p. 82.)

is easily blanched in a cellar, or an outside building, if care is taken to exclude the light.

Those who possess a warm, dark building may easily obtain a supply of forced heads during the winter. Seeing that all hardy green vegetables have been injured by the severe frosts and cold winds, Sea Kale should prove of especial value this season.

EARLY POTATOS.

THERE is little doubt that a shortage of Potatos will occur before the end of the season, and every possible means should be taken to increase the supply.

Potatos can be grown in pots, pans or boxes of all sorts; indeed, almost any receptacle. They may be started into growth in any warm place, even if it is quite dark; but immediately young growth appears above the surface of the soil they should be brought to the light and gradually hardened. Later on they may be placed at the foot of the south side of a wall or building, protected when necessary from frost.

Ordinary garden soil, sand or leaf-mould can be utilised, and very little is required to start with, more being added later on to prevent the new young tubers from greening. There are other methods of production which can be adapted by most people who possess a certain amount of ground, although only a back yard. A temporary skeleton pit may be built, with rough boards, turfs, or by driving into the ground a double line of stakes 4 inches apart, and with a height above ground of 3 feet at the back and 2 feet 6 inches in front; filling in the space between the stakes with the kind of material most easy to obtain, such as long litter, old straw, rough hay, bracken, or the trimmings of evergreen shrubs and trees. Firmly put together, such skeleton pits will last many years.

Portable frames are invaluable for the purpose, and many which have previously been occupied with more ornamental subjects should now be utilised. Well-decayed leaf soil, where easily obtainable, should be used in preference to any other mould.

With regard to varieties, those should be grown which mature early and produce the least amount of haulm, such as Sharp's Victor, Express, Harbinger, and May Queen. Wherever possible, use groomed tubers, with stout green shoots of about 2 inches in length. *E. Beckitt.*

RUNNER BEANS.

To gain time Runner Beans may be sown about the middle of April in boxes filled with light soil and germinated and grown on in a cold frame. The seedlings will be ready for planting early in May, the actual date depending on the weather, as it is obviously unwise to plant when nights are frosty. The end of April is early enough to make a sowing out-of-doors unless the situation is exceptionally sheltered.

Overcrowding is responsible for many partial failures, and inevitably results in a smaller crop. For this reason single rows are desirable, and plants allowed a distance of 3 feet apart will soon fill their allotted space with luxuriant growth, bearing pods superior in quality to those produced in crowded rows. A single specimen planted in deeply cultivated, well-enriched soil will develop into a column of growth several feet in diameter.

The best distance apart for ordinary purposes is from 1½ to 2 feet, and the plants should be pinched when they have reached the top of the supports. If pods are required for exhibition retain only two of the straightest on each truss.

The pods are frequently allowed to remain on the plants too long; and apart from stringy pods of poor flavour being sent to table, the practice results in a permanent weakening of the crop. The plants will furnish many new pods of superior quality if they are gathered while quite young. If the pods are not urgently required the plants will gain strength if the first trusses of bloom are removed. *E. R. Jones.*

FRENCH NOTE.

M. OSCAR FANYAU.

ONE of the Paris daily papers, the *Parisien*, gave, on February 9, the following account of the tragic death of M. Oscar Fanyau, well known in the north of France for his love of horticulture, and whose glass-houses, particularly rich in rare Orchids, were famous throughout the countryside. The "Kommandantur" of Hellemmes seized M. Fanyau's house and grounds some time ago, leaving, with characteristic graciousness, the underground floor of the house in the occupation of the proprietor, his grandson and an old servant. M. Fanyau was seventy years of age. When copper was requisitioned at Hellemmes, he refused to make the prescribed declaration, and instead addressed the Commandant thus: "For two years you have occupied my house. You know its contents. If it pleases you to take away my copper ornaments and works of art I cannot prevent it; but expect from me no declaration, nor any obedience to a German command. I am an old officer of 1870, and I refuse to betray my country by giving over to the enemy material for the manufacture of shells to kill my countrymen." For having thus "resisted" authority, he was imprisoned at Loos, to await deportation to Germany. On the following day he was found dead in his cell, and only after much supplication was his grandchild allowed to make the necessary funeral arrangements. M. Fanyau's services to horticulture were great; among the best of his Orchids were *Odontoglossum Rosati*, *O. Alexandrine*, *Triumphant d'Hellemmes*, and *Odontodia Cleverlyannii*. At the last Horticultural Exhibition held in Lille, in June, 1914, the Grand Prix d'Honneur, a gold medal offered by the King of the Belgians, was awarded to M. Fanyau for his exhibit of Orchids and greenhouse plants. J. M.

PLANT NOTES.

BURCHELLIA CAPENSIS.

THIS thoroughly good old-fashioned plant is much less frequently met with than was at one time the case. Its usual season of blooming is in the spring months, at which period it forms a bright and attractive feature in the warm greenhouse. This *Burchellia*, which is a native of South Africa, is a freely-branched, sturdy shrub, clothed with ovate, oppositely-arranged leaves, about 4 inches long, and of a deep green tint. The flowers, which are borne in clusters on the points of the preceding year's shoots, are tubular, a little over an inch long, and of a deep orange-scarlet colour. This tint is particularly effective against the dark green background of foliage. The cultural requirements of this *Burchellia* are not great. It responds to a little more heat better than many other natives of South Africa, and succeeds in a warm greenhouse or intermediate temperature. Some grow it as a stove plant, but this extra heat is not needed. In the stove the leaves are somewhat liable to be attacked by thrips—practically the only insect pests to give any trouble. Cuttings of the half-ripened shoots strike root without difficulty if put into well-drained pots of sandy soil and placed in a close propagating-case in a warm house. If the cuttings have a little bottom heat so much the better. The young plants should be stopped once or twice during their earlier stages, in order to ensure a bushy habit. A suitable compost for established specimens may be made up of two parts loam to one part peat, and a good sprinkling of silver sand. It is a member of the Rubiaceae, which contains many beautiful flowering plants, such as the different members of the genus *Boerhaavia*, *Gardenia*, *Lyonia*, *Mazetta*, *Rondeletia*, and others, as well as many of great economic value. W. T.



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

TURNSIPS IN PITS.—Make a sowing of Early White Milan Turnip in a cool pit at once. Rich soil is necessary for this crop, and should be placed to within 18 inches of the roof-glass. Sow the seeds thinly, and keep the pit closed until the seedlings are well through the surface, after which admit air in sufficient quantity to keep them from becoming drawn. Thin the seedlings as soon as they are ready for the operation, and give the crop liberal supplies of water to promote a quick growth.

BEET.—Sow a few seeds of Early Globe Beet in a slightly heated pit, or in a cold pit where frost can be excluded by a covering of mats or long litter. Use light, rich soil, and sow the seeds in shallow drills. Thin the seedlings to 9 inches apart as soon as they are large enough for handling. Water the seed bed liberally with soft water, and keep a sharp watch for slugs.

CARROTS.—Carrots should be sown in cold pits to provide roots for a succession. Make the soil as fine as possible, and raise the bed to within 15 inches of the roof-glass. Sow the seeds thinly, covering them lightly with fine, sifted soil. Damp the surface of the bed on sunny days with clear water. Carrots raised from seed sown early in January are well through the surface, and will require careful ventilation. As soon as the plants are large enough they should be thinned, and the bed watered with clean, soft water. If slugs are troublesome, dust the edges of the bed with soot or lime.

POTATOS.—All available pits should be planted with Potatos as soon as possible. A good depth of soil should be provided, and, if available, a quantity of manure from a spent Mushroom bed incorporated with it. Allow plenty of space between the sets for the full development of the plants, 2 feet between the rows and at least 1 foot between the plants in the row if necessary. Cover the seed tubers with loose soil, and earth up the plants when the haulm is 6 inches high. Give the roots a plentiful supply of water as growth advances. Admit air freely in order to promote stocky growth. May Queen, Early Paritum, Duke of York, and Sharpe's Express are good varieties for growing in pits as well as in early borders.

BRUSSELS SPROUTS.—The main sowing of Brussels Sprouts may be made forthwith. As Frenchie we sow this batch in a cold frame, and transplant the seedlings in a sheltered border as soon as they are large enough for transfer. By this means we secure a sufficient number of stocky plants to form the principal plantation. A later sowing may be made in the open for late supplies. The bed for this crop should be prepared thoroughly, and plenty of space allowed between the plants. Those transplanted in strong soil should be allowed a space of 3 feet between the rows and 2½ feet between the plants in the row. Ideal, Dwarf Gem, and Darlington are reliable varieties.

CAULIFLOWERS.—A sowing of a main crop variety of Cauliflowers may also be made now in order to produce heads for use in August and September. Early London, Walleheren, and Early Autumn Giant are suitable for the purpose, as they will be fit for use after the earliest plantations are over. Ventilate Cauliflower plants in pots which have been wintered in cold pits freely, in order to keep the plants stocky, and never allow them to suffer from want of water at the roots. If pots and space are available, some of the more forward plants may be potted into large pots with a view to producing early heads. Pot the plants in rich soil, and always keep the roots moist. If the stock of plants include the varieties Magnum Bonum or Great Dane, they will answer this purpose better than the small, early varieties, as the heads are larger and of better quality.

MINT, TARRAGON, AND OTHER HERBS.—A supply of Green Mint and Tarragon may be produced easily now by placing a suitable number of roots over a mild hotbed and covering them with fine leaf-mould. Chervil seed should be sown thinly in a cold frame; cover the seeds lightly with fine soil, and keep the frame closed until the crop is well through the surface. Make frequent small sowings of this herb. Chives may be lifted from the garden and treated in the same manner; the plants will soon make luxuriant growth, and will be useful for shading during the spring.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COXMAN, Bart., Gattin Park, Reigate.

THE COOL HOUSE.—The majority of plants in the cool Orchid house, including *Odontoglossum crispum*, *O. Pescatorei*, and their many hybrids, and *Odontiodas*, are in vigorous growth, and many have nearly completed the development of their new pseudo-bulbs. The greatest care should be exercised to have the pseudo-bulbs well matured. The plants should receive the fullest possible exposure to light, short of subjecting them to injury by scorching. As the flower-spikes develop, care should be taken that they are not injured by slugs. As soon as the inflorescences are a few inches long it is a good plan to wrap a piece of wadding around the base of the leaf that shields the spike; while moderately dry this will prevent the slugs from creeping up from the surface of the compost. Slugs may be trapped by placing damp bean or lettuce leaves on the stages near the plants, searching for them at night and early morning. When the flower-spikes have attained a sufficient length they should be tied to neat sticks and placed facing the light in such a position as to cause them to grow in a graceful, arching shape, which greatly adds to their beauty. Plants of *Odontoglossum octosumum* have commenced to develop young growths from the base of the new pseudo-bulbs, but they should still be kept dry at the roots, and the treatment continued until the flower-spikes make their appearance from the centre of the young growths, when the compost should be watered copiously, and the plants placed in the warmer part of the house. *O. grande* and *O. Trichocarpidium* should still be kept dry, and require but very little water at the roots until growth again becomes active. If these plants are not afforded a long season of rest they will not flower satisfactorily.

ONCIDIUM.—Winter-flowering *Oncidium*s, such as *O. monchii*, *O. Foulieii*, and *O. varicosum*, are passing out of flower, and should be afforded only sufficient water at the roots to prevent the pseudo-bulbs from shrivelling. The plants will soon begin to grow afresh, and any that require fresh rooting material may be attended to as soon as young roots push from the base of the new growths. These plants are best grown in shallow pans suspended from the roof rafters, in a house having a temperature ranging from 55° to 62°, allowing the temperature to rise as the season advances. The pans should be only just large enough to accommodate the plants, as they grow best when the roots are in a restricted space. In potting, press the compost moderately firmly between the roots, placing the base of the young shoot well down into the soil. This method minimises the danger of damage by slugs, which are particularly fond of the roots of *Oncidium*s. A suitable rooting medium for these plants consists of a mixture of 11 fibre, half decayed Oak-leaves, rubbed through a 3-inch sieve, and chopped Sphagnum-moss in equal proportions, adding crushed crocks to keep the compost porous. *O. Parilloi*, *O. flexuosum*, *O. Kramerianum*, and *O. Cavendishianum* require a higher temperature than those mentioned.

COELOGYNE CRISTATA.—Plants of *Coelogyne cristata* are developing flower-spikes, and should be afforded sufficient water at the roots to keep the pseudo-bulbs plump, or the flowers will grow weak. Do not syringe the plants overhead, for it might cause the flower-spikes to decay.

THE FLOWER GARDEN.

By W. J. GIBSE, Gardener to Mrs. DEMPSTER Keele Hall, Staffordshire.

ANEMONE AND RANUNCULUS.—Anemones should be planted directly in the ground in a friable condition. The soil for these plants should be well prepared, and of a rich, moist nature. The St. Bridget and fulgens types are commonly cultivated. The Bride (white), His Excellency (scarlet), and Blue Gown (pale blue), are other fine Anemones which may be raised from seed sown now, in boxes, or in a cool frame. Fire must not be employed at any stage. Ranunculus do much better planted now than in the autumn. Plant the roots 2 inches deep and 6 inches apart in well-prepared, rich loam. Place the claws downwards and cover the whole with fine soil. During dry weather liberal supplies of water must be given. Directly the foliage is dead lift the root tubers and store them in a cool shed.

MONTBRETIA.—Plants of Montbretia that were lifted in the autumn should be re-planted as soon as possible. Select the best corms, planting the smaller ones in open spaces in shrubberies. Montbretias thrive exceedingly well in old potting soil enriched with a liberal amount of leaf-mould and a little sand. Britannia (scarlet), Etoile de Feu (vermillion), Rosa (rose), Rayon d'Or (yellow), and St. Botolph (yellow), are all excellent varieties.

HARDY ANNUALS.—Autumn-sown annuals and biennials should receive attention occasionally. Take the first opportunity in favourable weather to run the hoe between the plants. The work of transplanting or removing them to their flowering quarters should be done during mild weather.

VERBENA. If not already done, Verbena seed should be sown forthwith. It is hardly worth the trouble to propagate Verbenas from cuttings as seedlings are generally much stronger, and give a wide range of colours. Sow thinly in pans or boxes filled with a rich compost; cover the seeds lightly with fine sandy soil, and germinate them in a temperature of 55°. Transfer the seedlings to small pots when they are large enough to handle, shifting them into pots a size larger as this becomes necessary. Remove the plants to cooler quarters gradually, but on no account should growth be hurried by too much warmth.

DELPHINIUM.—Seedling Delphiniums are often very disappointing, the colours generally being very poor; to ensure success the seed should be from a specially good strain. For decorative or bedding purposes there are few annuals to equal the Delphinium, and certainly none that gives a more charming effect for so small an amount of labour. Sow the seed thinly in pans or boxes, filled with a compost consisting of loam, leaf-mould, sand, and a little decayed manure. A temperature of 50° to 55° is sufficient to germinate the seed. Directly the seedlings are large enough, prick them out into cold frames at 4 inches apart. The tall varieties are suitable for planting in mixed borders and shrubberies, and the dwarf varieties for small beds. Last year the seedlings were planted in their flowering quarters direct from the seed boxes with excellent results.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbotts Wood, Godalming, Surrey.

PEACHES AND NECTARINES ON WALLS.—After the trees have been nailed to the wall for a number of years the bricks may need re-pointing to fill up the numerous holes that the nails have made. The nail-holes offer lurking places to insect pests. Get some good fresh lime, and slack sufficient to fill a good-sized pail, and add to each pail of lime 1 lb. of sulphur, 1 lb. of soft soap, 1 lb. of soot, 1 quart of paraffin or petroleum, and thoroughly mix the ingredients into a fairly thick paste. Enfasten the branches, tie them in bundles and sling them up with a string out of the way of the workman. Push the lime material into the wall by means of a stiff brush, filling up every crevice. The petroleum makes the material cling to the wall and also has a good effect on the early and critical stages of the young growths.

PRUNING AND TRAINING.—Assuming that the trees were carefully disbudded, but very little pruning is necessary beyond shortening some of the longer branches and the weak wood to perhaps a couple of eyes, for growth from these buds may be necessary to fill a bare space. At the same time as much of the old wood as can conveniently be spared should be taken away, as both the Peach and Nectarine fruit on the wood of the previous season. Nail or tie up the centre-branch perfectly straight, using soft tarred string, then tie the branches left and right at the bottom in a horizontal manner. Regulate the main branches at different angles and let the others radiate from these to fill up blank spaces. The shoots should be trained about 6 inches apart until a perfect fan shape is made. Twisted raffia is strong enough for securing the smaller branches. The branches of smaller maiden, newly-planted trees should be shortened considerably if a perfect specimen is to be formed. Strong shoots must be checked or the bottom of the tree will never become furnished with suitable growth. Material for protecting the blossoms should be got in readiness. If blimps are used, these should be adjusted so that they can be easily manipulated, and need only pulling down at night when the trees are in flower. The trees are backward this season, but with increased sunshine they may be expected to develop very rapidly. The borders should be made tidy and afterwards top-dressed, taking care to make the ground firm.

GENERAL REMARKS.—The pruning of all kinds of fruit trees should be pushed forward and the work finished as soon as possible. Owing to stress of weather much work is in arrears, but with extra energy delays may be caught up. Prunings required as grafts later should be sheltered a few inches in the soil, in a cold, sheltered spot.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHCOTE, Eastwell Park, Kent.

CALCEOLARIA CLIBRANI.—Young plants of Calceolaria Clibrani propagated last autumn and winter in 60-sized pots should be placed in their flowering pots, either 48's or 32's being suitable for the first year. Two and three year old plants that flowered last May, cut down at the roots and placed in a cold frame, will make splendid specimens. Having been afforded a liberal shift in the autumn in a fairly rich compost, they may be expected to do well. This Calceolaria is very impatient of dry fire-heat, and will not even tolerate being placed on a dry stage. It thrives best in a cool house or pit, on a damp bottom, with foliage close to the roof-glass. A minimum temperature of 40° is suitable in winter, and the house should be ventilated in favourable weather. When the plants commence to grow in the spring, give the roots a little rich top-dressing, and secure the shoots to neat green bamboo "points." For large specimens 2½ to 3 feet long will be necessary, tying the flower-pikes as they elongate. When in full growth the roots must never be allowed to suffer for want of moisture, or growth will be stunted. The atmosphere should be kept moist until the plants are commencing to flower. Let the plants have plenty of space, to keep the lower leaves perfectly healthy.

RICHARDIA ELIOTIANA.—After a period of rest these plants should be shaken out, potted into new soil, and placed in a warm house to start into growth. The yellow spathe and hand-some flowers are very effective, and a few plants should always be found in a good collection of flowering plants.

EUPHORBIA PULCHERRIMA.—The foliage of Poinsettias, as these plants are usually termed in gardens, having turned yellow, the plants should be given a complete rest in a cool house. Keep the roots quite dry for the next month or two. If there is a danger of moisture from "drip," place the pots on their sides until it is required to start the plants into growth again.

EUPHORBIA JACQUINIAEFLORA.—As plants of this Euphorbia pass out of bloom they should be

kept considerably drier at the roots, but not to such a degree as in the case of Poinsettias. Stand the plants in a light house, and do not allow the temperature to fall below 55°, or many losses will occur. When the foliage has ripened, cut the tops down to firm wood, and, as the days lengthen, spray them occasionally to encourage the development of shoots for cuttings.

COLEUS.—Cuttings of Coleus will root readily now in the propagating house. When rooted, they should be removed from the frame, and gradually exposed to full sunshine. They should then be potted into 60-sized pots, using a light, sandy soil for the first potting. Return them to a shelf in a hot house, and, after shading them for a day or two, place them in full exposure to the sun, with plenty of atmospheric moisture. Plants intended to be grown as large specimens should never be allowed to become rootbound, but should be shifted into larger pots by stages. Use a rougher and richer compost for these plants. When they have been in large pots for some time, the roots need regular and constant feeding to keep the plants in good health. Pinch the points of the shoots at all stages of the plants' development before they grow too long. This is necessary to lay a good foundation for a well-grown plant.

FRUITS UNDER GLASS.

By JAMES HUDSON, Gardener to LEOPOLD DE ROTHSCHILD, Esq., C.V.O., Gunnersbury House, Acton, W.

PEACHES AND NECTARINES IN BORDERS.—There is but little gain in the fruits of trained Peaches and Nectarines setting very early, and the risk exceeds the advantage. During the past month there has been an almost continuous frost, and experienced growers will realise that where much fire heat is required greatly puts in an appearance early. It will be necessary to keep a sharp watch for this troublesome insect when the earliest leaves are unfolding. If, however, the house was fumigated just before the flowers opened, aphid should not cause much trouble. Do not wait until the presence of the pest is detected, but rather anticipate it and take precautionary measures in good time. Trained trees near the roof-glass are much better, on the whole, for early crops than those trained against back walls, and, where there is space to pass between the front trellis and the lights, this permits of an easier manipulation of the trees. Those who still depend on a rabbit's tail or camel's hair brush for pollinating the flowers are thus enabled to get at the blooms easily. The atmosphere should be dry during the flowering period; we damp the bare spaces as usual, but discontinue overhead syringings. During this period a little ventilation may be permitted almost continuously, except when cold east winds prevail, it being only necessary at such times to open the ventilators a little when the sun is shining. With regard to temperature, 50° to 55° at night when the trees are in flower is suitable; this allows of a 15° fall by the morning, and a rise of 10° to 15° in the day may be permitted. Increase the heat in the pipes at day-break, but slow down the fires as soon as this has been attained. I damp down at nightfall with the pipes fairly warm. It is not advisable to hasten the development of trees in later houses. The object now is to save all the firing possible whenever and wherever it can be done. If the trees are on the move, keep the houses cool for another week or two, with a night temperature of 40°.

PEACHES AND NECTARINES IN POTS.—We rely on pot trees for our earliest crops of these fruits, and they almost invariably succeed. Our earliest trees are just about to flower, and in another week's time a hive of bees will be introduced into the house. Our earliest Nectarine is Cardinal, and I do not know of a better early sort. Our earliest Peaches are Duchess of Cornwall and Duke of York. Plum trees in the same house are starting into growth, and will be in flower a few days later. Very close attention should be paid to watering the roots.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would oblige by obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The same departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intimation of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication.—As well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If illustrations are sent, they will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, FEBRUARY 27.—

Royal Horticultural Society, Exhibition of Flowers Plants, Ac., 1-5, Lecture at 3 by Mr. John Dickson on Hardy Plants for the Flower Garden.—London Scottish Drill Hall, Buckingham Gate, 10.00. Bot. Club's annual meeting, dinner and lecture.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 40.2°.

ACTUAL TEMPERATURE.—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, February 22 (10.0 a.m.): Bar, 30.25°; temp., 41.5°; Weather, Cloudy.

SALES FOR THE ENSUING WEEK.

WEDNESDAY

Herbaceous and Rock Plants, Fruit Trees, Rhododendrons, Lilies, Eucharis amazonica, at 67 and 68 Chapsade, by Protheroe and Morris, at 12 and 3 o'clock.

THURSDAY

Standard, Dwarf, and Climbing Roses, at 67 and 68 Chapsade, by Protheroe and Morris, at 1 o'clock.

FRIDAY AND SATURDAY

Sale of Nursery Stock at Willow Grove Nursery, Chesham, by Protheroe and Morris, at 11.30 o'clock.

FRIDAY

Fruit Trees, Roses, Rhododendrons, Herbaceous Plants, at 12 o'clock, Orchids in variety at 1 o'clock, at 67 and 68 Chapsade, by Protheroe and Morris.

or fatty foods are required, the former to repair waste of muscle, and the latter to produce heat and to provide energy for work. Another way in which food values may be estimated is in food-units or calories, which indicate the amount of available energy contained in food.

If it may be assumed that the average man is fed on a mixed diet, and that this mixed diet supplies sufficient protein to repair the tissues and make good waste, the value of any vegetable constituent of the food may be estimated by the latter method—that is, by determining the number of food-units (calories) in a given weight of the foodstuff.

Looked at from this standpoint, it ought to be fairly easy to state which vegetables are the best; but to do this, another factor must be taken into consideration—namely, the yield of each crop per unit of area. Unless this is done, altogether wrong conclusions are bound to be drawn. For instance, it has been stated recently that the food-value of Parsnips is three-quarters that of Potatoes. This is true in the sense that the food-units (calories) in a pound of Parsnips are about three-quarters of those in a pound of Potatoes. When, however, we ask the essential questions, how many calories are produced by a rod of ground under Potatoes, and how does this number compare with that provided by an equal area of ground under Parsnips, we shall discover that, owing to their higher yield, the number of calories (food-units) produced by Potatoes per unit of area is considerably more than a quarter as much again as the number yielded by Parsnips. Another consideration which has hitherto escaped the notice of the chemical analysts of foodstuffs is that different varieties of the same vegetable differ widely in feeding value.

It is much to be desired that this interesting aspect of the food question should receive more attention than it has yet had, and we hope that it will be possible for the Research Station at Wisley, which, as we understand, is engaged in this subject, to investigate thoroughly and systematically the relative food value of different varieties of vegetables.

In the meantime, it may be stated with confidence that of all crops grown in gardens the Potato gives the largest return as measured in calories per unit of area. Next and almost equal to the Potato comes the Beet; well below these is the Jerusalem Artichoke; and below the Artichoke the Parsnip and autumn Cabbage. Among the lowest are garden Peas. So that, when intensive cultivators are urged to grow Peas, they are being told to grow what, in fact, is a luxury crop. It is true that it contains per pound of dry weight far more protein than is contained in an equal weight of Potatoes, but when the relatively low yield of Peas is taken into consideration, the far greater value of the Potato becomes apparent.

Whether Haricot Beans would be a profitable crop from this point of view we have not the data to determine. It is probable that it would; but in the meantime it is evident that the Potato should

occupy in these times a large space in any scheme of cropping, and that garden Peas and Brussels Sprouts, which give a low yield per acre, should be grown only on a restricted scale.

There are, of course, other factors to be taken into consideration in estimating the food values of vegetables. One of these is the richness of vegetables in what are known as accessory food bodies—bodies the special function of which is to stimulate and regulate growth.

The relative values of different vegetables from this point of view have not been determined, but it is probable that the instinct which leads men to eat vegetables so relatively low in the scale of food values as Onions, Carrots, and Tomatos indicates that these vegetables are rich in the essential accessory food substances.

BOARD OF AGRICULTURE APPOINTMENTS.—

The Hon. E. G. STURT and Mr. A. D. HALL have accepted, for the period of the war, the unpaid posts under the Board of Agriculture and Fisheries of Additional Agricultural Adviser and Scientific and Technical Expert respectively. The Duke of MARLBOROUGH has been appointed Joint Parliamentary Secretary (unpaid) to the Board of Agriculture and Fisheries, and will represent that Department in the House of Lords.

THE NEW YEAR HONOURS.—

In addition to the recognitions recorded last week the Honours List contains the announcement that a knighthood has been bestowed on Dr. JAGADISH CHANDRA BOSE in recognition of his contributions to botanical physiology. Dr. Bose has for many years devoted his remarkable abilities to the investigation of plant-sensitiveness, and even those who are not able to agree with the conclusions which he has reached admire and appreciate the wonderful skill of experimentation which he has shown in his researches. Dr. Bose has, moreover, demonstrated his devotion to science by founding at Calcutta a Research Institute for Indian post-graduate students engaged in physiological and medical investigations. We congratulate the Colonial and Indian Departments of State on setting so good an example to the home departments.

AGRICULTURAL ORGANISATION IN FRANCE.—

Alphonse CLEMENTEL, the new French Minister of Agriculture, is making vigorous efforts to organise agricultural labour in preparation for the spring. To this end arrangements are being concluded with General LYAUTEY, the War Minister, to release certain classes of soldiers for work on the land, where possible at their own homes. Arrangements are being made for general Government direction of all agricultural labour, military or civilian. To this end a new Minister has been appointed, to be known as the Director-General of Agriculture, in the person of Monsieur FERNAND DAVID, Deputy for the Haute-Savoie, who was formerly Minister of Agriculture. Monsieur LE RORZIC, Deputy for Morbihan, is in charge of the work of increasing the production of Potatoes.

N.E. RAILWAY LINE-SIDE GARDENS.—

The N.E. Railway is acting with great energy in providing line-side gardens. No rent is charged except in the case of fenced allotments, and from the published list* it appears that nearly all the sites have been taken. Seed Potatoes Arran Chief and King Edward are being supplied at 15s. per cwt.

POTATO PRICES.—The revised maximum prices for the sale of Potatoes will be given in an

* N.E. Railway Magazine, Feb., 1917.

The Relative Food Values of Different Vegetable Crops.

At the present time, when so many people are undertaking the cultivation of vegetables, and even more are offering advice on the subject, it is important that the public should understand the relative food values of the chief garden crops. At first sight it would seem an easy matter to make precise and definite statements on this subject, for the crops have been analysed chemically many times, and the amounts of the several food constituents—proteins, sugars, starch, and oil—are known.

There are, however, two ways of estimating food values. One way is to determine how much protein and how much carbohydrate (starch or sugar) or fat are required by the average man or woman. Both protein and carbohydrate

order to be issued forthwith. The revised prices of reliance may be placed on reports, will enable grower, dealer, and retailer to carry on their businesses without one or the other incurring loss.

STATE ASSISTANCE TO HORTICULTURE AND FORESTRY IN HONG KONG.—The *South China Morning Post*, a daily paper published in English at Hong Kong, publishes in full the budget of the Colony, which includes small sums provided under the heading of "special expenditure" for clearing brushwood at Mount Kailash, and for laying out the grounds of the Ellis Kadoorie School for Indians. This constitutes an increase of nearly \$3,000 in this department. Special attention was drawn in the report to the efficiency with which Mr. TROOPER and his staff carried out their duties.

ALLOTMENTS IN SCOTLAND. The demand for and provision of garden allotments in Scotland is growing rapidly, and there can be no doubt that in the future the garden allotment will form a great feature in the life of communities for the town artisan and those employed in shops and offices. The provision of allotments by the municipality of Glasgow, begun last year at Tollcross, has extended with the most encouraging results. Plots have been secured in different parts of the city, and a comprehensive system established under the charge of Mr. JAMES WILTON, the Superintendent of the Parks Department. The movement in Edinburgh is ably supported by the Town Council and their Superintendent of Parks, Mr. J. W. McHARTIE, who has done much to further the scheme. It is expected that 3,000 allotments will be in cultivation in the city of Edinburgh this year. Hamilton Town Council has applications for 700 allotments, and additional applications are being received.

POTATOS AND DISEASE. It is often supposed that disease of cultivated crops is a penalty which has to be paid for high cultivation. In the case of the Potato the statement is not infrequently met with that disease is due either to varieties running out or to heavy manuring. Without a doubt, any condition which is unfavourable to the plant itself is likely to render it a more ready prey to disease. But the experiments recently carried out by Mr. O. A. FRANK in planting clean seed in new land in South Dakota indicate that even when tubers free from disease are planted in land which has never carried a crop of Potatoes, disease makes its appearance. In order to make as sure as possible that the tubers used as "seed" were free from disease, they were cut and disinfected by treatment for 1½ hour with a solution of corrosive sublimate. Notwithstanding these precautions, the crop was by no means free from disease, and although it may be admitted that even with the most careful selection and disinfection the seed may still have harboured germs of disease, we think that the conclusion reached by the author is correct, and that disease which attacks the Potato, like misery, "doth walk about the orb of the world; like the sun it shines everywhere." No less interesting is the further conclusion reached in the course of these investigations that other crops, Lucerne and grain, appear to clean the land for less disease of Potatoes was noticed on land so cultivated than on a new virgin or desert land. The test would have been more conclusive, however, if Potato seed taken from a seed ball and raised in sterilised soil had been planted out on the virgin ground.

MECHANICAL AID TO LAND CULTIVATION. A correspondent emphasises the need for a small motor cultivation, on the lines suggested by *Southern Grower* and others in these pages, as a means of cultivating ground for vegetable crops.

ing, and especially in large gardens dotted with fruit trees. He encloses a cutting from *The Scotsman*, in which a correspondent suggests a motor plough two and a half or three feet long, with a plough and steering gear at either end. Such a plough would not require to be turned on reaching the end of its journey, it being simply necessary to reverse the gear on the backward journey.

HYBRID CYPRIPEDIUMS.—In addition to the Orchids mentioned in these pages last week as shown at the R.H.S. meeting, Messrs. HISSMAT AND CO., Southgate, staged a selection of hybrid Cypripediums, including several varieties of them

risk Potatoes in prices so reduced as to afford 20 at retail to the ordinary consumer.

BELGIAN GARDENING AT LETCHWORTH.—Soon after the outbreak of the war a number of Belgians, amongst whom were many discharged soldiers, settled at Letchworth, to be employed at the munition factory established by their countrymen, Messrs. KRAY and LAMY. Including women and children, several thousand Belgians are now living in the Garden City. In order to increase the food production and to improve the conditions in which these munition workers are living, the Belgian Minister of Agriculture



FIG. 52. ANISOMALI VERTICILLATA. A NEW PLANT FROM THE HIMALAYA (See p. 380.)

and C. Corona (Heatrice) and C. Schulz, with C. Alexandri and other Cymbidiums, and a bright form of *Sephiro Cattleya* Swa.

THE POTATO IN 1800. The curious may find in London's *Bell of Fame* a compilation recording the names of those who have received the Freedom of the City, the following entry:—"1800 No. 4. Revoked at the Court of Common Council that the Freedom of the City be given to Mr. WILLIAM ADAMS [the Adams were always agricultural!] in testimony of the high sense the Court entertains of the services he has rendered the public by vending upon his own account, and

has appointed a qualified horticulturist who will act as an instructor for the cultivation of their gardens. The directors of the metal works have taken this instructor in their employ, and one of them, M. LAMY, is to be the honorary president of a gardeners' association. Lectures are organised, and demonstrations on gardening given; seeds will be bought cooperatively, and plants for distribution raised in a central garden. Funds are supplied by the firm and by the Belgian Board of Agriculture.

PARIS SPRING SHOW.—The Council of the Société Nationale d'Horticulture de France has

* *Journal of Agric. Research*, U.S.A. Dept. of Agric., July 10, 1916.

Photograph by C. P. Roffel.

decided to hold a Spring Exhibition, the proceeds to be devoted to war charities. The exhibition will take place at the Society's head quarters, rue de Grenelle, from June 1 to 5. No money prizes will be paid to exhibitors.

THE FLORA OF THE NEW NOTES.—“Full many a flower is born to blush unseen” in the new paper money which is just issued. The Rose and the Thistle, the Shamrock and the Daffodil may all be discovered there. The earthly appearance of St. George and the Dragon suggests as a motto for the note:

“Dost thou think it a vain thing
That Georges' crowned for vanquishing
Should bear some dust from out the ring?”

ARTIFICIAL MANURES.—In view of the scarcity of artificial manures, the attention of growers is directed by the Board of Agriculture to the advantages of applying small quantities of lime in localities in which it can readily be obtained. Lime is itself an essential plant food; it will also unlock some of the stores of nitrogen and potash in the soil, especially heavy soils, and, as a temporary measure, may therefore take the place of part of the manures which the land would otherwise require. The Board also advises, in view of the difficulty of securing delivery of basic slag, superphosphate and other phosphatic manures, the withholding of phosphates from meadows and pastures during the remainder of the present season. All available supplies should be reserved for other crops, especially for roots and Potatoes. Having regard to the short supplies, it is not advisable to apply more than three-quarters of the usual dressings of these phosphatic manures, since better results may be expected from the same total weight of manure if the whole area under any particular crop is manured lightly, than if a part is heavily dressed and the balance left without artificial manure.

THE LOCAL SOCIETIES.—A Parish War Society has been formed at Wendy, Hertfordshire, its objects being to promote the production of more food, the profitable sale of members' produce, the purchase of their requirements, the provision of cheaper credit for productive purposes, the welfare of those who are now with the Colours or have been discharged from service, and to encourage thrift and saving.

—The Norfolk and Norwich Horticultural Society has inaugurated a League, to be known as the Norwich Food Production League, for the purpose of encouraging the growing of Potatoes and other vegetables. It comprises some 500 members, all of whom are engaged in cultivating allotments around Norwich. It is expected that the League will shortly become self-supporting.

ANEMONE VITIFOLIA.

This Himalayan plant (see fig. 32) in many respects resembles the well-known Japanese Anemone (*A. japonica*). The woolly foliage, however, is thicker, larger in size, and less divided, having more of the appearance of Vine leaves, from which resemblance it obtains its specific name. The flowers are of good substance, large size, pure white, and are very freely produced during the summer months. It is a handsome plant, but appears to be less hardy than its Japanese relative, although it will survive our hardest winters in sheltered situations. This fact may account for its rarity in gardens, although it has been in cultivation for nearly a century. The plant illustrated is growing in an open border, in light, sandy soil, and has been there for several years. It is a native of the Eastern Himalaya, including Bhotan, where it has recently been found by Mr. Cooper when collecting for Messrs. Bees, Ltd. W. L.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

PROTECTION OF SEEDS.—Seeds will shortly be sown in various out-of-the-way places, and will be much exposed to the ravages of small birds and mice. To prevent these pests from destroying the crop the seeds should be dressed with paraffin and red lead. But just the amount of seeds required for sowing into a flower saucer and wet them with sufficient paraffin to make the seeds clog together, add sufficient red lead to part the seeds again and then shake them well up. All Brassica seeds—these, of course, include Turnips—also Peas, Radish and all hard shelled seeds, may be dressed. The paraffin does not make any difference to the germinating of the seeds. Soot or lime may be used instead of lead, but they do not stick so well to the seeds in wet weather. Unfortunately, this dressing will not prevent the Brassica species from clubbing as I once saw stated, *Thos. B. Archer, The Hazels Gardens, Princes, Lanes.*

POTTING PALMS.—Referring to the note by W. T., on page 76, on the above subject, I was interested in the details of the special pot he designed for Palms, but getting special pots made for a limited number of Palms might not be practicable in many cases. I quite appreciate the difficulty of keeping large specimen Palms for a number of years in moderate-sized pots, and in the Calendar notes on page 60 I omitted to mention that I have for some years used collars of zinc sheeting to avoid such large shifts. As the roots fill the pot and render the important matter of sufficient water somewhat difficult, a strip of zinc is neatly fitted round the top of the pot, cutting it sufficiently deep to press in the soil inside the rim of the pot. This will allow ample room for plenty of water and regular top-dressings to be given, and the plants can be kept in the same-sized pot for another year or two. Any one using large Palms for decoration will appreciate the advantage of keeping such plants in receptacles of moderate size: Oak tubs (made on the same principle as W. T.'s special pots) I have used for some years, and consider them quite suitable for specimen Palms, as being much handier for moving about. W. T.'s mention of the roots of the stronger growing Palms lifting the plants out of the pots, recalled to my mind that the grower of some of the finest Palms I have ever seen told me that he prevented this by ramming the soil, when potting Palms, as hard as he would for a specimen Erica. Certainly his Palms were beautiful specimens, and mine were pushing out of the pots when I saw them. J. G. Weston

GROWING EARLY MELONS IN POTS (see p. 72).—I was interested in Mr. Hudson's remarks on the growing of Melons in pots. It is an excellent method for growing the very early and very late Melons. The roots of the plants and the body of soil are better under control than when the planting is done in mounds or borders, and this is a great gain, should the plants prove a little unsatisfactory in growth—as early and late specimens sometimes do. With the main crop, or summer batch, there is little or no difficulty, and heaps of soil in a house or frame will usually suit the purpose admirably. It was in a Herefordshire garden that I saw and had practice with the pot method, and very successful it proved. Bottom heat from pipes was employed, and the pots were stood on slates about 2 or 2½ feet above, with hot-bed material of leaves and manure placed between. The latter surface, by the way, provided good standing for pots and boxes of cuttings of bedding plants. C. Turner, Ken View Garden, Highgate.

PRUNING FRUIT TREES IN FROSTY WEATHER.—On page 57, *Southern Grower* states that he has never known injury to result from pruning Apple trees in frosty weather. If this is an established fact, it is a piece of gardening information worth knowing, and should receive wide publicity. The statement is really nothing

short of remarkable, inasmuch as it refutes the belief held and taught by the majority of gardeners, old and young. A reference to accepted authorities in books, calendar writings, and other occasional writers, will show that most of them advise leaving fruit tree pruning in abeyance during severe frosty weather—presumably to prevent any possible hurt to the uppermost buds, or even the wood. Personally, I have always followed this practice, so cannot support nor deny the assertion of *Southern Grower*. The opinion of other readers who have made observations on this subject would be valuable, and help to give settlement to this debatable operation. T. C.

POTATOS AND PREJUDICE (see p. 53).—The origin of the Potato seems wrapped in mystery. In a paper read by Mr. J. R. Baker before the Linnean Society in 1884, it was stated that Solanum Maglia, closely allied to *S. tuberosum*, and, like it, a native of Chili, produced similar tubers. Hybridisation trials were afterwards made at Messrs. Sutton and Sons' grounds at Reading, where *S. Maglia* was found to produce tubers as large as ordinary Potatoes, and of good quality when cooked. Were the trials carried out to a logical conclusion? If not, someone might carry them out. *S. Maglia*, *S. Commersonii*, *S. Jamesii* might all be crossed with *S. tuberosum*, the resultant hybrids re-crossed together, and by selection we might get Potatoes of a hardier constitution and less subject to diseases. This should be worth the doing, as Potatoes are now literally in everyone's mouth, though when first introduced they were considered as “fit only for swine.” C. E. Bridgett, *The Gardens, St. Helens, Hampton Wick.*

MOLES.—The war is giving the mole its opportunity, and in some parts of the country the activity of these animals is converting pasture land into a miniature model of the Somme front. Their earthworks are extending continuously, and the damage which they are doing must be very considerable. A. X.

SELECT VEGETABLES.—I welcome J.'s friendly remarks on the above, on p. 71, relative to my notes of the previous week in the *Gardener's Chronicle*. My reason for suggesting early and mid-season varieties of Potatoes was that early tubers are bound to be in large demand, and the ground can be cleared of them in good time to accommodate some other crop this season, and mid-season varieties, owing to their early maturing, are more free from disease than the late varieties. I am entirely in accord with J., as to the value of lime where the soil is deficient in that substance. Scotch and Cottager's Kale have proved their worth during the severe spell of cold weather this year. They have come through practically unharmed, whilst the majority of other greens are almost ruined. Asparagus Kale is, unfortunately, much subject to disease, and fails to do satisfactorily in many places. Mercury is one of the easiest vegetables to grow, but the flavour is not always appreciated. I did not wish to ignore the value of Peas and the various kinds of Beans. My object was to mention particularly those vegetables which would give a more or less continuous supply throughout the year, and especially during the winter. Edwin Beckett.

WHITE WOOD STRAWBERRY.—Can any of your readers tell me anything of White Wood Strawberries? I came across the mention of this variety in Jane Austen's *Emma*, which novel was first published 101 years ago. Readers of Jane Austen will remember the page devoted to the Strawberries growing in Mr. Knightley's garden. “Strawberries, and only Strawberries, could now be thought or spoken of. The best fruit in England—everybody's favourite—every sort good—hautboys infinitely superior—no comparison—hautboys very scarce—Chili preferred—White Wood finest flavour of all.” Was the White Wood Strawberry only a cultivated variety of the wild Strawberry? If not, what was it? The Strawberry which so appeals to the rare taste of Jane Austen would be well worth growing. A. X.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

FEBRUARY 15.—*Present:* Sir Everard im Thurn in the chair; Messrs. W. Hales, E. A. Bowles, W. C. Worsdell, J. Ramsbottom, R. H. Pearson and F. J. Chittenden (hon. sec.).

Tulipa Kaufmanniana.—Mr. J. H. Chapman exhibited flowering plants of *Tulipa Kaufmanniana*, a species introduced to cultivation about 1877 and awarded F.C.C. 1897. The plants shown were dwarf, bright rose in the back of the exterior segments, yellow at base inside, with a carmine spot about midway down the segments inside, and margined with pale cream or white. They were thus somewhat different from the four certificated and from those figured in the *Garden* or the *Bot. Mag.*, and were, further, easy to propagate, which some forms of this species are not. The whole of Mr. Chapman's stock had been derived from one bulb.

Stipules of Hawthorn.—Mr. W. C. Worsdell showed specimens of leaves from *Crataegus sinuata*, showing intermediate steps from leaf segments to so-called stipules and demonstrating that the latter belonging to the leaf blade, not to the leaf base, as true stipules do.

Leaves of hybrid Orchids.—Mr. J. Ramsbottom exhibited a series of slides showing the characters of leaves of hybrid Orchids. The series included sections of the leaves of thirteen primary hybrids and their parents:—

	♀	♂	Hybrid.
<i>Cochlidia Noezliana</i>			× <i>Aida aurantiaca</i>
			(Athyrid)
<i>Cochlidia Noezliana</i>			× <i>Miltonia vexillaria</i>
			× <i>Miltonia Harwoodii</i>
<i>Cochlidia Noezliana</i>			× <i>Odontoglossum cordatum</i>
			(<i>Odontiodia Craveniana</i>)
<i>Cochlidia Noezliana</i>			× <i>O. Harryannum</i> (<i>Odontiodia Charlesworthii</i>)
<i>Cochlidia Noezliana</i>			× <i>Oncidium incurvum</i>
			(<i>Onciodia Charlesworthii</i>)
<i>Cochlidia Noezliana</i>			× <i>O. macranthum</i>
			(<i>Onciodia Cooksonia</i>)
<i>Laelia cinnabarina</i>			× <i>Epidendrum prismatocarpum</i> (<i>Epilaelia</i>)
<i>L. tenebrosa</i>			× <i>E. prismatocarpum</i>
			(<i>Epilaelia</i>)
<i>Odontoglossum Edwardii</i>			× <i>Cochlidia vulcanica</i>
<i>Odontoglossum Edwardii</i>			× <i>Boschii</i> (<i>O. Antiopei</i>)
<i>O. Fro-Skinneri</i>			× <i>Miltonia</i>
			(<i>Schroederiana</i>)
<i>O. Fro-Skinneri</i>			× <i>O. Edwardii</i>
			(<i>O. Grogoniae</i>)
<i>Vanda teres</i>			× <i>V. saavis</i>

Also two secondary hybrids.—
Odontiodia Charlesworthii × *Odontoglossum Harryannum*
 (=*Odontiodia Brownii*)
Odontoglossum Fro-Skinneri × *Odontiodia Charlesworthii*
 (= *Odontiodia Irene*)

They had been prepared by Mr. Charlesworth, who was studying the structure of hybrid Orchids, and it was found that where a structure existed in both parents, but developed to different degrees in them, the hybrid usually showed the same structure developed in an intermediate fashion; when a structure was present in only one of the parents it might or might not be present in the hybrid, and if present was usually less well developed than in the parent possessing the character.

Large Rhododendron.—Sir Everard im Thurn exhibited photographs of a tree of *Rhododendron arboreum*, growing in the rain forest of Ceylon, to call attention to the huge size of its trunks of which there were several—each almost as large as a man's body, and showing great buttresses and twisted freely developed along them.

NATIONAL CHRYSANTHEMUM.

FEBRUARY 19.—The Executive Committee of this Society held a meeting at Carr's Restaurant, Strand, on this date, Mr. T. Bevan presiding.

The secretary read the correspondence between himself and the B. H.S. relative to the show that the N.C.S. will hold next autumn at the Drill Hall, and the terms were considered satisfactory. Details of the classes, etc., will appear in the new schedule which the Sub-Committee were authorised to prepare and issue at an early date.

The report of the Finance Committee was considered encouraging. It was recommended that prize-money to the extent of £45 be offered at the next show, without counting the amount of special prizes.

The election of committees then followed. Of the Floral Committee one-third retire by rule annually. The new members, who will hold office till 1920, are Messrs. Ballantine, Curtis, Emberson, Prickett, H. Wells, and T. Stevenson. There being a vacancy in the third retiring next year, Mr. A. Robertson was elected to fill the place till then.

The election of members to fill the places in the Finance, Schedule and Publication Committees resulted in no change being made.

SCOTTISH HORTICULTURAL PRESIDENT'S ADDRESS.

FEBRUARY 6.—The first ordinary monthly meeting for the session of this Association was held in the Guild Hall, 5, St. Andrew Square, Edinburgh, on this date. Mr. Pirie, the retiring president, occupied the chair, and introduced his successor, Mr. John Phillips, who delivered his inaugural address, taking as his subject, "Horticultural Topics and Post-War Problems."

Mr. Phillips' remarks were as follows: "If I am left to read the signs of the times aright, it is my duty to continue to make good progress in the future, we shall have to adapt ourselves to greatly changed circumstances, and bring our machinery completely into line to meet the new requirements of the country. All industries will, it goes without saying, be greatly influenced and modified by the conditions which will result from this great war. To take one instance, it is doubtful if we shall see in our day a re-assertion of large Chrysanthemum bloom growing for exhibition purposes, and without these how, for example, is it possible to hold a great Chrysanthemum show such as we have been holding for the last thirty years? Every industry has become more or less disorganised, and when horticulture comes into its own again, as no doubt it will, we may be quite certain that the conditions will have vastly changed. At first there will be the labour question. Many of our young gardeners, who have gone to fight for King and country, and freedom and right, will, alas! never return, and many more will come back broken men. There will also be a financial difficulty. The huge cost of the war will cripple the nation for many years to come, and many who have hitherto spent large sums on the upkeep of great horticultural establishments, will be so severely taxed that they will be unable to do so, and without such establishments great horticultural exhibitions cannot exist. But this does not mean that horticulture must take a back seat. On the contrary, I believe that horticulture will receive a great stimulus from the war, and that it will come now to the front than ever after it is over, but it will be a somewhat different horticulture from that of pre-war days. The great cry at present is to increase the food supply of the country. In normal times we heard nothing of this cry. Why? Simply because we were quite content to take things as they came, and this laissez-faire, or let-alone policy held sway in almost everything. Now, under the pressure of war conditions, and especially on account of the German submarine menace, things have changed in this respect. We now realise, as we have never realised before, what it means to be dependent on overseas countries for the bulk of our food supplies, and when we are faced, as we are at present, with the risk of their being greatly curtailed, or perhaps cut off altogether, we begin to put our house in order. It wakes us up to the importance of our home resources

in food production, and how they have been neglected, and if we cannot afford to neglect them in a time of stress like the present, how can there be neglect justified in times of peace?

And there is no doubt that in many ways they have been neglected. Take fruit-growing for example. It would, of course, be absurd to try to grow fruits here under glass which can be grown out-of-doors in other countries at a minimum of expense, and which can be brought to our doors at a price with which we could not compete. But in many parts of the United Kingdom hardy fruits like Apples and Pears, Plums, etc., can be grown quite as well, and in some parts of the country even better, than they can be grown abroad; while the small fruits can be grown anywhere. To take an example for illustration. Why is it that so many Apples are imported into this country every year while so many of our own growing go to waste? It is simply because the imported fruit is properly graded and more carefully packed than the home-grown article, and therefore the bulk can be sold from the sample. It is not because the imported fruit is of finer quality; it is simply because ours is not graded, and it is improperly packed. The outcome of this is, of course, that the buyer prefers the imported fruit, because he knows he is getting uniformity of quality, and that he can depend on this uniformity when he buys from the sample. It seems a very simple difference, but it makes all the difference between a remunerative price and an unremunerative one to the grower. And while I am on the subject of fruit, I would like to make a few remarks on another aspect of the matter, namely, the preservation of such fruits as Plums, Cherries, Gooseberries and small fruits generally, as well as certain vegetables, in the fresh state by sterilisation. It is painful to read, in a time of great stress like the present, of tons of good Plums rotting, as was the case last year in orchards in some parts of England, for the want of sugar to preserve them with, when by this simple process of preservation by sterilisation, requiring nothing but a few comparatively inexpensive appliances, and no preservative whatever except plain water, the whole of this waste could have been avoided, and a substantial addition made to our food supply. And it is not only in a case of this sort that the process would have its use, for fruit thinnings, most of which are wasted in ordinary course, might be preserved in this way; while by judicious thinning a substantial addition would be made to the weight of the fruit left to mature on the trees or bushes. One could multiply instances of neglect of our resources, both in fruit and vegetable growing, and even in the case of the Potato, a food plant which has bulked more in the public eye recently than any of the other food plants except the cereals, we find from statistics prepared by Professor Middleton, of the Board of Agriculture, that when we compare our production of the precious tuber with that of Germany we are a very long way behind.

Then there is the question of allotments, regarding which so much is being done just now, but in this also we are merely following the lead of others, for far more food is produced from small patches of land in other countries than in this. The growing of vegetables on allotments is undoubtedly a great aid to the food supply of many people where it is properly conducted, and under suitable conditions, especially in times of stress and high prices for articles of food.

Before leaving this important question of food-producing plants, I would like to say a few words about another aspect of it which is bound to claim a good deal more attention than it has hitherto done, but it is one exclusively for scientific investigation, namely, the sterilisation of soil for growing purposes. As you are aware, the object in soil sterilisation is to kill out all the injurious organisms, and to leave unharmed those which are beneficial to the plants. This, it has been conclusively proved, can be accomplished; but, unfortunately, it can only be done on a comparatively small scale in practice, and is, therefore, only applicable to soil used in the cultivation of plants grown under glass. What is wanted is a simple and inexpensive method of treating soil in the open over large areas, and

the advantages of the still no doubt reap a rich reward. For inside work, the common method is by means of steaming, which is quite a simple process, but one which involves considerable initial expense, as a steam boiler and accessories are necessary for its accomplishment. This process has been advocated by many growers, but belief in its efficacy is by no means universal, as may be seen from the following statement by a "Market Grower," in a recent horticultural trade journal: "For several years," this grower states, "I have used steam in sterilising soil, but always failed to see any good result from the process, which, with the labour involved, was distinctly expensive. Whenever I met a grower who used, or had used, the steam method, I made careful enquiries as to opinions and results. One gentleman who grows Tomatoes on a fairly large scale, the crop of which is his side means of living, has a steam boiler for sterilising, but the last time I saw it the chimney had fallen away and the whole thing was derelict, plainly showing he had lost faith in steam. He gives the soil a rest by using boxes for the plants for a year, and treats the soil with creol. Another grower near by who has about 50,000 Tomatoes (and nothing else) does not steam. Another fairly large grower, who has done a lot of experimenting with various methods of sterilising, says that he believes steam to be positively harmful. He times his soil well, and after that is dug in, uses a fungicide, and covers the ground with fresh soil from the field. These are the reasoned opinions of men who have worked hard for the money and position they have, and who throw away no chances of success if they can possibly help it."

There is one other matter which will occupy much attention after the war, and that is education. Already the subject is receiving a good deal of attention from educational authorities in anticipation of post-war conditions, and, of course, it is to the technical aspect of it that the greatest amount of attention will have to be given if we are to hold our own in the commercial and industrial, as well as the scientific world. We are fortunate in Edinburgh in having a well-equipped agricultural college, in which there is an excellent curriculum in horticulture, and I trust that whatever developments may take place in connection with it the interests of the practical gardener will not be lost sight of, and that means will be adopted, not only to enable him to take full advantage of the instruction provided there, but to remove the financial disabilities which at present beset him. The importance of imparting technical instruction to the practical man has not, I think, been so fully grasped by those in authority in educational matters as we could wish, and I am sure we all hope that it will receive more attention than it has done hitherto. But there is no royal road to learning, and in horticulture as in other things sound technical knowledge of the subject can only be acquired by strenuous effort and close application. In gardening, as in everything else, success invariably goes to those who show the greatest determination to overcome the obstacles which lie in their paths, and the gardener who understands the scientific principles which underlie the multitudinous operations that go to make up the cycle of his year's work will have a better chance to overcome them successfully than those who are merely guided by rule of thumb methods. My advice, therefore, to all young gardeners, is to embrace every opportunity which presents itself to acquire knowledge of the technique of the subject.

In recent years gardening has made great progress in almost every branch, and in many establishments there have also been great changes in the class of plants grown. In many cases plants like Crotons and Dracenas and other old favourites of our younger days are finding their way to the rubbish heap, and there is a distinct tendency generally to a freer use of hardy subjects for outdoor decoration. Such plants as Sweet Peas, Antirrhinums, and other annuals, now take a much more important part in garden decoration than they ever did before, and the new types of Roses have almost revolutionised decorative gardening. But in no branch of horticulture perhaps has more pro-

gress been made than in our knowledge of scientific manuring, and in connection with this I would like to refer to the valuable and extremely useful paper by Mr. Chisholm on this subject, which was read at one of these meetings last session, and which appears in the last volume of our *Transactions*. It is sometimes said that our gardeners are not so good as they used to be. With that I do not agree. I think we have better growers than ever we had, and I am quite sure that the Scottish gardener will always maintain the deservedly high reputation as a cultivator which he has held in the past.

I cannot bring these remarks to a close without a reference to the part which women are now taking in horticulture. The employment of women in gardening is no innovation, for they have been so employed, in both horticulture and agriculture, for centuries, if not from the very first. But the lady gardener, as we know her, is very different from the mere worker who was formerly employed in gardens, whose function it was to perform certain operations which could not be classed as anything else than mere drudgery, and which she had to do for a living. Now we have the educated woman coming into the field, and her aims are quite different. She wants to take her place with men gardeners, and to compete with them, and we all welcome her advent. But if the lady gardener is to succeed, as men have succeeded, she must be prepared to go through the mill in the same way as they have done, otherwise she will fall behind in the race.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FEBRUARY 1. *Committee present:* The Rev. J. Crombholme (in the chair), Messrs. R. Ashworth, D. A. Cowan, Dr. Craven Moore, J. Cypher, J. Evans, P. Foster, A. R. Handley, D. McLeod, W. Shackleton, H. Thorp, and H. Arthur (secretary).

AWARDS

FIRST CLASS CERTIFIED VES.

Cypripedium Lloyd George (Anacam Hyacinth - Beckmann), a fine well formed flower, with broad petals, the dorsal sepal with a broad margin of white; *C. Mabelis macropetala West* *Pand. var.*, similar in form and colour to *Aletrisides Bluntii*, from S. GRAYNER, Esq.

Bress. Cattleya Ascension (B. C. The Baron - C. Mendel), a large flower of good form and rich colour, from R. ASHWORTH, Esq.

AWARDS OF MERIT.

Odontodia Linda (Oda, Diana S. Odm. and hbr.), *Odontoglossum wallonianis Cogniaux* var. *polypetalum (C. crispum)*, and *Cymbidium Mendelii var. Eucherianum (Anacam - Laevis - ussleri)*, all from Dr. CRAVEN MOORE.

Odontoglossum crispum varium superbum, and *Odontodia Mendelii var. superbum (Odm. C. Britannia - Oda Chalesworthii)*, both from P. SMITH, Esq.

Sophia Cattleya Ashworth (Doris - Bluntii), from R. ASHWORTH, Esq.

AWARDS OF APPRECIATION.

Odontoglossum Peckii var. The Bay (Osdalton - Crispum), and *O. Messy Sturmerianum - King Emperor*, both from P. SMITH, Esq.

O. Ceres De Andra Jap. O. Larina (Smith - Jap.), from S. GRAYNER, Esq.

Odontodia Armstrongii (Odm. Armstrongii - Oda. Voglsteini), and *Odontoglossum Davis (Ussleri - Crispum)*, both from Messrs. ARMSTRONG AND BROWN.

PUBLICATIONS RECEIVED. *The Cultivation of Parsnips.* Special Leaflet No. 70. Board of Agriculture and Fisheries, Whitehall Place, London.—*Potato-Growing in 1916 on the University Farm.* (School of Agriculture, Cambridge University).—*Symons's Meteorological Magazine*, February, 1917. Price 4d. (London: Edward Stanford, 12-14, Long Acre.)—*Finger and Tail.* Leaflet No. 2, Eastern Counties School of Agriculture, Cambridge.

CROPS AND STOCK ON THE HOME FARM.

PARSNIPS FOR STOCK.

FOR COWS in milk, and for sows, Parsnips are useful; the roots contain much valuable food. Where butter is made they must, however, be fed in reasonable quantity with other foods, such as Mangolds, hay and meal. A deep, medium loam, as free from stones as possible, is the most favourable soil for Parsnips; it should be deeply ploughed in the autumn and again in February, choosing dry weather, this time cutting the soil across, cultivating and harrowing freely to obtain a good tilth. Seven pounds of seed per acre, drilled in rows 18 inches apart, as early in March as possible, is sufficient.

BRUSSELS SPROUTS.

FOR COWS in milk during March and April, when the Cabbage crop has come to an end, Brussels Sprouts are valuable, as they provide much green food. A tall, strong-growing variety like Sutton's Exhibition should be selected for its length of stem, as it is not merely the size of the sprouts that are a gain but the greatest bulk of green food should be the aim. Deeply ploughed, heavily manured, stiff soil at the cultural conditions necessary. Sow the seed early in March thinly in a cold frame, encouraging a sturdy growth. From there the plants can be put out into their permanent quarters in rows 2½ feet apart, a similar distance from plant to plant in the rows. Raising the plants in a frame affords extra time for growth, which means larger plants and more food. Frequent stirring of the soil about the plants accelerates growth, as will also an occasional sprinkling with sulphate of ammonia or soot.

FATTENING CATTLE.

AT THE present time there is such a demand for home-grown beef to meet the requirements, that it behoves all who can to assist in producing more cattle. The more is grown and fattened at home, the greater likelihood there will be of a lowering of prices. Steers from two to three years old should be fattened as quickly as possible. The longer they are in becoming fit for the butcher the more expensive they become. Parsimony is not economy in feeding. Liberality with best food shortens the period of fattening.

I do not agree with the fattening of heifers for food, except in the case of barrenness. Heifers have a quite different function to perform. There are three methods of housing cattle for fattening in winter—shutting them up singly in pens, tying them up in stalls, and allowing them to run loose in a strawyard where they can have shed-protection from inclement weather. Any of these methods can be made satisfactory, if absolute quiet for the animals can be obtained. The food rations should be varied. Mangolds and Swedes, either separately or together, in equal parts, are the safest winter food. Add to this a small quantity of sugar Beet and a little finely chaffed Hay or Oat straw, with Barley and Bean meal in small quantities. The roots should be cleaned and cut into slices, or pulped smaller, and mixed together with the chaff in a heap, but not more than one day's allowance should be given as a greater bulk would quickly become sour, and that is very undesirable.

In addition to the food already mentioned, oil-cake, with an equal quantity of cotton cake, is also required. The first feed in the morning should be the cake, starting with 2 lbs. per animal, increasing this gradually until the last fortnight, when 6 lbs. daily should be given. After the cake is eaten the root mixture should be given, 2 bushels in the morning, the same in the afternoon, and for the last month increase the quantity to 6 bushels per day; for the last two weeks give the feed four times daily. As long as they clear up the whole, continue to give a little extra. With such a quantity of roots, some animals will not drink water, others will; all should have the opportunity. The feeder will quickly know the peculiarities of each animal and should act accordingly.

In the evening a handful of long hay should be given the animals for amusement. Plenty of

straw should be given for bedding, remembering the more they have the greater the quantity of manure made. No manure can be of higher value than that from cattle so highly fed.

CLOVER FOR HAY.

Now that so much Clover is required for Army horses, in addition to that needed for home consumption, it behoves all who have the opportunity to produce as much as possible. What is known as clean Clover hay—Red or Broad Clover—is preferred by some persons for horses and sheep. When Clover alone is grown the second crop in the season (August) can be utilised for seed if of a good strain, free from objectionable weeds and parasites, as Dodder. Clover seed in a favourable season is remunerative.

A greater bulk of hay can perhaps be obtained from a mixture of Broad Clover and Italian Rye Grass, or Hampshire or Devon Bents, in the place of the Italian Rye Grass. Two tons per acre of most excellent hay from such a mixture can generally be reckoned upon. The objection to Italian Rye Grass is that it is such a roborer of the soil, and as Wheat or Oats are generally the succeeding crops, the best results cannot be expected without additional stimulating food for these crops. Hampshire or Devon Bents do not grow so vigorously, therefore they do not rob the soil so much. Clover is usually sown with Oats or Barley in March, or among autumn-sown Wheat in April 12 lbs. of Clover seed and 1 bushel Italian Rye Grass or Bents are ample. Both should be sown separately, with the hand seed barrow wheeled evenly over the land at the same time that the corn is sown, if possible, and harrowed in along with the seeds. Sometimes these crops are also sown in February or early in March, which is too early for frost may occur. The first week in April is a good time to sow the seed among the Oats and Barley, drawing light harrows over the plot, finishing off with the roller if the weather is dry. Once harrowing will not injure the seed, and effectively buries the seed. In sowing Clover along with autumn sown Wheat in April, where the soil is stiff the surface usually is hard and caloused, owing to winter rains, but harrows should be drawn over the Wheat crosswise to the drills before sowing the Clover, this ensuring a tilth for the seed, and once after finishing off with the roller to make the soil firm about the roots. *E. Molynour*

On the death of their father, George, Thomas, and Edward Walpole entered into possession of Mount Usher, and developed it. As space became limited the grounds were gradually extended, until the present considerable dimensions were reached. The brothers Walpole quickly realised the great possibilities of Mount Usher, especially as regards the cultivation of what are generally known as half-hardy plants, and they made many and interesting experiments in that direction. Mount Usher is at present the most interesting and edifying garden of its size in Ireland. George was the first to die, and Thomas followed not long afterwards. Mr. Edward Walpole was a man of the kindest disposition, of sound common sense, and of great enterprise. His early days were passed in Waterford. All Irish gardeners will rejoice to know that Mount Usher is to be kept up by the new owner, Mr. E. H. Walpole.

GEORGE MASSEE.—We record with deep regret the death of Mr. George Edward Massee, who, from 1883 until 1915, held the post of Principal Assistant in the Herbarium at Kew. Mr. Massee, who achieved a wide and



THE LATE GEORGE MASSEE, A.M.H.

Obituary.

JOHN GALE.—*Horticulture*, U.S.A., records the death of Mr. John Gale, nurseryman, of Chicago, and a specialist in Asters. He was a native of this country, and settled in America as a young man of 24 years.

GEORGE SINCLAIR.—We hear with regret of the death, on the 18th inst., of Mr. George Sinclair, market gardener, of Prestonkirk, East Lothian, at the age of 70. Mr. Sinclair was a leading member of the Edinburgh Market Gardeners' Association, and for many years on the Fruit Committee of the Royal Caledonian Horticultural Society. He was also a lecturer at the Heriot-Watt School, Edinburgh, for several sessions.

EDWARD WALPOLE.—Our contemporary, *Irish Gardening*, in announcing the death of Mr. Edward Walpole, of Mount Usher, Co. Wicklow, at an advanced age, offers the following tribute to his memory. Mr. Walpole's death will evoke genuine feelings of regret in the hearts of many who had the privilege of enjoying his friendship. He was the last of the three brothers who created the beautiful garden at Mount Usher, and filled it with rare and beautiful plants, and who made it an easy matter for all interested in gardens to see, hear, and enjoy. Mount Usher was started very many years ago as a small country residence to which the brothers Walpole were brought by their parents to spend holidays in the country.

well deserved reputation by his contributions to our knowledge of fungi, and particularly of the fungous parasites of cultivated plants, was born at Stampton, in East Yorkshire, in 1859. Destined to follow his father's career, that of farming, Mr. Massee showed in his early years a decided bent for drawing and nature. Sent to study art at the York School of Art, he became acquainted with Dr. Spruce, the botanist and traveller, who was related to Massee's mother. As he records in the *Journal of the Kew Guild*, Mr. Massee drew most of the illustrations for Dr. Spruce's work in Hepaticae. After his stay in York, Mr. Massee went to the West Indies and South America to study plants, and collect Orchids. On his return he continued his botanical studies, combining them with painting. Subsequently Mr. Massee proceeded to Kew, and in 1895 succeeded the late Dr. M. C. Cooke in the headship of the Mycological Department. Since his retirement, Mr. Massee had lived at Park Place, The Common, Sevenoaks. His death followed on a short illness; he was buried at Richmond Cemetery on Wednesday, February 21. Of his books on fungi, those which dealt with pests enjoyed a wide circulation. They embodied a vast amount of personal observation, and were written in a direct and clear style. Mr. Massee was remarkable in personality as well as distinguished in science; of concise turn of speech, "but to those men that loved him sweet as summer" and the numbers of those who loved him were many.

MARKETS.

GENERAL GARDENERS' FEBRUARY 21

Cut Flowers, &c. Average Wholesale Prices.

	s.d.	s.d.	
Arums per doz.	8.0-9.0	Lily of the-Valley per doz. bun.	3.0-3.60
Azalea, white, per doz. bun.	8.0-9.0	Narcissus, Grand Primo, per doz. bun.	8.0-10.0
Camellias, white, per doz. blms.	3.6-4.0	— Pheasant Eye per doz. bun.	6.0-7.0
Carnations, per doz. blooms, best American varieties.	2.6-3.6	— Grand Duke of Saxe-Coburg per doz. bun.	10.0-12.0
— Carolina (Crimson) ex large	3.6-4.0	Orchids, per doz.:	
Daffodils, Golden Snail, per doz. bun.	12.0-15.0	— Cattle's Foot	15.0-18.0
— Henry Irving	10.0-12.0	— Celestem per doz. blooms.	2.0-2.6
— Princeps, per doz. bun.	18.0-21.0	— Cypridium	2.0-3.0
— doubles, per doz. bun.	12.0-15.0	— Od on tozlossum crispum	3.0-4.0
— Victoria, per doz. bun.	18.0-21.0	Pelargoniums, per doz. bunches,	
— double, per doz. bun.	12.0-15.0	— Fleecscarlet	15.0-18.0
Eucharis, per doz. blms.	8.0-12.0	Roses—	
— Pigeon Green, per doz. blms.	12.0-15.0	— Richmond, per doz. blms.	8.0-12.0
Freesia, per doz. bun.	3.0-4.0	— Sunburst, per doz. blms.	10.0-12.0
Gardenia, per doz. blms.	—	— Snowdrops, per doz. bun.	4.0-6.0
— in bloom	—	Tulips, white, per doz. bun.	30.0-36.0
Heather, white, per doz. bun.	12.0-15.0	— yellow, per doz. bun.	—
Lilium longiflorum long	1.0-1.6	— bronze, per doz. bun.	36.0-42.0
— short	1.0-1.6	— in vase Darwin	36.0-42.0
Lancifolium album long.	3.6-4.0	— per doz. bun.	36.0-42.0
— short	3.0-3.6	Violets, single,	
— rubrum, per doz. long.	3.6-4.0	— Princess of Wales...	4.0-5.0
— short	3.0-3.6		
Cut Foliage, &c.: Average Wholesale Prices.	s.d.	s.d.	
Adiantum (Maidenhair Fern) best, per doz. bunches.	9.0-10.0	Cycas leaves per doz.	3.0-6.0
Asparagus plumosus long trails per half dozen.	2.6-3.0	Fern, French, per doz. bunches.	0.6-0.8
— medium doz. bunches.	12.0-18.0	— common	3.0-4.0
— Sprengeri	8.0-12.0	Ivy leaves, per doz. bun.	2.0-2.6
Bronze foliage	3.0-6.0	Mosses, FROSS bunches	9.0-10.0
Carnation foliage, doz. bunches	4.0-5.0	— Myrtle, doz. bunches	9.0-10.0
Croton foliage, doz. bunches	12.0-15.0	— small-leaved	6.0-8.0
French Flowers, &c. Average Wholesale Prices.	s.d.	s.d.	
Anemone, double pink per doz. bun.	3.0-3.6	Mimosa (Acacia) per doz. bun.	8.0-10.0
— single, mixed per doz. bun.	10.0-12.0	Narcissus paper white, per doz. bunches.	6.0-7.0
Lilac, white, per doz. sprays.	6.0-6.6	— Stock white, per doz. bunches.	3.6-4.6
Marguerites, doz. per doz. bun.	4.0-4.6	— pink, per doz. bunches.	1.6-5.0
		Violets, single, per doz. bun.	2.6-3.0
Remarks.			
With the exception of a further increase in the supply of Carnations, the market is similar to those of last week. All small white flowers are very scarce and dear. Especially was this so during the last week of the month, at the momentary arrival, here of the known variety, and French flower. High prices this week are due partly to French paper white Narcissus, which came about last for this season. Violets, Mimosa (Acacia), Balausta, and Anemone are getting more plentiful. A few barrels of white Stock are coming to hand. There is a good demand.			
Plants in Pots, &c.: Average Wholesale Prices.	s.d.	s.d.	
Aralis Sieboldii, dozen.	6.0-6.0	Ferns in 32's, per choice sorts.	12.0-18.0
Asparagus plumosus, per doz.	10.0-12.0	— 48's, per doz.	8.0-12.0
— Sprengeri	8.0-10.0	— 60's, per doz.	6.0-8.0
Aspidistra, per doz. green	24.0-36.0	— 48's, each.	2.6-7.6
Cacti, various, per tray of 15's	4.0-5.0	Kentia Belmoreana, per doz.	4.0-8.0
— tray of 12's	5.0-6.0	— larger, per doz.	18.0-36.0
Cinchona, 18's per doz.	12.0-15.0	— Porsteriana, 60's, per doz.	5.0-8.0
Cocos Weddelliana, 48's, per doz.	18.0-20.0	— Lantana borbonica, 50's, per doz.	12.0-30.0
— 60's, per doz.	8.0-10.0	Lilium longiflorum, per doz.	36.0-42.0
Conon, per doz.	18.0-20.0	— Lancifolium rubrum	24.0-30.0
Cyclamen, 18's per doz.	21.0-24.0	— album	24.0-30.0
Daffodils, 48's per doz.	12.0-15.0	Marguerites, in 48's, per doz.	12.0-15.0
Ferns in tubs, per 100.	10.0-15.0	Panlausa Veitchii, per doz.	36.0-48.0
— per 100, in small and large 60's	1.0-24.0	Phoenix rupicola, each.	12.6-21.0
— in 48's, per doz.	2.6-7.6	— per doz.	12.0-15.0
Remarks.			
Flowering plants in pots chiefly of Cyclamen, no need.			

higher than actual, no doubt on account of the limited supply. There is the usual stock of Ferns and other foliage plants.

Vegetables: Average Wholesale Prices.

Table with columns for vegetable names and prices. Includes items like Artichokes, Beans, Broccoli, Cauliflowers, Celery, Cucumbers, etc.

Fruit: Average Wholesale Prices.

Table with columns for fruit names and prices. Includes items like Apples, Apricots, Bananas, Chestnuts, Cranberries, etc.

REMARKS: The English Apples now available consist of the following varieties: Newton Wonder, Dumelow's Red, and Bramley's Seedling. ...

Potatoes.

REMARKS: There is a good demand for Potatoes, but very few arrivals. The Government has fixed the price for Potatoes at £10 10s. per ton, ...

DEBATING SOCIETIES.

WARGRAVE AND DISTRICT GARDENERS.—A well-attended meeting of the Association took place on February 24, when Mr. W. Clarke, gardener to Mrs. Choate, Bear Hill, Tynard, gave his second paper on "Vegetables," this time dealing with Kidney and Runners, very exhaustively referring to the necessary soil cultivation, sowing seed by succession, manuring, and general treatment during the time of growth. ...

SCHEDULE RECEIVED.

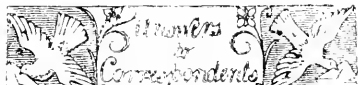
East Anglian Horticultural Club. Rules and arrangements for 1917, and list of prizes for competition in special classes at the monthly meetings. Secretary, Mr. G. R. Todd, 12, Royal Arcade, Norwich.

GARDENING APPOINTMENTS.

- Mr. Frank Thompson, for the past 21 years Gardener to the late Mrs. DOHERTY, WATERHOUSE, Wellhead, Halifax, as Gardener to W. G. GROVES, Esq., Rochdale, Warrington. (Thanks for donation to R.G.O.F. box Esq.)
Mr. James Humphrey, for the past 64 years Gardener to Dr. ROBERTS, The Gables, Linslade, Bucks, as Gardener to Mrs. E. D. LEE, Hartwell House, Aylesbury.
Mr. Thomas Wearing, for the past 6 months Gardener to Mrs. FENNER, Witham Hall, Bourne, Lincs., as Gardener to the same lady at Laseover Grange, Duddington, near Stamford, Rutlandshire.
Mr. L. R. Day, late of Mount View, Holyport, Maidenhead, as Gardener to Geo. L. WING, Esq., Rockshaw, Mersham, Surrey.
Mr. M. S. Peck, for the past 51 years Gardener to Mr. L. HESKETH, Esq., Ashmans Hall, Beeches, as Gardener to St. THOMAS G. FERDORHESKER, Baiton, Easton Neston, Townsaver Northamptonshire.

CATALOGUES RECEIVED.

- SEEDS.
PETER HENDERSON AND CO., 35-37, Oldland Street, New York, U.S.A. (wholesale).
CHARLES TURNER, 50, 52, 55, London Wall, London.
M. H. SIMPLAR, Union Street, Aberdeen.
BRITISH SEEDLING LTD., 14, 15, Colquhoun Street, London.
D. H. WATSON, 22, Oak Street, Manchester.
E. P. DAVIS AND SONS, LTD., Patagon Square, Hull.
SUTTON AND SONS, Reading (farm seeds).
THE YOKOHAMA NURSERY CO., LTD. Craven House, Kingsway, London.—Japanese and Chinese Vegetable and Flower Seeds, FOREIGN.
R. ANDREWS, 179, Casewick Road, West Norwood.
L. CANNELL AND SONS, Emsford, Kent.
MISCELLANEOUS.
C. ENGELMANN, Seaton, Walden, Essex.—Perennial flowering Carnations.
R. WALLACE AND CO., Colchester.—Lilies, Begonias, Gladioli, Shubds, Seeds, &c.
HENRY A. DEER, 714-716, Chestnut Street, Philadelphia, U.S.A.
L. FERARD, 20, 22, Rue de la Populaire, Paris.



BLUE HYDRANGEA: W. J. M. Pot the plants in peat, adding two-fifths leaf-mould and one-fifth sand, 10 per cent. of powdered slates, 5 per cent. sulphate of iron—or a larger quantity of iron slag—and 10 per cent. of ammonium sulphate. The plants must be prepared a year in advance of flowering, and all traces of the ordinary soil in which they have grown removed. Lime should not be used, and it is necessary to employ rain-water for the roots. Water the plants twice a week during their growing period with water containing 4 ounces of sulphate of iron to the gallon.

CLIMBERS: J. James. The majority of the climbers mentioned in your list do not require pruning at the usually accepted sense of the term, but should have the weak growths thinned out and the remainder properly trained in early spring. The exceptions are Abela chinensis, Biddiana Colera, Clematis Gloire de Versailles, and C. Ceres, all of which flower on shoots of the current season. These plants should be pruned to within two or three eyes of the base of the previous year's wood, except where the shoots are required for extension. Clematis Verticillata flowers in spring 2 on the old wood, and any thinning of the growths that is necessary should be done immediately after the flowers are over.

CUCUMBER CUTTINGS: G. W. It is not an easy matter to destroy such ground pests as wireworms, leather-jackets and cockchafers at this time of the year. Gas-lime is the best cure, but you cannot use gas-lime in spring, because it would burn the crop even more than would the pests. At least six weeks must elapse before ground treated with gas-lime can be planted or sown. We are informed that sick naphthalin powder is applied in the trenches at digging will destroy such pests as wireworms and cockchafers, and it is well known that superphosphate, nitrate of soda, and other fertilisers of this character act as

deterrents to pests underground. Soot, lime and wood ash have also a value in this respect. Agricultural salt at a rate of 2 cwt to the acre is said to be particularly acetic for this purpose.

DESTROYING TREE ROOTS: W. F. Tree roots can be blown to pieces by the use of coarse blasting powder, or tonite or dynamite cartridges. Tonite cartridges are considered safer than dynamite cartridges, and for butt blowing are very effective. 2 ounce, 3 ounce, or 4 ounce cartridges may be used according to the size of the butt. Bore slanting holes from the side to the centre of the butt large enough to take a cartridge. A cap and fuse must then be attached to the cartridge and the hole around the fuse filled in firmly with wet sand. The fuse must be long enough to allow the operator to reach a safe place before the explosion. It is as well when purchasing cartridges to procure proper instructions at the same time. A 5-ounce cartridge might be tried on a butt at first, giving a 4-ounce one if the first does not appear to be sufficiently powerful. When using blasting powder a hole an inch in diameter should be bored to the centre of each butt. Place a time fuse in the centre and fill round with powder to within 3 inches of the top of the hole. Press the powder firmly with a piece of stick, then over the powder ram some powder firmly down, filling the mouth of each hole with clay. Light the fuse and get to a safe distance before the explosion. It is difficult to advise a place for obtaining explosives at the present time, and you would probably do best by ordering what you want through a local gunsmith.

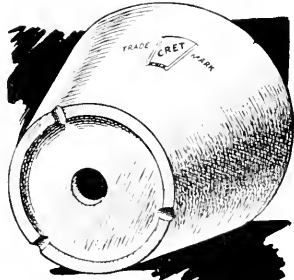
MARKET MEASURES: B. J. C. "Bags" of Beetroot, Carrots, Onions, Swedes, and Turnips weigh 1 cwt. each. "Bags" of greens weigh each about 40 lbs., filling the 1 cwt. bag to its utmost capacity. Celery, Celeriac, and Leeks are sold by the dozen. Cucumbers in lots of from 2 to 4 dozen, according to their size.

MEHULLA MAGNIFICA: W. S. M. Bombay. Medinilla magnifica is a tropical evergreen plant, and in the spring and summer months requires a moist atmosphere, and temperature ranging from 70° at night to 90° by day in sunny weather. During this period the plant needs a liberal supply of water, both at the roots and overhead. In winter the minimum temperature should be 60°, and less water is required, but on no account should the plants be allowed to become so dry as to cause the foliage to flag, or the leaves will fall prematurely. To promote a natural, free development of flowers the growths should be ripened thoroughly, therefore a light, sunny position is necessary; in very bright weather the plants should be shaded lightly for a few hours during the middle of the day. Medinillas are free rooting subjects, and when grown in pots or tubs are benefited, during the growing season, by frequent applications of manure water. Starving them in small pots is not favourable for the development of flowers. They succeed best in a compost of fibrous peat, leaf-mould and loam in equal parts, with sufficient sand added to render the soil porous.

NAVES OF PLANTS: G. C. Anverley, Azadea Mrs. Carmichael.—1, E. L. 1, Codraem (Crotom) trilobum; 2, Codraem Weismann; 3, Codraem Johannes; 4, not recognisable from the bruised leaves sent. Send when in flower.

ONION BULBS: J. S. Onion bulbs which are intended to produce seed should be planted at the earliest possible moment, when the ground is in a suitable condition, and put in a good, sunny position. The bulbs should be three parts buried, and a small quantity of finely sifted cinder ashes placed over the exposed part.

Communications Received: W. E. B. I. S. of L. E. B. D., Ltd., Chester.—W. J. S. T. C. W. & D. G. M. L. A. S. & Co. T. B. L. & M. Edmunds. (Chick) Hornsey, J. C. B. W. L. C. D. B. O. E. M. E. M. W. L. S. & Co.—J. T. W. T. MacPh.—C. W. F. A.—J. T. B. I. P.—W. B.



**Free Booklet
about the New Pot**

Every head gardener is invited to see the exceptional root-room, porosity, and drainage of the new pot—the CRET. The

FREE SAMPLE and interesting Booklet with prices (and 5 Special Assortment Offers) will show you many advantages of Crets for all pot plants. Write for same to-day.

Two Specimen Prices—3½ ins., 5/- per 100; 7½ ins., 21/-. Cret prices are all per 100, and include carriage on orders over 20/-.

PETER BAILEY & SONS LTD.
Heaton Mersey Pottery, near Manchester.

STANDARD CURRANTS



We can offer fine trees with 4½ ft. stems, stout enough to stand without stakes, at 5/- each.

Extra strong heads 7/6 each.

GEORGE BUNYARD

& CO., LTD.,

Royal Nurseries, MAIDSTONE.

NEW AND RARE HARDY PLANTS WATER LILIES SIDE PERRY'S CATALOGUE, Hardy Plant Farm, Enfield, Middlesex.

TURF LOAM.

Very Fibrous Yellow Turf Loam

For VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid or Delivered.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.

Burpee's Seeds Grow

THE truth of this famous slogan is proved by thousands of pleased and permanent customers. The Burpee Idea of Quality First,—combined with efficient service has built the World's Greatest Mail-Order Seed Business. Burpee's Annual, The Leading American Seed Catalog for 1917 is a bright new hook of 204 pages, in colors, and a Safe Guide to Success in the garden. Mailed free. Write for it today.

W. ATLEE BURPEE & CO., Seed Growers,
Burpee Buildings, Philadelphia, Pa., U. S. A.



G **S** **ROILED SHEET GLASS**
MORE LIGHT

A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 3/4 in. (or equal to stout 21 oz. in thickness). Can be supplied to buyers' sizes at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of
GENUINE WHITE LEAD PAINT.



"BLACKFRIARS BRAND." Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cans.

BEST LINSEED OIL PUTTY.

Complete Price List of Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.



Food Production on Farms & in Gardens.

To obtain the best results sow **Dicksons Seeds** which are all carefully selected from the finest and most productive strains, and are always reliable.

Prices moderate. Catalogues free.
Dicksons Seed & Snows Chester.

EVERY GARDENER KNOWS THAT

Clay's gets there and makes the Garden gay all the year round.

Sold everywhere in TINS at 6d., 1s., and in BRANDED & SEALED BAGS: 7 lbs. 2s. 6d., 14 lbs. 4s. 6d., 28 lbs. 7s. 6d., 56 lbs. 12s. 6d., 112 lbs. 20s. Or direct from the Works, Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mfrs & Bone Crushers, STRATFORD, LONDON, E.



IT IS THE STANDARD FOOD FOR PLANTS.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two),
6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address above are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials, only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisements are continued against having Letters addressed to Intails at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

HEAD GARDENERS' SITUATION at Pripton Park, on behalf of Captain J. B. HANKE, JAMES STEARNS to thank all applicants for the post, and to inform them that it is now filled.

GLAMORGAN COUNTY COUNCIL. HORTICULTURAL DEMONSTRATORS AND ADVISERS.

The Glamorgan County Council have Applications for the Appointment of Horticultural Demonstrator and Adviser for assisting the Occupiers of Cottage Gardens, Allotments, and Small Holdings in such areas as will from year to year be selected within the Administrative County of Glamorgan.

Applicants must possess an Examination Certificate of the Royal Horticultural Society, and have served as apprentices to gardeners, and have held situations in which they were in charge of and responsible as Foreman or Head Gardener for flowers, fruit, vegetables, and hot-house work.

Experience as journeyman in vegetable gardens will be deemed an additional qualification.

Applicants must provide and be able to ride a bicycle salary, 45s. per week, with an allowance at the rate of 25s. per annum in addition for the upkeep of a bicycle.

The appointment will be for one year, subject to one month's notice on either side, and will be renewable annually.

The person appointed will be required to give his whole time to the service of the county, and reside where from time to time directed.

Applications, stating previous experience and age, with copies of three recent testimonials, must be received by the Chief Education Officer, Glamorgan County Hall, Cardiff, on or before 10 a.m. on the 7th day of March 1917.

T. MANSELL FRANKLEN,
Clerk of the County Council.

Glamorgan County Hall, Cardiff.
12th February, 1917.

WANTED, HEAD-WORKING GARDENER for gentleman's country place, Wiltshire 1 labourer under, vegetable garden, small flower garden, practically no glass, good cottage. C. H., Box 33, 41, Wellington Street, Covent Garden, W.C.

WANTED, HEAD WORKING GARDENER 2 under, 4 under, 6 under, good fruit and vegetables essential, cottage. Apply strong wages, experience. E. H. BALES DARBIN, Newton St. Loeville, Yeovil, Som.

WANTED, SINGLE-HANDED GARDENER 1 labourer, box kept to give help. C. H. CAVE, Red Hill House, Margateville, near Bristol.

WANTED, SINGLE-HANDED GARDENER good wages. Apply, St. Augustine's, Tottenham, Herts.

WANTED, GARDENER (SINGLE-HANDED) with assistance for Garden, Hall, Shop, etc. Lovers, must be experienced in vegetables, fruit, little glass, active man, willing to assist with room, garden, etc. age, situations, good cottage, tree, wages 25s. and 5s. per week weekly. E. S. MORTON PRICE, Esp. G. Munson Place, London, S.W.

WANTED, SINGLE-HANDED GARDENER small vegetable and flower garden and lawn, no glass, beds, knives, and a few plants, etc. 25s. and 5s. per week cottage. Apply, DAVIS, Elmley Lodge, Cobham, Surrey.

WANTED, SINGLE HANDED GARDENER for March 3rd, intelligible, experienced in all vegetables, fruit, flowers, and lawn, willing to learn making of electric light plant, etc. in evening. wages 25s. for 40s., consisting of experience. Mrs. ROSSENDALE, The Manor Cottage, Gerrards Cross Bucks.

WANTED, by a Lady, a good SINGLE HANDED GARDENER or Experienced LADY GARDENER, smallinery and Conservatory.—MRS. P. L. L. Church Spion Lodge, Newbury, Berks.

NORTH SURREY DISTRICT SCHOOL, ANERLEY, S.E.
SECOND GARDENER.

THE Managers require a SECOND GARDENER for their Branch School at 8 South Norwood; wages 24s. per week.

Apply personally any morning before 12 o'clock, or by letter, to the Superintendent at the North Surrey School, Anerley.

H. J. CHAMBEKOTT,
Clerk to the Manager.

WANTED, SECOND GARDENER, to take charge of Kitchen Garden, &c., also one to Pleasure Grounds, rooms provided for both.—State wages and experience. RAWSON, Earlwell Court, Chessington, Surrey.

WANTED, SECOND GARDENER, married, good experience, Inside and Out, intelligible, wages 25s., with cottage, for situation near Maidenhead.—Apply, W. HIGGS, Fitcham Park, Leatherhead.

WANTED, SECOND GARDENER; married or single, intelligible, principally ornamental, Fruit, Roses, and Pleasure Grounds. Apply, with full particulars, to W. J. FENTIMAN, Great Chiffield Manor, Melksham, Wilts.

WANTED, Man as SECOND; married or single, used to Inside and Out. State age, etc. &c. F. SALCOMBE, Teichurst, Sussex.

WANTED, GARDENER, Middlesex—well up Orchids, Crotons, Cactidiums, Chrysanthemums, and general wages 45s. and 5s. war bonus for good man. Apply H. GREEN, Amberley House Gravelly Hill, Birmingham.

WANTED, a well-trained GARDENER the end of the war, first-class character essential. MISS HOGG, Bony Road House, Brixham, S. Devon.

WANTED, GARDENER, unobscured. Apply, lodge provided, wages 20s. week and vegetables. State age, family, experience to DEERSWOOD Crawley, Sussex.

WANTED, middle of March next UNDER GARDENER, intelligible, married, good cottage and garden, good character, state wages. Apply, M. SCOTT WILLIAMS, Esq., Woodland House near Blandford, Dorset.

WANTED UNDER-GARDENER (INSIDE AND OUT), a strong and able to take duty, good wages.—C. BRAINSBER, The Gardens, Osidge, Southgate, N.

LADY HEAD GARDENER Wanted at once, Cowhurst, near Longfield. Apply SECRETARY, Duchess of Marlborough, Sandeplatz House, Curzon Street, W.

WANTED, at once, experienced HEAD GARDENER (at least) to take charge of gardens, no glass; Vegetables and Fruit grown in quantities to supply large establishment, also able to organize unskilled labour and to instruct classes of boys and girls in practical horticulture. Salary starting £150, or £100 in preference. Apply stating particulars and experience. J. H. BAYLEY, Bedale School, Bedale, Hants.

WANTED, for Large Gardens in the Midlands, TWO LADY GARDENERS, one Inside and one Out, to work under Head; must be experienced, furnished lodgings, and 30s. per week salary. Write, T. H. C., Box 18, 41, Wellington Street, Covent Garden, W.C.

WANTED, 2 good, practical WOMEN GARDENERS, one for the glass department and 1 for ornamental and other, to be permanent and to keep Glass, &c. Both and usual perquisites. Apply, stating age and experience, to A. FRESHWATER, Pains Hill Gardens, Cobham, Surrey.

WANTED, several LADY GARDENERS, with one experienced, to work under (man) Head; wages 21 per week comfortable rooms. Write SMITH, Besingford Gardens, Goudhurst, Kent.

WANTED, at once, Two LADY GARDENERS with experience assistance given in dressing, good cottage in the grounds, Kent, near Seven Oaks. Write, MISS NEAME 6, Egerton Terrace, Lambou, N.W.

WANTED, LADY UNDER-GARDENER; work under Lady Gardener and share furnished lodge with her and learn electric light engine. Miss HAMILTON RUSSELL, Varrington House, Wincanton, Somerset.

WANTED, a FOREMAN GARDENER for large Gardens in the Midlands, to work under Head; must be well up in Grapes, Peaches and Chrysanthemums; wages, 30s. per week and good Botly.—Write, S. M., Box 19, 41, Wellington Street, Covent Garden, W.C.

WANTED, FOREMAN GARDENER, in Northumberland, intelligible; experienced Inside and Out; good wages given, as may be agreed upon. Botly and usual allowances—Apply, stating age and all particulars, to N. D. COWANS, West Lifford, Antrim.

WANTED, FOREMAN GENERAL, or good FIRST JOURNEYMAN; intelligible, wages 30s. per week and Botly; duty and overtime paid—Apply, with full particulars, to H. A. PAGE, The Gardens, Belzoni Court, Hampton, N.W.

WANTED, an experienced FOREWOMAN for the Glass department (Fruit and Plants), also an Assistant for general work, comfortable Botly, good wages. Full particulars and references to J. G. WESTON, Eastwell Park Gardens, Ashford, Kent.

WANTED, MARRIED MAN for the HOUSES, with good general knowledge of the cultivation of Fruit and Plants, must be thoroughly reliable, active, and energetic; good wages, with duty and overtime paid, excellent cottage provided, with every convenience, one o'clock Saturdays. State full particulars to J. BROWN, Burford Gardens, Dorking, Surrey.

WANTED, YOUNG MAN, for the Houses, or for Inside and Out; Botly, milk, and vegetables, good wages and overtime paid.—T. DOWNS, Basing Park Gardens, Alton, Hants.

WANTED, an IMPROVER, with some experience; age about 17, wages 17s. per week; Botly, milk, and vegetables; 2s. 6d. for Sunday duty.—Apply, W. WEXMAN, Hickleton, Doncaster.

WANTED, IMPROVER, Inside; some experience, intelligible, wages 20s. a week and bonus, with Botly and attendance.—S. POPE, Holmwood Gardens, Langton Green, Tunbridge Wells.

WANTED, good strong Youth as IMPROVER for general Inside Work, or discharged soldier, good wages, Botly, milk, and vegetables; overtime and duty paid, 1 o'clock Saturdays. State age, experience, and references to HEAD GARDENER, King's Walden, Bury, Hitchin.

WANTED, TWO YOUTHS (16 to 17) for the Houses, wages 18s. and Botly; duty and overtime paid, 1 o'clock Saturdays.—C. GARRATT, Cawwell Hall Gardens, Sutton Coldfield, Birmingham.

WANTED, strong YOUTH, about 15 or 17, for Houses, 18s., Botly, milk, and vegetables; duty paid. H. PAGE, Stoke Place Gardens, Slough.

WANTED, Three YOUNG WOMEN for Inside and out, with a little knowledge of gardening preferred; Botly.—Please state wages, &c., to R. LEARMOUTH, Sherfield Manor Gardens, Basingstoke.

WANTED, Young WOMEN for the Glass department, lodging provided; state wages and experience.—Apply, C. BROWN, Ponsbourne Park Gardens, Hereford.

WANTED, COWMAN for Small Herd of pedigree Jersey Cows, for private gentleman's place in Surrey, to fill up spare time in garden; good wages and cottage, &c., provided. Apply, with full particulars, to G., Box 15, 41, Wellington Street, Covent Garden, W.C.

WANTED, Cowman, 2 cows, little poultry, assist in Garden, intelligible; single.—MRS. TYNDALE, Meadowcroft, Chislehurst.

TRADE.

WANTED, FOREMAN for Market Nursery, Tottenham, Croydon, and Chrysanthemums, &c.; £2,000. Glass; single man preferred.—Apply, stating wages asked, SMITH, Bopkas Nursery, Tamworth.

WANTED, Experienced Man, intelligible for service, as FOREMAN of Alpine and Herbarium Department, will particulars as to references, wages, &c., to KING'S ACRE NURSERIES, LTD., Hereford.

WANTED, a WORKING FOREMAN, used to Cucumber, Tomato, &c., Chrysanthemums, and general run of Market Plants; one able to take charge in principal's absence.—Please state wages to be quoted, with copies of references, to R., Box 27, 41, Wellington Street, Covent Garden, W.C.

WANTED, a good PROPAGATOR and GROWER; one used to Roses, Clematis, Chrysanthemums, and General Nursery Stock.—Apply, with particulars, wages, etc., to THE DEVON ROSEY AND FRUIT FARM, LTD., Torquay.

WANTED, a PROPAGATOR and GROWER, used to General Nursery Stock. Please state wages required, with copy of testimonials, to J. M. LEATHER, Eastfields, Mitcham, Surrey.

WANTED, MEN experienced in Growing Tomatoes, Chrysanthemums, and Vegetables, ineligible for service. State full particulars as to references, wages, &c. to JOHNSON, TYLER & CO., Market Gardeners, Park Royal, Twyford Abbey, near Willesden, N.W.

WANTED, for large Midland Nursery, an experienced Budder and Grafter, with a good knowledge of Rhododendrons, Roses and Fruit Trees; also two experienced KNIFEMEN. Apply by letter, stating age, references, and wages required, to, Box 21, 41, Wellington Street, Covent Garden, W.C.

WANTED, Two Good KNIFEMEN, experienced in Budding, Grafting and Training of Fruit Trees, suitable for planting service. Also Two Experienced MEN for Rose Department. Apply with particulars, as to wages, &c., to KING'S WIRE NURSERY LTD., Hereford.

WANTED, Two or Three MEN (including also as JOBBING GARDENERS) HIBBEN Nurseryman, Littlehampton.

WANTED, Strong YOUTHS, or experienced MAN, for General Nursery and Garden work; good wages and opportunity. KEELING & SONS, Westgate Hill, Bradford.

WANTED, ASSISTANT SHOPMAN for the Wholesale Trade. Apply CUTTING & SONS LTD., 106, Southwark Street, S.E.

WANTED, experienced PACKER for Orchard Nursery, in the neighbourhood of London. Write "ORCHID" Box 17, 41, Wellington Street, Covent Garden, W.C.

FLORIST wanted for Ireland (male preferred), must be a thorough artist in making up choice floral designs, bouquets, &c.; good salary. Write "Alpha," Box 12, 41, Wellington Street, Covent Garden, W.C.

WANTED, LADY FLORIST; competent. Age, experience, &c., to THOMAS PERKINS & SONS, 31, Drapery, Southampton.

FLORIST and FRUIT Young Lady, who will do all the work, must be capable of making up; good wages. R. COX, Ashford, Kent, Begent.

WANTED, experienced ASSISTANT for Florist, with liberal remuneration. GREENFLORIST, Brighton.

WANTED, LEDGER and INVOICE CLERK, to do all the work of opening for a really small nursery. Age, experience, and salary required, and copies of references to JOHN BLEED & SON, The Nurseries, West Norwood, S.E.

SITUATIONS WANTED.

Twenty-six words for 16, and 6d for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Names and addresses alone are insufficient.

Gardeners writing to Advertisers of Vacancies, Situations are recommended to send their copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Intend, at Post offices, as all Letters in address are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

G. ABBEY Aston Rowant, Wallingford, Oxon, is open to re-employment for similar position or management of estate, combined or separate.

ESTATE STEWARD of GARDENER. BARNETT, in good establishment, 15 years' excellent references; life experience in all branches of farming, gardening, and estate management, married, over military age, disengaged.—H. WOODGATE, Ivy Villa, Dunton Green, Sevenoaks.

GARDENER (HEAD).—LADY VICTORIA DUNN very highly recommends W. ELSWORTH as above, 7 years here, 6 Under; leaving through estate being sold, age 48, no family. North preferred.—W. ELSWORTH, Gardens, Benningbrough Hall, York.

MRS. L. SALOMONS Recommends her HEAD GARDENER, 20 years Norbury Park, life experience all branches; good manager.—Apply, G. KENT, 15, Pixham Lane, Dorking.

GARDENER (HEAD). F. R. H.S., Gold and Silver Medalist, 10 years' last place, knowledge of estate work, life experience in large establishments, active, good manager, highest references for character and address; age 45.—A. B. Box 41, Wellington Street, Covent Garden, W.C.

GARDENER (HEAD) requires Situation where 4 or 5 are kept, 24 years' practical experience in all branches of the profession, married (no children), intelligible.—ROGERS, Church Cottage, Durley, Bishop's Cleeve, Hants.

G. H. Y. SHOEBRIDGE seeks Situation as HEAD GARDENER, in good establishment, life experience all branches, 14 years' Head (5 present), intelligible, disengaged, March 4, Park View, Sunbury, Essex, Braden, L.O.M.

GENTLEMAN recommends his GARDENER (HEAD WORKING), practical life experience in private gardens, reliable and trustworthy, married, age 41, intelligible, near London preferred. BARKETT, Highgate Heath, near Harlow.

GENTLEMAN recommends his HEAD WORKING GARDENER, where several are kept, has been with him 10 years, thoroughly experienced in all branches, disengaged; age 45, married (1 boy). BALDWIN, 500, Edgware Road, London.

GARDENER (HEAD WORKING), practical experience in all branches, very high room mensel, J. BROWN, The Gardens, Tebbeyd, Baldi, Herefordshire.

GARDENER (HEAD WORKING). 23 years' experience, Inside and Out, 12 years present situation, good references, age 44, married, no family. DOMAN, 55 Agamemnon Road, W. Hampstead, N.W. No circulars.

GARDENER (HEAD WORKING); well used to supplying large quantities of high-class Fruit, Vines, Flowers, Potatoes, Stakes, and Vegetables from limited stock, seeks re-employment in good private or public institution, 30 years in present situation, disengaged, shepherds, A. SHAKELTON, Forde Abbey, Chard, Som.

GARDENER (HEAD WORKING), where 2 are kept, life experience in Vines, Peaches, Melons, Straw, and Greenhouse plants, Kitchen and Pleasure Gardens, 10 years' present situation, age 41, married (1 child). A. HAYS, The Gardens, Highfield Lodge, Kent.

GARDENER (HEAD WORKING) requires permanent position, life experience, thoroughly practical, and capable of doing all the work, also Carnations, married, age 38. GARDNER, 60 Mt. Sanders, Gillingham, High Street, Tring.

GARDENER (HEAD WORKING), where several are kept, life experience in all branches, age 44, married, present situation 42 years, can be engaged, recommended. KING, 3, Portland Terrace, Harley Street, Bath.

GARDENER (HEAD WORKING); 2 or 3 kept, one experience, 16 years in last place, age 40, married (no family), please state wages, disengaged. BRUCE, Gardener, Ely, Cambs.

GARDENER (HEAD WORKING) requires permanent situation where more are kept, life experience in all branches, excellent references, good manager, age 49. GARDNER, 24, Heath Street, Hampstead, N.W.

GARDENER (HEAD WORKING), where 2 or 3 are kept, 12 years' experience in all branches, age 42, disengaged, age 30. HANEY, 2, Maiden Lane, Cannon Road, Harley.

GARDENER (HEAD WORKING), thoroughly experienced, practical, and up-to-date in all branches, including Orchids, 17 years' Head at Highfield, disengaged, married, age 45. H. F. WARREN, Highfield Lodge, Gainsborough.

GARDENER (HEAD WORKING) 6 or more are kept in normal times, life experience in all branches, age 47; married, no family, excellent references from present and previous employers. BEALE, New Cottage, Blawhorn, Newport, Mon.

GARDENER (HEAD WORKING) in suburbs, life experience, inside and out, married (1 child), age 46, would not object to supernumerary stock; good references.—S. HIGGS, Mr. Donald Road, Lighthaw, Bagshot.

GARDENER (HEAD WORKING); life experience, Inside and Out; over 7 years Head of 7 previous situations, experienced in management of large estate, married, age 50, intelligible. W.M. WARREN, 48, Hamworth Road, Hounslow, Middlesex.

GARDENER (HEAD WORKING), where several are kept, life experience in all branches, age 35, married (no family), 15 years in last place as Head, Kent, Surrey, or Sussex preferred; disengaged, please state wages.—W. BARNES, 74, Grove Road, Wandsworth.

GARDENER (HEAD WORKING) seeks re-employment with Lady or gentleman, in good establishment, life experience in all branches, age 48; wages 55s., house and firing. J. SHIRMITZOS, 358, Norton Way, Letchworth, Herts.

GARDENER (HEAD WORKING); life experience all branches; thoroughly understands stock, can milk if required, excellent references; age 46; son, 17, available.—WILLIAMS, 50, London Road, Ipswich.

GARDENER ELECTRICIAN (HEAD WORKING), seeks situation, life experience in all branches of gardening, take charge, and do running repairs to electric installation, age 45; abstemious, married, one in family, highest possible references.—Wage, &c., to M. J., Box 26, 41, Wellington Street, Covent Garden, W.C.

GARDENER (SINGLE HANDED or SECOND); experienced, Inside and Out, good references; intelligible, age 32, married, no family. Please state wages. KILLICK, The Lodge, Holmfeld, Womersley, Guildford, Surrey.

GENTLEMAN wishes to recommend GARDENER and STEWARD, of proved ability; well up in all his work, married, three children; age 45; good organizer of labour; excellent reasons for leaving.—RICHARDSON, Poplars Green, Hertford.

GARDENER seeks Situation as good plain GARDENER, as Caretaker, or any place of trust, 15 years in present place; married, intelligible.—Apply, G. E. WOOD, Daylesford, Clipping Norton, Oxon.

FOREMAN, INSIDE or GENERAL; life experience gained in good establishments in Fruit Plants, Carnations, and house decoration, excellent references, married; age 27; intelligible.—A. CRIPPS, Moleton Gardens, Bedford, N. Devon.

FOREMAN (age 27) requires Situation; good experience, disengaged. E. WYNNE, 3, Newbury Street, Kintbury, Berks.

YOUNG MAN seeks Situation as JOUWNEYMAN (inside); good experience up to outbreak of war, now discharged from Army, age 24.—S. WRIGHT, Clapham Lodge, Otford, Redhill.

TWO LADY GARDENERS, excellent experience (two and three years) both Inside and Out, require Situation at once, where only two are kept, under good Head; furnished cottage in Betty E. A., Box 3, 41, Wellington Street, Covent Garden, W.C.

TWO YOUNG WOMEN, no experience, want work together in Gardens; Herefordshire preferred. Apply, stating wages, to MANSBY, The Grove, Market Drayton, Shropshire.

TRADE.

MANAGER or SHOPMAN.—Advertiser requires situation, over 25 years' experience in all branches of Seed and Nursery Trade and Floral work, over military age. "OMEGA," Box 2, 41, Wellington Street, Covent Garden, W.C.

NURSERY FOREMAN or GROWER; a generalist, life experience in all branches, over military age, slate wages, Write, R. E., Box 24, 41, Wellington Street, Covent Garden, W.C.

FOREMAN; over 30 years' experience Wholesale and Retail Market Nurseries; well up in Chrysanthemums, Tomatoes, Cucumbers, Pot Plants, Cut Blooms, Potting, over military age; singles 5 years present place. B. WOODS, Hopwas Nurseries, Tamworth, Staff.

PROPAGATOR of Hard and Softwooded Nursery Stock, 18 years' Foreman in leading Nursery abroad; open for engagement. "EUCHA," Box 22, 41, Wellington Street, Covent Garden, W.C.

MAN (42) seeks permanent Situation; experienced Vines, Tomatoes, Chrysanthemums; total abstainer. Kindly state wages.—WINGHAM, 54, Frith Road, Leytonstone, Essex.

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Alpine Flora:** for Tourists and Amateur Botanists. By Dr. Julius Hoffmann. Translated by E. S. Barton (Mrs. A. Gepp). 7s. 11d.
- Alpine Flowers for Gardens.** By W. Robinson. Revised Edition. With Illustrations. 11s.
- Alpine Plants, Dictionary of** (see "The English Rock Garden"). By Reginald Farrer.
- Alpine Plants of Europe.** By H. Stuart Thompson. With Cultural Notes. 64 Coloured Plates. 7s. 10d.
- Alpine Plants, Sub.** By H. Stuart Thompson. Including Coloured Plates by G. Flemwell. Price 8s.
- Asparagus, The Book of.** By Chas. Hott. With sections on Celery, Salsify, Scorzonera, and Seakale. Illustrated. 2s. 10d.
- Bacteriology, Agricultural.** By J. Percival, M.A. 7s. 11d.
- Banana, The: Its Cultivation, Distribution, and Commercial Uses.** By W. Fawcett. With Preface by Sir Daniel Morris. 7s. 11d.
- Bee-Keeping, Book of.** A Practical Manual on the Proper Management of Bees, especially written for Beginners. By W. B. Webster. Illustrated. 1s. 3d.
- Bees, for Pleasure and Profit.** By G. Gordon Samsou. With chapter on "Bee-keeping in Hot Climates." Illustrated. 2s. 2d.
- Botanic Terms, Glossary of.** By B. D. Jackson. 7s. 11d.
- Botanic Names, Dictionary of, and their English Equivalents.** By G. F. Zimmer. 2s. 9d.
- Botanist, the Young.** By W. Percival Weston and C. S. Cooper. Excellent for young people commencing to botanise. 3s. 10d.
- Botany, Agricultural.** By J. Percival, M.A. 7s. 11d.
- Botany, A Practical Introduction to the Study of (Flowering Plants).** By J. Brethland Farmer, F.R.S. 121 Illustrations. 2s. 10d.
- Botany, A Primer of.** By Sir J. D. Hooker, F.R.S. 1s. 2d.
- Botany, A Text-book of.** By Dr. E. Strasburger. Translated by H. C. Porter, Ph.D. Revised. Fifth Edition. 779 Illustrations. 18s. 6d.
- Botany, A Year's.** Adapted to Home and School Use. By Francis A. Kitchener. With 195 Illustrations. 5s. 4d.
- Botany, Elementary.** By Dr. E. Drabble. 2s. 10d.
- Botany, First Course of Practical.** By G. F. Scott Elliott. Illustrated. 5s. 10d.
- Botany, Lectures on Plant Physiology.** By Dr. Ludwig Jost. Translated by J. Harvey Gibson. Morocco back, gilt top. 24s. 6d.; cloth, 21s. 6d.
- Botany, Practical Plant Physiology.** By Frederick Keeble, Sc.D., F.R.S. Recommended for use in colleges and schools. 5s. 10d.
- Botany, Structural.** By D. H. Scott, M.A. 2 Vols.
- PART I.—FLOWERING PLANTS.** 3s. 11d.
- PART II.—FLOWERLESS PLANTS.** 3s. 11d.
- An excellent introduction to the Anatomy and Life Histories of Plants.
- British Plants, List of.** By G. C. Druce, M.A. A detailed list of Species and Varieties. 2s. 9d.
- British Plants, The Uses of.** By Prof. Henslow. 4s. 9d.
- Cambridge Manuals of Science.** Cloth Edition, 1s. 6d., post free.
- Bees and Wasps.** By O. H. Latter, M.A.
- Earthworms and their Allies.** By F. E. Bedford, F.R.S.
- Insects, The Life Story of.** By Prof. G. H. Carpenter.
- Plant Animals: A Study in Symbiosis.** By Frederick Keeble, Sc.D., F.R.S.
- Plant Life on Land.** By Prof. F. O. Bower, F.R.S., Sc.D.
- Soil, The Fertility of the.** By E. J. Russell, D.Sc.
- The Atmosphere.** By A. J. Berry, M.A.
- The Earth.** By Prof. J. H. Poynting, F.R.S.
- The Story of a Loaf of Bread.** By Prof. T. B. Wood, M.A.
- Carnations, Picotees and Pinks.** By John Fraser. Fully Illustrated. 8d.
- Coco-nut, The.** By Edwin Bingham Copeland. 10s. 6d.
- Cottage Gardening; or, Flowers, Fruits, and Vegetables for Small Gardens.** By E. Hobday. 1s. 9d.
- Cucumber Culture for Profit.** By W. Dyke. A Practical Guide to the Cultivation in Frames and in the Open. 1s. 2d.
- Cyclopaedia of Botanical Drugs.** Potter's. By R. C. Wren, with additions by E. M. Holmes. Containing the Names and Properties of all the Herbs employed medicinally in this country. 3s. 10d.
- Cyclopaedia of Horticulture The Standard.** By L. H. Bailey. In 6 vols. Fully Illustrated in Colour and Half-tone. A valuable book of reference. Each part, 26s.
- Date growing in the Old World and the New.** By Paul P. Popenoe. Illustrated. 9s. 6d.
- Dictionary of Hardy Flowering Plants** (see "The English Rock Garden," by R. Farrer)
- Diseases and Garden Pests, Book of Plant.** By R. Hooper Pearson. 214 pages. Over 65 Illustrations. Cloth, 2s. 11d.
- Diseases of Cultivated Plants and Trees.** By George Massee. 7s. 11d.
- English Rock Garden.** By Reginald Farrer, author of "My Rock Garden," "Among the Hills," etc. This work contains up-to-date monographs of the Plants suitable for cultivation in the Rock Garden. The text consists of 500,000 Words. 300 Plants are Illustrated in Half-Tone Plates. In 2 Vols. Price £2 2s. 10d. (in the Press).
- Flora, British, Handbook of the.** By Geo. Bentham. Revised by Sir Joseph Hooker. Seventh Edition. 9s. 5d.
- Flora, British, Illustrations of the.** By W. H. Fitch and W. G. Smith. 1,315 Wood Engravings. Revised and enlarged. 9s. 5d.
- Florist's Bibliography, The.** By C. Harman Payne. Second Edition, with Supplement and Index. Cloth, 5s. 4d.
- Flowers and Flower Culture.** By H. W. Ward. 8d.
- Flowers, The Book of Hardy.** By E. H. Jenkins. A Practical Guide to the Cultivation of Hardy Flowers. Illustrated. Cloth, 2s. 11d.
- Flowers, The Book of Old-Fashioned.** By Harry Roberts. 2s. 10d.
- Flowering Plants, Classification of.** By Alfred B. Rendle, M.A., D.Sc. Vol. 1. Gymnosperms and Monocotyledons. 400 pages. Illustrated. 10s. 10d.
- Forestry, English Estate.** By A. C. Forbes. Copiously Illustrated. 323 pages. 12s. 11d.
- Forestry, The Development of British.** By A. C. Forbes. Illustrated. 11s.
- Forestry, The Practice of.** By Percival T. Maw. A voluminous and practical manual. It deals also with the financial aspect of Forestry. 17s. 6d.
- Forestry, Webster's Practical.** Fourth and Enlarged Edition. Illustrated. 5s. 4d.
- French Market Gardening.** By John Weathers. With practical details of "Intensive Cultivation" for English Growers. Preface by W. Robinson. 3s. 11d.
- Fruit Growing, Profitable: for Cottagers and Small Holders of Land.** By John Wright, V.M.H. A Gold Medal Essay, written for the Worshipful Company of Fruiteers. Illustrated. 1s. 3d.
- Fruit, Hardy, Culture for Amateurs.** By S. T. Wright, with notes by W. D. Drury on Fungi affecting Fruit Trees. Illustrated. 1s. 3d.
- Fruit Raising in British Columbia.** By J. T. Bealy. Illustrated. 3s. 11d.
- Fruit Trees and their Enemies.** With Spraying Calendar. By Spencer Pickering, F.R.S., and Fred W. Theobald. Cloth. 1s. 9d.
- Fruit Trees in Pots.** By Josh Brace, twenty-two years Foreman for Thos. Rivers and Son. Illustrated. 5s. 4d.
- Fruit and Vegetables, Packing and Selling: for Cottagers and Small Holders of Land.** By R. Lewis Castle. A Gold Medal Essay, written for the Worshipful Company of Fruiteers. Illustrated. 1s. 3d.
- Fungoid Pests of Cultivated Plants.** By Dr. M. C. Cooke. Many Coloured Plates. 5s. 6d.
- Garden Craft in Europe.** By H. Inigo Triggs. £1 15s. 6d.
- Garden Pests and Plant Diseases, Book of.** By R. Hooper Pearson. 214 pages. Illustrated. 2s. 11d.
- Garden Flowers for Town and Country Gardens.** By John Weathers. Coloured Plates. 5s. 4d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No. 3975

No. 1575. Vol. LXI. {THIRD SERIES} SATURDAY, MARCH 3, 1917. {Registered as a Newspaper. PRICE 3d. POST-FREE, 3d.

SUBSCRIPTION—Inland, 15/-; Foreign, 17/6 (22/6r. 10/-) [\$4 26/-] per annum. Entered at New York Post Office as second-class matter. Postal Address—41, Wellington Street, Covent Garden, W.C. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543

For CONTENTS see page 93.

For Advertisement Charges see page vi.

YOUR GARDEN NEEDS FOOD
To obtain the Finest Vegetables and Flowers, use
WEBB'S GARDEN FERTILISERS
PERFECT PLANT FOODS. Used by the
Leading Growers and Exhibitors. Manufactured at Webb's Manure Works, Maitland, Chester, 6 acres in extent.
POTATO MANURE, 10s. 6d. per 2 cwt., 20s. 6d. per 4 cwt.
TOMATO MANURE, 12s. 6d. per 2 cwt., 25s. 6d. per 4 cwt.
GENERAL MANURE, 10s. 6d. per 2 cwt., 20s. 6d. per 4 cwt.
VINE MANURE, 12s. 6d. per 2 cwt., 25s. 6d. per 4 cwt.
LAWNS MANURE, 12s. 6d. per 2 cwt., 25s. 6d. per 4 cwt.
Rose, Carnation, Crysanthemum, and Sweet Pea Manures, Carriage Paid.
For particulars, see Webb's Garden Catalogue post free on request.

WEBB & SONS, LTD., The King's Seedsman, STOURBRIDGE.
THE GRAND NEW CHINESE PRIMULA HELODORA, A.M. R.H.S. 1916. Other new Chinese Primulas, Anemones, Berberis, New Chinese Species, Lilies, Gladioli, Begonias are a few of the items offered and described in our **SPRING CATALOGUE**, post free on application.
R. WALLACE & CO., LTD. Kinkfield Gardens, Colchester, Essex

GREENHOUSE PAINTING & GLAZING. "Vitrolite" superior to White Lead Paint. "Plastine" superior red putty. Full particulars from W. CARSON & SONS, Grove Works, Battersea. Agents throughout the country.

JAMES GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W. Wire, 201. Western London. Telephone, 201 Western.

BATH'S CARNATIONS, PANSIES, DAHLIAS, CHRYSANTHEMS, and other flowers. New Illustrated Catalogue of the best and standard varieties is ready, and will be sent post free on application. Dept. A. R. H. BATH, LTD., The Floral Farms, Walsley.

BATH'S SELECT SEEDS. New Illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application. Dept. A. R. H. BATH, LTD., The Floral Farms, Walsley.

WM. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham Conservatories, Winter Gardens, Vineries, Peach-houses, Portable Buildings, &c. Catalogues gratis.

DOBIE & CO., ROYAL SEEDSMEN, EDINBURGH, will send a copy of their 1917 Catalogue, and Guide to Gardening 100 pages, nearly 150 illustrations, free, if this paper is mentioned.

OMMISSIONS and Failures made good by purchasing Storrie's Seedlings, just ready for picking out or putting on at correct dates for best possible results; all popular Greenhouse plants, Summer Bedding and Hardy Border Flowers, &c. (Grand list of Cyclamen now ready). Write for catalogue. **STORRIE & STORRIE, Flower Seeds' Specialists, Glencairn, Perthshire.**

WATERER'S ROSES & FRUIT TREES. Grand stocks of the best varieties. Lists free.—**JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Twyford, Berks.**

TO replace Spring Cabbages and Lettuces destroyed by the exceptional severe weather destroyed by the exceptional severe weather.
SUTTON'S EARLIEST CABBAGE.
SUTTON'S COMMODORE SITT LETTUCE.
A superb early variety, per packet 1s. 6d. These will then be fit for use almost as soon as they planted in the autumn.

SUTTON & SONS, The King's Seedsmen, READING.
NOW IS THE TIME TO PLANT KELWAY'S Gladiolus Bulbs (all British). If you wish to have a gorgeous display of flowers in the autumn when blooms are scarce, Kelway's, the champion growers of Gladioli, are offering a really superior and reliable variety in all colours at a greatly reduced price during the sale. Write at once for their illustrated catalogue, and make a selection that will enable you to send flowers to the Wounded Soldiers in Hospitals and Nursing Homes, from July till the frosts come. Gladioli are invaluable for cutting, as every bud opens in water. They last for a fortnight, and are so bright and cheerful that they are particularly well suited to hospitals. For decoration of all kinds the Gladioli are the best in the present market. Carriage paid and postage free for postpaid orders.
KELWAY & SON, Royal Plant Department, Liphook, Somerset.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also Dickson's Improved Manure for Spices. For full particulars see on application to **DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.**

BARR'S VEGETABLE and FLOWER SEEDS of finest selected strains and tested growth in strictly hygienic process. Descriptive Catalogue free.

BARR'S Beautiful LILIES, GLADIOLI, Camellias, Mandarinas, Tigridias, Anemons, Ranunculus, &c., for spring planting. Catalogue free. **BARR & SONS, King Street, Covent Garden, London.**

GISHURST COMPOUND—Insecticide at 1/4 per gallon. Over 50 years' reputation; highly commended. R.H.S. Sentimentally called "Frag" at Wisley, 1914-15. Sold by Dealers in Garden Sundries. Wholesale: **PILES PATENT CANDLE CO., LTD. Battersea, London, S.W.**

BENYARD'S ASPARAGUS. Orders are now being looked for these plants for delivery in March. Write for full directions and prices on application. **GEO. BENYARD & CO., LTD., Royal Nurseries, Maidstone.**

PEACH LEAF BLISTER. Benyard's Mixture has been proved by hundreds of practical gardeners a certain cure for this trouble, to be applied in March and April; 2s. per quart, 5s. 6d. per gallon, in casks. **GEO. BENYARD & CO., LTD., Royal Nurseries, Maidstone.**

FERNS' FERNS!—Free Ferns, Climbers, and Ferns. Rarest Ferns, Stages and Greenhouse Ferns, Hardy Border Ferns, catalogues free. **J. E. SMITH, London Fern Nursery, Longbridge Juniper, London, S.W.**

SEVERAL Sashes, suitable for Greenhouses, for sale. **WHITBY, 29, Eagle Street, Holborn, W.C.**

WATERER'S GOLD MEDAL RHODODENDRONS. We cordially invite you to come and select any plants you require. We have over 60 varieties comprising the finest collection in cultivation. Catalogue free.—**JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Bagshot, Surrey.**

A GRAND STOCK of these Brilliant Flowering in all shades, now ready for delivery.—For Lists, with full particulars, apply **GLINN & SONS, 6, Old, Warwickshire.**

FIDLER'S NEW ILLUSTRATED CATALOGUE OF CHOICE GARDEN SEEDS will be sent post free, to any address on receipt of postcard. Write at once for a copy. It may help you to save 50 per cent. on your seed bill this season.—**FIDLER & SONS, Royal Berkshire Seed Stores, Reading.**

BLACKMORE & LANGDON, Bath, will have pleasure in sending a copy of their 1917 Catalogue of Begonias and Delphiniums, &c., &c., free, if this paper is mentioned. Magnificent strong roots of our unequalled Delphiniums, in superb variety.

SANDER AND SONS, Orchard Growers, St. Albans.

PEED'S SEEDS. PEED'S SEEDS FOR RICH CROPS. The Last ounce is required from Kitchen Garden this year. Write for our 1917 Seed List. We can give you the bumper crop you look for.

JOHN PEED & SON, The King's Seedsmen and Nursermen, WEST SORWOOD.

MACKENZIE and MONCUR, Limited, Horticulture Builders, and Heating Engineers, London, Edinburgh and Glasgow. By special appointment to H.M. the King. London Office, 8, Camden Road, N.W.

LAXTON'S SEEDS AND FRUIT TREES. New Catalogues of the above now issued gratis. Grand New Early Pea, Laxton's Superb, &c., Fruit Trees. A line stock to offer; may still be safely planted. Pamphlet on Cultivation on receipt of stamped envelope. **LAXTON BROTHERS, Nursermen, Bedford.**

COWAN'S NEW ORCHID MATERIAL. The best and most the cheapest. Full particulars on application to **JOHN COWAN & CO., Galsburn Nurseries, Galsburn, Liverpool.**

ORCHID PEAT, 6s. and 7s. 6d. per sack: Brown Peat, 10s. 6d. per yard in trucks; in bags 2s. 6d. each, 50s. dozen, Oak and Birch Leaf Mould, Yellow Loam, Slacked and Fresh Cut Silver Sand; 4-ton lots for 45s. C.N. Fibre, 24s. dozen bags; 14d. free. **J. HANDSCOMBE, F.R.H.S., Fellingham, Middlesbrough.**

SPORTSMEN, Farmers, Horsemen. Try our splendid Yorkshire Whipped Tweed; wears like leather; shrewproof; 7 yards for 17s. 6d. Patterns free. **BRADFORD WOOLLEN CO. (71), Bradford.**

BOXES—Large quantity of One and All Seed Trays, size 23in. by 11 1/2 by 8 1/2, FOR SALE. Apply: **SAXFO & CO., 4, Stoucteur Street, E.C.**

HIGHLY IMPORTANT SALE OF ORCHIDS.

MESSRS. PROTHEROE & MORRIS beg to announce that they are favoured with instructions to dispose of the

Collection of valuable Orchids

formed by the late WILLIAM THOMPSON, Esq., of

WALTON GRANGE, STONE, STAFFS.

The entire Collection will be submitted to auction upon the premises on

Tuesday, April 24th, 1917, and two following days.

The following is a condensed list of some of the more valuable plants:—

<p>Odontoglossum hybrid Hereules.</p> <p>“ “ Atheltum.</p> <p>“ “ Helius.</p> <p>“ “ Mirandus.</p> <p>“ “ A. E. Thompson.</p> <p>“ “ Red Monarch.</p> <p>“ “ John Robson.</p> <p>“ “ William Thompson.</p> <p>“ “ Papilium.</p> <p>“ crispum Palatine.</p> <p>“ “ Alabaster.</p> <p>“ “ Virginal Madona.</p> <p>“ “ Queen Empress.</p> <p>“ “ Solum.</p> <p>“ eximium Xanthotes.</p> <p>“ “ Rubrium.</p> <p>“ “ Excelesior.</p> <p>“ amabile Royal Monarch.</p> <p>“ “ Walton Gem.</p> <p>Cattleya Gaskelliana alba.</p> <p>“ “ Trianae Queen of the Earth.</p> <p>“ “ Fabia Rex.</p> <p>“ “ Iris Walton Grange variety.</p> <p>“ “ Lady Veitch.</p>	<p>Odontioda Charlesworthii.</p> <p>“ “ Walton Grange Variety.</p> <p>“ “ Irene.</p> <p>“ “ Red Wing.</p> <p>“ “ Thompsonia.</p> <p>“ “ William Thompson.</p> <p>Cypripedium Desdemona.</p> <p>“ “ Mirum.</p> <p>“ “ Waltonensis magnificum.</p> <p>“ “ Mrs. Carey Batten.</p> <p>“ “ aureum Goliath.</p> <p>“ “ Aleibiades Illustrious.</p> <p>“ “ Carola.</p> <p>“ “ Shogun.</p> <p>“ “ Thunderer.</p> <p>“ “ Royal George.</p> <p>Laelia-Cattleya Numidea variety</p> <p>“ “ Queen Marie of Roumania.</p> <p>“ “ Britannia variety Melanie.</p> <p>Miltonia Charlesworthii superba.</p> <p>“ “ variety papilio.</p> <p>“ “ William Thompson.</p> <p>Zygopetalum Sir Trevor variety Brewii, and many others.</p>
---	---

Catalogues (when ready) may be obtained from the Auctioneers, 67 and 68, Cheapside, London, E.C.

SALES BY AUCTION.

WEDNESDAY NEXT, at 12 o'clock.

A Choice collection of Herbaceous and Rock Plants, Rhododendrons, Roses, Fruit Trees, Lily-of-the-Valley, Carnations, Lilies, and Gladiolus in variety, and other Bulbs.

and at 3 o'clock,

JAPANESE LILIES.

In cases, and other Bulbs, for the trade.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. On view mornings of sale and catalogues had.

ROSES.

THURSDAY NEXT.

MESSRS. PROTHEROE & MORRIS will sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on Thursday, March 8th, and every succeeding Thursday at 1 o'clock, consignments of well-grown ROSES, especially suited to suit all buyers.

On view morning of sale and catalogues had.

SALES BY AUCTION.

SALE OF TOPIARY WORK

JAPANESE DWARF TREES and Miniature Gardens, **ANTIQUE AND MODERN GARDEN ORNAMENTS.** Garden Furniture, comprising Seats, Tables, Tubs, &c.

MESSRS. PROTHEROE & MORRIS will SELL the above at their Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

On Friday, March 16th, at 1 o'clock.

On view two days prior and morning of sale. Catalogues on application to the Auctioneers.

BUSINESSES TO LET.

BARNES, SURREY.

TO LET, NURSERY; 8 Greenhouses, 100 feet long, heated, and one acre of land; reasonable offer accepted.—Apply **MESSRS. RICHARDS & CO.**, 62, Church Road, Barnes, Surrey.

NURSERY TO LET; commanding position; five minutes from rail and trams; 350ft. Glass; 1½ acres land, house, &c.—MILES, Royal Hotel, Sheerness.

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORISTS' AND SEED BUSINESSES to be Let or Sold, Published by

MESSRS. PROTHEROE & MORRIS every month. Copies may be obtained post free on application.—Estate Offices, 67 and 68, Cheapside, London, E.C.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

SECONDHAND Motor Lawn Mower wanted, 2½ inches; must be in first-class condition. State make, price, and how long in use.—COPEMAN, Chynden, Shenfield, Essex

PLANTS, &c., FOR SALE.

100,000 LARGE GARDEN FERNS,
 20s. 100. Palms, Begonias, Crotons,
 Dracaenas, Roses, Ericas, Gloxinias, Lilies, Hydrangeas,
 &c.; catalogues free.—J. E. SMITH, London Fern Nur-
 series, Loughborough Junction, London, S.W.

“ROCK GARDEN PLANTS. Where and
 In What Soils to Plant Them,” with Catalogue,
 free on application. Special selections, 12, 3s. 6d.;
 25, 6s. 6d.; 50, 12s. 6d.; 100, 25s. All different, named,
 strong stock; please state position and soil.—G. R.
 PHIPPS, Alpine Nursery, Barnham, Bognor.

A MARYLLIS (Hybrids of Vittata)—
 MORLE & CO. offer magnificent named sorts
 from Mr. W. Bull's celebrated Gold Medal prize col-
 lection, also Flowering Bulbs, crossed with named
 sorts, at half usual prices. List free. 150-156, Finchley
 Road, N.W.

JAPANESE LILiums, just landed in
 splendid condition; large, firm Bulbs, Longi-
 florum giganteum, 3s. 6d., 6s. and 9s.; Speciosum Mel-
 potense and magnificum, and Album Keitziar (the
 best), 5s., 8s. and 10s.; Auratum, 6s. and 10s.; Henryi,
 4s. and 6s.; all per dozen; also others. List free.—
 MORLE & CO., as above.

SEED POTATOS, Lincolnshire or Scotch,
 Myatt's Ash Leaf, Hebrons, Early Rose, Express,
 Royal Kidney, Up-to-Date, Sir J. Llewellyn, Arran Chief,
 King Edward, and others, per bush, or cwt.—MORLE &
 CO., as above. Our Seed and Plant List sent on applica-
 tion.

GERANIUMS, very strong, autumn
 struck, Crampel, 12s. 100.—V. GEO. THOMSEN,
 London Road Nurseries, Croydon.

OFFERS WANTED.—100 Aspidistras, 50
 being variegated; 5 years old, averaging 20 leaves;
 suitable for stock only. Accept £12 to clear RAMS
 DEN, Brandy Carr, Wakefield.

GIANT Asparagus, strong, 2 years' roots,
 3s., 5 years 4s. 6d., 100
 Please order early.
 Blooming Bulbs, White Madonna,
 Lilies, dormant, fresh dug, 2s. 6d., 15s. 100
 Flowers pay well for market.
 JOHN FLOWER,
 Asparagus Grower,
 Morestead, Winchester

MARGUERITES.—Single, White and
 Yellow, 3s. 100; Mrs F. Sanders (double), 7s. 100.
 Calceolarias, Golden Gem and Dark Brown, 3s. 100.
 strong, well grown plants. Carriage paid on orders of
 10s. and upwards.—KEMLAND & FURNES, Freeland's
 Road Nurseries, Bromley, Kent.

PAUL CRAMPEL.—3,000 for Sale; one-
 year old stools, real good plants, ready for 4 inch
 pots.—What offers? B. W., Box 5, 41, Wellington Street,
 Covent Garden, W.C.

FRUIT TREES, true to name, my special-
 ists trained trees, in well-grown, extra-sized speci-
 mens, with fibrous roots; Carlot Peas, Grape Vines,
 Orange Trees, Fig Trees, in pots for fruiting Catalogues.
 WILL TAYLER, Hampton, Middlesex

**PERPETUAL FLOWERING CARNA-
 THIONS,** strong, healthy plants, now ready,
 amongst which are the following varieties: 4s. 6d. per
 doz out of sand, 5s. 6d. per doz. in pots: Enchantress,
 Snowstorm, May Day, Lady Northcliffe, Mikado, Rose
 Pink, Enchantress; 6s. per doz. out of sand, 7s. per
 doz. in pots—Enchantress Supreme, Salmon King, Gor-
 geous, White Enchantress, Champion, Triumph. Price
 List of Latest Novelties on application.—J. C. JENNER,
 Lynwood Nurseries, Rayleigh, Essex.



**BENTLEY'S
 WEED DESTROYERS :**

Liquid : Concentrated Strength 1 to 80.
 Double Strength 1 to 50.
 Patent Powder : 1 to 25.

BENTLEY'S DAISY KILLER

(LAWN SAND).

BENTLEY'S INSECTICIDES.

BENTLEY'S FUNGICIDES.

BENTLEY'S FUMIGANTS.

BENTLEY'S MANURES.

Catalogue on application.

JOSEPH BENTLEY, Ltd.,

Chemical Works,

Barrow-on-Humber, HULL.

RIVERS'

Fruit Trees, Roses,
 Vines, Figs, Oranges,
 AND
 Orchard House Trees.

**A LARGE AND SELECT STOCK
 ALWAYS ON VIEW.**

**ILLUSTRATED AND
 DESCRIPTIVE CATALOGUE
 POST FREE.**

THOMAS RIVERS & SON

Sawbridgeworth, Herts.

STATION : HARLOW, G. E. R.

THE ROCK GARDEN

A practical work on the cultivation and manage-
 ment of Rock Gardens, written by Reginald
 Farrer. One of the best and most popular works
 on the subject.

Contains 8 plates in colour. Price 1/10 post free.

THE PUBLISHER,
 The Gardeners' Chronicle, Ltd., 41, Wellington
 Street, Covent Garden, London, W.C.

NOW READY

THE

HORTICULTURAL

DIRECTORY

AND

YEAR BOOK

FOR 1917.

The first two thousand copies
 of this work are now being
 distributed. Owing to the
 paper shortage, an unlimited
 number of copies cannot be
 guaranteed, and purchasers are
 advised to order AT ONCE
 to avoid disappointment.

**Orders will be dealt with
 in strict rotation.**

The 1917 edition contains no
 name or address which has not
 been verified. The information
 given is therefore absolutely
 trustworthy.

Apply, enclosing 1/4 for each
 copy required, to :—

**GARDENERS' CHRONICLE,
 LTD.,**

41, WELLINGTON ST., COVENT GARDEN,
 LONDON, W.C.

Burpee's Seeds Grow

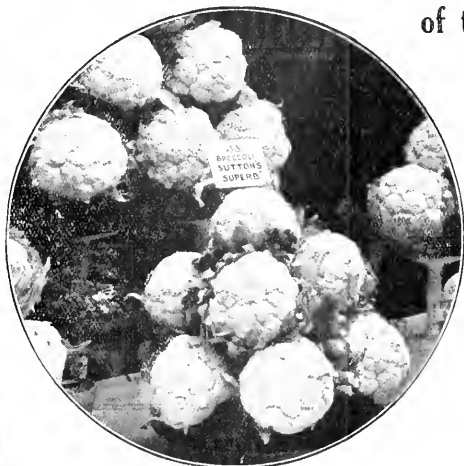
THE truth of this famous slogan is proved by thousands of
 pleased and permanent customers. The Burpee Idea of
 Quality First,—combined with efficient service has built the
 World's Greatest Mail-Order Seed Business. **Burpee's Annual,**
The Leading American Seed Catalog for 1917 is a
 bright new book of 204 pages, in colors, and a Safe Guide to
 Success in the garden. Mailed free. Write for it today.

W. ATLEE BURPEE & CO., Seed Growers,
 Burpee Buildings, Philadelphia, Pa., U. S. A.



SOW SUTTON'S SEEDS

therefore **SECURE YOUR SUPPLIES** at once



of the following popular & profitable vegetables :

PEAS	Sutton's Early Giant. A popular early variety.. ..	Per pint 1/9
	Sutton's Selected Duke of Albany. The Amateur's Pea par excellence	Per pint 1/9
DWARF BEAN	Sutton's Selected Canadian Wonder. A great favourite	Per pint 1/3
RUNNER BEAN	Sutton's A1. A very prolific bearer	Per pint 2/6
BEET	Sutton's Globe. Valuable for frame sowing	Per pkt. 1/-
BROCCOLI ..	Sutton's Superb Early White. Heads of purest white	Per pkt. 1/6
CABBAGE ..	Sutton's All Heart. The name is a literal description of the plant	Per pkt. 1/-
SAVOY	Sutton's Best of All. Early solid heads	Per oz. 1/-
CARROT.. ..	Sutton's Early Gem. Excellent type for borders	Per pkt. 1/-
	Sutton's New Red Intermediate. A type for general cultivation	Per pkt. 1/-
CAULIFLOWER	Sutton's Magnum Bonum. Solid pure white heads	Per pkt. 1/6
LEEK	Sutton's Improved Musselburgh. A very popular variety	Per pkt. 1/-
ONION	Sutton's Selected Ailsa Craig. The heaviest cropper	Per pkt. 1/6
PARSNIP ..	Sutton's Tender and True. Of white flesh and delicate flavour	Per oz. 10d.
TOMATO ..	Sutton's Princess of Wales. An early smooth fruited	Per pkt. 1/6

Sutton's

THE KING'S SEEDSMEN,
READING.

"BULL'S"
THE NATIONAL FERTILIZER
THAT MADE THE
CHELSEA NURSERIES FAMOUS
BULL'S PLANT FOOD Co. 536, KINGS RD CHELSEA.



More Root Room

on the same amount of staging. That is one advantage Cret Pots offer. Add the exceptional porosity, perfect drainage, uniformity, cleanliness, and "healthiness" of Crets and—you'll write now for

FREE SAMPLE "Cret" Pot, with interesting Booklet giving all prices per 100, and 5 Special Assortment Offers.

Two Specimen Prices—2½ ins., 4/- per 100; 1½ ins., 75/- Carriage Post on all orders over 20/-

PETER BAILEY & SONS, LTD.,
2, Heaton Mersey Pottery, near Manchester.

SEEDS FOR 1917.

It is none too early for garden lovers to think of seeds, but be sure the seeds you buy are seeds of quality. It is a gardening axiom that

RYDERS SEEDS

are the best, and despite the fact of a War Time price of 1½d. per packet, orders for these famous Flower and Vegetable Seeds are daily growing in volume. Seeds of quality cannot now be supplied, even by Ryders, in Penny Packets.

Ryders Illustrated Seed Catalogue Free.

Ryders 1917 Catalogue contains a large number of choice varieties not found in other lists.

Ryders offer in 1½d. packets such standard novelties as:—

- Tomato Bide's Recruit, 8 seeds for 1½d.
- "All the Year Round" Cauliflower.
- The New Chinese Celery-Cabbage "Pe Tsai."
- Lychnis Arkwrightii.
- Calceolaria Veitchii.
- New Double Cosmos, pink and white.
- Such Sweet Peas as Jean Ireland, President, Fiery Cross, The Lady Eveline, Yarrowa, and over 200 others.

Send a post-card to-day for your free copy of this Catalogue. Remember the one and only address and beware of imitators—no agents.

RYDER & SON, Ltd., Seed Specialists, ST. ALBANS.

Grow Your Own Food by Sowing Ryders Famous Vegetable Seeds.

STANDARD CURRANTS



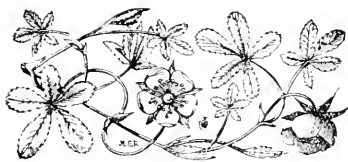
We can offer fine trees with 4½ ft. stems, stout enough to stand without stakes, at 5/- each.

Extra strong heads 7/6 each.



GEORGE BUNYARD & CO., LTD.,

Royal Nurseries, MAIDSTONE.



THE
Gardeners' Chronicle

No. 1675.—SATURDAY, MARCH 3, 1917.

CONTENTS.

Aldenham in winter .. 93	Ordinary, cont.—
American note .. 93	Robinson, Charles .. 163
Gardeners in America 109	Henry .. 163
Spruce, the American .. 93	Salomon, Etienne .. 103
.. .. 93	Orchid notes and gleanings .. 95
Australia, note from .. 93	Pruning in frosty weather .. 101
Phoenix canariensis .. 93	Potato and cereal crops .. 95
Books, notices of—	Potatoes, sifting .. 95
Field Notes on Sweet .. 95	Rock garden, the .. 94
Figs .. 100	Societies—
Business names, the re- .. 101	British Wholesale .. 103
gistration of .. 101	Florents .. 102
Clematis vedrariensis .. 94	Luncheon .. 102
Cypripedium glabra .. 95	Manchester and North .. 102
Farm, crops and stock .. 103	of England, Orchid .. 102
on the home .. 103	Norfolk and Norwich .. 102
Galathea Imperata At- .. 100	Horticultural .. 102
kinsis .. 100	North of England Hor- .. 102
Garrow, war-gardening .. 95	ticultural .. 102
at .. 95	Royal .. 98
Herbs, medicinal, cul- .. 95	Royal Horticultural .. 101
tural conditions for .. 95	United Hort. Benefit .. 103
Horticulture and the .. 95	and Prov. .. 103
food crisis .. 95	Societies, the local .. 103
Horticultural college, a .. 95	Strawberry, the White .. 101
new .. 95	Wood .. 101
Leeks, the value of .. 99	Undercropping in or- .. 100
New Zealand flora .. 99	chards .. 100
Obituary .. 103	War items .. 119
Bowden, John H. .. 103	Week's work, the .. 96, 97

ILLUSTRATIONS.

Clematis vedrariensis .. 94	.. .. 94
Cypripedium glabra, branch of .. 95	.. .. 95
Cymbidium tussieum album .. 95	.. .. 95

ALDENHAM IN WINTER.

ALDENHAM gardens are interesting at all seasons, and some of the winter effects are as charming as those of gay summer. Much planting has been done by the Hon. Vicary Gibbs for the purpose of providing colour in winter from the barks of certain trees and shrubs. In many cases such plants have been massed, giving the effect, from a distance, of large panels of colour. To those who have never seen the best use made of this aspect of garden decoration, the results would appear astonishing; it is most effective when done on a large scale. This is possible at Aldenham because the whole estate has, so to speak, been brought within the pale of the garden. It appears as though every spot that offered a suitable place for some rare or interesting tree or shrub had been put to the purpose, making the whole place one vast arboretum. Nor is this all; for miles beyond the suburbs of the estate choice trees have been planted by the road side, in field and meadow, and wherever else opportunity has been afforded thus to improve the landscape or beautify the villages. Sometimes a natural feature in the country, such as a sheet of water or grassy knoll, has offered an opportunity for Mr. Gibbs and his capable gardener, Mr. Edwin Beckett, to introduce a special kind of planting for securing particular effects.

It will be readily understood that in a garden containing such a wealth of ar-

boreal vegetation, and abounding with evergreen species of all kinds, many possessing variegated foliage, it is not only the coloured barks that are beautiful in winter. The Hollies, Yews, Eleagnuses, Lilies, Conifers, and such plants are most attractive, and give fine colour effects in their golden and silver forms. There is much natural dignity, too, in the winter contour of trees and shrubs, such as is presented by a tall group of rugged Scots Firs outlined against the sky or a background of woodland, graceful weeping trees, massive avenues of Cedars and Yews, rows of light and graceful Silver Birches, and russet undergrowths.

Some of the finest garden and park scenery is found in association with water, and Aldenham is fortunate in this respect, for it includes ponds, moats, streams, and a large lake. The lake is situated in about the centre of the park, and has been converted into one of the finest examples of its kind, forming a piece of ornamental water that is as interesting in winter as in summer. The best view is from the ornamental stone and red brick bridge, the architecture of which is in keeping with the house. The bridge carries the drive, that stretches for three-quarters of a mile from the Elstree road to the mansion, passing over the centre of the lake. From the gate to the bridge this broad, well-kept drive is bordered on either side with a double row of Horse Chestnuts, each tree of perfect symmetry; and from the bridge to the house the curved drive is astonishingly beautiful in winter with the stem colouring of various low-growing shrubs. They are planted in large, irregular shaped beds, the principal species being *Salix rosmarinifolia* (reddish-brown), *Spiræa Douglasii* (hazel-brown), *Cornus alba sanguinea* (scarlet), *Rosa rugosa* (silver-grey), and *Spiræa ulmifolia*.

The lake has been made from a pond and a piece of swampy land. Thousands of loads of soil were removed, the sides were concreted and set with rockwork to prevent displacement by wash and burrowing by rats, and the bottom puddled, making it absolutely watertight. Rising ground at one end has been transformed into a cave for a boat-house by the use of rugged masses of rock. It is approached by a winding grass path, and overhung by plants of pendulous and creeping habit. The mound over the cave has been planted as a rockery, with a great variety of shrubs and small trees. The most striking objects as we approach this planted mound are *Salix cardinalis* and *S. vitellina*, the stems showing scarlet and gold from afar. Other beautiful patches of colour are provided by the dark-red stems of *Cornus alba sanguinea*, the dark-brown leaves of *Spiræa confusa*; a big bush of *Viburnum Opulus* (the Guelder Rose), with light brown, crinkled bark; and here and there a Golden Privet. In contrast with the brighter colours is a big clump of the ever-green *Berberis stenophylla* and the *Aucuba*, covered with noble foliage, splashed with gold. Crowning the mound is a Lon-

bardy Poplar, tall and dignified in outline, and well suited to such a position. One of the rarest and most interesting trees at Aldenham is a Weeping Oak, planted near this spot. It is about 50 feet high, and has a clear, straight bole some fifteen or twenty feet before its branches. Another plant not often seen is the Weeping Privet. The dependent shoots carry the foliage very late, and the leaves turn almost black before they drop.

The weeping character of trees is best seen when the branches are defoliated, and Willows of this nature have a special grace and charm in winter, especially when reflected in the clear water beneath them. Amongst other plants that were contributing to the winter glory of the lake were Cotoneaster microphylla, the low, spreading evergreen branches sweeping the stonework almost awash with the water; *Osmanthus ilicifolius*, like a miniature Holly; *Cotoneaster bacillaris*, some of the black fruits still hanging on the branches; *Berberis Wallichiana*; Alders hung with their dark-brown catkins, the cut-leaved variety retaining a few of its deeply incised leaves; the fastigate form—*Alnus glutinosa pyramidalis*; Quinces, Weeping Elms, and bare, golden Poplars on the bankside; *Rhamnus Alaternus*, making a most perfect-shaped pyramid; *Stranvaesia undulata*, which might easily be mistaken for a Cotoneaster, with shoots of addressed habit, and gay with clear, scarlet berries; and the Mahonia, which gives a warm touch of colour along the stream side. The lake is fed at one end by a winding woodland stream, and the water is discharged at the other end by a miniature cataract which tumbles down large boulders over hung by *Berberis stenophylla* and similar shrubs.

STEM COLOURING IN THE WILDERNESS.

Leaving the lake, we will next describe the part of the gardens known as The Wilderness, where the best examples of stem colouring are to be seen. The Wilderness covers many acres. It is a good example of a "wild" garden on a large scale, consisting of a piece of sparse Oak woodland, carpeted with grass, in which are vast numbers of bulbs. The ground is sheltered on the north side by a belt of woodland. The Scots Pine grows here in all stages; some tall trees of this Conifer fringing the wood are exceedingly picturesque in winter, one old tree, that seems to lean against its fellows, being such as a painter might select as a subject for his canvas. Grass paths run in both directions, crossing each other at right angles, bordered by rare trees and shrubs. Huge, irregular shaped beds are planted for producing winter effects in coloured barks. Many of these plants are massed, giving the effect of large patches of colours on the landscape, such as *Salix vitellina* (yellow), *S. cardinalis* (red), *Cornus sanguinea* (scarlet), *Rhus typhina* (warm brown), *Leucosterna formosa* (one of the finest plants for green colouring), the common Raspberry (*Rubus Idæus*), *Populus Bollandiana* (white), *Rosa rugosa*

(grey), *Spiraea Douglasii* (reddish-brown), *Spiraea canescens* (brown), and the Snowberry (greyish-brown). Others selected for this purpose are *Pyrus arbutifolia* (*Aronia floribunda*) (almost black), *Spiraea umifolia*, *Rubus Giraldiana*, *R. lasiostylus* *disygos*, *R. phoenicolasius* (the Japanese Wineberry), *Paulownia imperialis* and the Golden Elder, most of which are cut down annually to make them produce a dense mass of their coloured shoots. There are large beds of *Euonymus europaeus*, that produce masses of scarlet fruits in autumn and early winter; *Hippophae rhamnoides*; *Rosa rubrifolia* (the blue-stemmed Rose), *Forsythia suspensa*, *Loganberries*, *Rubus polytrichus* (a beautiful new Chinese species), *Cotoneaster Simonsii*, *C. horizontalis*, *Exochorda grandiflora*, *Berberis Wallichiana*, *B. purpurea*, and the new *B. Sargentiana*, all of which contribute colour from berry, leaf, or stem in winter. Further varieties provided by clumps and beds of *Rhus glabra*

the left were a sheet of colour in tones of red and brown from the withered rushes and grasses, with here and there a clump of silvery Pampas Grass. A large bush of the evergreen *Veronica Traversii* was prominently seen from the spot where we stood and looked along the water. The shoots were tipped with light green, and contrasted with those of its companion, a Golden-leaved Box. Close by, the graceful, arching culms of *Phyllostachys Quiloi* swayed with the slightest movement of the wind, which was bringing down the few remaining leaves of the neighbouring *Cornus*. At the back, and almost overhanging the Bamboo, was a Weeping Larch, the old branch bases looking like yellow buttons, a few only retaining the straw-coloured shoots of last season. Underneath this tree is planted the new *Rubus irenaeus*, making a perfect carpet of greenery. The leaves of the Water Lilies had their edges seared by frost, and would

seemed quite a pygmy compared to the tall tree of *Acer palmatum* near by, whose deeply cut leaves were a russet brown before they dropped. The path is bordered with Periwinkle, small bushes of stone Lavender (*Santolina incana*), colonies of *Saxifraga cordata*, the foliage of which is too sheltered to turn ruddy, mossy cushions of other *Saxifragas*, Rock Roses, *Ericas* and the like. A few solitary fruits hung on the red Chestnut, which had plumped up its buds, but had not coated them with resin for protection, as the Horse Chestnut. At the foot of a waterfall in the stream was a big plant of *Lomaria Spicata*, whose fronds had collected a deep store of fallen tree leaves, which would protect the crown of young leaves from injury by frost. The shrubby border at this spot makes an intricate bending, following the irregular course of the stream, and a bluff that juts into the water is crowned with the new *Jasminum Beesianum* on a pole, looking very like a *Smilax*, and promising to retain its handsome foliage all through the winter. On another bend of the bank is a tree of *Cupressus Lawsoniana aurea*, its branches reaching almost over to the water, leaving only a narrow pathway to reach the next bluff, where a pendulous tree of *Gleditsia triacanthia* grows. At this spot the view opens on the avenue of Cedars, with rows of *Berberis subcordata* amongst them. Here the brown and russet of the water plants in the moats toned well with the golden and red stems of the Willows amongst them. The silvery Pampas Grass, along the banks, with the Bamboos of green and gold; *Salix lanata*, which has turned from grey felt to mahogany brown; and tiny colonies of *Euphorbia* (*Cyparissis*, with stems of coral-red and ruby-tinted leaves; all combined to make a charming winter scene.

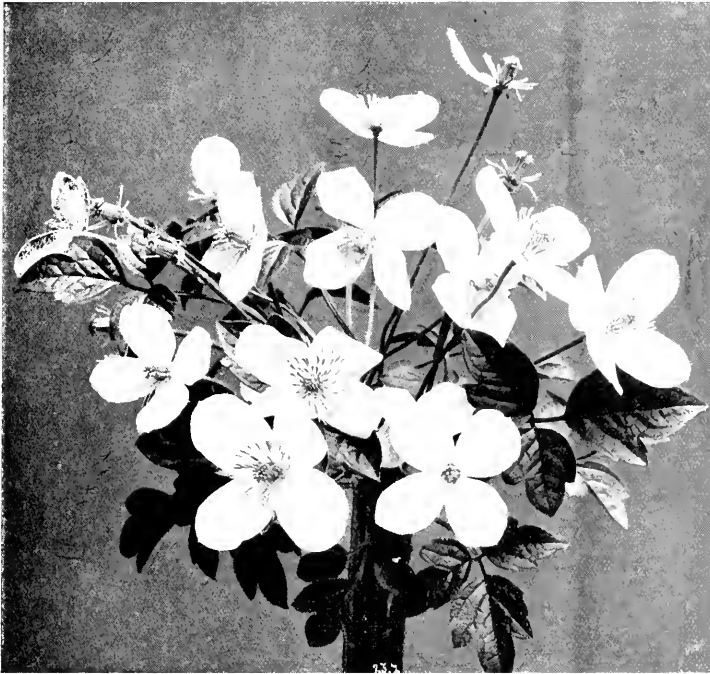


FIG. 33.—CLEMATIS VEDRARIENSIS. FLOWERS PALE ROSE-MAUVE. (Photograph by E. J. Wallis)

CLEMATIS VEDRARIENSIS.

The hybrid *Clematis C. vedrariensis* (see fig. 33), is of French origin, the result of a cross between *C. chrysozona* and *C. montana rubens*, both these species being natives of China. *C. chrysozona* has creamy, pink-tinted flowers, and was first discovered in Yunnan by the Abbé Delavay in 1884, whilst *C. montana* has rosy red flowers.

The flowers of the hybrid are a delicate mauve-pink of pale rosy-mauve colour, changing with age to a lighter tint. The individual flowers are $\frac{1}{2}$ inch in diameter. The photograph, from which the illustration is reproduced, was taken on June 6, the plants being at their best during that month, though they carry blossoms during nearly the whole summer. The growth of the Kew plants suggests that in an open, limy soil *C. vedrariensis* will prove a showy and useful climber of moderately strong growth. A. O.

THE ROCK GARDEN.

FROST AND ROCK PLANTS.

ONE effect of a period of frost is to lift small plants, such as rock plants, either partially or wholly out of the ground, and thus leave the roots exposed. This is especially the case with plants that have been recently transplanted. Roots of the "star-fish" description, consisting of a central bud from which fleshy rootlets diverge, are particularly liable to suffer in this way; such are the St. Bruno's Lily (*Anthericum Liliastrum*), and *Ranunculus acemifolius*.

As soon as the soil is in good working condition, all small plants should be carefully examined, and where the roots are exposed they should be pressed firmly into the ground and top-dressed with a mixture of gritty soil and leaf-mould. Where this is insufficient, they should be taken up and transplanted. H. E.

lacinata, *Fuchsia Riccartonii*, *Rhododendron* in variety, *Hydrangea paniculata grandiflora*, *Rhus Cotinus*, *Arundinaria japonica*, *Hypericum calycinum*, *Spiraea arborea grandis*, *Buddleia variabilis* in variety, *Berberis Aquifolium*, and *Rubus fruticosus* fl. pl. A new plant that will be valuable for growing in the shade, and especially under trees, is the Chinese *Rubus*, *R. irenaeus*. The growth is like that of the Ivy, and forms a dense mass of foliage.

Beautiful as is this wild garden in winter, the shrubberies by and near the moats are equally interesting at this season. Our visit was made before the recent severe frost, and much in berry and leaf was lingering from autumn, but the Birches in the Avenue were completely debilitated, and their bark showed milk white; the branches, like filigree work, seeming too frail and slender to resist the gales of winter. The rows of Yews, avenues of Lombardy Poplars, and lines of Hawthorns looked of a stouter nature. The banks of the moat on

soon be gone, but *Typha*, the Reed Mace, stood out in full dignity above the water, its velvet brown poles arising from a mass of pale brown ribbons. The red-barked Willows on the bank had lost their leaves, and the huge foliage of *Gunnera* hung round the stalks like a tattered shroud on a pole. Under a tree of *Pyrus floribunda* was a carpet of *Euonymus radicans*, in tensely variegated where the sun reached the leaves. A narrow stone pathway leads to a tree of *Quercus coccinea* *Watereri* variety, encircled by a seat. The scene was enchanting enough to tempt us to rest. *Berberis yunnanensis* had lost its red leaves and appeared formidable in its aggressive-looking spines. *Epinediums*, encroaching over the flagstones, were most bronzed where most exposed to cold. The broad-leaved *Bambusa palmata* made a charming corner plant, whilst *Diplopappus chrysophyllus* revealed its golden undersides as the shoots moved. *Euonymus radicans* variegata

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT KEW.

A WEEK or so ago, when the outdoor departments were in the firm grip of frost and snow, it was pleasing to find so much of interest in the Orchid houses. Several groups of Calanthes were conspicuous, and numerous species and hybrid Cypripediums attracted attention. Among a number of Cymbidiums, C. Gottmanni was showy, and the delicately fragrant Platystichum glaucum was well represented. Cyclophorum Lowianum, Stenorrhynchum speciosum, Lycaste lasiocarpa, Odontonia longicauda and Phaius Sanderaiana were other noteworthy subjects in flower. It is interesting to see women gardeners, with supervision, in charge of the Kew collection and doing good work, the whole of the Orchid staff having enlisted in His Majesty's Forces.

BOTANICAL ORCHIDS.

A LIST of rare and little-known Orchids in flower at Kew during the early days of February will be of interest to readers who delight in uncommon plants. Eria trifimbriata, E. parviflora and E. stricta, Lepotes bicolor, Epidendrum Albimanum, and E. Wallii, Xylobium leucostictum, and X. conzatti, Cyclophorum Lowianum, Spiranthus australis, Oncidium barbatum, Anlostoma cernuum, Polystachya laxiflora, and Pleurothallis Sappia.

HYBRID ORCHIDS.

(Continued from Dec. 23, 1916, p. 300.)

Table with 4 columns: Hybrid, Parentage, and Exhibitor. Lists various orchid hybrids such as Brassia-Cattleya, Cymbidium, and others with their parentage and exhibitors.

NOTE FROM AUSTRALIA.

PHOENIX CANARIENSIS.

In the Gardeners' Chronicle of September 9, 1916, p. 122, Mr. J. H. Maiden, of the Sydney Botanic Gardens, writes about Phoenix canariensis growing in the Garden Palace grounds. He states: "Its history is not clear, but it was over thirty years old, and where it originally came from I cannot ascertain." This information is not accurate, as its history is well known. When I had charge of the beautiful Garden Palace grounds, much of which I designed and laid out, I suggested to the late Mr. Charles Moore, Director of the Palace Gardens, Sydney, that a group of Palms should be chosen suitable to the surroundings. One of the first of these I saw which there were then growing a number of varieties of the Phoenix, Amphithus schaffelinii and A. tricolor, and a few species and varieties of Canna. I told Mr. Moore what the group of Palms I had in mind were Phoenix Canariensis, East-India, Queen-land, and the suggestion of the work being carried out. There is considerable controversy about the advisability of planting in the open certain species of Palm, Phoenix canariensis, but even so, Mr. Moore gave me in his hand I had in mind a group of Palms, and the planting was carried out in the same course. Most of the Phoenix I had in mind were vigorous specimens, all well established in 8 inch flower-pots. Mr. Moore informed me that the seeds of most of these Palms, including Phoenix canariensis, were collected in the Royal Botanic Gardens, Kew, during the late Trusteeship of Sir William

Jackson Hooker. It was thus I planted the first Phoenix canariensis in the open in Australia. Near this group of Palms in the Garden Palace grounds is growing a fine specimen of Phoenix dactylifera which I planted. This specimen belonged to my collection (which had been awarded a gold medal) of the most valuable commercial plants ever exhibited in Australia.

The group of Palms which I planted some years ago in Hyde Park, Sydney, has recently been referred to in the leading Australian news papers as the principal feature of the Park. Fred Turner, Chatswood, Sydney.

NOTES ON CONIFERS.

XVI.—CUPRESSUS GLABRA.

ALTHOUGH this Cypress was first found on Pine Creek, Central Arizona, more than twenty years ago, it was not distinguished from its nearly allied, Cupressus arizonica, until 1910, when Professor Seward, of Washington, described it from a group of trees discovered by Mr. A. H. Zieher, on the northern slope of a small tributary stream on the west side of the Verde River Canyon, Arizona. The history of this new Cypress, given in considerable length by Seward in his recently published account of the Conifers and Juniper Trees of the Rocky Mountain Region. He notes that in general appearance the foliage of the smooth Cypress resembles that of the Arizona Cypress (Cupressus arizonica), Greenel, though the former species can be distinguished from the latter by the compact, narrowly oval, or somewhat pyramidal, crown. The branches of smooth Cypress, particularly of younger trees, are strongly upright. Old trees grown in the open develop long, lower branches, which from their great weight are less upright than those of trees of the same age in a close stand. In height, the trees range from 25 to 70 feet, and in diameter from 10 to 14 inches, though much larger trees probably exist. The most distinctive characteristic of this tree is its thin, smooth, dark, purple-red bark. Each season's growth of bark, from 1/10th to 1/8th of an inch thick, breaks irregularly into small, curled, scale-like plates, which fall away during the succeeding autumn and winter, leaving the trunk smooth. The foliage is a bright blue-green, and the minute, scale-like leaves are thickened and keeled on the back, where in practically every case there is a comparatively large resin gland, a characteristic which distinguishes the leaves from those of C. arizonica. The mature cones are conspicuously wrinkled, and covered with a deep, blue-grey bloom, which when rubbed off reveals a rich, dark brown colour beneath. They may remain on the tree unopened from 14 to 18 years.

Both species grow together in the mountains of Arizona, but Cupressus glabra is much more restricted in its range. In the Verde River Canyon it grows abundantly in gravelly and shelly soil, at elevations between 5,700 and 5,900 feet. At lower elevations it is associated with Pinus monophylla, Pinus edulis, Quercus chrysolepis, and Rhus haurina.

If the foliage character mentioned above is to be relied upon for distinguishing Cupressus glabra from C. arizonica, all the trees grown under the latter name in England, which I have examined, would seem to belong to C. glabra rather than C. arizonica, of which I have seen no typical example from an English garden. Most, if not all, our cultivated trees have conspicuously glandular foliage. In Messrs. Hillier's

Hybrids of Cattleya Bowringiana named by Mr. T. E. Meade Owen, Florida. In the composition of the names "Bow" represents C. Bowringiana and the other parts are made up of syllables of the parents. Episcattleya Adonis (C. Bowringiana x Epidendrum adonis), Episcattleya phloxica (C. Bowringiana x Epidendrum phloxica), Cattleya Annelora (C. Bowringiana x C. interlobosa), Cattleya Melodora (C. Bowringiana x C. labellata), Cattleya Estrella (C. Bowringiana x C. Duperreana), Episcattleya Beirna (C. Bowringiana x E. Peruvia), Cattleya Crisomulosa (C. Bowringiana x C. leucoglossa), Episcattleya Leobrocha (C. Bowringiana x E. C. Ives), Episcattleya Purpurea (C. Bowringiana x E. C. Ives).

* Shown by Messrs. Hassall and Co. as a yulidium hybrid.
* Cattleya-Corona previously recorded in Gardeners' Chronicle last.

* Garden and Forest, VIII, 22, 1895.
† American Forester, XVI, 88, 1910.
‡ U.S.A. Dept. Agric. Bull. 207, 1915.
§ Prof. Seward, however, stated in a letter to me a year ago that, judging from specimens received from Prof. A. Henry, the plant we have cultivated as Cupressus arizonica seemed to be quite different from C. glabra as known in America, but Henry is of the opinion that this specimen, which he thinks, came from Lough Cutra Castle, Ireland, comes under C. glabra. Moreover, he is not convinced that there are two distinct species of Cypress in Arizona.

nursery at Winchester I saw large numbers of young trees, grown as *C. arizonica*, but a specimen from one of those sent to Professor Sudworth last year was referred by him to *C. glabra*. A tree in Sir John Ross's collection at Rostrevor and three small, but well-grown examples in Mr. William Arkwright's

a tree of *Cupressus arizonica* will send me a specimen branch, as I am anxious to know if this species, as defined by Sudworth, is really in cultivation. Mr. Wallis's photograph represents a branch from a young tree in Hillier's nursery at Winchester, which bore cones in 1915. *J. Bruce Jackson.*

The Week's Work.

THE FLOWER GARDEN.

By W. J. CRISE, Gardener to Mrs. DEMPSTER, Keele Hall, Staffordshire.

PRUNING SHRUBS.—The severe weather has delayed all work outside, and now that the frost has broken, alterations or planting not finished in the autumn, and the pruning and regulating of evergreen shrubs must be concluded with as little delay as possible. The saw may be used freely on overcrowded specimens of Portugal Laurels, the common Laurel, Yew, and Holly. Do not use shears on the large-leaved varieties; the knife, or tree-pruner, is better.

HERBACEOUS PHLOXES.—Now is the time to plant new varieties of herbaceous Phlox and divide and replant old ones. The soil must be dug deeply and the manure well pushed down, in addition to putting some in the holes when planting. Plant 2 feet apart, with the crowns 3 inches below the surface, applying a light mulching of leaf-mould and manure in equal proportions. Old crowns 9 inches to 12 inches across may be cut into four parts or more with a long-bladed knife; the roots cling too firmly together to be separated by hand. Even small pieces should not be discarded, but planted in a well-prepared reserve bed; they will provide a succession of flowers at a later period. Should the stock be limited, propagation may be effected in spring by attaching small pieces about 3 inches in length and inserting them singly in small pots or in a frame, using a light, sandy compost.

HOLLYHOCKS.—Young plants in reserve quarters should be lifted and placed in their permanent positions directly the soil is in a friable condition. The Hollyhock is a strong, deep-rooting plant, and the soil should be well prepared previous to planting. Those, however, who have wintered their plants in pots in frames should be in no hurry to plant them out before the latter end of the month, as a return of the recent severe weather would certainly injure them.

SOWING FLOWER SEEDS.—If these are sown at intervals of a week or so it will allow time to deal with the young seedlings in rotation before they become drawn and weakly, a not infrequent occurrence where large quantities are required. Petunia, Aquilegia, Pansy, Ageratum, Nicotiana, Heliotrope, Polyanthus, Salvia, Pyrethrum (Golden Feather) and Salpiglossis should be sown now.

FRUITS UNDER GLASS.

By JAMES HUDSON, Gardener to LEOPOLD DE ROTHSCHILD, Esq., C.V.O., Gunnersbury House, Acton, W.

FIGS IN POTS.—The earliest and by far the most reliable varieties of Figs are St. John's and Pinco de Mel. In pre-war times, when we forced them early, these were now resting, prior to the last swelling and ripening of the fruits. Trees that are now growing freely should be stopped at about the fourth leaf. Do not do the thinning too quickly, or remove many shoots at one time, but rather take off a few one day and a few another until it can be seen that the crop is a fairly safe one. These earliest trees in pots should be top-dressed. For this purpose we use a mixture of hop manure, manure from a spent Mushroom-bed, and turfy loam in about equal quantities. We form a ring around the top of the pot with some of the compost, the ring resting, so to speak, on the top of the pot rim. The roots will enter the fresh soil within ten days. Guard still against an excess of moisture, more especially from the syringe than the evaporating troughs.

CHERRIES IN POTS.—Cherries grown in pots are well worth an extra care bestowed upon them. They will remain in health and vigour



(Photograph by E. J. Wallis.)

FIG. 34.—BRANCH OF CUPRESSUS GLABRA WITH FEMALE CONES.

garden at Sutton Scarsdale, last summer, are the same thing. Several trees I have seen labelled *C. arizonica* have also the thin, smooth, dark purple-red bark, and the upright branches of *C. glabra*. I shall be glad if anyone possessing

Figured as *C. glabra* in *Gard. Chron.*, June 5, 1915.

A NEW HORTICULTURAL COLLEGE.—A women's horticultural college has just been established at Chester, for the purpose of providing students with a short course of training in the cultivation of vegetables and fruit. The college is under the control of a committee, of which the Duchess of Teck is chairman.

for an almost indefinite number of years. We have had some in pots for nearly twenty years; they are still thriving, and promise well for this spring. Before long they will be opening their earliest flowers, if fairly fine weather comes to their aid; the buds are even now swelling freely. The custom with us now is to syringe at least once every day, and twice in bright, sunny weather. So far, our Cherry house is closed at night, but we shall soon allow a little night ventilation both at the side and at the top, except in keen, frosty weather. This almost constant ventilation is congenial to the Cherry when in growth, and it strengthens the flower-buds. A fumigation will be given in about a week, to keep in check the insect pests to which the Cherry is liable. This fumigation will carry the plants safely over the setting period. No fire-heat is given when it can be avoided. A temperature of 40° is ample, and 45° when in flower. The best and earliest Cherry with us is Guigne d'Annonay; it is nearly ten days before Early Rivers, in the same house. This year we are a little late in starting into growth, but I estimate that we shall have ripe fruit by June 1 under fair conditions. We shall introduce a hive of bees when the trees are fairly well in flower. Do not let the trees get dry at the roots, but keep a constant watch upon them. On the other hand, avoid an excess of water. Whilst in flower keep a dry, buoyant atmosphere, mostly damping over the surface upon which the pots stand.

STRAWBERRIES IN POTS. In some instances the plants will be pushing up their flower-spikes. Where this is the case keep the pots as near to the glass as possible, and do not so syringe overhead as to encourage leaf growth at the expense of the flower. Do not over-water at the period of flowering. Pinch off any adventitious runners as soon as they appear, and place the plants so that the flower-spikes are facing the light. Introduce another batch into fruit so as to keep up the succession. Sometimes the first earlies fail, and care must be taken to avoid a break in the supply. See that the later plants do not get too dry if in a cold frame or pit. Look over the pots to see if the plants have been lifted or loosened by the late frost, and, if so, make them firm again in their pots. Sometimes the pots are cracked during a hard frost; these must be replaced at once.

THE KITCHEN GARDEN.

By J. DEXX, Foreman, Royal Gardens, Windsor.

SPRING CARBAGE. The recent severe weather has had a bad effect on plantations of young Cabbage, and it is to be feared that the season for cutting will be somewhat later than usual. In some cases it will be necessary to plant again as soon as suitable plants can be procured. Growers who have a stock of plants in reserve should fill in gaps at the earliest opportunity, after which the surface of the bed should be lightly broken up with a fork or other implement, at the same time working the soil lightly towards the stems of the plants as a protection from rough wind. Further assistance may be afforded by light applications of soot during the spring. A sowing of some quick-maturing variety should be made at once in order to prevent a break in the supply. Sow in gentle heat and grow the plants under glass until large enough to handle, when they must be gradually hardened and planted on a good, rich plot.

WINTER SPINACH. This crop should be given early attention, so that a supply of green leaves may be applied. Sow Summer Spinach as soon as decaying plants and foliage and hoe the surface of the bed as soon as dry enough in order to promote new growth. Light dressings of soot may be applied. Sow Summer Spinach as soon as possible, in case the earliest sowing has been injured by frost.

FORCING. The roots of Seakale, Asparagus and Rhubarb should be placed in gentle heat as it becomes necessary in order to maintain an unbroken supply, and all Seakale roots which are intended for forcing in pots or houses should be lifted and placed in very cool quarters until required. Seakale crowns for forcing in the open should have a few inches of sifted ashes placed

over them as a protection from light; if left unprotected until growth commences the colour of the produce will not be satisfactory. Seakale forced in the ground by means of pots and fermenting material is heavier and of better quality than that forced in strong heat, especially late in the season. If a piece of ground can be entirely devoted to it, this is the best means of furnishing late supplies. The fermenting material should be prepared for the purpose and placed round the pots in sufficient quantity to ensure perfect darkness. Enough warmth should be provided to promote steady growth.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcott, Eastwell Park, Kent.

EUPATORIUM.—Greenhouse species of Eupatorium, such as *E. Weinmannianum* and *E. riparium*, remain in flower for a long time, and are useful for supplying cut blooms in winter, and for conservatory decoration as flowering plants. When they are past their best, remove them from the flowering house, reserving only the cleanest and healthiest specimens for stock plants. Cut these over and place them in a frame, reducing the supply of water at the roots, but not completely drying them off. They will soon start again into growth, and, when the shoots are sufficiently strong, the cuttings should be taken for next season's batch of plants. The cuttings will strike readily in a propagating pit or warm frame, dibbled in pots of light sandy soil.

THE ROSE HOUSE.—Presuming that the Roses were pruned and cleaned and the house closed a few weeks ago, the temperature may now be slightly raised as the days lengthen and growth becomes active. Ventilate as soon as the temperature of the house rises above 55°, allowing it to run up 10° by sun-heat before increasing the air. Be very careful to avoid draughts of cold air on the young and tender shoots of forced Roses, or mildew will quickly appear, with all its attendant evils. Close the house fully only in the afternoon to conserve the sun-heat as much as possible. Fumigate at regular intervals to destroy green fly.

POT ROSES. Where no special Rose house exists pot Roses may be started in fruit-houses, such as Vineries and Peach-houses. The conditions in these houses, when closed for starting, suit the Roses admirably. Pinch the plants, clean the pots, and if necessary give a top dressing of rich loam before placing them inside. Give a good watering, which will suffice for some time. Spray the plants lightly on sunny days.

FUCHSIAS. Young plants struck last autumn and grown gently on in a warm house all the winter will now require a shift into larger pots. Use a compost consisting mainly of good turfy loam, with a moderate proportion of leaf soil or spent Mushroom bed manure and sand, and pot the plants firmly. Plants to be potted should have been watered the previous afternoon; they will then have drained well before being handled for potting. Never pot a plant when the ball is very dry. Avoid disturbing the roots of the young Fuchsias too much; stake if required, and return the plants to a light, warm house for the present. Old plants which have been wintered in a cool house should be pruned hard back and placed in a moderately warm house to start. When commencing to grow, turn them out of the pots, reduce the ball, and pot again into somewhat smaller pots. Cuttings taken off as soon as the shoots are sufficiently strong will make a good batch of plants for blooming in late summer and autumn. Standard Fuchsias are deservedly popular, and well-grown specimens are excellent subjects for grouping with dwarf plants in the conservatory or greenhouse. Plants last for years, and old standards should be pruned and started as recommended above. If young plants are to be grown on for standards this season they must be encouraged to grow quickly in a warm house, exposed to full light. All side-shoots should be removed as they appear until the desired height is attained. Pinch the top out then, and a break of 4 or 5 shoots will be obtained. These must be afterwards pinched regularly to ensure a well-shaped head.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbots Wood, Godalming, Surrey.

GOOSEBERRIES. Complete the pruning of bush and cordon trees as soon as practicable. If they have been damaged by birds during the late frosty weather leave a little more growth to ensure a crop. If large fruits be required the bushes must be well thinned and pruned back to two or three eyes, but if quantity is the main object do not prune so hard, but well thin the shoots and leave the remaining branches nearly the whole of their length. Some of the fruit can be gathered for bottling; bottled Gooseberries are a great acquisition when other fruits are scarce. They should be bottled whilst green and tender. The pruning of Gooseberries trained on wire and in cordon form should be severe. All shoots should be reduced to two or three buds except the terminal one, which should be left for extension, or, if the terminal shoots have reached the top of the allotted space, these also should be reduced to two eyes each. As soon as the pruning is finished and all the prunings cleared away some slaked lime should be sprinkled over the trees. If Lichen is present, spray with alkaline solution or with lime-water in which some petroleum has been mixed. If this is carefully strained the bucket pump syringe will do the work very effectively in a short time. It will, moreover, act as a deterrent to birds. When this has been done fork the soil lightly, and mulch with some good manure.

MORELLO CHERRIES and all trees on north walls should be pruned. The shoots should be tied or nailed quite straight, not too close together, as, unless plenty of room exists between the branches the fruit will be of poor quality, and the leaves will be more difficult to keep free of pests. All pruning should be finished as soon as possible, as the sap will soon be on the move.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

CYMBIDIUM INSIGNE. Since the introduction of *Cymbidium insigne* the decorative qualities of *Cymbidiums* have been greatly enhanced. Before *C. insigne* was brought into use by the hybridist the colouring of the flowers and the habit of the plants were not nearly so attractive. *C. Tracyanum*, a supposed natural hybrid, bore flowers of a dull brown colour; the colours of *C. Lowianum* ranged from greenish-yellow to brown; *C. chaboumii* had white, wax-like flowers with short inflorescences. But since the advent of *C. insigne* as a parent we find fine, rich colourings, varying from white and yellow to shades of the deepest pink, and the arching habit of the flower-spikes adds to the beauty of the plants. The season of flowering, late winter and early spring, also adds to the usefulness of the genus for decorative purposes. The hybrids are easily raised from seed, and have been known to develop flower spikes in four years after the sowing of the seed. Among the best of the known hybrids from *C. insigne* are *C. Gottianum*, *C. Alexandri*, *C. Cuninghameum*, *C. Pauwelsii*, and *C. Queen of Gattton*. Many of the hybrids mentioned are in bloom or are developing their flower-spikes, and will now require a liberal supply of water at the roots. When water and these plants soak the compost through, but allow it to become moderately dry between each application. *C. Tracyanum* will now be passing out of flower. This Orchid, like many other *Cymbidiums*, resents root disturbance, therefore, if there is sufficient room in the pot for the plant to complete its new growth it will be better to defer repotting for another season. Any plants that are to be repotted should receive attention at once, but do not give more pot-room than is absolutely necessary, as all *Cymbidiums* flower most freely when in a not-bad condition. Use a compost similar to that recommended for *Cypripediums* on page 72. All *Cymbidiums* succeed best when grown in a moist atmosphere, with a night temperature ranging from 52° to 55°, with a rise of 5° or 10° during the day. *Cymbidium grandiflorum* should occupy a position near the glass at the sunny end of the house, or it will fail to develop its flowers in a satisfactory manner.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher—Our correspondents would oblige us by obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary Department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News—Correspondents will greatly oblige by sending to the Editors early intimation of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR MARCH.

TUESDAY, MARCH 13—
Roy. Hort. Soc. Coms. meet.

THURSDAY, MARCH 15—
Manchester and N. of England Orchid Soc. meet.

THURSDAY, MARCH 27—
Roy. Hort. Soc. Coms. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 36.6°.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, March 5 (10.9 a.m.): Bar, 29.9°; temp 44°; Weather Clouds.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—

Herbaceous Plants, Fruit Trees, Rhododendrons, Roses and Bulbs, at 67 and 68, Cheapside, E.C., at 12 o'clock. Japanese Lilies in cases, at 3 o'clock, by Protheroe and Morris.

THURSDAY—

Roses, at 67 and 68, Cheapside, E.C., at 1 o'clock, by Protheroe and Morris.

Horticulture and the State

It looks as though the State coach had at last come to fetch the Cinderella of Horticulture from her modest abode, and although the fairy tale does not tell us how the maid belated in after life, we may be confident that Horticulture will prove worthy of the prominence into which it is now being brought. The duty of the gardening world at the present critical time is clear. Mere obstructive criticism is useless. Every pound of food that can be produced will be wanted, and therefore it is every gardener's plain duty to look upon himself as an unofficial officer enlisted in the service of the Director General of Food Production. Many of those who are cultivating ground are inexperienced. A little

friendly counsel will often go far to convert a prospective failure into a success. Gardeners can, from the store of their knowledge, give that counsel. In some places the ground is not very suitable for growing crops, but before discouraging the amateurs of the spade, let the gardener reflect that, even though a crop of Potatoes taken from such land be a very light one, yet unless the land is sour and absolutely infertile, late summer-sown crops—Turnips, Beets, and Brassicas—may in many cases be made to compensate for the lightness of the first crop. If every gardener makes himself into a discreet and persuasive missionary, and not only gives advice but offers practical help, he will be doing a national service. Furthermore, gardeners and owners of gardens must face the present position. Without sacrificing plants of real value and variety—for such a sacrifice would be an irreparable blow to horticulture—they should make up their minds that for the present luxury gardening should be reduced to the lowest limits. There is no reason why easily-grown annuals should not continue to be grown, nor why Rose beds should not be allowed to remain, but energy devoted to the frequent tending of lawns and paths, the raising of conservatory and other decorative plants, the early forcing of luxury fruits, ought not to divert any gardener from the urgent duty of raising vegetable food. The quantity of such food raised in gardens and never accounted for in the market returns is enormous, and can undoubtedly be increased. If in every district the gardeners will become members of the Royal Horticultural Society's Panel of Patriotic Gardeners, or put their leisure time at the disposal of local organisations engaged in encouraging food production, they will be at once discharging a duty and rendering a real service to the State.

Nor is it too much to hope that gardeners who can show that they are doing the maximum possible in the cultivation of food crops, and in helping their neighbours as well, will be recognised authoritatively as doing work of national importance.

THE ROYAL SOCIETY.—Among the names of biologists nominated by the council for election to the fellowship of the Royal Society, are those of Professor WEISS and Dr. E. J. RUSSELL. Professor WEISS, who occupies the chair of Botany in the University of Manchester, has made important contributions to the knowledge of fossil plants, and Dr. RUSSELL is well known not only for his remarkable work in soil sterilisation, but also as a most competent and energetic Director of the Rothamsted Experiment Station.

HORTICULTURE AND THE FOOD CRISIS.—On Tuesday last the Council of the Royal Horticultural Society agreed to release Dr. F. W. KEEBLE, F.R.S., for service with the new Director-General of Food Production, Sir ARTHUR LEE. Gardeners will learn with interest that a separate horticultural section is to be established under Dr. KEEBLE's direction, with a view to assisting the increase in the production of food in gardens and the

smaller uncultivated areas. The official address of Sir ARTHUR LEE's Department is 72, Victoria Street, Westminster.

PILFERING OF SEED POTATOS.—Purchasers of seed Potatoes are advised to inspect carefully consignments at the time of delivery. Judging from reports which we have received, pilfering during transit appears to be frequent. In a case which has come to our notice of three bags, two had been opened and some 20 lb. of seed abstracted.

THE SURVEYORS' INSTITUTION.—A meeting of the Surveyors' Institution will be held in the Lecture Hall of the Institution on Monday, the 12th inst., at 5 p.m., when the adjourned discussion on the paper on the "Defence of the Realm (Acquisition of Land) Act, 1916," read by Mr. EDWIN SAVILE (member of council) at the last meeting, on February 12, will be reopened by the Right Hon. the Lord PARMOOR OF FREITH, P.C., K.C.V.O., K.C.

SCHOOLBOYS IN AGRICULTURE.—We learn from our contemporary, the *Revue Horticole*, that the French Ministry of Agriculture has just formed a service, to be known as the Service of Schoolboy Labour. It has been created with a view to encouraging school children all over the country to render practical assistance to those engaged in vegetable culture. There seems every prospect of success in the appeal thus being made, and many growers will probably gladly avail themselves of the assistance of these young workers.

POTATO AND CEREAL CROPS.—The International Agricultural Institute estimates that the production of Potatoes for the current season in France, United Kingdom, Italy, Netherlands, Canada, United States and Japan is 564,219,000 cwt., or 21.4 per cent. below the average crop in the years 1909-1913. The Australian Wheat crop is 76,865,000 cwt., an increase of 58.5 per cent. on the average production in 1909-15. The areas sown with Wheat and Rye in France are 10,569,000 acres and 2,046,000 acres respectively. This estimates, compared with last year's averages, represent decreases of 15 per cent. in the case of Wheat and 10 per cent. in the case of Rye.

CULTURAL CONDITIONS FOR MEDICINAL HERBS.—A little while ago a British horticulturist of repute received a letter from a planter asking which artificial manures were best calculated to increase the yield of oils, aromatic oils, latex, resins, and such-like plant products. Needless to say, the person appealed to was unable to give the information. Beyond making the appropriate and inadequate general statements on the action of different kinds of manures on the several parts of plants, he was obliged to confess that neither he nor anyone else knew anything worth knowing on the best cultural conditions for producing these different plant products. The interest lies, therefore, in the question, and not in the answer, and anyone who is conversant with the great importance of drugs and other commercial products of plants cannot but realise how much to be desired is the knowledge of the conditions under which plants yield these products most lavishly. Among the not too numerous attempts made to arrive at this knowledge the most recent is that made by Mr. FRANK RABAK, with respect to the production of peppermint oil by *Mentha piperita*.^{*} The results of the experiments carried out by the author do not appear to be very decisive. He inclines to the belief that the oil is produced rather more copiously on light, sandy, or loamy soils, than on heavier soils, although he also makes the statement (p. 2, *op. cit.*) that only very slight differences are noted in the yield of oils obtained from plants grown in

* *The Effect of Cultural and Climatic Conditions on the Yield and Quality of Peppermint Oil.* Bull. 454, U.S.A. Dept. of Agric.

different soils. The yield from dried plant material is lower than that from fresh plants, and more oil occurs in the Mint during its fruiting state than in its budding or flowering state. It is the leaves which contain most of the oil, the stem containing but very little. Plants grown in partial shade, at all events in the author's experiments, yield as much oil as is obtained from plants grown in the sun. The chief conclusion to be drawn from this, as well as preceding investigations, is that a rich and promising field awaits exploration. At present our ignorance in these matters is very great, but having regard to the vast commercial importance of many of the therapeutic and industrially-used plant products, there is no reason why in course of time knowledge should not replace that of ignorance.

WAR-GARDENING AT HARROW.—Harrow-on-the-Hill, Middlesex, was one of the first places in which war gardening was taken up on a large scale. Ever since the outbreak of war, the municipality, and especially Councillor JAMES O'BRIEN, the vice-chairman, has devoted much time and energy to the production of food, chiefly from waste land. The Council has provided land for about 600 allotments. The experiment has been begun of keeping pigs on the Council's Sewage Farm, and many large breeding sows have been purchased. Householders are keeping edible refuse separate from other refuse; this has been used for feeding the pigs, which have so far cost nothing to keep.

WAR ITEMS.—We learn from our contemporary *Le Jardin* that Monsieur ALFRED NOMBLOT, the Secretary of the Société Nationale d'Horticulture de France, now serving in the Army, has been favourably mentioned for the second time in despatches. His rank is that of "chef de bataillon," and the despatch states that he "has fulfilled every mission entrusted to him with remarkable zeal and capability. Thanks to his clear-sighted energy and his infectious enterprise, he has obtained from his battalion the maximum of service, even in the most dangerous conditions."

— From the same source we learn that the Company commanded by Monsieur CHARLES DUGOY, a former contributor to these pages, has received the following encomium: "The 5th Company of the 14th Infantry Regiment, on July 11, 1916, displayed great gallantry on open ground, and succeeded, in spite of heavy mitral-leuse fire, in reinforcing the first line, which was in danger. On the following day, placed at the extreme left of the same line, the company heroically resisted a strong attack, maintained its position, and took a number of prisoners." Monsieur Dugoy, already Chevalier de la Légion d'Honneur, has now been awarded the Croix de Ste. Anne de Russie.

— Among the French prisoners of war recently returned from Germany, we notice that the son of M. PIERRE PASSY, the eminent pomologist and lecturer at the Grignon School, is one of the number.

Le Jardin, in giving a further list of killed and missing Old Students of the Versailles School of Horticulture, points out that it brings the number up to 75 out of 459 who joined over 16 per cent.

The Edinburgh Market Gardeners' Association has decided to reserve 10 per cent. of their produce for the Army. This is in accordance with a proposal of the military authorities, which has met with a favourable response from market gardeners and farmers in other parts of Scotland.

NEW ZEALAND FLORA.—Volume XLVIII, of the *Transactions and Proceedings of the New Zealand Institute* for the year 1915, issued in October, 1916, contains a number of interesting botanical papers, some of which have already

been summarised in these pages. It is a volume of some 600 pages, illustrated by twenty-nine plates, of which eleven represent local botanical subjects. A considerable number of new species are described, mostly belonging to the larger genera, such as *Epilobium*, *Veronica*, *Amplylla* and *Celmisia*. The Kermadec Islands Palm is described as a species distinct from

other features of the great natural Show, exhibited at the Colonial and India Exhibition at Kensington in 1906, was sold at very moderate prices before news of the colossal disaster reached this country. This volume of the *Transactions* also contains several noteworthy biological papers by Dr. L. COCKayne, and some "Observations on the Lianas of the Ancient Forests of



[Photograph by C. W. Cole.]

FIG. 35. CYMBIDIUM INSIGNE ALBUM
(See Awards by the Orchid Committee, p. 87.)

the Norfolk Island *Rhopalostylis Baueri*, and named *R. Cheesemani*, Beccari. An instructive description of the vegetation of the Tararua Mountains, the scene of the great volcanic eruption on June 10, 1886, by B. C. ASHON, is illustrated by eight characteristic landscape views. In this connection it may be mentioned that a collection of paintings of the pink terraces and

the Canterbury Plains of New Zealand," by J. W. BIRD. The locality in which the investigations were made was Hecaraton Bush, the last remnant of the ancient forests of the Canterbury Plains now strictly preserved, the bulk of which consists of *Podocarpus dactyloides*, many of gigantic dimensions, with a sprinkling of *P. spiratus* and *P.*

Totara and two species of *Elaeocarpus*. The vegetation of the forest comprises sixty-eight species of vascular plants, consisting of 35 species of trees and shrubs; 12 lianes; 2 parasitic; 12 herbaceous plants and 7 Ferns. The intermingled stems of the various lianes often form impenetrable masses, very different from anything we see in our native forests. It is computed that New Zealand contains no fewer than forty-seven species of liane, belonging to twenty-two genera and sixteen families.

THE LOCAL SOCIETIES.—On February 15, the Newcastle and District Horticultural Society held a public meeting, addressed by Mr. T. A. LAWRENSON, on the subject of home food culture. The lecture chiefly consisted of advice to those cultivating allotments, and the lecturer urged the members of the society to assist those engaged for the first time in vegetable growing by giving them practical help and counsel.

PUBLICATIONS RECEIVED.—*Hints on Potato Growing.* By A. J. Allsop, Superintendent of the Leeds City Parks. (Published by the Round-hay Allotments Association.)—*The Ceylon Agricultural Society's Year Book, 1917-1918.* By C. Drieberg. (Colombo: The Colombo Apoth. Co., Ltd.)—*Journal of the R.H.S. Gardens Club, No. IX., 1916.* (Colchester: Benham & Co., Ltd.)—*Journal of the Kew Guild, Vol. III., No. XXIV.* (London: Taylor and Francis, Red Lion Court.)—University of California publications: Bulletin No. 270, *A Comparison of Annual Cropping, Biennial Cropping, and Green Manures on the Yield of Wheat;* Bulletin No. 272, *Commercial Fertilisers.*—*Transactions of the Royal Scottish Arboricultural Society, Vol. XXXI., Part 1.* (Edinburgh: Douglas and Foulis, Castle Street.)—*Notes on Medicinal Plants.* By A. Hosking. Bulletin No. 78, The West of Scotland Agricultural Society. (Glasgow: Robert Anderson, 142, West Nile Street.)—*Notes from the Royal Botanic Garden, Edinburgh.* Nos. XLII., XLIII., XLIV., XLV. (Edinburgh: Neil & Co., 212, Causewayside.)—*Reports on Crops, Live Stock, &c.* Crop Bulletin No. 94, Department of Agriculture and Immigration, Manitoba.

NOTICES OF BOOKS.

FIELD NOTES ON SWEET PEAS.*

VERY many Sweet Pea enthusiasts will remember the visit paid by Mr. Lester L. Morse, of San Francisco, to the National Sweet Pea Society's great exhibition of 1912, and the surprise he showed at the wonderful flowers staged in the Royal Horticultural Hall by the most skilful of British growers. Some will also remember the good-humoured chaff Mr. Morse received concerning a certain "Bible," which humour said never left him either by day or night. It was a volume of notes on Sweet Peas, culled from all sources. These notes, and a vast amount of industry on the part of Mr. Frank Cuthbertson (now the supervisor of the Sweet Pea work carried on at Messrs. C. C. Morse and Co.'s seed farms in California), have been joined to produce a book of surpassing interest to Sweet Pea lovers all over the world.

The classes or types of Sweet Peas are reviewed, and then follows a brief historical sketch of each section. Here the notes on Early-Flowering Sweet Peas become particularly fresh and interesting. Unknown amateurs have not seldom been the means of enriching our gardens, and so, in this case, it appears that the variety *Blanche Ferry* was found in the garden of a quarryman's wife in northern New York, where the good lady had practised careful selection for many years. Mr. Tracy discovered the variety in its humble home, and Messrs. D. M. Ferry and Co. introduced it in 1889.

* *Field Notes on Sweet Peas.* By Lester L. Morse and Frank G. Cuthbertson. (Published by C. C. Morse & Co., San Francisco, Cal., U.S.A., 1917.) \$1.50.

The "cordon system" of cultivating Sweet Peas for exhibition purposes is dealt with at some length, and this chapter is peculiarly interesting to British cultivators, as it records the excellent results obtained by the Messrs. Morse in the grounds of the Panama-Pacific International Exposition of 1915. Capital hints regarding the packing of Sweet Pea flowers and their arrangement at an exhibition are given, and Mr. G. W. Kerr (who, like Mr. F. Cuthbertson, was trained in this country, and was a pupil of Mr. Andrew Ireland), gives a brief note on the general cultivation of the Queen of Annuals.

To me, however, the most valuable part of the book is the list of names of Sweet Peas, with descriptions. This list contains the names of 1,638 Spencer and grandiflora varieties, 201 early-flowering varieties, and 29 Cupid varieties. Having had a good deal to do with the production of the National Sweet Pea Society's lists of names, as well as the compilation of the Royal Horticultural Society's lists of Daffodil names, I am perhaps able to appreciate the labour Mr. Cuthbertson has put into this new list, which is certainly the last word on the matter up to the end of the year 1916. "To get the list together and alphabetise it has meant much labour, but I trust it may prove of interest if not of value to those associated with the Sweet Pea," is the compiler's modest observation. It is a splendid work, and as Spencers are differentiated from Grandifloras, date of introduction and name of introducer given, and the varieties considered to be obsolete distinctly marked, the list should prove invaluable alike to growers and seedsmen, who may add their own notes on the alternate blank pages and so keep the list up to date.

The illustrations showing the various types and forms are good, but the one intended to indicate the "infallible distinction between ordinary or Grandiflora Sweet Peas and new Spencers" is poor, and has apparently suffered greatly in the process of reproduction. But, anyway, the 220 large octavo pages of "Field Notes" are cheap at a dollar and a half, both for their general interest and value to the specialist. One could wish that there were such valuable lists of other florists' flowers. C. H. Curtis.

AMERICAN NOTE.

THE AMERICAN GREY SQUIRREL.

THE note in *Gard. Chron.*, vol. LIX., p. 224, on the grey squirrel, which has been acclimated in Great Britain, interested me. The animal is pretty and interesting, or what Americans term "cute," but after an acquaintanceship with it of over 25 years I have failed to find that it is of any economic value, while it has many bad traits.

It digs up and destroys bulbs, having a special fondness for Crocuses; it is also particularly destructive amongst Pears and our popular vegetable Sweet Corn. A few squirrels will soon ruin a large corn patch unless effective measures are taken against them. These squirrels make nesting places in the attics of houses, in barns and other outbuildings, shingles and cupboards being easily burrowed through. In spring, while the young growths on Elms and other trees are young and tender, the squirrels simply riddle them, cutting them off in squares, so that the ground is perfectly covered with them.

While the foregoing are serious faults, the most serious one is that these squirrels, or as they would be better termed, "tree rats," destroy immense numbers of young birds; this last offence to me is quite unpardonable, for here in New England the birds are of supreme economic value in helping to hold in check hordes of destructive insects. We are told

that squirrels have an economic value in that they help to disseminate nuts and seeds, but I consider the good they do is but the veriest fraction of the harm done to birds, buildings and crops, and I sincerely hope that this pretty, interesting, but destructive pest will not be allowed to spread in Great Britain.

GARDENERS IN AMERICA.

AS no young gardeners have come to America since the European war opened, there is a marked scarcity of assistant gardeners, more particularly those accustomed to greenhouse work. The same is true of garden labourers, many of whom have gone into occupations which are more remunerative, in spite of the advance in gardening wages. Of head gardeners there is no shortage at any time, owing to the fact that young men coming here feel that after one or two years in the New World they are fully competent to take charge of any garden. Not only is labour dear, but fuel and all kinds of supplies have advanced in price tremendously, in some cases more than in Great Britain. Cut flowers have sold particularly well during the present winter, prices averaging better than a year ago. Vegetable prices have never been equalled in my experience. Of the more common varieties, Potatoes are retailing at 11/12s. per bushel; Cabbages, 5d. per lb.; Onions, 4d. 7d. per lb.; Carrots, Turnips, Beets and Parsnips, 2s. 3d. per lb. *William N. Craig, Faulkner Farm, Brookline, Mass., U.S.A., January 31.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE VALUE OF LEES. I was glad to see the timely advice of Mr. Edwin Beckett (see p. 59) to grow more Lees. I have repeatedly pointed out the great value of the Leek and urged its more extensive culture in southern parts of England. Here, in France, it is grown extensively in every garden. My ignorance of the French language has prevented me from ascertaining the methods of culture, but appearances point to their being sown in drills, like Onions, and thinned, for they are usually 4 to 6 inches apart in rows 1 foot asunder. The plants are quite small even now, and presumably they are pulled and used for soups. In only a few cases have I seen any attempt to earth them up. I am not here advocating the French method of culture, but put my observations on record to show that our French friends highly value the Leek as an article of food. I get the *Gardeners' Chronicle* regularly and read it with eager interest. W. F. Rowles, British Expeditionary Force, France.

UNDER-CROPPING IN ORCHARDS.—Much more might be done to economise in land by under-cropping orchards with vegetables. I have in mind several sparsely planted orchards which have been laid down to grass, presumably to save labour. It would have been better for the trees if the ground had been planted with vegetables. Luxuriant grass, in an orchard where the trees are all standards, may be comparatively harmless, and the grass valuable for feeding purposes or for hay; but where the trees are a mixture of standards and bushes, under-cultivation is a more economical method of producing a double crop. The mowing of the vegetable crops tends to produce freedom of growth in the fruit trees. E. Molyneux, Swanmore Farm, Bishop's Waltham.

GALANTHUS IMPERATI ATKINSHII.—Atkins Snowdrop is one of the most beautiful varieties of this popular flower. This year, like all other Snowdrops, it is much later than usual. It came originally from the garden of the late Mr. Atkins, of Painswick. Another fine Snowdrop was later sent out under the name of *Atkinsii* in error. This one is tall, and is subject to a curious petaloid malformation, apparently a tendency towards doubleness, as an additional petal

or two are produced. When the flowers are fully open they thus present a singular appearance. Although this "pseudo-Atkinsii" is worth a place in the garden, the true *G. Atkinsii* far excels it in beauty of form and general appearance. The stems are tall and stout, the flowers perfect in form and of great purity, and the green markings are without a flaw. It is not at all common, either in private gardens or nurseries. It is different from *G. Melvillei*, also ascribed to *G. Imperati*, which is, in itself, only the southern form of *G. nivalis*. I have never seen finer flowers of *G. Atkinsii* than some sent me by Mr. E. A. Bowles, of Myddelton House, Waltham Cross, N. *Arnott, Moorwelltown, Dumfriesshire.*

THE WHITE WOOD STRAWBERRY (see p. 88.)—The following quotation from the *Fruit Cultivator*, by John Rogers, 1837, gives the information required by *A. N.*:—"This (the Red Wood) and its congener the White Wood (the later but an indifferent bearer) are natives of this country, and sometimes introduced into gardens by those who relish their sweet, tartish taste. These sorts are readily raised from seeds sowed as soon as ripe, and cleared of pulp, and in the following spring the seedlings may be hedged out where they are to stand for good." *Fredd, Bostock, Springfield, Cliftonville, Northampton.*

—The Wood Strawberry referred to by *A. N.* is the white form of *Fragaria vesca*. It was very popular in the early days of last century, and is referred to by Abercrombie and other authors of that period. The flavour of the berries is excellent, and a handful of the fruits added to ordinary Strawberries in jam making will noticeably improve the flavour. I shall be pleased, in honour of the Immortal Jone, to send a few plants later to *A. N.* *E. A. Bangard.*

PRUNING FRUIT TREES IN FROSTY WEATHER (see pp. 57 and 59).—These are some statements which are handed down from generation to generation, or which are copied from one author by another, the authority for which is lost in obscurity; there are others in which "the wish is father to the thought." May it not be possible that the question of pruning in frosty weather is one in which the comfort of the operator is more considered than the ill effect upon the trees? No one would choose to go pruning in a blizzard, but on a quiet, frosty day a man can prune in comfort, provided he is warmly clad. Again, one would not think of pruning Peaches, Apricots or Cherries in severe weather, but Apples and Pears may be pruned with all safety. Some draw the line at Plums, but we have been pruning young trees, standards, bushes and fan-trained, for the past month with 20° to 25° of frost at night, and freezing slightly during most of the day. I remember that during a very severe winter in the eighties, when our kaffee men were all under cover, the foreman, who had charge of the trained trees, and who disliked being shut up in a close and over heated building, wrapped his feet up in bags over his boots and sallied forth into deep snow. For a week or two he cut down young trees and pruned trained trees. It was said that the results would be disastrous and plainly seen. The latter was the only true forecast, for the trees cut down during the frost made an early start in the spring, and were plainly superior to those cut down later. In fairness it should be added that after a long frost, work being hindered, the execution of orders is delayed, and the pruning of trees left is somewhat later than is desirable; still, since the experiment above mentioned we have never hesitated to prune during frosty weather, if agreeable to the pruners, and like *Southern Grapes*, have seen no bad effects. *A. H. Pearson, Loughboro.*

REGISTRATION OF BUSINESS NAMES.—May I seek the hospitality of your columns for the purpose of calling attention to the obligation imposed by the Registration of Business Names Act on shopkeepers and other tradesmen, and, in fact, on everyone carrying on a business or profession in this country (except limited liability companies and other corporations). This Act provides that on and after March 21 next, all persons carrying on business in this country must trade under their own true names or else must be registered. The object of the Act

is to enable everyone to know with whom they are trading, and if persons are trading under their own names with no additions except their Christian name or names (or the initials thereof) it is not necessary to register, but if anything is added to the true name, or if a business is carried on under a fancy title, registration must be effected between February 21 and March 21, on pain of heavy penalties. A simple instance will serve to show what is required. If, for instance, John Smith owns a business, he may trade as "John Smith," or "J. Smith," and need not register; but if he trades as "Smith and Co.," or adopts a fancy title, such as "The General Drapery Stores," registration must be effected. And, in addition to registration, all business letters, trade catalogues, trade circulars and showcards which are issued or sent to any person in any part of His Majesty's Dominions must show in legible characters the true name or names of the proprietors of the business, and the present nationality or the nationality of origin, if other than British.

The individuals and business firms who are not trading under their own name or names (with no additions thereto) are liable, if not registered by March 21 next, to a penalty up to £5 per day for every day of the offence, or if such individual or firm enters into a contract with a registered party, such contract cannot be enforced by the law if the other party should wish to get out of it. It is also open to any private individual to set the law in motion against a defaulter, except in regard to section 18 (publication in trade catalogues, etc.) where the consent of the Board of Trade must be obtained. It is understood that the forms for registration will be obtainable on and after February 21, from the principal post offices and the offices of the Registrar for England and Wales, and at 79, Russell Square, W.C. *James Martin, Chairman of the Parliamentary and Commercial Law Committee, London Chamber of Commerce.*

SOCIETIES.

ROYAL HORTICULTURAL

FEBRUARY 27.—The usual fortnightly meeting of the Royal Horticultural Society was held on Tuesday last in the Dipl. Hall of the London Scottish, Buckingham Gate. There was a slight increase in the number of exhibits compared with those of the two previous shows, but they were not sufficient to fill the hall. In the floral section, Perpetual-flowering Carnations formed the chief exhibits. There were also a few Cyclamen, a good group of Ferns, and some early-flowering Alpines.

The Floral Committee recommended an Award of Merit to a new variety of Cyclamen, and seven Medals to groups.

The Orchid Committee awarded one First-class Certificate, three Awards of Merit, a Preliminary Commendation, and two Medals to groups.

The Narcissus Committee awarded a Silver Banksian Medal to an exhibit of Daffodils.

The only group before the Fruit and Vegetable Committee consisted of seven varieties of Savoy from the Society's trials at Wisley, being those which showed least injury from the recent severe frosts.

Floral Committee.

Present: Mr. H. B. May (chairman), and Messrs. G. Harrow, G. Reuther, J. Green, J. W. Moorman, J. Neal, W. Howe, R. W. Wallace, C. Elliott, C. R. Fielder, J. Jennings, A. Turner, J. Dickson, C. Dixon, T. Stevenson, H. Cowley, C. E. Pearson, W. P. Thomson, and E. H. Jenkins.

AWARD OF MERIT.

Cyclamen Cherry Rippe.—The merit of this new variety lies not in the size of the blooms, which are not very large, but in the brilliant colouring, a glowing carmine, resembling the tone combined carmine No. 3 in the *Répertoire des Couleurs*. The plant forms a small, compact specimen, and the leaves are pleasingly but not conspicuously

marbled. It is very floriferous, and makes a handsome subject for indoor decoration. *From Messrs. STEVART LOW AND CO.*

GRASSES.

The following medals were awarded for collections:—

Silver Flora Medals to Messrs. H. B. MAY AND SONS, The Nurseries, Edmonstone, for FERNS, Cyclamens, Blue-flowered Cyclamens, and the handsome scarlet *Colymbia magnifica*. The latter plant was used as a cutting piece, and the front was furnished with a semi-circular row of *Richardias*, overhung by plants of *Lomaria gibba*, a small tree-Fern; and Messrs. ALWOOD BROS., Wivelsfield, Haywards Heath, for Perpetual-flowering Carnations.

Bronze Flora Medals to Messrs. J. CHEAL AND SONS, Crawley, for boxes of coloured FERMOSES, not plants of *Rhododendron Jacksoni*, and *R. praeox* (the former being particularly well-flowered), and specimens of choice and rare Conifers; Mr. J. C. JENNET, Rayleigh, for Perpetual-flowering Carnations.

Silver Banksian Medal to Messrs. STEVART LOW AND CO., Bush Hill Park, Enfield, for a group of Perpetual-flowering Carnations, and one of well-flowered Cyclamens, including a number of the new variety *Cherry Rippe*.

Bronze Banksian Medals to Messrs. H. J. CHAPMAN, LTD., Ryde, for a group of their beautiful Iris Cantab, with flowers of lavender blue; seedlings of *Cyclamen ibernicum*, including some with crimson flowers; a number of hybrid Freesias, and Daffodils in pots; the Misses ALLEN BROWN, Henfield, Sussex, for Violets of the Princess of Wales variety.

Other exhibitors were Mr. G. REUTHE, Keston, Kent, who showed Alpines and flowering shrubs, including *Hamamelis arborea* and *H. japonica var. macrantha*, which has broader but paler yellow flowers than *H. arborea*; Mr. G. W. MILLER, Wisbech, who showed spring bulbous plants; and Mr. C. ELLIOTT, Stevenage, who showed a batch of *Saxifraga Bursiferiana*, plants of which in small pots were flowering freely.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Messrs. Jas. O'Brien (hon. secretary), W. Bolton, S. W. Flory, Arthur Dye, W. H. Hatcher, T. Armstrong, Frederick J. Hanbury, F. R. Ashton, R. A. Bolte, and R. Brooman-White.

AWARDS

FIRST CLASS CERTIFICATE.

Elaphoglossa Bolleei (Elisabethae s. Prostrata), from Messrs. CHURLESWORTH AND CO., Haywards Heath. This is one of the most remarkable hybrids of recent times, and intermediate between the white *E. Elisabethae* which was the seed-bearing parent, and the rosy mauve *E. Pedersiana*, whose colour predominates in the new hybrid. We are informed that the time from the fertilization of the flower to the development of the true capsule and the germination of the seeds was three months, which probably constitutes a record. The stout inflorescence is 3 feet high, dark in colour after the female parent, and it bore 12 flowers, each more than 3 inches across and wax like in texture, and four buds. The sepals and petals are of deep rosy mauve; the lip is white with a yellow crest and narrow tinted apex. In its seedling habit and nearly erect inflorescence the plant resembles *E. Pedersiana*.

AWARDS OF MERIT.

Miltonia Veans (vesicularis s. Phalaenopsis), from Messrs. CHURLESWORTH AND CO., Haywards Heath. *M. vesicularis* was the seed bearer, and the pretty new hybrid approaches that species in habit and the manner in which the rose-tinted sepals and petals are displayed. The lip individual *M. Phalaenopsis* very strongly. The base is yellow, with rayed-crimson lines extending to the mid-vein spotting with which its white front-lab is decorated.

Cymbidium insipide album (see fig. 35), from Messrs. ARMSTRONG AND BROWN, Orghidhurst, Timberidge Wells. Of the large numbers of *C. insipide* imported, this is the first albino submitted before the R. H. S. Committee for award. Its value as a white-flowered Orchid in the hands of the hybridiser can scarcely be over-estimated.

The spike bore 11 white flowers, of fine form and substance, and without any sign of the vinous-purple lines and spots on the petals and lip, as in the many forms of the species which have already appeared.

Odontioda Joan Broadlands variety (Oda, Charlesworthii × Oda, aristosissima), from E. R. ASHWORTH, Esq., Broadlands, Camden Park, Tunbridge Wells. A handsome flower, and the darkest variety of the cross. The sepals and petals are deep claret-red, with a chocolate tint. The lip is mottled and flushed with ruby-red, lightest in front. The crest is yellow.

PRELIMINARY COMMENTARY.

Odontioda Madeline var. Opal (Oda, Charlesworthii × Oda, crispum), from Messrs. ARMSTRONG and BROWN, Tunbridge Wells. A richly coloured hybrid, of fine size and shape, flowering for the first time. The sepals and petals are glowing mulcharet colour, with a slight gold shade. The lip is blotched with deep rosy-mauve colour.

GENERAL EXHIBITS.

MESSRS. CHARLESWORTH and Co. were awarded a Silver Flora Medal for a fine group, consisting principally of red *Odontiodas* and purple and white *Odontoglossums*. Specially noteworthy were a handsome blotched *Odontoglossum crispum*, a magnificent *O. Aglaon*, the new *O. Nortia* (Jasper × Phoebe), finely blotched, a fine form of *Odontioda Sensation* (*Oda, Vuylstekeana × Oda, crispum*), good white *Cattleya Enid* alba, and a fine form of *Brasso-Cattleya Cliftonii*.

MESSRS. SANDER and SOXS, St. Albans, were awarded a Silver Banksian Medal for a group of *Cymbidium* Pauwelsii, *C. Gottianum*, *C. Albanense*, varieties of *Miltonia Bleuana*, a selection of pretty species, the new hybrid *Laelio-Cattleya Serr* (*L.C. bleibeiensis × C. Percivaliana*), with pale rose-coloured sepals and petals tinged with yellow and deep purple line; and *Brasso-Cattleya Andre Maron* var. *amabilis* (*B.C. Mrs. J. Leemann × C. Schroderae*) of good shape and delicate colour.

MESSRS. ARMSTRONG and BROWN, Orchardhurst, Tunbridge Wells, showed a good selection of new *Odontoglossums* and *Odontiodas*, the best of which were *Odontioda Armstrongii* var. *Jupiter* (*Oda, Vuylstekeana × Oda Armstrongii*), a charming flower of a deep reddish-rose tint, with white tip to the labellum and slight white margin to the other segments; *Odontoglossum eximilis* finely blotched, the new *Sophro-Laelio-Cattleya Iris* (*L.C. Thymoe × S.C. Doris*), a pretty flower, shaped like *Cattleya Percivaliana*, with light cowslip-yellow sepals and petals and soft rose-magenta lip with yellow lines running from the base; *Sophro-Cattleya Atrens gloriosa* (*C. Lawrenceana × S. grandiflora*), a profuse flower, and differing from the ordinary mauve-coloured forms in having the sepals and petals deep scarlet; and *Cattleya Ochoa magnifica* (*Trianae × Enid*), large, and of fine shape and colour.

MESSRS. FLORY and BLACK, Orchid Nursery, Slough, showed *Cattleya Blackii* alba (*Mendeli alba × Geskeiana alba*), a fine white flower, nearest in form to *C. Mendeli alba*, and the new *Brasso-Laelio-Cattleya Harrisonii* (*L.C. Juno × B.C. Mrs. J. Leemann*), a very interesting and pretty rose-tinted cross, in which *L. majulis*, obtained through *L.C. Juno*, shows plainly in the broad, flatly-displayed lip.

MESSRS. STUART LOW and Co., Jarvisbrook, Sussex, sent *Brasso-Cattleya speciosa* (*B.C. Digbyana-Mendeli × C. Schroderae*), bluish white, with yellow disc to the lip; a good *B.C. Mendel*, and *Laelio-Cattleya Galabina* (*L.C. Myra × C. Schroderae*), a pretty primrose-coloured flower, with orange-coloured disc to the lip.

Narcissus Committee.

Present: Messrs. E. A. Bowles, chairman, Miss E. Willmot, Messrs. W. Pompat, James Hanson, F. H. Chapman, C. Boume, P. E. Bull, G. Heath, and C. H. Curtis.

The only award made by this Committee was a Silver Banksian Medal, for boxes of *Dafnodi* shown by Messrs. R. H. BATH, LTD., Wisbech.

The varieties included Sir Watkin, Golden Sun, Victoria, and *Narcissus odorus unguisus* fl. pl.

Fruit and Vegetable Committee.

Present: Messrs. J. Creal (vice-chairman), W. Wilks, E. A. Buryard, A. Bullock, J. G. Weston, A. R. Allan, J. C. Allgrove, P. D. Tuckett, A. W. Metcalfe, W. H. DIVERS, E. Beckett, W. Bates, Owen Thomas, and W. Pompat.

The following were the varieties of Savoy exhibited from the Society's gardens: Ormskirk (Hawthorn Selection), Ormskirk Late Green (R. Sydenham, Ltd.), Late Drumhead (W. and J. Nutting), Selected Green Curled (Dobbie and Co.), and New Year (Sutton and Sons).

NORFOLK AND NORWICH HORTICULTURAL.

FEBRUARY 10.—The annual meeting of the Norfolk and Norwich Horticultural Society was held at the Guildhall, Norwich, the Lord Mayor (Mr. G. M. Chamberlin) presiding.

The statement of accounts showed a balance of £130 9s. 11d.

Mr. J. E. P. Pollard, the acting hon. secretary, read the annual report. The number of members was 204. The report referred to the establishment of a herb-growing association, and recommended that the expenses of the preliminary meeting and of the initial propaganda work in connection with the herb movement in the county should be borne by the society. Since September 26 the association had been quite distinct from the society, and now had a council, executive committee, and offices of its own. The committee recommended that the society should suspend its exhibitions during 1917, and that its president, vice president, committee, and officers should continue in office for the year. The attention of members was drawn to the appeal made through the Press and elsewhere by Lord Beresford, president of the Vegetable Products Committee, for gifts of fresh fruit, vegetables, jams, and preserved fruits throughout the winter months. A local committee had been formed in Norwich for receiving and collecting goods. The report was adopted.

On the proposition of the Sheriff (Mr. G. Ernest White), it was decided to make a grant of £10 to the Norwich Food Production League.

LINNEAN.

The general monthly meeting of this Society was held on February 1, 1917, Sir David Prain in the chair.

Mr. C. E. Salmon made a communication on "Some Plants that might occur in Britain," showing specimens of the plants considered likely to occur, and their allied forms possibly to be mistaken for them. Some undoubtedly native species would seem unlikely from their European distribution to occur here, such as *Sagina Reuteri* and *Lloydia alpina*, whilst it is manifestly uncertain what species may be ultimately found in Britain. He had therefore chosen the ten following species, all well-defined plants, and recognised on the Continent, leaving out consideration of minor species for the present.

Ranunculus oleraceus, Lloyd, allied to *R. tripartitus*, DC.; *Cerastium brachypetalum*, Desp., close to *C. glomeratum*, Thunb., especially its subvariety *elongatum*; *Alisma dimensis*, Garbice, distinguishable from *A. tenuifolia*, Crantz; *Spergularia Maritima*, Boreau, closely allied to *S. pentandra*, Lam., found in Ireland by Dr. William Sherard, and recorded in Ray's "Synopsis," ed. 3, p. 351; *Veronica opaca*, Fries, very near *V. agrestis*, Linn., and *V. polita*, Fries; *Rhinanthus hirsutus*, Lam., comparable with our *R. major*, Ehrh.; *Ruppia brachypus*, Gay, very near *R. rostellata*, Koch; *Helocharis mamillatus*, Lindb. f., between *H. palustris*, R. Br., and *H. unguiculus*, Schultes, distinguished by their fruits, as shown in the diagram exhibited by the author; *Carex frigida*, All., previously reported from Scotland, but the plant found is now known as *C. binervis* var. *Sodderi*, Linton; and lastly, *C. laevirostris*, Fries, nearest to *C. rostrata* of our British species.

The last communication was by Messrs. Charlesworth and J. Bamsbottom, "On the Structure of the Leaves of Hybrid Orchids."

Mr. R. A. Rolfe, A.L.S., contributed further remarks, and showed leaves of Orchids in illustration.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FEBRUARY 15.—Committee present: The Rev. J. Crombeshelm (in the chair), Messrs. R. Ashworth, D. A. Cowan, Dr. Craven Moore, J. Cypher, A. G. Ellwood, J. Evans, P. Foster, A. H. Headley, A. J. Keeling, D. McLeod, W. Shackleton, H. Thorp, and H. Arthur (secretary).

GROUPS.

R. ASHWORTH, Esq., Newchurch (gr. Mr. Davenport), was awarded a Large Silver Medal for a group of *Odontoglossums*, *Odontiodas*, *Cattleyas*, *Brasso-Cattleyas* and other plants.

MESSRS. CYPER and SOXS, Cheltenham, were awarded a Silver Medal for *Cypripediums*, *Laelia anceps* Hillii, *Calanthe Pycnan*, C. Wm. Murray, *Mastodella gurganua*, a fine variety of *Cymbidium Wiganianum*, and *Coelogyne intermedia*.

Other exhibitors were Messrs. GRATRIX, Whalley Range; Messrs. J. and A. McBEAN, Cooksbridge; Messrs. SANDER and SOXS, St. Albans; Mr. W. SHURKLETON, Bradford.

AWARDS.

FIRST-CLASS CERTIFICATE.

Odontoglossum crispum var. *Mrs. E. W. Thompson*. The flower is of good shape, with brown blotches on the sepals; petals serrated, solid reddish-brown in colour with white margin; *Odontioda Diana magnificum*, a large, finely-coloured flower, both from P. SMITH, Esq.

Brasso-Cattleya Cattleya Joan var. Mrs. Gratrix, a well-formed flower of apricot-yellow colour, from Mrs. GRATRIX.

Cymbidium Alexanderi expositum, a large, well-shaped flower, lip bearing small crimson markings, from Dr. CRAVEN MOORE.

AWARDS OF MERIT

Odontoglossum Jasper var. *Ashworthii*, *O. Moonlight*, *Cattleya Mohel* (C. *Wauveri alba × C. Susanna Hyg. de Coum*), and *Brasso-Cattleya Barwa* var. *Diphne*, from R. ASHWORTH, Esq.

Odontoglossum Ceres, *Sir Trevor Lawrence's* var. (*Bolton × Rossii*), and *O. Cobham* var. *Mrs.*, from P. SMITH, Esq.

Cattleya Enid var. *Mrs. Gratrix*, from Mrs. GRATRIX.

Odontoglossum andatisianum var. *Caroline*, from Dr. CRAVEN MOORE.

Odontoglossum amabile Gilroyd var., from JOHN HABITTY, Esq.

CULTURAL CERTIFICATE.

Mr. DAVENPORT, gardener to R. Ashworth, Esq., for *Odontoglossum Jasper Mastereana*.

NORTH OF ENGLAND HORTICULTURAL.

FEBRUARY 16.—The annual general meeting of the North of England Horticultural Society was held at the Law Institute, Leeds, Mr. J. S. Brunton (chairman) presiding.

The statement of accounts, presented by the secretary (Mr. J. C. Jackson), showed a balance in hand of £70.

The chairman outlined the proposals by which the Council hoped to assist in food production, by organising a panel of lecturers on vegetable and fruit culture. The society's lecturers would be available to plot-holders in any part of the North of England, the local societies to pay expenses, which in all cases would be nominal. Local societies could become affiliated with the N.E.H.S. on payment of 10s. 6d. or £1 1s., and such societies would receive N.E.H.S. silver and bronze medals to award to the owners of the best cultivated vegetable gardens or plots in their area.

Earl Grey was re-elected president, and Mr. Brunton, chairman, Mr. Jackson, who resigned

the secretaryship, was elected a member of the Council, and the secretarial work will be resumed by the Rev. J. Bernard Hall, of Farnham Vicarage, Knarborough.

BRITISH WHOLESALE FLORISTS

The committee appointed at Essex Hall, on January 15, to arrange for the establishment of the British Wholesale Florists' Federation, has now so far advanced with the preliminary business that a general meeting will be held at Essex Hall, Essex Street, Strand, W.C., on Tuesday, March 13, at 5 p.m., for the purpose of presenting the proposed rules, and electing a president and committee for 1917. A statement of work already accomplished and progress made will be given on this occasion. The signatories at the original meeting are receiving a personal invitation to attend, but all wholesale flower growers and salesmen who are interested in the formation of a strong federation for mutual help and protection will be welcome. Officers have been taken at 55, Wellington Street, Covent Garden, W.C., but until these are ready for occupation all correspondence, including applications for membership, should be sent to Mr. Charles H. Curtis (secretary), c/o Mr. George Munro, jun., 4, Tavistock Street, Covent Garden.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

FEBRUARY 12.—The monthly meeting of the Society was held in the Royal Horticultural Society Hall, on the 12th ult., Mr. Chas. H. Curtis presiding. The sick pay for the month on the ordinary side amounted to £54 16s. 2d., and on the State Section to £28 14s. 2d., and Maternity benefits to £16. The Trustees reported that they had invested £691 in the new War Loan, which, with conversion, made a total of £5,200. The new rules for the Juvenile Section were ordered to be printed for adoption at the annual meeting, which will take place at the Royal Horticultural Society's Hall on Monday, March 12, at 7 p.m.

CROPS AND STOCK ON THE HOME FARM.

MAIZE

For sowing in milk green Maize is a little during dry weather in September and October, as at that time the grass supply often fails, and in the lack of a substitute the milk yield diminishes. It is commonly cut and strewn over the pastures once daily, or fed in the cow house at milking time. All kinds of stock do well on green Maize. The White Horse Tooth variety is mostly grown. One and a half bushels of seed per acre is sufficient, and it should be planted 3 inches deep. It sown shallow, rooks quickly and it will spoil the prospect of a crop. The land should be well manured and deeply ploughed in the autumn. The first week in May is early enough to sow the seed; if earlier a cold spell hinders growth; even excessive rains coupled with cold soil will cause the seed to rot. Sow the seed thinly by hand in the furrow following the plough, thus ensuring its security.

TREFOIL, OR FODDER CLOVER

Where sheep are kept mainly on stubble land a continual food supply has to be maintained throughout the year. A mixture of Trefoil and Italian Rye Grass at the rate of 8 lbs. per acre in April, along with Oats or Barley, provides much useful green food in June the following year. If not required green an extra crop of hay is assured.

THE MANAGEMENT OF CHICKENS.

Early in March is a good time to prepare for hatching chickens in quantity, for stock purposes. Cockers in November and December sell readily

if they are pure in breed and strong, vigorous birds. Pullets are even more profitable during the same period in egg production.

There are many types of incubators to choose from. The higher-priced machines are not always the more expensive in practice, as they are economical in their consumption of oil. Constant attention is the main factor in success. Full instructions in the management generally accompany each machine, and if these are carried out no trouble need be anticipated in obtaining a successful hatch. A room free from floor vibration is necessary, and the incubator must stand level on a firm base. The thermometer in the egg drawer should register 101° for two or three days, to ensure that all is in order before putting in the eggs. Some persons put in more eggs than the prescribed number. This I do not advise. The eggs should be perfectly fresh, of good size, of normal shapes and thin shells. As the eggs are placed in the drawer, on one side should be written in pencil the date, and on the opposite side a cross. This method of marking the eggs facilitates their being turned twice daily, to prevent the contents sticking to the shell and to cool the eggs for, say, ten minutes. There are various methods of turning the eggs in the drawer; some take out a few in the centre and roll the others over into that space. A more expeditious plan is to wet the tip of the index finger and roll over the eggs until the underneath mark is uppermost. The eggs should not be turned after the eighteenth day, but they should be cooled in the same way. The thermometer in the drawer should regularly register 105°; some prefer 104°, but not more.

When setting eggs under hens it is wise to put down two hens at the same time. If one is sitting alone, she occupies a whole coop, and may only produce quite a few chickens, whereas if two hens are put down at the same time, the two hatches, if not too large, can go with one hen, who can easily look after sixteen chickens. All the eggs in the two nests need not be of the same level; but do not give a hen strange chickens after she has had her own for several days, or she may kill the others. As the chickens hatch, remove the empty shells, or they may become encased over the end of hatching eggs. In such a case the emerging chick might be smothered. Leave the chickens under the hen until they are quite dry. They do not require food for the first twenty-four hours. The coop should be new, or newly white-washed, and be placed on a board floor on grass, in a sunny, sheltered spot. In very dry weather this board floor is not required.

First put the hen in the coop, giving her a little food. She will collect the chickens under her wings at once, where they will obtain the desired warmth. Four times daily after the first twenty-four hours the chickens should be fed with just as much as they will eat.

There are two kinds of chicken food, the dry and the wet. The former consists of prepared dry food mixed by the vendor, and it forms an easy and efficient method of feeding. The wet food consists of hard-boiled eggs, soaked bread scraps or biscuit meal, mixed with oatmeal or middlings. The latter may be cheaper, but the dry method has its advantages. Too much egg food is liable to cause diarrhoea. Upon the slightest sign of this complaint, add powdered chalk to the food and reduce the amount of egg.

When the coops are upon grass they should be moved several times daily, as tainted ground is fatal to chickens. For chickens fed upon soft food, water is not necessary until they are six weeks old. At no time is it wise to give them too much. To the hen in the coop water should be given daily. Maize should be her principal food. It is not recommended to feed her with the chicken feed. The drinking vessels and the water should be quite clean.

SCOUR BASKET.

In a recent note I spoke in favour of this pad for fattening cattle. Here there are two acres still in the ground, and after the recent frost 19° I find the roots are quite sound. They bury themselves in the ground even more deeply than Parsnips, and the ample foliage affords protection. Horses and pigs eat

them with avidity, and if used reasonably they should prove a valuable food.

KOHL RAB.

Where a difficulty is experienced in obtaining good crops of Turnips, Kohl Rabi is a good substitute. The plants are also not so liable to insect pests or mildew. Champion Short Top variety is the best for an early feed for fattening lambs, giving a greater bulk of food.

The Hardy Green variety is later, and is very nutritious, but should be used before the roots become too old. The cultivation is much the same as that of Turnips following a straw crop. Dull 3 lb. of seeds per acre, and transplant the seedlings in June to fill gaps, to make an extra plot, or to fill vacancies in the Turnip or Swede crop. *E. Molyneux.*

Obituary.

JOHN H. BOWDEN.—We regret to announce that Mr. J. H. Bowden, formerly head gardener at Tolven, Redruth, died on the 20th ult., at the advanced age of 89 years. He was born at Helston, and served his apprenticeship in the gardens of Miss Smedley at that town. Later, he was gardener at St. Erth and in Worcester. In 1867 he took control of the gardens at Tolven, in the service of the late Mr. Alfred Lanyon. For forty years he was one of the most successful cultivators and exhibitors in the West of England, his specimen stove and greenhouse plants being remarkably good. At the age of 79 he retired, and spent his last years cultivating the flowers in his own small garden.

ETIENNE SALOMON.—We regret to learn from the pages of the French horticultural press of the death, on January 27, of the celebrated French vine grower, Monsieur Etienne Salomon. He was born at Saint Giers in 1847, and early took up the occupation of Grape growing. He settled at Thomery, where he established a vine yard of which the reputation has become almost universal; his wonderful collection of vines will long be remembered by horticulturists who visited his establishment. His activities were not confined to the growing of fruit, and he studied exhaustively such subjects as the preservation of Grapes and their transport abroad. He obtained a number of distinctions, being an Officer of the Legion of Honour, Chevalier du Merite Agricole, vice-president of the Société Nationale d'Horticulture de France, and president of the Syndicat Central des Primeuristes Français. He leaves a widow and one son.

CHARLES HENRY ROBINSON.—We regret to record the recent death of Mr. C. H. Robinson, for the past 25 years gardener to Mr. H. L. Williams, Chichester Road, Croydon. Deceased was only 49 years of age, but had been suffering for some time from an affection of the nerves. He leaves a widow and young son.

REPLIES.

PROTECTIVE COMPOSITIONS FOR TREES.

REPLIES to N. (p. 80), the composition he refers to is Abbot's Tree protective composition, for protecting trees from insects. The material is sold in tins at 1s. 6d. and 3s. 6d., and in 2½ cent kgs. at 2s. 6d. Stewart and Co., 13, South St., Andrew Street, Edinburgh.

It may be interesting to state that we use a mixture composed of 2 ounces each of black soap, sulphur, and soot dissolved in water to the consistency of paint. The specific is usually applied with a brush, but for shrubs it is strained and applied by means of a syringe. The composition has proved effective against rabbits and mice, and it retains its deterrent powers for two or three years. It does not injure the tenderest bark or bud, and it is also a powerful insecticide. *Barn-duth.*

MARKETS.

COVENT GARDEN, February 25

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eds.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices, including Arums, Azaleas, Camellias, Carnations, Dahlias, and Tulips.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage plants and their prices, including Adiantum, Asparagus, Ferns, and Myrtle.

French Flowers, &c.: Average Wholesale Prices.

Table listing various French flowers and their prices, including Aemone, Lilac, and Marguerite.

REMARKS: Latest consignments of cut flowers are arriving and for most kinds the prices have fallen considerably. Carnations are much cheaper than last week. Roses are improving in quality very fine from Richmond, Saraband, and Pink Queen are sought for sale. In addition to William's (yellow) and Clara Butt there are a few other varieties of Darwin Tulips. Home-grown Dahlias are arriving in much finer condition, and consist chiefly of Emperor Golden Spur, Princess, Sir Watkin, and Victoria. There are also abundant supplies of Snowdrops, and a few English Violets, which find a ready sale. A much larger consignment of Guernsey and Sicily flowers is reaching Covent Garden last week and consisting chiefly of yellow and white Natives, Daffodils, Freesia, a few consignments of Anemone tuberosa and Albino (star of Bethlehem), which add largely. High prices are still realized for tulips, such as Apache and pinks. A Stronger Adiantum Fern (Maidenhair), and Smilax. Hardy foliage is more plentiful. The arrival of French flowers is very uncertain.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing various plants in pots and their prices, including Aralia, Asparagus, Aspidistra, and Cyclamen.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices, including Artichokes, Beans, Broccoli, and Cabbages.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices, including Apples, Bananas, Chestnuts, and Grapes.

REMARKS: Supplies of English Apples are limited, but the market is well supplied with imported Apples in boxes, and a fairly plentiful supply of Nova Scotian and United States barrelled bins. Pears from California consist principally of the variety Winter Nones. A consignment of Cape bins is being consigned to Paris, containing Apples, Avocettes, and Melons. Supplies of grapes are decreasing, pointing to the closing season. Forest Rhubarb is very plentiful, and there is a fair quantity of Siskale. Melons are a better supply but quantities are only a moderate quantity of Asparagus there are fairly large supplies available. The market is nearly cleared of French Tomatoes (under the vegetable and fruit) and becoming scarce. P. H. R., Covent Garden Market, February 25, 1917.

Potatoes

REMARKS: There is a good demand for Potatoes, but here are not sufficient stocks in London to meet requirements. Favored J. Newborn, Covent Garden and St. Pancras, February 28, 1917.

DEBATING SOCIETIES.

BRISTOL AND DISTRICT GARDENERS.—The usual monthly meeting of this Association was held on Thursday, February 22, Mr. G. W. Harford presiding. The lecturer was Mr. Leader, representing the Reading Association, who read a paper entitled "The Value of Observation to the Gardener." Mr. Leader's remarks were followed with much interest. The two prizes, which were given by Mrs. Cary Batten, for two Cyprinellus, were won by Mr. Jennings and Mr. Scott. Mr. Blanchard was awarded a Certificate of Merit for two pots of Freesias.

BATH GARDENERS.—The monthly meeting of this Society was held at the Foresters' Hall on February 12. Mr. T. Parrott presiding. A paper on "Orchids" was read by Mr. R. Jennings, of the Bristol Gardeners' Association.

GARDENING APPOINTMENT,

MR. F. W. BUSSON, for the past 14 years Gardener to Col. R. Barrack, at Gardener to C. P. Parsons Esq., Wipers, Stebbins, Bournemouth, Sussex. [Thanks for donation to R.G.O.F. box.—Eds.]



BLEEDING OF VINES: H. J. S. Nothing you can do now will stop the bleeding of your vines, but it will cease soon after growth commences. You were too late in pruning, and kept the house too warm after the roof was repaired. Frost will not injure dormant vines provided the rods are well ripened.

LEAVES FROM ROADS: J. T. The presence of either petrol or tar in the material you have obtained from the road will certainly be injurious to the crops, and your suggestion to remove the leaves from the ground had better be carried out. Since the smell of tar is apparent in the leaves, they must be impregnated with it. You could burn the leaves and use the ashes, which will contain potash, burning out the tar and petrol in the process.

NAMES OF FRUITS: F. G. T. Cucurbitaceous fruit. Unable to trace; send leaves and flowers when in bloom.—Shropshire. Apples, (1) Winter Greening; (2) Loudon Pippin; (3) Baxter's Pearmain.

NAMES OF PLANTS: R. M. Satterly. Bilbergia nutans—A. H. L. The imperfect flowers sent are probably Calanthe Veitchii. After flowering place the plants on a shelf in an intermediate house and keep them perfectly dry until growth starts again, when they should be watered and watered sparingly until root action develops.—H. P. D. 1 and 2. Forms of Cyperopodium Actaeus (insigne x Lecanum); 3, Cyprripedium Calypso (Boxallii x Spicerrimum). All the others are forms of Cyprripedium Dicksonianum (Heia Euryades x villosum). A batch raised at Langley and named Countess of Carnarvon showed all the variation seen in the flowers you send.—Robyt, 1, M. dorsiventer floribunda; 2, Acacia armata; 3, Ardisia crenulata; 4, Azalea amoenata; 5, not recognised, send when in flower.

PLANTING POTATOES: T. C. The variety Up-to-date still succeeds well on certain soils, but unless you know that it is suited to your district you would be better advised to select a more recent variety. Ascertain which sorts succeed well in the district, in similar soil to that in the beds you are going to plant. In ordinary districts the best time for planting is about the end of March; if late frosts occur after the sprouts are through the soil, draw a little earth lightly over the tops to protect them. The trench in which the tubers are planted should be 5 inches deep, or 7 inches if manure is placed in the bottom. The rows should be 3 feet apart, and the tubers 18 inches apart in the rows.

Communications Received.—H. L. Stoke Poges, F. J. H.—Beal, G. P. B.—W. C. M.—G. H. B.—Courtney, P.—T. B. Leicester.—Sir A. F. W.—G. A.—E. B.—T. W., Manchester.



“SANITAS” POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (or, London) of all Chemists, Stores and Nurseries.

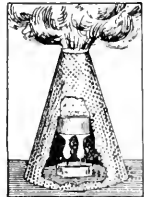
THE “SANITAS” CO., Ltd.
Limehouse, London, E.
Awarded Medal at Royal Horticultural Exhibition, 1911.

A. F. DUTTON'S Noted Carnations.

Strong flowering plants in 5in. pots.
In 6 good Standard varieties, 15/- per doz., 96/- per 100.
In 6 good Novelties, 20/- per doz., 128/- per 100.
Packed free for cash, carr. forward.

The Nurseries, **IVER, BUCKS.**

LETHORION :: VAPOUR CONE Fumigator



Introduced 1885.
The marvellous effect of this simple and cheap method of Fumigating Greenhouses is fully borne out by the enormous increase of sales year by year.

Only a match required for starting the Cone. Full directions for use on each Cone.

Thousands of testimonials received from all parts.

Registered Trade Mark, 6207.
Prices. No. 1, 500 to 1,000 cubic ft., 6d.; No. 2, 1,500 cubic ft., 8d.; No. 3, for 2,000 to 2,500 cubic ft., 1/-.

“TENAX” THE NEW AND MOST SUCCESSFUL Grafting Wax

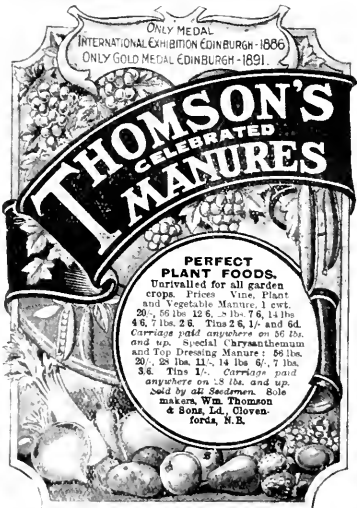
It is a much required “HOME-MADE” article to meet the requirements of all Nurserymen and Gardeners.

It is rapidly taking the place of all Foreign and other preparations for all Grafting and Budding Purposes.

In Tins, each 6d., 1/-, 2/-, 4/-, 6/-. Also in bulk at reduced rates.

To be obtained through the Nursery and Seed Trade generally.

CORRY & CO., Ltd.,
Bonded Chemical Works, Shad Thames,
LONDON, S.E.



ONLY MEDAL INTERNATIONAL EXHIBITION EDINBURGH-1886 ONLY GOLD MEDAL EDINBURGH-1891

THOMSON'S CELEBRATED MANURES

PERFECT PLANT FOODS.
Furnished for all garden crops. Prices: Nice Plant and Vegetable Manure, 1 cwt. 20/-; 50 lbs 12/6; 100 lbs 7/6, 14 lbs 4/6, 7 lbs 2/8. Tins 2/6, 1/- and 6d.

Carriage paid anywhere on 50 lbs. and up. Special Christmas and Top Dressing Manure: 55 lbs. 20/-; 50 lbs 11/-, 14 lbs 6/-, 7 lbs 3/6. Tins 1/-.

Carriage paid anywhere on 25 lbs. and up. Sold by all Seedmen. Sole makers, Wm. Thomson & Sons, Ltd., Glenferrie, N.B.



SWEET PEA

Autumn Sown Cold Grown

PLANTS
OUR GREAT SPECIALITY.

All Devotees of this Charming Flower should send for our **NEW LIST**. It contains **90 Varieties including 20 Novelties**. These are a Selection of the “**Cream**” and we honestly believe that **there has never been offered as plants such a comprehensive Collection of First-Class Varieties**.

Everyone who has a greenhouse, how ever small, should aim at flowering these as early as possible. **Tomato Crop** can follow.

NO HEAT IS REQUIRED. PLANT or POT now.
We find “**Collections**” a very popular form of buying, so offer 6 plants each, 12 varieties, our selection, 3/3; 12 ditto, 6/9; 25 ditto, 10/6; 50 ditto, 18/6.

TOMATOES—A strong line of which we offer as follows:

Varieties.	Seeds.	Seedlings, planted.
Alce Clare Comet	6d. & 1/-	12/-
Edinbasket, Banner Supreme	1/-	12/-
King of the Castle, Sunrise	1/-	12/-
Victory	1/-	12/-
Buck's Reckless	1/-	12/-
Truce (Reckless)	1/-	12/-

Terms—C.W.O. Please remit extra for postage.
BUCK'S Nurseries, St. John's, IPSWICH.



Food Production on Farms & in Gardens.

To obtain the best results sow **Dicksons Seeds** which are all carefully selected from the finest and most productive strains, and are always reliable.

Dicksons Seed Showers Chester.

Ammanford and Pontyberem Collieries.
SOLE AGENT:
T. T. PASCOE,
York Chambers,
SWANSEA.

Best Anthracite Large Coal for Horticultural purposes and Cobbles for House Furnaces.
Quick Despatch. Best Quality.
Lowest Prices.

Telephone Grams 1048 Central, Pascoe, Swansea.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than
WEDNESDAY, 5 p.m.

	£	s.	d.
Ordinary Positions per page	10	10	0
Facing matter and Back Page	12	12	0
Half and quarter pages, column and half column spaces, pro rata.			
1 line space not exceeding 20 words	£	s.	d.
Per inch, single column	3	0	0
Per inch, across 2 columns	7	0	0
Per inch, across 3 columns	14	0	0
Per inch, across 8 columns	1	1	0

Front page (no display allowed) 1/- per line space.
(Headline counted as two lines.)

For discounts apply to address below.

SITUATIONS WANTED.

26 words, 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM	15.	per annum.
ABROAD	17 6	..

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

**41, WELLINGTON STREET,
COVENT GARDEN, LONDON, W.C.**

Telegrams: 1643 "GARDCHRON, RAND, LONDON."
Telephone: 1643 GERRARD.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two),
6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise, no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

WANTED, WORKING HEAD GARDENER where 2 are kept. Surrey Hills—Apply, stating age, experience, wages and family, to C. A. C., c/o Chas. Knight & Co., Ltd., 227-229, Tisbury Street, S.E.

WANTED, MAN, to take charge of Glass Department, also one for Kitchen Garden, modern, over military age. Wages required, with full particulars, to E. SIMS, Holly Lodge, Highgate, N.

WANTED, SINGLE-HANDED GARDENER, has kept to give help.—C. H. CAVE, Red way Hill House, Mogsotsfield, near Bristol.

WANTED, GARDENER (SINGLE-HANDED), boy assists, small Greenhouse, large Garden.—N. Priory House, Godstone, Surrey.

WANTED, SINGLE-HANDED GARDENER, ineligible, experienced with Vegetables, Flower Garden and Lawn, little Glass; boots, knives, etc.; wages, 32s. per week.—Apply, stating age, experience, and references, to MRS. SMALE, Donhead Lodge, Edge Hill, Wimbolden, S.W.

WANTED, SINGLE-HANDED GARDENER, help given if available, 5-room cottage on place, wages 32s. inclusive.—MRS. WEGARTIN, Coombe End, Kingston Hill, Surrey.

WANTED, SINGLE-HANDED GARDENER, able to work electric oil engine plant, or willing to learn same. Apply, ARTHUR LEE, Barnside, Hatfield, Herts.

WANTED, SINGLE-HANDED GARDENER, for small garden, or Man and Wife (as cook); no children; good home and wages to suitable applicants; 2 in family.—SMITH, Briarwood, Kingsbury.

WANTED, A SINGLE-HANDED GARDENER, one who understands the work in all branches, a good all-round man. The Hollies, Elphinstone Road, Hastings.

WANTED, SINGLE-HANDED GARDENER, good wages.—Apply, St. Augustine's, Tottenham, Herts.

WANTED, A GOOD SECOND GARDENER, several others kept; good wages and out; age. Apply, HEAD GARDENER, Sodbury Park Gardens, Chipstead.

WANTED, competent GARDENER; good cottage and garden, provided. State experience, age, and wages asked.—REV. A. PHILLIMORE, Wilkesey Hall, Ashby-de-la-Zouch.

WANTED, GARDENER at Great Barr Hall near Wat-ly. Written applications only, with particulars of previous experience, wages required, and copies of two testimonials, to be sent to MR. A. H. WARD, 22, Lombard Street, West Bromwich.

WANTED, GARDENER, during war; wages, 30s. a week inclusive, some Glass; help given. Apply, PROFESSOR WHITE, Betty House, Lath Hill Road, Shrewsbury.

GARDENER.—Good MAN wanted for Inside and Outside, 50s. per week. Bothy, wages, and attendance, take duty, also YOUNG MAN 16, and 10, 25s. and 10s. Bothy, &c., must be reliable.—SIMPSON, Weimss Castle Gardens, East Weimss, Ebe.

WANTED, WORKING GARDENER, 2 under him. CAPE RHODES, Wyton Manor, Huntingdon.

WANTED at once, good WORKING GARDENER, Flowers and Vegetables, must be sober and good character, live in; good wages and help given.—RIBB, St. Catherine's End, Ruship, Middlesex.

WANTED, GARDENER (WORKING), thoroughly experienced in all branches.—Apply, giving particulars and wages expected, to H. Box 15, 41, Wellington Street, Covent Garden, W.C.

WANTED, GARDENER (WORKING), at once, to help of old man sometimes.—Apply, to PAWELL, Esq., Oakbank House, Chester, stating wages, references, &c. Must be ineligible.

WANTED, a WORKING GARDENER, Head of 3, inside and out; good cottage.—COL. PALMER, Prospect, Trobachy, Wilts.

WANTED, GARDENER, for Vegetables, Fruit, poultry, and pons, experienced.—Write full particulars, age, and wage (no board) to KING, 9, Spring Field, Upper Clapton, N.

FOUR LAKE SCHOOLS, COWLEY, OXFORD.
WANTED immediately, for the period of military service, an UNDER GARDENER, ineligible for further particulars apply to THE SUPERINTENDENT.

WANTED, at St. Leonard's School for Girls, St. Andrew's, Ebe., a fully qualified and well-educated WOMAN, to act as HEAD GARDENER and INSTRUCTOR in GARDENING, knowledge of the growth and sale of Apples and the care of Grass growth, and some experience in teaching desirable. For further particulars apply to the HEAD MISTRESS.

WANTED LADY GARDENER, to take entire charge of small Garden, mostly Vegetables, also able to drive and wash car occasionally; live with family; salary, 25s. per week.—Apply, HEATHERY EDGE, Ferndown, Dorset.

WANTED, Two LADY GARDENERS, to take entire charge Inside and Out; help given with digging; state salary required; nice cottage and garden.—ROLLS, Ely, Cambs.

LADY GARDENERS are required for (1) Wills, as Head; understand Vine and Peach Stoves, usual Inside and Outside work; Vegetables. (2) Lowrey, as Under, good Head Man and another Lady Gardener kept. (3) Berks, as Under, Head, Head, Head several Under Lady Gardeners kept; understand Peaches and Citrus-trees. (4) Kent, Two Wanted, Head, Under, large estate, Kitchen Garden, Orchard, some Glass. (5) Somerset, as Head, considerable amount of Glass and Vegetables. 3 Women Under Gardeners, men and boy kept.—MRS. HUNT, LTD., 86, High Street, Marylebone. No engagement, no fee.

REQUIRED, TWO LADY GARDENERS, experienced; good Bothy, with cool, light, vegetables, milk.—Apply, with full particulars, MISS T. The Gardens, Easthamstead Park, Wokingham.

WANTED, Two LADY GARDENERS, some experience; to work under Head Man; salary 25s. per week; furnished cottage and vegetables.—Write, MRS. G. DAVEY, Lyston, Hereford.

LADY GARDENER for INSIDE and OUT, (no other Lady Gardeners kept); furnished house, cool, light, and vegetables; wages 18s. per week, 2s. war bonus; comfortable place.—GEO. BENFORD, Hartman Park, Corsham, Wilts.

WANTED, LADY GARDENER, some experience; Vegetables, small Greenhouse; furnished rooms and gas.—Apply, stating salary, MISS WIGRAM, Wathing House, St. Albans.

WANTED, for Kitchen Gardens, Two or Four LADY GARDENERS, furnished accommodation. Apply, stating wages required and with references, to PERCY DUDING, Shrubland Park Estate Office, Baylham House, near Ipswich.

WANTED, an ASSISTANT LADY GARDENER, for District Horticultural School for Free-bounded Girls; salary, £20, board and lodging.—Apply to MISS PILKINGTON, The Hazels, Prescot, Lancashire.

WANTED, LADY UNDER GARDENER at once, Crowhurst, near Langfield.—Apply, SECRETARY, Duchess of Marlborough, Sunderland House, Mayfair, W.

WANTED, FOREMAN GARDENER, in Northumberland; ineligible; experienced Inside and Out; good wages given, as may be agreed upon; Bothy and usual allowances.—Apply, stating age and all particulars, to N. D. COWANS, West Lulburn, Alnwick.

WANTED, KITCHEN GARDEN FOREMAN, married, good home found; state wages.—Apply to J. HYGATE, The Gardens, Tynley Hall, Wincfield, Hants.

WANTED, Several MEN, for Garden work, chiefly Inside; wages, with Bothy, according to experience.—Apply, with particulars, stating wages expected, to C. H. WHEELER, Swinton Gardens, Masham, Ripon.

WANTED, MAN (or Woman), chiefly inside, Fruit and Plants, ineligible; half-day Saturdays; duty and overtime paid; good wages.—References and full particulars to J. BLACKWOOD, Sefton Park, Slough, Berks.

WANTED, YOUNG MAN, rejected or discharged Army; take charge small amount Glass, Bothy, milk, and vegetables provided.—Write fully, stating wages required, and previous experience, to H. C. DURNFORD, Broadhanger Gardens, Petersfield, Hants.

WANTED, YOUNG MAN, for Fruit and Plants, Inside; Bothy, vegetables, and liberal wages paid.—Particulars to HEAD GARDENER, Sodbury Manor, Salmouth, Devon.

WANTED, YOUNG WOMEN for the Glass department; Bothy provided. State wages and experience.—W. BUTLER, Wilton House Gardens, near Salisbury, Wilts.

WANTED, IMPROVER, able to take duty, about 17, wages £1 per week and Bothy; and overtime paid. Apply, with full particulars, to H. A. PAGE, The Gardens, Belsize Court, Hampstead, N.W.

WANTED, IMPROVER (Inside the House and Out), age 19, wages 1s. and 2s. war bonus; Botby, vegetables, and milk.—E. MORGAN, Wasnall Hall Gardens, Hull.

WANTED, IMPROVER (INSIDE), under 18 years; 18s. per week and 3s. war bonus; good Botby, milk, and vegetables; half-day on Saturdays, travelling expenses paid.—Apply, with copies of references, to J. B. ALLAN, Osberton Gardens, Worksop, Notts.

WANTED, LAD (16-17) or **DIS-CHARGED SOLDIER** for Kitchen Garden work (daily); duty. State wages, with good Botby or lodg. wages.—H. BROOMFIELD, Ellisfield Manor Gardens, Basingstoke, Hants.

WANTED, strong, active LAD, for the House and wages to commence 16s., Botby, &c.; Sundays extra; 1 odd job Saturdays.—J. HOWARD, Benham Park Gardens, Newbury.

TRADE.

WANTED, near Manchester, energetic WORKING FOREMAN (indefinite), must thoroughly understand the growing and cultivation of Vines, Tomatoes, Cucumbers, and forcing Bulbs; stage wages, and references, with photo, if possible. H. N. Box 4, 41, Wellington Street, Covent Garden, W.C.

WANTED, for our Seed Trial Grounds, WORKING FOREMAN, indefinable. Full particulars of abilities, and wages required, to DICKSON & ROBINSON, Seed Merchants, Manchester.

WANTED, FOREMAN for Fruit Trees and Boses. Please state wages required, age, and send references.—WILL TAYLER, Hampton, Middlesex.

PALM-GROWER WANTED, to take charge of Palm House in London, good position. Apply, ROBERT GREEN (1911), LTD., 25, Crawford Street, London, W.

WANTED, a good PROPAGATOR and GROWER; one used to Roses, Clematis, Chrysanthemums, and General Nursery Stock.—Apply, with particulars, wages, &c., to THE DEVON ROSEBY and FRUIT FARM, LTD., Torquay.

WANTED, Two MEN, with some Gardening experience, for Jobbing Work, permanent, neutral nationality not objected to. F. HARDING, 4, Wood Lane, Highgate, N.

WANTED, Strong YOUTHS, of experienced MAN, for General Nursery and Garden work; good wages and opportunity. KEELING & SONS, Westgate Hill, Bradford.

WANTED, experienced PACKER for Orchard Nursery, in the neighbourhood of London.—Write "ORCHID," Box 17, 41, Wellington Street, Covent Garden, W.C.

SEED TRADE, ASSISTANT WANTED immediately (Midland), male or female. State age, experience, and wage expected, to "SEEDS," Box 17, 41, Wellington Street, Covent Garden, W.C.

WANTED, LADY FLORIST; competent. Age, experience, &c., to THOMAS FERKISS & SONS, 34, Drapery, Northampton.

FLORIST (must be experienced) wanted at once; Young Lady who thoroughly understands the business, good Maker up and Saleswoman. Apply in confidence, with full particulars of previous experience and wages wanted, L. D., Box 31, 41, Wellington Street, Covent Garden, W.C.

WANTED, ASSISTANT (Male or Female) for Seed and Florist shop. State experience and wages expected.—W. TROUGHTON, Florist, Preston.

FLORIST AND SEEDS.—Young LADY ASSISTANT wanted in Yorkshire market town, able to make up, some knowledge of Seeds necessary, state age, and wage required. L. D., Box 32, 41, Wellington Street, Covent Garden, W.C.

WANTED, steady, strong LABOURER, in Greenhouse sector, previous experience not absolutely necessary, wages, with week-end duty. See 2d. other opportunities of overtime during busy season; good home may be had close to work. Apply to THOMAS ROCHFORD & SONS, LTD., Tarnford Hall Nurseries, near Bourneville, Herts.

WANTED, LEDGER and INVOICE CLERK, indefinable; a good opening for a really smart man.—Please state age, experience, and salary required, and enclose copies of references to JOHN PEED & SON, The Nurseries, West Norwood, S.E.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d. for each succeeding Eight words or less.

PRIVATE.

G. ABBEY, Aston Rowant, Wallingford, Oxon, open to reengagement for similar position of management of estate, combined or separate.

MRS. L. SALOMONS Recommends her HEAD GARDENER, 20 years Sorbury Park, Hampshire all branches; good manager.—Apply, G. KENT, 15, Fisham Lane, Dorking.

GARDENER (HEAD).—LADY VICTORIA DAWSON very highly recommends W. ELSWORTH as above, 7 years here, 6 Under; leaving through estate being sold; age 32; no family; North preferred.—W. ELSWORTH, gardens, Beningbrough Hall, York.

GENTLEMAN recommends his HEAD GARDENER for permanent situation, age 35, no family, first-class references from past and present employers; thoroughly efficient in all branches; disengaged six months; Surrey preferred.—L. WATSON, The Garden, Eastover, Kingston Hill, Surrey.

GARDENER (HEAD), F.R.H.S., Gold and Silver Medalist, 10 years last place, knowledge of estate work, life experience in large establishments, active, good manager; 6 Under; North preferred.—W. ELSWORTH, age 46; A. R., Box 25, 41, Wellington Street, Covent Garden, W.C.

GARDENER (HEAD), where 6 or more kept (normal times), thoroughly experienced Flower, Fruit and Vegetable, Inside and Out, in English. A. R., Box 19, 41, Wellington Street, Covent Garden, W.C.

G. H. SHOEBRIDGE seeks Situation as HEAD GARDENER in good establishment, 10 years experience in all branches, 13 years as Head (Park) in English, intelligible, disengaged 1st of March.—4, Park View, Stanbury Estate, Bradford, LOM.

BELGIAN, married, two children, re-employment situation, as GARDENER (Head), Diploma of the Government School of Horticulture at Vilvoorde, in Belgium, 10 years' practical experience in all branches of the profession, 2 years same place in England, ANDRÉ KAYENBERG, Spring Grove House, Isleworth, W.

GENTLEMAN recommends his GARDENER (HEAD WORKING), practical life experience in private gardens, reliable and trustworthy, married, 42, 10, the school, 2, London, preferred. BARKETT, 14, B-H-B, near Harlow.

GARDENER (HEAD WORKING), private service or public institution. Gentleman strongly recommends highly skilled and qualified man, 6 years' experience, capable of managing, life's practical experience 44, 10, the school, 2, London, Diploma in Horticulture, also R.S. Certificate, where Fruit and Vegetables required in plenty, experienced, marketing Particulars, GARDENER, Danbury Park Gardens, Chippingham, Wilts.

GARDENER (HEAD WORKING), where several are kept, 23 years practical experience in all branches, has held out, including Orchids, 2 years in all situations as Head, good refs., age 36, married, discharged. T. MARSHMAN, 16, Southfield Street, Worcester.

GARDENER (HEAD WORKING) requires a situation, where 1 or 2 kept, life experience, all branches, including Oil beds, Cannons, indefinable, good refs., married (no family), discharged. T. P., Box 9, 41, Wellington Street, Covent Garden, W.C.

GARDENER (HEAD WORKING), where 2 or 3 are kept, age 39, 27 years as Head in present place. S. WRIGHT, Copely Lodge, Ormskirk, Redhill, Surrey.

GARDENER (HEAD WORKING) seeks re-employment (in lady or gentleman in good establishment), life experience in all branches and stock, age 47, wages 36s., home and firing. J. SHIRKTON, 55, Norton Way, Letchworth, Herts.

GARDENER (HEAD WORKING); life experience in all branches. For many years before-hand at Harlow Park, Ware, Herts., and married (no family). R. ROEDGER, The Cottage, Aldeby, Coventry.

GARDENER (HEAD WORKING); 28 years' experience, Inside and Out; 4 years' present situation, good references; age 44; married (no family). J. JAMES, 55, Agmonden Road, W. Hampstead, N.W. No circulars.

GARDENER (HEAD WORKING); life experience in all branches; married, indefinable, age 35; 7 1/2 years' present situation as Head, disengaged.—CLEMENS, Gardens, Elford, Tamworth, Staffs.

GARDENER (HEAD WORKING); life experience in all branches, age 44, married; present situation 6 1/2 years, Head of 5 1/2 years previous; can be highly recommended.—KING, 5, Portland Terrace, Harley Street, Bath.

GARDENER (HEAD WORKING) of good SINGLE HANDED (with help); practical experience Inside and Out; highest references; married (no family), age 48.—PEACE, "Woodhill," Summinghill, Berks.

GARDENER ELECTRICIAN (HEAD WORKING), seeks situation, life experience in all branches of Gardening; take charge, and do running repairs to electric installation; age 35; abstemious; married (one in family), highest possible references.—WAGE, A.C., to M. J., Box 26, 41, Wellington Street, Covent Garden, W.C.

GARDENER (SINGLE-HANDED or HEAD WORKING); life experience Inside and Out; over military age; wife good handmaid if required; no children, both good references.—H. W.C., Box 4, 41, Wellington Street, Covent Garden, W.C.

GARDENER, as Second, seeks re-employment; experienced, Inside and Out; good references; indefinable; married when suited. Apply, T. CRESSWELL, The Mount Gardens, Bishopsgate, Herts.

GARDENER seeks Situation as good plain GARDENER, as casual, or any place of trust; 15 years in present place; married, indefinable.—Apply, G. E. WOOD, Daylesford, Chipping Norton, Oxon.

UNDER-GARDENER, Head Working, or GARDENER BAILIFF; well up in all requirements of good establishment; thoroughly experienced Outside and Under glass, good manager of labour; age 48, wife dairy, poultry if required. W. CHANDLER, Cranford, Framlingham.

LADY GARDENER desires post as joint HEAD GARDENER with Lady, or post as UNDER GARDENER, but must be under Lady (Head Gardener). Full particulars to A., Box 7, 41, Wellington Street, Covent Garden, W.C.

LADY GARDENER, trained; one year's experience in Houses, willing to work in Kitchen Garden under experienced Gardener; recommended.—W. S., Box 13, 41, Wellington Street, Covent Garden, W.C.

TWO LADY UNDER-GARDENERS require Situation together, within 50 miles radius of London; jobbing experience. Write, LANE, 4, Courtfield Gardens, West Ealing, W.

FOREMAN or SECOND (INSIDE) requires situation, good experience with Fruit and Plants, single, age 27, including engaged. R. GREENLY, Handwick Down, Herefordshire.

HOUSE and ESTATE CARPENTER requires Situation; thoroughly experienced in all branches of Estate Work, Oil and Petrol Engines, &c. Box 10, 41, Wellington Street, Covent Garden, W.C.

TRADE.

FOOD PRODUCTION, Advertiser seeks monogamous position, intensive crops, pigs, poultry, storage for cattle, Fruit, Tomatoes, conversion law products into unique articles of food. STRATHMORE, Llanfairpwll, Anglesey.

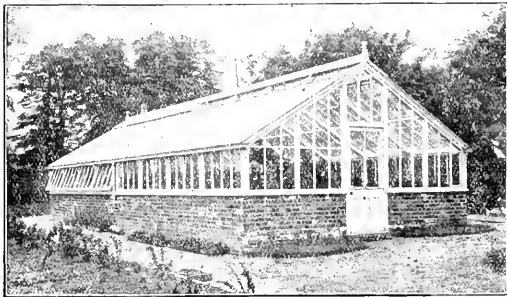
MANAGER of INSIDE FOREMAN; life experience, capable of producing everything required for Market, Shop sale, good references. Louisa, Box 16, 41, Wellington Street, Covent Garden, W.C.

MANAGER or SHOPMAN.—Advertiser requires situation, over 25 years' experience in all branches of Seed and Nursery Trade and Floral work; over military age.—"ORCHID," Box 2, 41, Wellington Street, Covent Garden, W.C.

ORCHID GROWER wishes Re-employment in life experience in all varieties, including Seed Raising, indefinable, first class references, age 39. "ORCHID," Box 11, 41, Wellington Street, Covent Garden, W.C.

MAN (42) seeks permanent Situation; experienced Vines, Tomatoes, Chrysanthemums; total abstainer. Kindly state wages.—WINGHAM, 64, Friar Road, Leytonstone, Essex.

W. RICHARDSON & CO., DARLINGTON.



**HORTICULTURAL BUILDERS
and HEATING ENGINEERS.**

PLANS and ESTIMATES prepared free of cost.

REPRESENTATIVES sent to any part of the Kingdom to advise and take particulars.

LARGE CATALOGUE of photographic views of Horticultural Buildings free on application.

GARDEN FRAMES, GARDEN SEATS, &c., supplied from stock.

**LONDON OFFICE: BELGRAVIA CHAMBERS,
VICTORIA STREET, S.W.**

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties.

STOVE and GREENHOUSE PLANTS of ALL KINDS.

Kindly send for Catalogue.

**JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.**

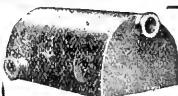
"They come out of their holes to die"

LIVERPOOL VIRUS
exterminates
RATS & MICE.

No unpleasantness and danger from smells. It is quite harmless to man and domestic animals.

In one ready prepared with bait: for Rats 2/6 & 6/-; for Mice 1/6. Order Chemists. Write for particulars to:

STANBROOKS BROS. & WELLS, Ltd., 26, Hanover St., Liverpool.



Sectional,
Tubular &
Saddles.

R.H.S. Gold Medal

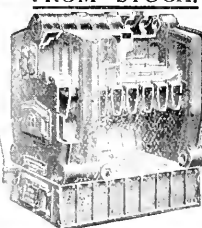
**C. P. KINNELL
& Co., Ltd.**

**SOUTHWARK ST.,
LONDON, S.E.**

BOILERS

For House
and Greenhouse

FROM STOCK.



**NEW AND RARE
HARDY PLANTS
WATER LILIES
PERRY'S
CATALOGUE,
Hardy Plant Farm,
Enfield,
Middlesex.**

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
State quantity of each size required and have "carriage paid" quotation. (Carriage 5/- frequently amounts to half value of goods); we write for "Price List, free".
SPECIAL POTS of all descriptions. Bulb Bowls and Fern Pans from 2/6 each.
**RICHARD SANKEY & SON, LTD.,
Bulwell Potteries, NOTTINGHAM.**

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated
with Eight Plates Reproduced from Colour Photo-
graphs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.
DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.
CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD
TULIPS. By the Rev. JOSEPH JACOB.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARNIAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTBERTSON, V.M.H., and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No 3976

No. 1576. Vol. LXI. {THIRD SERIES} SATURDAY, MARCH 10, 1917.

{Registered as a Newspaper.} {PRICE 3d.} {POST-FREE, 3d.}

SUBSCRIPTION—Inland, 15-; Foreign, 17/6 (22fr. 10c.) [\$4 26c.] per annum. Entered at New York Post Office as second-class matter. Postal Address—41, Wellington Street, Covent Garden, W.C. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 105.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

YOUR GARDEN NEEDS FOOD

To obtain the Finest Vegetables and Flowers, use **WEBB'S GARDEN FERTILISERS**. PERFECT PLANT FOODS. Used by the Leading Growers and Exhibitors. Manufactured by

SUTTON'S VEGETABLE SEEDS.
SUTTON'S FLOWER SEEDS
The Best.

SUTTON & SONS, The King's Seedsmen, READING

PEEDS' SEEDS FOR RICH CROPS.
The best ounce is imported from Kildare Gardens this year. Write for our 1917 Seed List. We can give you the bumper crop you look for.

JOHN PEED & SON, The King's Seedsmen and Nurseries.

For Advertisement Charges see page vii

WATERER'S ROSES & FRUIT TREES.
Grand stocks of the best varieties. Lists free. **JOHN WATERER, SONS & CRISP, LTD.**, The Nurseries, Twickenham, Berks.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers; also Dickson's Improved Mushroom Spawn. Priced circulars free on application to **DICKSON'S, Royal Seed Warehouse and Nurseries, Chester**

DOBIE & CO., ROYAL SEEDSMEN, EDINBURGH will send a copy of their 1917 Catalogue, and Guide to Gardening, 160 pages, nearly 150 illustrations, free, if this paper is mentioned.

WALDUNCK, TUCKER & SONS, LTD., Latimer Road, South Tottenham, Crouch Hill, Writtle Gardens, Amersham, Peach-houses, Portico Buildings, &c. Catalogues gratis.

BATH'S CARNATIONS, PANSIES, PAHLIAS, CHRYSANTHEMUMS, and other flowers. See Illustrated Catalogue of the best new and standard varieties is ready, and will be sent post free on application to (Dept. A) **R. H. BATH, LTD.**, The Floral Farms, Wisbech.

BATH'S SELECT SEEDS.—New illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application to (Dept. A) **R. H. BATH, LTD.**, The Floral Farms, Wisbech.

GREENHOUSE PAINTING & GLAZING. A superior to White Lead Paint. "Plastone" super-soluble putty. Full particulars from **W. CARSON & SONS**, Grove Works, Battersea. Agents throughout the country.

KELWAY'S PERFECTLY GLORIOUS PAEONIES.

Kelway's beautiful blue *Dolphinium*, Kelway's brilliantly coloured *Phloxes*, Kelway's Colour Borders, ever in bloom. Kelway's new and choice hardy perennial plants of all kinds.

NOW is the time to ORDER for Spring planting. Kelway's famous *Gladoli*, Kelway's many coloured *Pyrethrums*, Kelway's gay *Calliopsis*.

NOW is the time to SEND for particulars to **KELWAY & SON, Retail Plant Department, LANGFORD, SOMERSET.**

WALLACE'S NEW CHINESE PRIMULA HELEDOXA, A.M., R.H.S. 1915 Other new Chinese Primulas, &c. **BEBBERS' NEW CHINESE SPECIES, LILIES, GLADIOLI, BEGONIAS**, &c.

Our **SPRING CATALOGUE** post free on application. **R. WALLACE & CO. LTD.**, Kilmild Gardens, Colchester.

SPOURSALEN, Farmers, Horsemen.—Try our special Yorkshire Whipcord Taced; wears like leather, shock proof; 7 yards for 17s. 6d. Patterns free. **BRADFORD WOOLLEN CO.** (71), Bradford.

ORCHID PEAT, 6s. and 7s. 6d. per sack: **Brown Peat**, 10s. 6d. per yard in trucks; in bags 2s. 6d. each, 30s. dozen. **Oak and Beech Leaf Mould, Yellow Loam, Stacked and Fresh Out, Silver Sand, 4-ton lots for 45s.** **C.S. Fidler**, 28s. dozen bags. List free. **J. HANDSCOMBE, F.R.H.S.**, Feltham, Middlesex.

made good by a ready-to-plant or best procedure. Summer Bedding. 1 lb. of Cyclamen. **REE & STORIE**, 7, Northampton St., London, W.C.

is bag to another, they will not arrive any more order.

erther, they have me extent, with as they are in difficulty in doing the necessary excepting orders, the Press, 25, Abchurch Lane, London, E.C. 4.

ise. Brilliant in the delivery. **GUNN & SONS**, 10, Abchurch Lane, London, E.C. 4.

VAL RHODE, 10, Abchurch Lane, London, E.C. 4.

to be sent to you. We have over 60 different kinds of the finest collection in cultivation. Catalogue free. **JOHN WATERER, SONS & CRISP, LTD.**, The Nurseries, Bagshott, Surrey.

JAMES GRAY, LTD., Builder of Conservatories, Greenhouses, &c. and Heating Engineers, Drovers Street, Chelsea, London, S.W. Ware, 201 West End London. Telephone: 201 Western.

ROSES Wm. Paul and Son, Waltham Cross, Herts. New and old, for present planting. Price on application. **PAUL'S ROYAL NER SEEDS**, Waltham Cross, Herts.

COWAN'S NEW ORCHID MATERIAL. The best and most the cheapest. Full particulars on application to **JOHN COWAN & CO.**, Glasgow Nurseries, Gateacre, Liverpool.

CABBAGE ROOT MAGGOT. A sure remedy against this pest, which, if not destroyed, will produce a crop of Cabbages and Cauliflowers from maggot attacks. 3d. per 1,000 lbs. per 100 (postage extra, 3d. for 1,000, 4d. per 1,000), full instructions supplied; cash with order. **FRED ROBINSON**, 15, Langdale Road, Victoria Park, Manchester.

No. 1575 has failed to arrive. Same will be mailed as soon as possible.

Modela has been proved by hundreds of practical Gardeners a certain cure for this trouble, to be applied in March and April; 2s. per quart, 5s. 6d. per gallon, in cans. **GEO. BUNYARD & CO., LTD.**, Royal Nurseries, Maidstone.

BUNYARD'S ASPARAGUS. Orders are now being booked for these plants for delivery in March. List, with full directions and prices, on application. **GEO. BUNYARD & CO., LTD.**, Royal Nurseries, Maidstone.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes about 1lb., 3lb., and 15lb. by Dealers in Garden Sundries. Wholesale: **FRICES' PATENT CANDLE CO., LTD.**, Battersea, London, S.W.

BARR'S VEGETABLE and FLOWER SEEDS of finest selected strains and tested growth at strictly moderate prices. Descriptive Catalogue free.

BARR'S Beautiful LILIES, GLADIOLI Carnations, Montebretias, Tigrids, Anemones, Ranunculus, &c. for Spring Planting. Catalogue free. **BARR & SONS**, King Street, Covent Garden, London.

W. RICHARDSON & CO., DARLINGTON.

**HORTICULTURAL BUILDERS
and HEATING ENGINEERS.**

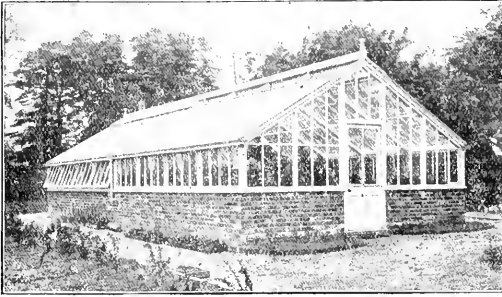
PLANS and ESTIMATES prepared free of cost.

REPRESENTATIVES sent to any part of the Kingdom to advise and take particulars.

LARGE CATALOGUE of photographic views of Horticultural Buildings free on application.

GARDEN FRAMES, GARDEN SEATS, &c., supplied from stock.

LONDON OFFICE: BELGRAVIA CHAMBERS, VICTORIA STREET, S.W.



ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties.
STOVE and GREENHOUSE PLANTS of ALL KINDS.
Kindly send for Catalogue.

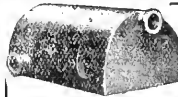
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

"They come out of their holes to die"

LIVERPOOL VIRUS
exterminates
RATS & MICE.

No unpleasantness and danger from smells. It is quite harmless to man and domestic animals. In use easily prepared with bait; for Rat, 2/6 & 6/-; for Mice 1/6. Of all chemists. Write for particulars to

EVANS & SONS BRECHER & WEBB, Ltd., 56, Manover St., Liverpool.



Sectional,
Tubular &
Saddles.

R.H.S. Gold Medal

G. P. KINNELL

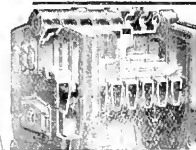
& Co., Ltd

SOUTHWARK

LONDON, S

BOILERS

For House
and Greenhouse
FROM STOCK.



**NEW AND RARE
HARDY PLANTS
WATER LILIES
PERRY'S
CATALOGUE,
Hardy Plant Farm,
Enfield,
Middlesex.**

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
State quantity of each size required and have carriage paid.

Present-Day

Edited by R. H

1/6 net Each
per with 1
Volume. graph



ORCHIDS. By JAMES
Secretary of the Orchid
Royal Horticultural Society.

APPLES and PEARS. By GEORGE
EUNYARD, V.M.H., late Chairman of R.H.S.
Fruit Committee.

ANNUALS HARDY & HALF-HARDY By
C. H. CURTIS, late Hon. Sec. of the National
Sweet Pea Society.

CHRYSANTHEMUMS. By THOMAS
STEVENSON, with Chapters by CHARLES
SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with
preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD
FARRER, with preface by Dr. J. BRET-
LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON,
V.M.H.

ROOT and STEM VEGETABLES. By
ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB,
Chairman of Committee of the Midland
Daffodil Society. With preface by the Rev.
W. WILKS, M.A.

CARNATIONS and PINKS. By T. H.
COOK, Head Gardener at Sandringham;
JAMES DOUGLAS, V.M.H., and J. F.
McLEOD

TULIPS. By the Rev. JOSEPH JACOB.

SWEET PEAS. By HORACE J. WRIGHT,
late Secretary and Chairman of the National Sweet
Pea Society. With Chapter on "Sweet Peas for
Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By
WILLIAM CUTHBERTSON, V.M.H., and R.
HOOPER PEARSON.

RHODODENDRONS and AZALEAS.
By W. WATSON, with preface by Sir F. W.
MOORE, M.A. (the only volume published
on this subject).

ROSES (double volume 2/6). By H. R.
DARLINGTON, Joint Secretary of the
National Rose Society.

CLIMBING PLANTS. By W.M. WATSON
with introduction by W.M. ROBINSON,
Author of "The English Flower Garden."
(Double volume 2/6.)

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841 No 3976

No. 1576. Vol. LXI. (THIRD SERIES) SATURDAY, MARCH 10, 1917. {Registered as a Newspaper. {PRICE 3d. {POST-FREE, 3½d.

SUBSCRIPTION—*Inland, 15-; Foreign, 17/6 (22/- 10/-).* {\$4 25c.} per annum. Entered at New York Post Office as second-class matter. Postal Address—41, Wellington Street, Covent Garden, W.C. Telegraphic Address—"Gardchron, Rand, London." Telephone—Oerrard 1543.

For CONTENTS see page 105.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

YOUR GARDEN NEEDS FOOD

To obtain the Finest Vegetables and Flowers, use

WEBB'S GARDEN FERTILISERS.
PERFECT PLANT FOODS. Used by the leading growers and exhibitors. Made and cured at Webb's Manure Works, Salisbury, Chester, 5 acres in extent.
POTATO MANURE, 10s. 6d. ½ cwt., 20-
TOMATO MANURE, 13s. 6d. ½ cwt., 25-
GENERAL MANURE, 10s. 6d. ½ cwt., 20-
VINE MANURE, 12s. 6d. per 2 cwt., 25-
LAWN MANURE, 12s. 6d. per 2 cwt., 25-
 Rose, Carnation, Chrysanthemum, and Sweet Pea Manures, Carriage Paid.
 For particulars, see Webb's Garden Catalogue post free on request.

WEBB & SONS, LTD., The King's Seedsmen, STOURBRIDGE.

SANDERS, Orchid Growers, St Albans.

BLACKMORE & LANGDON, Bath, will have pleasure in sending a copy of their 321 Catalogue of Begonias and Delphiniums, &c., &c., free, if this paper is mentioned. Magnificent strong roots of our unequalled Delphiniums, in superb variety.

LANTON'S SEEDS AND FRUIT TREES.
 New Catalogues of the above most useful goods. Grand New Early Pea, Laxton's Supreme, &c., Fruit Trees. A fine stock to offer may still be safely planted. Pamphlet on Cultivation on receipt of stamped envelope. **LANTON BROTHERS,** Nurseries, Bedford.

PEACH LEAF BLISTER BUNYARD'S
 Medica has been proved by hundreds of practical gardeners a certain cure for this trouble, to be applied in March and April; 2s. per quart, 8s. 6d. per gallon, in cans. **GEO. BUNYARD & CO., LTD.,** Royal Nurseries, Maidstone.

BUNYARD'S ASPARAGUS.—Orders are now being booked for these plants for delivery in March. List, with full directions and prices, on application **GEO. BUNYARD & CO., LTD.,** Royal Nurseries, Maidstone.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, &c., on Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes about 10s., 2s., and 12s., by Dealers in Garden Sundries. Wholesale **FRICKS' PATENT CANDLE CO., LTD.,** Battersay, London, S.W.

BARR'S VEGETABLE AND FLOWER SEEDS of finest selected strains and tested growth at strictly moderate prices. Descriptive Catalogue free.

BARR'S Beautiful LILIES, GLADIOLI, Lilies, Monbetsias, Geraniums, Anemones, Ranunculus, &c. for Spring Planting. Catalogue free. **BARR & SONS,** King Street, Covent Garden, London.

SUTTON'S VEGETABLE SEEDS.
 SUTTON'S FLOWER SEEDS
 The Best.

SUTTON & SONS, The King's Seedsmen, READING.

PEEDS' SEEDS FOR RICH CROPS.
 The last ounce is required from Kitching Gardens this year. Write for our 1917 Seed List. We can give you the bumper crops you look for.

JOHN PEED & SON, The King's Seedsmen and Nurserymen, WEST NORWICH.

OMISSIONS and Failures made good by the sending of extra Seedlings, just ready for potting, to replace any or more failures for best possible results. Greenhouse plants, Summer Bedding, Bush, Field Flowers, &c. Grand lot of Cyclamen ready. Write for catalogue. **STORRIE & STORRIE,** 11, Swiss Spinnery, Glasgow, Perthshire.

MESSRS. FIDLER & SONS beg to announce to their clients, that they will not be able to accept in the present time, any more orders for Seeds, &c.

Seeing the nature of the fresh weather, they have been obliged to such an astounding extent, with orders, that several handicapped as they are in the present time, they consider it with difficulty dealing with them, at a time when it is necessary to have the plants in the ground, accepting orders, they have been obliged to announce in the Press. **FIDLER & SONS, Ltd.,** Berkshire Seed Store, Reading.

NEW PHLOEXES.
A GRAND STOCK of these Brilliant Phloxes, which are ready for delivery. For full particulars, apply **GUNN & SONS,** 11, Warwick Lane.

WATERER'S GOLD MEDAL RHODODENDRONS. We cordially invite you to see one of our best plants you require. We have over 200 plants comprising the finest selection in cultivation. Catalogue free. **JOHN WATERER, SONS & CRISP, LTD.,** The Nurseries, Woking, Surrey.

JAMES GRAY, LTD., Builder of Concreting, Greenhouses, &c., and Heating Engineers, 11, Dyer's Street, Chelsea, London, S.W. Wire, 201 Western London. Telephone, 201 Western.

ROSES, Wm. Paul and Son, Waltham Seedling List, beg to offer a fine stock of all the latest varieties, new and old, for present planting. Price 1/6 per 100, 1/2 per 1000. **PAULS' ROYAL NURSERY, Waltham Cross, Herts.**

COWAN'S NEW ORCHID MATERIAL. The best and cheapest. For particulars on application to **JOHN COWAN & CO.,** Glasgow Nurseries, Glasgow, Liverpool.

CABBAGE ROOT MAGGOT. A new remedy against this pest, cheap, pleasant, and harmless. Jarred left discs will protect your cabbages and Cauliflowers from maggot attacks. 6s. per 1,000 lbs. per 1000 (postage extra, 9d. for 1,000, 4s. per 100), full instructions supplied, cash with order. **FRED ROBERTSON,** 13, Langdale Road, Victoria Park, Manchester.

For Advertisement Charges see page vii

WATERER'S ROSES & FRUIT TREES.
 Grand stocks of the best varieties. Lists free.—**JOHN WATERER, SONS & CRISP, LTD.,** The Nurseries, Woking, Berks.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers; also Dickson's Improved Mushroom Spawn. Printed circulars free on application to **DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.**

DOBBIE & CO., ROYAL SEEDSMEN.
EDINBURGH will send a copy of their 1917 Catalogue, and Guide to Gardening, 160 pages, nearly 150 illustrations, free, if this paper is mentioned.

W.M. BUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham, County of Essex, Winter Gardens, Vineries, Peach-houses, Portable Buildings, &c. Catalogues gratis.

BATHS, CARNATIONS, PANSIES, DAHLIAS, CHRYSANTHEMUMS, and other flowers. See Illustrated Catalogue of the best new and standard varieties is ready, and will be sent post free on application. (Dept. A) **R. H. BATH, LTD.,** The Floral Farms, Wisbech.

BATHS SELECT SEEDS.—New illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application.—(Dept. A) **R. H. BATH, LTD.,** The Floral Farms, Wisbech.

GREENHOUSE PAINTING & GLAZING.
 "Argyle," superior to White Lead Paint. "Plastic" superdopes putty. Full particulars from **W. MARSON & SONS,** Grove Works, Bittersea. Agents throughout the country.

KELWAY'S PERFECTLY GLORIOUS PÆONIENS.
 Kelway's beautiful blue Delphiniums. Kelway's brilliantly coloured Phloxes. Kelway's Glorious Borderers, ever in bloom. Kelway's new and choice hardy perennial plants of all kinds.

NOW is the time to ORDER for Spring planting. Kelway's Famous Gladioli. Kelway's many coloured Pyrethrums. Kelway's gay Galliardias.

NOW is the time to SEND for particulars to **KELWAY & SON,** Retail Plant Department, LANGFORD, SOMERSET.

WALLACE'S NEW CHINESE PRIMULA HELODOXA, A.M. R.H.S., 175 other new Chinese Primulas, &c. **BERBERIS, NEW CHINESE SPECIES, LILIES, GLADIOLI, BEGONIAS, &c.** OUR SPRING CATALOGUE post free on application. **R. WALLACE & CO. LTD.,** Kilmfield Gardens, Colchester.

SPORTSMEN, FARMERS, Horsemen.—Try our splendid Yorkshire Whipped Tweed; wears like water, shoo-proof; 7 yards for 17s. 6d. Patterns free. **BEYFORD WOOLLEN CO. (7), Bradford.**

ORCHID PEAT, 6s. and 7s. 6d. per sack:—Brown Peat, 10s. 6d. per yard in trucks; in bags 2s. 6d. each, 50s. dozen; Oak and Beech Leaf Mould, Yellow Loam, Staked and Fresh Out, Silver Sand, Atom loam for 45s., G.N. Fibre, 28s. dozen bags; hot tree.—**J. HANDSCOMB, F.R.H.S.,** Feltham, Middlesex.

SALES BY AUCTION.

WEDNESDAY, at 1 o'clock.

A Choice collection of Herbaceous and Rock Plants, Rhododendrons, Roses.

1.500 FRUIT TREES

and Bushes, Lily-of-the-Valley, Carnations, Lilies, and Gladioli in variety and other Bulbs.

and at 3 o'clock,

JAPANESE LILIES,

In cases, and other Bulbs, for the trade.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. On view mornings of sale and catalogues had.

ROSES.

THURSDAY NEXT.

MESSRS. PROTHEROE & MORRIS will sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on Thursday, March 15th, and every succeeding Thursday at 1 o'clock consignments of well-grown ROSES, especially lotted to suit all buyers.

On view morning of sale and catalogues had.

SALE OF TOPIARY WORK

JAPANESE DWARF TREES and Miniature Gardens, ANTIQUE AND MODERN GARDEN ORNAMENTS.

Garden Furniture, Seats, Tables, Tubs, &c.

MESSRS. PROTHEROE & MORRIS will sell the above at their Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

On Friday, March 16th at 1 o'clock.

On view two days prior and morning of sale. Catalogues on application to the Auctioneers.

MARESFIELD, near UCKFIELD. Short Notice.—Invresed sale of Stock on certain lands where the tenancy expires on March 25 next.

MESSRS. PROTHEROE & MORRIS (in conjunction with Messrs. Wm. Wood, Son & Gardner) will sell by auction at the Woodlands Nurseries, Maresfield, Sussex, by order of Messrs. Wm. Wood & Son (Maresfield), Ltd.

On Tuesday, March 13th, at 12 o'clock.

A Large quantity of Nursery Stock, comprising 50,000 Conifers, Shrubs, Rhododendrons, Fruit Trees, Roses, Deciduous Trees, and numerous other items.

May be viewed. Catalogues had on the premises; of Messrs. Wood, Son & Gardner, Land Agents, Crawley; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

LOWER EDMONTON.

Clearance Sale of 25 Greenhouses, in all about 3,000ft. run of glass, 11,000ft. of 4 inch, and 1,000ft. of 5 inch hot water piping, 2,000ft. of cold service piping, 7 Tubular Boilers, Brickwork, &c., 1,000 cists of 12 and 16, 30,000 Bamboo Canes, Corrugated Iron, 5 Hobs, 2 Tanks, 56 Brass Taps and Surmises.

MESSRS. PROTHEROE & MORRIS are instructed by Mr. J. Crouch to sell the above by auction on the premises, Houndsfield Nursery, 407, Hertford Road, Lower Edmonton.

On Wednesday, March 14th, at 12 o'clock precisely.

May be viewed. Catalogues had on the premises and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

BUSINESSES WANTED.

WANTED to Rent, near London (Surrey or Middlesex). Glasshouses, with or without cuttage, and some land; near station.—G., Box 17, Wellington Street, Covent Garden, W.C.2.

BUSINESSES TO LET.

NURSERY TO LET; commanding position, five minutes from rail and tram; 3,500ft. (class 1) acres land, house, &c.—MILES, Royal Hotel, Slough.

TENDERS.

BY Order of the Board of Trade.—For sale by tender, for cash only, **FIRST CLASS COFFEE FLOUSINS**, in West-End of London, an excellent going concern; average annual turnover last six years about £8,900.—For forms of tender and any further information apply to the Controller, A. H. KNIGHT, A.C.A., 146, Bishopsgate, F.C., or to H. E. Foster & Crangfield, Auctioneers and Surveyors, 6, Foultry, E.C.

TO BE SOLD BY TENDER.

THE ROYAL NURSERIES, FELTHAM MIDDLESEX.—The Receiver for the Debenture Holders desires Tenders for the above Nursery and Contents (formerly the Property of Messrs. Jas. Veitch & Sons, Ltd.) To be sold as a going concern.—Full particulars can be obtained on application to the Receiver at the Nurseries, or from Messrs. Crawfords & Marchmont, 7, Southampton Row, W.C.

PLANTS, &c., WANTED.

WANTED, a large Plant of BANANA Musa Cavendish.—State size and price to CALDWELL & SONS, Knutsford.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, PONY LAWN MOWER, Robinson's or Green's, 30 inch; must be in first-class condition.—Apply, giving lowest price, to SUPER-INTENDENT, Roper Park, Stockton-on-Tees.

WANTED, Cyrtopodium Lanatum Chinkaberaynum, C. insigne Harefield Hall, and C. insigne Sanderae.—Offers to D. B., Box 18, 41, Wellington Street, Covent Garden, W.C.

WANTED, COPIES of the Gardener's Chronicle, No. 1,254 (January 7, 1911).—State quantity and price to X. Y. Z., 41, Wellington Street, Covent Garden, W.C.

PLANTS, &c., FOR SALE.

MARGUERITES.—Single White and Yellow, 5s 100; Mrs. F. Sanders (double), 7s, 100; Celebrities, Golden Gem and Brown, 12s, 100; strong, well-grown plants, carriage paid on orders of 10s. and upwards.—ENGLAND & FRINKESS, Fowlands Road Nurseries, Bromley, Kent.

100,000 LARGE GARDEN FERNS, 20s 100, Palms, Begonias, Crotons, Dracenas, Roses, Ericas, Gloxinias, Lilies, Hydrangeas, &c., catalogues free.—E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

"ROCK GARDEN PLANTS," Where and In What Soils to Plant Them," with Catalogue, free on application. Special selections, 12s, 50; 25s, 6d; 50, 12s, 6d; 100, 25s. All different named, strong stock, please state position and soil. G. R. PHIPPS, Alpine Nursery, Barnham, Bognor.

AMARYLLIS (Hybrids of Vittata).—MORLE & CO offer magnificent named sorts from Mr. W. Bull's celebrated Gold Medal prize collection, also flowering Bulbs, crossed with named sorts, at half usual prices. List free. 150 156, Finchley Road, N.W.

JAPANESE LILICUMS, just landed in splendid condition; large, firm Bulbs, Long-forem giganteum, 5s, 6d, 6s, and 9s; Speciosum Mel-pomne and magnificum, and Album Krutzem (the best), 5s, 6s, and 10s; Auratum, 6s, and 10s; Henry's, 6s, and 10s; all per dozen, also others. List free.—MORLE & CO., as above.

SEED POTATOS Lincolnshire or Scotch, Warr's Ash, Leaf, Hebrons, Early Rose, Express Royal Kidney, 1st to 4th, Sir J. Leavelle, Arvon (Chot. King Edward), and others, per bush or cwt. MORLE & CO., as above. Our Seed and Plant List sent on application.

FRUIT TREES, true to name, my specialities, (1) standard trees, in well-grown, extra-sized specimens, with flowers, such as Queen Pears, Grape Acre, Orange, Willow Tree, in pots for fruiting. Catalogues.—WILL TAYLER, Hampton, Middlesex.

PERPETUAL FLOWERING CARNATIONS, strong, healthy plants, now ready, amongst which are the following varieties: 4s 6d, per doz. out of sand, 5s, 6d per doz. in pots.—Enchantress, Snowstorm, May Day, Lady Natchelle, Makdo, Blue Pink Enchantress, 9s per doz. out of sand, 7s, per doz. in pots.—Enchantress supreme, Salmon King, Gorgous, White Enchantress, Champion, Triumph. Price List of Latest Novelties on application. J. C. JENNER, Lynnwood Nurseries, Rayleigh, Essex.

VERBENAS.—Miss Willmott (pink), King of S. artists, Queen of Whites, Lovely Blue (tender) Blue, Princess of Wales (purple); strong, clean, well-rooted stuff from boxes, 50 for 5s; 9s per 100; carriage paid for cash.—H. DUDDERIDGE, The Dorset Nurseries, Blandford.

FERNS' FERNS.—True Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogues free.—E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

WANTED, HEAD GARDENER, where speciality: Egg and Rock Gardens; some Glass; good cottage; wages 35s.—LADY TONSONBY, St. James's Palace, S.W.

WANTED, HEAD WORKING GARDENER, careful manager, having first-class experience, where 3 or 4 are kept; undesirable references required; ineligible; good wages, cottage, and garden.—Full particulars to G. HAMPTON, Norton Manor, Sutton Sottery, Hants.

WANTED, GARDENER (HEAD WORKING); man or boy; duration of war; Vegetables chiefly, some Glass; cottage.—State wages, experience, &c., to S. GASK, The Hill, Westby, near Kirkham, Lancs.

WANTED, GARDENER (HEAD WORKING); ineligible; experienced Inside and Out; wages 30s. a week.—MRS. REID, The Oaks, Hanworth, Middlesex.

WANTED at once, SINGLE-HANDED GARDENER for private house in Boston; Conservatory, Greenhouse, and Kitchen Garden; good wages to suitable man. Apply, W. W. JOHNSON & SON, LTD., Boston, Lincs.

WANTED, by a Lady, a SINGLE-HANDED GARDENER or experienced LADY GARDENER; small Vinery, Fruit, and Vegetables.—MRS. POLE, Chichester Green Lodge, Newbury.

GARDENER, Single Handed; Bachelor or Widower; no Glass; in Surrey; wages 25s., with board and lodging.—Apply J., 23, Pall Mall, London, S.W.

WANTED, at once, Good SINGLE-HANDED MAN or LADY GARDENER for Chislehurst. Call, MRS. DE BECK, Hotel Waldorf, between 10 and 11.

DISCHARGED SOLDIERS and **OLD MEN** WANTED as GARDENERS. Head, Single Handed, and Under; all suited entirely free, and valuable presents given. **HEAD GARDENERS.**—(1) South Wales; £70, house and garden; last man there 10 years. (2) Cheshire; 2 Under, Inside and Out; £70 and cottage. (3) Hert; 1 Under; cottage found; Vegetables, Fruit, and simple Flowers. **SINGLE HANDED.**—(4) Highbury; 3 and 5s; live out; 1 acre Lawn and Kitchen Garden; 5 small houses; last man there 5 years. (5) Hert; 30s; live out; cottage easy to obtain. **TENDER.**—(6) Wilts; Second of 2; wide arched to lodge gates; certain privileges attached (7) Surrey; 2 kept; 25s. weekly; share cottage. Call, write, or phone. Office hours, 9 to 9; Saturday, 9 to 2.—MRS. HUNT, LTD., 86, High Street, Marlborough. Tel.: Mayfair 6200.

WANTED, SECOND GARDENER, experienced Fruit, Flowers and Vegetables; single preferred.—Age, wages and references to A. DICKSON, The Gardens, Wychik Hall, near Barnard Castle, N.R., Yorkshire.

WANTED, a good SECOND GARDENER for Inside, well up in Fruit and Plants; good wages; duty and overtime paid for.—Full particulars to BLACKWOOD, Foston Park, Slough.

WANTED, a SINGLE MAN or Married without family, as Second, for Glass Houses, having good experience, including Orchids and Carnations; excellent references required; ineligible; good wages.—Full particulars to G. HAMPTON, Norton Manor, Sutton Sottery, Hants.

WANTED, GARDENER, experienced, married man, to live in lodge, rent free; £1 5s. weekly, and vegetables.—Apply, MRS. FILLINGHAM, Syerston Hall, Newark.

GARDENER WANTED, place near Man-ningtree, with 4 Coots, and 1 Pond; wages 28s. and 10s.; house provided.—All particulars to Box 351, G.P.O., Manchester.

WANTED, for Oxfordshire, near Wallingford, **WORKING GARDENER**, knowledge of electric lighting plant an advantage; no Glass; wife caretaker and cook or housemaid when family are there; to live in house, having every convenience; good wages to suitable couple—Apply: **GLAXE WILLIAMS, ESQ.**, 7, Berkeley House, Hay Hill, London, W.

WANTED, KITCHEN GARDENER; intelligible, or discharged from Army—Apply, **H. H. SCOTT**, Newtown, Leigham Court Road, Streatham, S.W.

WANTED, an UNDER-GARDENER (intelligible for the Army), married or single, for a Gentleman's Country Estate—Apply, **JAS. MARTIN & CO.**, Land Agents and Surveyors, Wainfleet, Lincolnshire.

WANTED, at St. Leonards School for Girls, St. Andrews, Fife, a fully qualified and well-educated **WOMAN**, to act as **HEAD GARDENER** and **INSTRUCTOR** in **GARDENING**; knowledge of the growth and sale of Vegetables and the care of Grass is essential, and some experience in teaching desirable. For further particulars apply to the **HEAD MISTRESS**.

WANTED, TWO LADY GARDENERS. First-class Head and Second Gardener, for nobleman's situation in Cheshire; modern house, and every comfort—Apply, **MRS. CLEGG**, 78, Albert Hall Mansions, Kensington, London.

WANTED, experienced LADY GARDENER, to take charge of Glass Houses and Flowers—Apply, **A. CROSSMAN**, Hill House, Harrow Weald.

WANTED, LADY GARDENER for general work—Apply to **THE CURATOR**, Chelsea House Garden, London, S.W.

WANTED, TWO LADY GARDENERS, with experience; Inside; Bothy, milk and vegetables—Apply, with references, stating wages required, to **W. H. ALLEN**, Minley Manor Gardens, Farnborough Hants.

WANTED, TWO WOMEN GARDENERS for Inside and Out, with some experience preferred; Bothy found, good opening to gain thorough knowledge of Gardening. State wages. **LEE**, Stag-horn Gardens, Cambridge-on-Tyne.

WANTED, TWO WOMEN GARDENERS, under Head, one for Glass and one for Herbaceous Borders and Rockery, rooms, &c. State wages. **MISS INSOLE**, The Court, Landail, Cardiff.

LADY GARDENERS WANTED for (1) Weybridge, as Head, with another Lady as Under; about 3 acres of ground; little Glass. (2) Wokinghampton, two wanted, one as Head and the other as Under; understand milking. (3) Bexley, two wanted as Under Gardeners; all round knowledge of Gardening, understand Peaches and Carnations. (4) Norfolk, as Under, 3 men, boy, and woman kept, chiefly to work in the Houses, Fruit and Flowers; slight experience necessary. (5) Herts, as Single-handed, much experience not necessary. Lady Gardeners are suited entirely free of charge. **MRS. HUNT LTD.**, 86, High Street, Marylebone.

WANTED, for Kitchen Gardens, Two or four **LADY GARDENERS**; furnished accommodation. Apply, stating wages required and with references, to **FEICZY DUBBING**, Shrubland Park Estate Office, Hayham House, near Ipswich.

LADY GARDENERS. — Good Posts vacant for trained women. Apply to **THE WOMEN'S FARM AND GARDEN UNION**, 45 (6th floor), Queen Anne's Chambers, Westminster, S.W.

WANTED, FOREMAN, for Inside and Out, intelligible, married or single, good Bothy or cottage, &c. Apply, with references, stating wages required, to **ESTATE OFFICE**, Bedford Park, Bedford, Herts.

WANTED, good FOREMAN or good experienced **JOURNEYMAN** (intelligible or ever) bothy (and) in Inside Flowering, good wages to suitable man, Bothy and vegetables, also **YOUTH**, about 17, who has had some experience in Gardening, good wages and Bothy — Apply, **JAMES VERT**, Chuk Castle Gardens, Whitehurst, Rubon, N. Wales.

WANTED, JOURNEYMAN (Inside and Out), 25, and Bothy, 28, 6d. duty. Also two **W.M.** Outside, Pleasure Grounds, &c.; 25, and Bothy — **MR. FENTON**, Warren House Gardens, Kingston Hill, Surrey.

MARRIED COUPLE required as Cook, Gardener, and **SINGLE HANDED GARDENER**, in small family, good, comfortable home and wages offered. Particulars, **RAND**, Woodburn, Slough.

WANTED YOUNG MAN, for charge of Glass, also strong **YOUTH** for Inside, 16/7, or over if intelligible; good wages and Bothy, with usual allowances—Apply, **HEAD GARDENER**, Sdbury Manor, Southmouth, Devon.

NOW READY

THE

HORTICULTURAL

DIRECTORY

AND

YEAR BOOK

FOR 1917.

The first two thousand copies of this work are now being distributed. Owing to the paper shortage, an unlimited number of copies cannot be guaranteed, and purchasers are advised to order AT ONCE to avoid disappointment.

Orders will be dealt with in strict rotation.

The 1917 edition contains no name or address which has not been verified. The information given is therefore absolutely trustworthy.

Apply, enclosing 1/4 for each copy required, to:—

GARDENERS' CHRONICLE, LTD.,
 41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C.

THE

"Double-Purpose" Garden.

THE 1917 garden will be a patriotic garden—divided between vegetables and flowers. A generous vegetable patch to help Lord Devonport and a floral space where tired warriors and workers may find peace amidst beauty and fragrance.

SOW RYDERS SEEDS

The Seeds of Success, and both sides of your garden will give you complete satisfaction. Get Ryders Seed and you will get the *fullest germinating power*, freshness and truthness to name at the cost of 1/6d. per packet. (The familiar and popular 1d. packet has had to be abandoned temporarily owing to the war.) Even with this slight increase in price *Ryders Seeds still represent the highest obtainable expression of quality and economy.*

ILLUSTRATED CATALOGUE FREE.

Ryders 1917 Illustrated Catalogue contains over one hundred illustrations and much useful information. Send a postcard for a free copy to the only address, no agents.

RYDER & SON, LTD.,
 Seed Specialists, ST. ALBANS.

Beware of Imitators. Order your seeds now stocks are low.

ORCHIDS,

Clean, well-grown and cheap; also **Many Rare and Choice Varieties.** **STOVE AND GREENHOUSE PLANTS OF ALL KINDS.** Kindly send for Catalogue.

JAMES CYPHER & SONS,
 Exotic Nurseries, CHELTENHAM.

CARNATIONS. PERPETUAL FLOWERING.

FOR SALE, good clean plants, grown in thimbles and 60s, well broken ready for putting on.

Colleen, Enchantress Supreme, White Enchantress, White Wonder, Beauvon, Mikado, Mayday, Scarlet Scrolling, Enchantress, Salmon Enchantress and other good varieties.

4/- per dozen. Cash with order.

MAYTHAM GARDENS, ROLVENDEN, KENT.

Once Tried, Always Used.

The "PATTISSON" HORSE BOOTS

SIMPLEST! STRONGEST! MOST ECONOMICAL!
 SOLES of best English Sole Leather (Waterproofed), with Motor Tyre Rubber Studs, or of Solid Rubber. Fig. 1 can be fitted repeatedly, equal to New Boots. Rubber Soles Strongly Recommended.

USED FOR MANY YEARS IN THE ROYAL AND IN THOUSANDS OF THE PRINCIPAL GARDENS.

The "PATTISSON" BOOTS are the most durable on the market, out-lasting several sets of ordinary boots, and when worn out can be many times refitted and are then equal to new ones, but this may only be satisfactorily done by us, the makers.

SILVER MEDALS. Hundreds of Testimonials. Royal Horticultural Soc., 1904. The "Field" says—& 1914. Royal International "As good as anything that has ever been devised" Exhibition, 1912.

Illustrated Price Lists, from the Makers.

H. PATTISSON & CO.,
 4-6, Greyhound Lane, STREATHAM, S.W.
 CONTRACTORS TO H.M. GOVT.

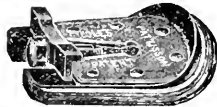


Fig. 1.



Fig. 2. A Quality.



Fig. 2. B Quality.

THE HOME OF PURE SEEDS.



Interiors of a few of the twenty-one Departments of the Royal Seed Establishment, where growers are being supplied with Seeds for the National Food Supply.

SUTTON & SONS, THE KING'S SEEDSMEN, READING.

"BULL'S"
THE NATIONAL FERTILIZER
THAT MADE THE
CHELSEA NURSERIES FAMOUS
BULL'S PLANT FOOD Co. 536, KINGS RD CHELSEA



*Food Production
on Farms & in Gardens.*

*To obtain the best results sow
Dicksons Seeds
which are all carefully selected from
the finest and most productive strains,
and are always reliable.*

Prices moderate. Catalogues free.
Dicksons Seed Growers Chester.

Horse Shoe Boilers

Foremost for 30 Years.

For Economy.
As used in the Botanical and Zoological Gardens.

COMPLETE APPARATUS FROM STOCK.

C. P. KINNELL & CO., Ltd.
Southwark St., LONDON, S.E.

Burpee's Seeds Grow

THE truth of this famous slogan is proved by thousands of pleased and permanent customers. The Burpee Idea of Quality First,—combined with efficient service has built the World's Greatest Mail-Order Seed Business. **Burpee's Annual, The Leading American Seed Catalog for 1917** is a bright new book of 204 pages, in color, and a Safe Guide to Success in the garden. Mailed free. Write for it today.

W. ATLEE BURPEE & CO., Seed Growers,
Burpee Buildings, Philadelphia, Pa., U. S. A.

NEW AND RARE
HARDY PLANTS
WATER LILIES
SPECIALLY SELECTED
PERRY'S
CATALOGUE,
Hardy Plant Farm,
Enfield, Middlesex.

THE
Gardeners' Chronicle

No. 1676.—SATURDAY, MARCH 10, 1917.

CONTENTS.

Allotments at Leeds .. 110	Orchid notes and gleanings— <i>Odontoglossum Broteri</i> .. 106
Books, notices of— .. 110	<i>Odontola Bellie</i> .. 106
Algae 110	<i>Vanda Miss Joaquim</i> .. 106
Bulbs, home-grown and foreign 111	Pasture, converting to arable 110
Catalpaes, restrictions on issuing .. 110	Peas and Beans, to dry .. 112
Farm, crops and stock on the 112	Salomon, Etienne, the late 111
Food supply, the .. 110	Societies— .. 111
Galloway garden, notes on 105	Horticultural Club .. 111
Hardy flower border— .. 105	Sugar Beet for preserves 111
Erg. von B. Ladhams 106	sulphate of copper .. 110
<i>Ilex verticillata</i> .. 107	grapes of .. 110
Deweyn, Sir John .. 110	Vegetables .. 107
Local Societies, the .. 110	Vines, the bleeding of .. 111
Market fruit garden, the 106	War items .. 110
Outlary 112	Water-lilies, h. bridling 111
Charles Winn 112	Week's work .. 108, 109

ILLUSTRATIONS.

<i>Ilex verticillata</i> 107
Symphaes in flower 111
Symphaes Mrs. Richmond 108
Snowdrops in woodland 105

NOTES FROM A GALLOWAY GARDEN.—III.*

NEVER was there an after illustration than the past winter has afforded of the weather described in rural parlance as "feeding a frost." From before Christmas onward, right through January, the mercury hovered round the freezing point, never more than two or three degrees above or below it. Then, when the frost was full "fed," it set to work in earnest, and we had a three weeks' spell of such cold as has not befallen us since the memorable months of January and February, 1895. In that year the frost was far more severe than anything we have had to bear here in 1917, for on that occasion the shaded thermometer twice registered zero Fahr.; but a thick and beneficent mantle of snow averted injury from many susceptible subjects. This year the risk has been greater, for, although the shaded thermometer has only twice fallen so low as 17° Fahr., there has been no snow. Yet, so far as can be seen, we have escaped cheaply, probably because the frost was steady, without trying alternation of freezing and thawing.

The plants introduced since 1895 are so numerous and various that it is very interesting to note their behavior in their first experience of a hard British winter. It is too early to judge of the effect upon bulbous and herbaceous subjects, but it is satisfactory to record that plants, both new and old, have suffered very little. Among the new Chinese *Rhododendrons* collected by Messrs. Wilson and Forrest no deaths have occurred among about forty species here. Even *R. habrochitum*, which, I believe, comes from Southern China, and about which I had considerable misgiving on account of its soft, hairy foliage, is quite fresh and vigorous. It was, indeed, favoured above the other species, because, being the only specimen we had, it was given the protection of some branches of *R. ponticum* placed round it. *Leptospermum scoparium* (9 feet high) and its varieties

Nichollsi and *Chapmannii*, *L. lanigerum* and *ericoides*, have not suffered in the least. Some species of *Olearia* have been reported of doubtful hardihood. *O. semidentata* we have not got yet, and *O. insignis* we lost in a wet winter two or three years back; but *O. nitida*, *ibifolia*, *macrodonta*, *nummularifolia*, and *Gunnii* are untrouched. *Eucryphia cordifolia* is un-

showing in fine contrast to the brighter emerald of *Illicium religiosum*. What one dreads for this *Eucryphia* is a late spring frost to blacken the rubicund young growth which it is prone to put forth too soon.

The myriad flower-buds of *Tricuspidaria lanceolata* in open borders are uninjured; but *T. lanceolata* against a wall is pretty severely cut in one instance, and perhaps fatally in another. I do not regret this, for it is a very inferior plant to the other. *Caleolaria integrifolia*, a fine thing when of large size, has been killed back to the root in some cases, beyond it probably, in

the open border. *Spartium junceum* has been severely cut. It is time I brought this long story to a close by saying that, while an immense bush of *Philonis fruticosa* is hanging the points of its silvery shoots, *Fabiana imbricata*, *Phygadeuon capensis*, *Abrutylon vitifolium*, and *Solanum crispum* remain in their customary vigour in the open, while plants of *Mutisia decurrens* on walls are bearing fresh young growths erect.

Among the bewildering multitude of *Barberis*, two are especially beautiful at this season, although, of course, flowerless. One is the glossy evergreen, *Barberis Knightii*, which Mr. Bean tells us is a variety of *B. Hookeri*, differing from the type in its extraordinary vigour and much larger leaves, which are green on both surfaces; the other is the deciduous *B. virescens*, which atones for the sickly pallor of its flowers in summer by the beautiful orange-red wands which it displays in winter.



FIG. 36.—SNOWDROPS IN A SCOTTISH WOODLAND.

others, but the prettier *C. violacea* remains quite safe against a south west wall alongside of *Berberidopsis corallina*. *Lupageria rosea*, flowering against a north wall in November, received no covering (I cannot be bothered with plants that require protection), and is none the worse for the winter; neither are *Abelia floribunda* and *Siphoria* (*Edwardsia*) *grandiflora*. Here and there a *Cistus* has succumbed, but that happens almost every winter in our dripping climate; the majority, however, including *C. purpureus*, *Lortetii*, *seymoulii*, *formosus*, and others, are unhurt. No damage has been done to *Osmanthus Delavayi*, *Semeio Grayi* and *laxifolius*, nor to any *Bambusa*, except *Arundinaria* (*Themonebanensis*) *Falconeri*, whose of the canes, twenty feet high, appear to be killed, though the base of the plant is quite vigorous. It is strange that, while *Notosporium Carmichaelii* and *Carmichaelia australis* remain quite unhurt in

The frost has imposed a wholesome and timely check upon early *Rhododendrons*. These should come to their own now, and the bulging flower buds of *R. barbatum*, *glaucum*, *ciliatum*, *praecox*, and others promise a fine display in March. Most plants of *R. arboreum*, however, are going to be very sparing in bloom, and a large bush of *R. Luscombei* (*Fortunei* × *Thomsonii*), which was loaded last year, has hardly any flower buds now.

The blooms of *Barberis japonica*, usually one of the chief joys of winter, were destroyed by the frost, and methought that the *Witch Hazels*, being in full flower when it set in, must have followed suit, especially when, on two days with fifteen degrees of frost, the bushes were so densely sheeted with hoar that hardly a gleam of their yellow petals was visible. But these petals have a marvellous power of resisting cold; when the thaw came, the plants were as if nothing had happened, and are still (February 23) at their best, though *Hamamelis*

* For previous articles see Jan. 13, p. 13, and Feb. 17, p. 69.

mollis began flowering before Christmas. *Parrotia persica*, on the other hand, began to shake out its vermilion anthers on February 5, when the frost was at its hardest. It is not so showy as its relatives, the Witch Hazels, and, unlike those precocious shrubs, I have never known it flower here until it is at least twenty years old.

Perhaps there is no genus whereof the species adopt so many disguises as the Knotweeds (*Polygonum*). I am well pleased to find that *P. equisetiforme*, which I received from Kew two or three years ago, has weathered the cold without any protection. Unlike many of the family, its growths are perennial, like very slender Rushes, which in autumn become studded along almost their entire length with small white flowers. *Herbert Maxwell, Monroith.*

ORCHID NOTES AND CLEANINGS.

NEW HYBRIDS.

ODONTOGLOSSUM BROTHAM.—This hybrid *Odontoglossum*, raised from *amabile* × *Lambardianum*, is a fine flower of good shape, richly blotched and tinged with claret-red.

ODONTIODA BELICE.—The *Odontoglossum* parent of this hybrid is *Her Majesty*, which secured the R.H.S. First-class Certificate on May 22, 1912, and it brings exceptionally fine qualities to the new hybrid, whose other parent was *Oda rosefeldensis*. The sepals and petals vary from copper colour to greenish-orange, with a slight trace of mauve on the margin of the lip. The yellow, which will intensify when the plant matures, comes from the *Odam triumphans*, which, with *Cochlioda Noezliana*, produced *Oda rosefeldensis*.

Both these were sent by C. J. Phillips, Esq., The Glebe, Oak Lane, Sevenoaks, who states that, being interested in Kentish lore, he names many of his hybrids with Doomsday names (A.D. 1066) of towns and villages in Kent. His Orchid-grower (Mr. R. Bucknell) having gone on military service, Mr. Fletcher, formerly with R. Ashworth, Esq., is filling his place.

VANDA MISS JOAQUIM.

A three-flowered inflorescence of a very interesting form of *Vanda*, named *Miss Joaquim* (teres × *Hookeriana*) is sent by Mr. F. C. Puddle, gardener to W. H. St. Quentin, Esq., Scampton Hall, Rillington, Yorks. The hybrid, which was raised at Singapore, and described in *Gard. Chron.*, June 24, 1893, p. 740, has rosy-violet flowers, with rich orange in the labellum. The variety sent appears to be distinct from the original, and may be a reversion towards *Vanda teres* in the form of the lip and in some other characters. The flowers are bluish-white, and the labellum has a green base and spur. Examination with a lens discloses in the rose-coloured spotting on the labellum distinct traces of *V. Hookeriana*. *V. Miss Joaquim* is usually summer-flowering, but this variety is said to have flowered always in February. It is not known whether several plants were raised from the original cross, or if it has been raised again. If so, this is a seedling variation with colour suppression.

ERIGERON B. LADHAMS.

I saw a good collection of the newer *Erigerons* in a Scottish garden last year, and was pleased to observe among them the fine hybrid, or reputed hybrid, known as *B. Ladhams*. The plant grows nearly 2 feet high, and so the flowers can be cut with long stems, which make them suitable for inside decoration. The blooms are rose-coloured, and the narrow ray florets give the elegant appearance which constitutes one of the merits of most of the *Flea Banes*. *S. Arnott.*

THE MARKET FRUIT GARDEN.

RAIN fell on only five days in February, and melted snow was measurable once, making the small total of 0.82 inch. Frosts from 2° to 12° occurred nearly every night until the 15th, after which there was mild weather, with many foggy days, and all the rain measured during the month. As the frost penetrated to the depth of at least a foot in the ground, some days of thaw were necessary to make it workable; but digging was practicable after the 20th. Snow lingered on the ground nearly as long as frost bound it. Yet birds did extremely little damage to the buds of Plums. In this connection their behaviour is inexplicable to me; they often do more damage in a mild winter than in a severe one. Vegetation of all kinds is very backward.

PROBLEMS OF FRUIT-PLANTING.

A correspondent asks questions in relation to the verdicts given in Woburn Fruit Station reports as to ramming trees when planting, the alleged uselessness of taking care to preserve the fibrous roots, and the comparative failure of growing Apple trees in grass land. I have experimented with ramming in two orchards, and have not found any difference between the rammed rows and those in which the soil was simply stamped in well over the roots of the trees. But then I always insist upon firm stamping-in, though without bruising the roots, so far as this can be avoided. Ramming is probably beneficial in quite light soils, but is an unnecessary expense, in my opinion, where the soil is even moderately stiff, except in the case of bush trees, branching out somewhat close to the ground, so that they cannot be staked, to keep the wind from blowing them about, and loosening the soil around the roots.

It seems to me desirable to preserve the fibrous roots on trees when planting, provided that they are alive at the time. Often, however, the finest of the fibrous roots have died through being kept too long out of the soil between the times of raising from their nursery beds and planting them, in which case they are clearly useless.

As to the relative advantage of growing Apples in arable or grass land, all the evidence that has come before me is in favour of the former plan. Nothing, it appears, is more fatal to the vigorous growth of young trees than the plan of planting them in grass land, and letting the grass grow closely around them at once, or even after three or four years. No one can drive about a fruit district without seeing thousands of trees so treated, miserably dwarfed things that can never grow to more than half their proper size. In part of one of my orchards ramming grass grew so persistently that it was almost impracticable to keep the land clean by digging it in winter, and hoeing it repeatedly in spring and summer. The soil was in so finely divided a condition that the slightest shower rooted the grass afresh after it had been hoed up. Therefore, when the trees were ten years from the planting, the grass was allowed to grow around them, being brushed and left on the ground once or twice in the season. In the third year of this trial, however, the dwarfing effect of the plan was so obvious that the land was restored to arable conditions. The outside row of trees had half its roots in arable land, kept clean by hoeing during the three years, and its superiority to the next row and others surrounded by grass was a very striking object-lesson. In this case the variety was Lane's Prince Albert, a poor grower on my land. But in a piece of Worcester Pearmain in the same orchard the same experiment was tried at the same time, with similar results. In this case also one outside row bordered upon land kept hoed, and its superiority to the rows surrounded by grass was remarkable. Both pieces were dug

after three years in grass, three years ago, and the trees have partially recovered. It must be mentioned, however, that some strong growing trees, such as Bramleys, Newton Wonders, and Royal Jubilees, near to Lane's Prince Albert, withstood the effects of grassing well enough. Everyone interested in fruit knows that there are thousands of acres of flourishing grass orchards of Apples, and Cherries are usually grown in grass. Vigorously growing varieties of Apples may have grass left to grow around them when they are mature with comparative, if not complete impunity. The fruit will not be as large as if the land were cultivated; but its colour will be better. Considering the great saving in expense in grass orchards, it is not certain that they do not pay as well as arable orchards. In several trials in the United States between what are called there "sod and mulch" orchards and arable orchards, in which a cover crop is annually grown and ploughed in, the latter, in most cases, have come out first in value of crops; but, if memory serves, no account has been taken of difference in expenses.

DOES GRASS IN ORCHARDS FOSTER INJURIOUS INSECTS?

A reply to this question seen recently was in the affirmative; but no proof was given, and it is doubtful whether evidence of any considerable account on the subject has ever been collected. Some large growers, who have both cultivated and grass orchards, might be able to throw light on the subject. At the same time, they might give their opinion as to whether fungous diseases are less prevalent in grass than in arable orchards. It seems to me that they are likely to be so, because grass land is drier than arable in winter and spring.

MINIMUM WAGES AND GRASS ORCHARDS.

The impending minimum wage of 25s. a week for every able-bodied man employed on a farm will probably lead to many mature Apple plantations now under cultivation being left to grass themselves, provided that there are no bushes growing among the trees. Such a minimum for all men between 17 and 61 years of age, which is the definition given by the Prime Minister of "able-bodied men," will render the work of digging and hoeing very costly. Men commonly earn as much or more at piecework; but this is widely different from their getting at least 25s. per week, "wet or dry," for what is often very leisurely day work. For a considerable portion of the year rain, snow, frost, or the wetness of the soil after rain or snow render work in the open impracticable, and on fruit farms, even more emphatically than on ordinary farms, there is very little profitable work for men under cover. Then fruit-growers have no guarantee of minimum prices for their produce, as ordinary farmers have for Wheat and Oats for six years, so that, unless duties are to be put upon imported fruit they will have no reason to expect prices above those of former peace times after the war is over.

THE CONDITION OF BLACK CURRANTS.

The promise of a Black Currant crop in my orchards is a very poor one. Probably, in consequence of the full crop of last season, the extension growth is scanty, and the number of dead branches is quite extraordinary. The buds, too, are small and backward.

KEEPING APPLES

The holding-back of long-keeping Apples till February can hardly have paid this season, as Bramleys made 11s. to 12s. 6d. per bushel in the latter part of last November, and were quoted no higher than 12s. to 14s. in the third week of February, when very few were left. The ordinary amount of waste would cover the difference in price. *Southern Grower.*

ILEX VERTICILLATA.

ILEX VERTICILLATA (see fig. 37) is the best of the deciduous Hollies for gardens. Specimens at Kew have been very attractive during the past autumn and early winter, the berries being of a rich sealing-wax red prior to the fall of the leaves. The bushes are showy in the pleasure grounds, and provide useful material to cut for indoor decoration, especially during the Christmas season. The Winterberry, the name by which this Holly is known in the United States, is suitable for indoor decorations, the sprays being more graceful than those of the common evergreen Holly.

Ilex verticillata, A. Gray, or *Prinos verticillatus*, Linnaeus, is a native of Eastern North America, and was first introduced into this country in 1756. It is a deciduous shrub of pleasing

will be found a much more appetising vegetable. Cooked properly and served with white sauce they make an excellent and palatable dish, tender, succulent and wholesome. *E. M.*

WAX POD, OR BUTTER BEAN.

MANY contributors to the *Gardeners' Chronicle* have urged us to grow this remarkable Bean, and I would again recommend it to all who have not tried it. It is a great favourite on the Continent, and will be enjoyed by any person who will give it a trial. Golden Wax Pod is the best variety I know; it requires the same treatment as the French Bean. *C. Davis, Holy Wells Park Gardens, Ipswich*

THE HARIHOT BEAN

THE Haricot is a highly nutritious food product, can easily be grown on any but the heaviest

taining seed, and as they should be sown at the end of May there is a possibility of utilising ground for this purpose which cannot be got ready for crops which require earlier sowing. (It is highly desirable that the seeds should be purchased of a reputable seedsman, and not at the grocer's, as the former will doubtless supply tested varieties.—Eps.] *W. Auton, The Gardens, Pargford Court, Woking*

POTATOS UNDER GLASS AND OUT OF DOORS

AT the beginning of last year, in discussing the question of producing very early Potatoes with my employer, who was willing to substitute Potatos for flowers, I suggested the use of a small house that had been used for growing Carnations in one section and Melons in the other. In the division used for



FIG. 37.—*ILEX VERTICILLATA.*

Photograph by E. J. Wallis

spreading habit, 6 to 9 feet or more in height. The plants thrive in most soils, and are readily increased by layering and seeds. There are several varieties, including *chrysearpa*, which has yellow fruits. *A. G.*

VEGETABLES.

THE VALUE OF LEEKS.

SOME writers have said much in favour of Leeks as a vegetable grown in the ordinary way in the open by dibbling a deep hole at planting-time (in May), dropping the plant some inches deep in the holes, and allowing these to fill up by degrees, thus becoming blanched and ready for use during the winter and spring, when they are most appreciated. It, however, they are cultivated on Mr. Beckett's method of producing exhibition specimens, with at least 16 inches of blanched stem 2 inches thick, Leeks

grow in the southern half of England, and might become a potent force in alleviating the possible food shortage should the war continue through another winter. I grew a considerable quantity last year on comparatively rough and unimproved ground, and found the return to be about one hundredfold.

It is now too late to increase materially the Wheat supply for this year's harvest, but much could be done to encourage the sowing of Haricots amongst the small growers. I suppose there is no district in the United Kingdom where the advice of head gardeners is not being sought by the local organisations for food production, and if we could be the means of inducing all those who are taking up food plots to grow even a few Haricots the total amount would be enormous and of great national value.

I have tested the germination power of those bought at the grocer's, and find it to be about 90 per cent., so there is no difficulty in ob-

taining them. I grew Potatos, and in the other French Beans. The house has a span roof, with side stages. The tops of the stages are corrugated iron covered with a layer of gravel; the gravel was removed, and in its place we put a layer (about 2 inches) of a mixture of lime rubble, burnt refuse, and leaf-soil. Then I had got together a sufficient quantity of half-and-half garden soil and soil from Cucumber frames, with some burnt refuse, old mortar, and soot. The whole was thoroughly mixed together and placed on the stages to a depth of about 8 inches. The Potatos (*Sharpe's Express*) had been boxed some time before; they were planted in rows across the stages, 15 inches being allowed between the rows and 9 inches from set to set in the rows. Lettuce was planted between the rows, and the stages edged with Mustard and Cress, which was very useful and gave the whole a neat appearance. As the Potatos were lifted and the eatable tubers taken off, as an experiment I replanted

them. During the early part of the time, when the plants were immature, they produced a second crop of about half the quantity of the first, but I found, as the plants became more mature, the second crop got less and less.

I am growing Potatoes again this year; the first batch was planted on December 25, and the plants are now well above ground, but instead of replanting this year I hope to have a second lot in pots, and as I take up the first I shall replace them with the pot plants.

Our French Beans are planted on similar lines to the Potatoes. The Potatoes gave an average crop of about 1½ lb. per root, of most excellent quality. I notice some of the advice for growing under glass is to box the sets crown ends up and cover with a mixture of leaf-soil, spent Hops or ordinary soil mixed with old manure. I think the advice a great mistake, as any experienced grower knows that both roots and sprouts would be broken off in getting the sets off this material. When I box my sets I put a thin layer of small, sharp clincher ashes in the bottom of the boxes; this acts as a drain and keeps slugs off the tubers. I always grade my tubers, one size in one box, and so on, and plant them in the same order.

Last year I grew a plot of Sharpe's Express out-of-doors. They were planted 3 feet between the rows and 18 inches from set to set in the rows. The only manure they had at the time of planting was a mixture of burnt refuse, old mortar and soot. The crop, when lifted, taking the proportionate size of the plot, was 15 tons to the acre. I had five rows marked for taking the proportionate crop from different-sized tubers. No. 1 row was planted with the smallest, and No. 5 the largest-sized tubers. When the crop was lifted they were as near as possible in proportion to the size of the sets, *i.e.*, the largest sets gave the heaviest crop and smallest sets the lightest. The sets were ordinary seed size from Scotland. *J. G. Blakey, Holmwood Gardens, Redditch.*

NORTH VERSUS SOUTH POTATO TRIAL.

To demonstrate the fact that Potato tubers from a cooler, later district give better results when planted further south than do those grown in the south, I carried out the following experiment. I sowed from a good stock of Midlothian Early ten tubers to be grown in Egypt, ten in France, ten in Surrey, ten in Midlothian and ten in Shetland, in 1915. The results were as follows, from ten sets:—

Egypt, a failure through locusts.	
France, raised August 4	11 lbs. 5 ozs.
Surrey, raised September 1	27 " 4 "
Midlothian, raised September 3	30 " 13 "
Shetland	28 "

I asked each of the growers to send me ten tubers to plant in Midlothian in 1916, and the following were the results, lifted August 30, 1916:—

10 tubers from France ..	produced 14½ lbs.
10 " " Surrey ..	25½ "
10 " " Midlothian ..	32½ "
10 " " Shetland ..	36 "

This is exactly the result I expected, but one does not always realise expectations in this world.

To Mr. T. W. Brown, Director, Horticultural Division, Ministry of Agriculture, Giza Branch, Egypt; Messrs Rivoire and Sons, Lyons; Dr. F. Keeble, Royal Horticultural Society's Gardens, Wisley; and Rev. D. Houston, St. Olaf Mansie, Lerwick, I am much indebted for helping me. *W. Cathbertson, Puddingston, Midlothian.*

COFFEE DISEASE.—It is interesting to learn* that the fungous disease—due to *Hemileia vastatrix*, which destroyed the Coffee industry in Ceylon—although present in Uganda, appears to be well under control.

The Week's Work.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. F. DAVEY,
Abbotts Wood, Godalming, Surrey.

ALPINE STRAWBERRIES are useful in the autumn, and are easily raised from seed sown now. Choose a good stock and sow the seeds in boxes filled with rich soil, pressing them down fairly firm, and placing the boxes in a temperature of about 50°. As soon as the seedlings appear give more air, and prick them out into other boxes or into a frame as soon as large enough to handle. Harden, and plant out in well-prepared positions as soon as large enough.

FIG TREES.—If the Fig trees have been covered, the protective material should now be removed, or growth will start prematurely. The Fig will grow in almost any kind of soil, and is often too vigorous to be fruitful. Rich soil should there-

necessary. The Brown Turkey is the most reliable variety to grow. In some parts of the West and South of England large standards of this variety are grown in the open, and yield fine crops of luscious fruits.

FRUITS UNDER GLASS.

By JAS. HIBSON, Gardener to LEOPOLD DE ROTHSCHILD, Esq., C.V.O., Gunnersbury House, Acton, W.

EARLY MELONS.—If the plants raised from the earlier-sown seed have thriven well they should now be fit to transfer into 48-sized pots. Even if planting out be decided upon later, it is well to have the plants as strong as possible. Keep them well up to the light, and in everything aim at a stiff, sturdy growth. Another batch of seed may shortly be sown. Ringleader is a good variety, and so are Hero of Lockinge and Sutton's Scarlet.

FIGS FROM CUTTINGS.—Those who are aiming at an increase in their stock of Figs should watch the cuttings put in during the early weeks of the year. Those struck singly in a thumb-pot should now be fit to transfer to 48-size pots.

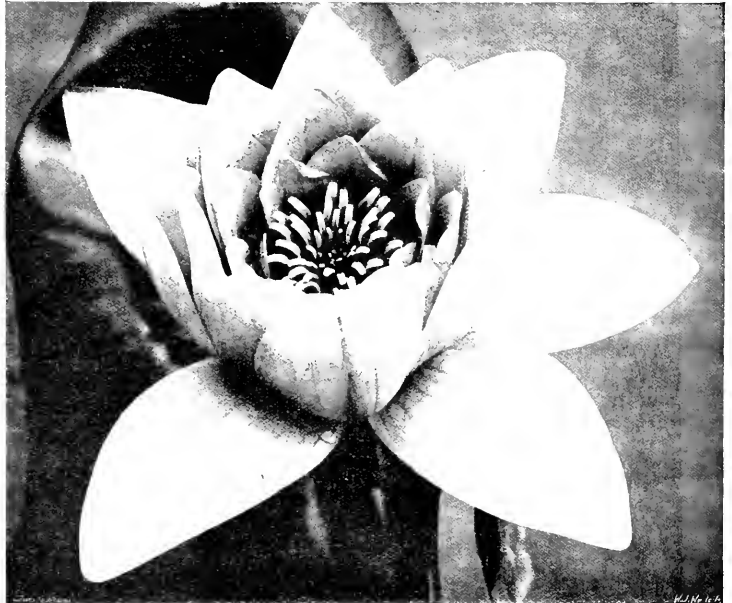


FIG. 38.—NYMPHAEA MRS. RICHMOND. COLOUR OF FLOWER ROSE-PINK, STAMENS YELLOW.

(See p. 112.)

fore be avoided, though a little extra nourishment may be given to get the roots well established. After being well started, the root area should be limited. If the trees are seen to be making too much growth and yielding too little fruit, curtail the nourishment at the roots by building a rough wall of old bricks or stone, about 6 feet from the base, filling in the spaces with old mortar rubble. Fig trees often grow and fruit well in paved yards. The trees require very little attention beyond a periodical thinning of the branches, and, as a rule, the older the tree the more prolific it is. In pruning, all the long, gross wood should be cut out, and only the well-ripened and short-jointed wood retained, except for the extension of the tree. These shoots should be laid in and nailed or tied quite straight, leaving room for the large foliage to develop and for new shoots to form for the following season. In many cases even the longest shoots retained will need pruning, especially in the case of extra vigorous ones. When bare spaces exist, prune a strong shoot back to two or three eyes, and when they break, rub off those not required. A great deal of thumb-and-finger work is necessary, and the more is done, the less pruning will be

Keep these young Fig trees in bottom-heat, and give them all the encouragement possible. When potting make the soil quite firm.

SOIL FOR NEW VINE BORDERS.—Where it is contemplated to plant a viney afresh, the proper selection and preparation of the soil is of the utmost importance. The staple material should consist of a fibrous, calcareous, yellow loam, neither too heavy nor too light in texture. Such soil cannot, however, be always obtained, in which case the top spit of an old pasture is the best substitute. On one occasion I had to rely on a local loam that was not quite the ideal material for vines, but the turf was tough and full of fibre, and it answered the purpose very well. If the loam is on the heavy side and approaching clay, it would be well to add sandy or gritty soil to it. Such soil can often be obtained by the roadside in country districts, but it must not be taken from roads that have been dressed with tar. What are usually termed road scrapings form a good material to add to heavy soils. Burnt ballast is another good medium for mixing with heavy soils to keep them open, and I have used it with good results. Charcoal of the size

* Annual Report, 1915-16, Dept. of Agric., Uganda.

of small nuts is of great benefit in all soils, and there should be added a quantity of half-inch bones and old mortar rubble, the last well crushed. These materials should not be used to excess, but in just sufficient quantity for traces of each to be apparent in the soil. Having secured all these essentials, the next process is to reduce the loam in size, say, to about the size of the fist. Next proceed to incorporate the ingredients well together, choosing a dry day for the work. The heap of soil should be covered with a waterproof sheet, to protect it from rains. Turn the compost at least once before it is taken into the vinery, and it should be used in a fairly dry condition; this is an all-important matter, and upon it will depend the well-being of the vines for years to come. The drainage of the border must be perfect, bricks with the mortar still adhering to them being the best choice of material, placing the coarser pieces at the bottom. It may be necessary, if it is suspected that the soil may become waterlogged, to employ drain pipes, in which case the pipes must have a good fall and a suitable outlet. In the case of cold, wet soils, I prefer to have the bottom concreted. I had this done when remaking the vine borders here some years ago after an attack of phylloxera, and it well repaid the extra trouble and cost. The concrete need only be of good lime and sand. It may be urged by some growers that it is not necessary to attend to these preliminaries, and that vines will do well with less trouble. This may be true, but the soil must be of a suitable nature and of a good depth. The vines intended for planting should be treated carefully. I prefer to let them break naturally and plant in the first week in April. The pruning should be done to suit the requirements of each individual vine.

THE ORCHID HOUSE.

By J. COLLIER, Gardener to Sir JEREMY COLMAN, Bart., Gatton Park, Reigate.

MASDEVALLIA.—September is the month usually chosen for repotting these Orchids, but if the work was not carried out at that date the present is a suitable time to supply fresh rooting material. The stronger-growing sorts of Masdevallias, such as *M. Harryana*, *M. Veitchiana*, *M. ignea*, *M. Chelsonii* and *M. amabilis*, that have become pot-bound, may be shifted into larger pots. Do not disturb the roots more than is necessary. Others, which have become bare in the centre, may be broken up and, after cutting away all decaying parts, be potted afresh in smaller pots. *M. tovarensis* will now be passing out of flower, and will commence to make new growth, at which stage new rooting material should be afforded. This Orchid is best grown in shallow pans suspended from the roof rafters. Masdevallias of the Chimerae section should also be given attention at the roots at this period; they grow well in Teak-wood baskets hung from the roof. A layer of Fern rhizomes should be placed over the bottom of the basket for drainage purposes, with a covering of Sphagnum moss. Crocks should not be used, as they hinder the flower spikes from pushing downwards through the bottom of the basket. A suitable compost for all the Masdevallias mentioned is one-half Osunda or A.I. fibre chopped up rather short, and the remainder half decayed Oak leaves rubbed through a half-inch sieve. Add chopped Sphagnum moss, crushed crocks and silver sand. If there is no house devoted to Masdevallias they should be grown in the warmest and shallowest part of the Odontoglossum house.

LAELIAR AND LAELIO CATTLEYAS *Laelia pumila*, *L. rubens*, *L. Gravesiae*, and their hybrids *L.C. Clive* and *L.C. Cornelia*, will be pushing forth new roots from the base of the pseudo-bulbs, and any necessary repotting should be carried out. The dwarf sorts are best grown in well-drained, shallow pans, suspended from the roof-rafters at the cooler part of the intermediate house. The stronger growers, such as *L.C. Epicaste*, should be grown in pots and placed on the stage. After repotting the plants should be given just sufficient water at the roots to keep the pseudo-bulbs from shrivelling, until the young roots are well into the new compost, after which they should receive more copious supplies.

THE KITCHEN GARDEN.

By J. DIXON Foreman Royal Gardens, Windsor.

SALAD PLANTS IN PITS.—Endive and Lettuce plants in cold pits must be freely ventilated during mild weather. Stir the soil between the plants and remove all decaying leaves. During showery weather the lights should be raised, but the plants must not be exposed to drip. The pit containing Endive may be covered with Fern or other material which will ensure perfect darkness at least ten days before the plants are required for use. Continue to plant young Lettuce plants as space becomes available, and make further small sowings for succession.

ASPARAGUS BEDS.—The work of cleaning and pricking over the surface of Asparagus beds should be accomplished with as little delay as possible. While the alleys are being dug some of the finest soil may be spread over the bed and the crowns should be covered with at least 4 inches of fine, rich soil. If new plantations are contemplated the ground should be trenched and thoroughly prepared now, so that it may become settled before the planting season arrives.

PARSLEY.—As soon as the state of the soil will permit, a sowing of Parsley may be made with a view to producing a supply throughout the summer. Parsley is a deep-rooting plant, and requires good, rich soil. The situation should be cool, but not too shady, as, for instance, a border facing east. The plants raised in July last for winter use will run to seed in May or June, and should be removed from the ground as soon as successional plants are ready to take their place. Sow the seeds in shallow drills 18 inches apart and thin to 6 inches apart as soon as the plants are of sufficient size. Another sowing made in July will furnish a supply throughout the winter. If seeds were sown in boxes in January the young plants will soon be ready for pricking into boxes or pans, and should be planted in a wood frame as soon as large enough. Old plants which have been exposed to the weather throughout the winter should be divested of all decaying leaves and the ground carefully hoed. A light dusting of soil may be applied with advantage as soon as the surface of the soil has been stirred.

TURNIPS.—Turnip seed should be sown in a sheltered position with a view to producing roots in quantity at the earliest date possible. Sow the seeds thickly in shallow drills made 1 foot apart. If birds are troublesome, place nets over the seed-bed. As soon as the seedlings are of a suitable size, thin them carefully to 3 inches apart, and work the Dutch hoe between the rows to destroy small weeds. Frequent dustings of finely sifted wood ash will be of great benefit to the crop. Early Milan, Snowdrop, and White Model are suitable varieties for present sowing.

BROAD BEANS.—Long-pod Beans should be planted for succession in rich soil which has been deeply dug and manured in early winter. The seeds should be sown in double drills 2 inches deep. Seedlings of the earliest batch are well through the surface, and the soil about these should be stirred frequently with the hoe. As the season advances, remove the tops of the shoots from the more forward plants to hasten the development of the pods.

PARSNIPS AND ONIONS.—If not already done, take advantage of the first favourable opportunity to sow the main crop of Parsnips and Onions, but unless the soil is in a crumbling condition this work will be better delayed for a time.

CARROTS.—A small sowing of Early Horn Carrot may be made on a warm south border in shallow drills 9 inches apart. The soil should be light and rich. Thin the plants as soon as they are large enough to handle to 2 inches apart in the row. Frequent light dustings of soil in the early mornings will keep slugs in check. A successional sowing should be made a fortnight later.

POTATOS.—In order to obtain new Potatoes from the open it is, as early as possible, plant an early variety in a sheltered position as soon as the soil is in a suitable condition. If the tubers are planted under a south wall in well-prepared soil there will be very little difficulty in protecting the plants from injury by frost. These should be ready to lift ten days earlier than those in open borders. All tubers intended for planting

should be placed on end in boxes and exposed to the light in order for them to make storky sprouts. Sprouted sets should be planted on all available south borders and other sheltered positions by the middle of March, and provision made for their protection from frost either by keeping a quantity of dry Fern at hand or some other light material which can be used quickly for the purpose. Early Potatoes in pits are making rapid progress, and require plenty of ventilation to prevent them becoming drawn; water should also be given freely while the plants are growing actively. Successional plantings should be earthed up carefully before the shoots become too long; if the soil is dry, water it copiously the day previous to earthing up.

TOMATOS.—Sow Tomato seeds, to raise plants for outdoor cultivation, in pans of finely sifted soil. Germinate them on a gentle hotbed, and when the seedlings are well through the soil, place them near the roof glass in a house having a temperature of 60°. As soon as the plants are large enough they may be potted into 3-inch pots, and when these are well filled with roots they may be shifted into 6-inch pots. Strong plants should be available about the third week in May for planting against south or west walls.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcote, Eastwell Park, Kent.

MIGNONETTE.—Plants coming into bloom must not suffer from lack of moisture, or the flower-spikes will be stunted. Feed them regularly, using a little manure or clear soot-water alternately with artificial manure. Stake neatly, using very light sticks of thin Bamboo points, and keep the plants in a light position. Later batches in frames should be encouraged by top-dressings, or transferred to larger pots if specimen plants are desired.

ALLAMANDA HENDERSONII. This is one of the most satisfactory warm house or stove climbers. A healthy specimen, trained on the roof, will give a succession of large yellow blooms for many months. A great point in its favour is that it is rarely attacked by insect pests. Having been given a good rest by keeping the roots dry during the winter, the plant should now be pruned back to firm, well-ripened wood. Do not leave too many shoots; the results are infinitely better if it is trained thinly, and thus well exposed to sun and air. Whether growing in a tub or in a border, the old, worn out top soil should be loosened and removed. Give a good soaking with water, and then top dress with cow-manure and good turfy loam. Beyond a daily spraying, very little water will be required until the plant is growing freely. The drainage must be ample, as when in full growth copious supplies of water are required.

BOUGAINVILLEA. If not already done established plants of Bougainvillea growing in cool conservatories or greenhouses should be pruned and cleared before they start into new growth. This plant succeeds best after a period of rest in winter by withholding water and lowering the temperature of the house. It thrives in varying conditions and in almost any position, and makes a capital plant for the amateur's greenhouse. Specimens succeed well planted in borders at the back of houses and trained on the wires under the roof. In pruning, cut the shoots hard back to well-ripened wood. Those of well-established plants should be cut to within a few buds of the main stems to make spurs, as in the vine. Thin the young shoots to a reasonable number for the space, and allow them to hang in a pendant position to give a natural effect. Syringe the plants daily in fine weather and give the roots plenty of water when in full growth. *B. glabra* is the oldest variety in general cultivation; others of more recent introduction are *B. Cypheri*, *B. Meud* (Chateaubriand) and *B. Sandersoniana*. The last-named variety is very free flowering and blooms profusely in small pots. Pot plants are suitable for decorative purposes; they need constant attention and extra care in watering and feeding. Bougainvilleas may be propagated easily from cuttings formed of the young shoots with a heel of old wood. Make them about 6 inches long, and insert them in sandy soil. Place the cutting pots in a warm propagating frame and keep it closed.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the Editors. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 41.2°.

ACTUAL TEMPERATURE.—*Gardeners' Chronicle* Office, 41, Wellington Street, Covent Garden, London, Thursday, March 8 (10.0 a.m.): Bar. 29.9; temp. 50.5°. Weather—Sun-shine.

SALES FOR THE ENSUING WEEK.

TUESDAY—

Nursery stock of the Woodlands Nursery, Maresfield, Sussex, by Protheroe and Morris, at 12 o'clock.

WEDNESDAY—

Greenhouses, Hot-water Piping, and Sundries, at 407, Hertford Road, Lower Edmonton, by Protheroe & Morris, at 12 o'clock.
Fruit Trees, Roses, Plants, Lilies, &c., at Protheroe and Morris' Rooms, 67 and 68, Cheapside, at 1 o'clock and 3 p.m.

THURSDAY—

Roses in variety, at Protheroe and Morris' Rooms, at 1 o'clock.

FRIDAY—

Topiary Work, Garden Furniture, and Ornaments, at Protheroe and Morris' Rooms, at 1 o'clock.

It is about thirteen years since Prof. West published his book on *The British Freshwater*

Algae.

Algae, and those of his colleagues who were aware that he had a large work in preparation have been awaiting its appearance with much interest. Unfortunately, it has been delayed owing to the serious illness of the author, but the first volume has now been published*, and the concluding one, we may hope, will not be very long delayed.

The author regards the present instalment as dealing with the biology of the group of plants included in the blue-green and green algae, together with the diatoms. But the ordinary person would probably regard it more as a handbook of the morphology and taxonomy of the plants. Truth to tell, the biology (in the ordinary sense of the term) is rather slender. There are many obvious biological points which have received no treatment at all, and what there is strikes one as being rather scrappy. The author shows his real bent in the grouping of the genera and in the illustrations of related forms. If one desired to criticise the plan of the book adversely, one would say that, for a book of this size, the wealth of examples was rather over-done. The

reader who is not a specialist in the group may easily find himself somewhat oppressed by the number of unfamiliar genera often only adduced as examples, and seldom more than briefly described. But then, it is no book for the beginner. To anyone who has studied the group, it provides a valuable presentation of a great range of facts, and it will certainly take its place as a solid contribution to the literature of this important group of plants.

We note some errors and omissions, but such are almost inevitable in a book of this kind. Thus, in speaking of the Red Snow plant no mention is made of the interesting fact that the alga will turn red whenever it is grown under conditions of nitrogen starvation, and will rapidly turn green when a source of nitrogenous food is supplied to it.

The account given of the cytology of *Spirogyra*, as elucidated by Tröndle, is incorrect. Tröndle clearly showed that, as might have been anticipated, the three supernumerary nuclei in the germinating spore degenerates, and that the eoaescence described by older authors rests on mistaken interpretation.

We note that Prof. West seems to adhere to the view that reduction in the number of chromosomes is necessarily connoted with the gametophyte stage of the life history, although the example of the brown Seaweeds (*Fucus*) clearly shows that the sexual organs may arise on what, if consistent, he would have to term the sporophyte.

But these things do not greatly detract from a valuable work, and the author may be congratulated on having made an important contribution to science.

CONVERTING PASTURE TO ARABLE CULTIVATION.—Although treating the subject from an agricultural point of view, the account* by Mr. ARTHUR ASHES of the means of overcoming some of the difficulties attending the conversion of pasture to arable land should be read by gardeners engaged in this work. The need for consolidating the freshly-broken turf, the risks of damage from insect pests, and manurial treatment are all dealt with.

ALLOTMENTS AT LEEDS.—The demand for allotments at Leeds is very great. The Parks Committee has received 950 applications, and Mr. ALLSOP, the Parks Superintendent, under whose charge the allotments are made, hopes to supply every applicant with a plot. In addition to this work, he is supervising the cultivation of 60 acres devoted chiefly to Potatoes, Oats and Peas. Seed Potatoes of the varieties Eclipse, King Edward, and Arvan Chief, fertilisers and tools are supplied to allotment-holders at cost price, and a leaflet on Potato cultivation has been prepared for their use.

THE FOOD SUPPLY.—Everyone interested in the understanding of food problems should study the Report on the food supply of the United Kingdom drawn up by a Committee of the Royal Society at the request of the President of the Board of Trade.

PRICES OF SULPHATE OF COPPER.—An arrangement has been made by the Board of Agriculture with manufacturers of sulphate of copper, whereby sulphate of copper will be sold for home consumption in the United Kingdom at the price of £50 per ton, in quantities of not

less than 2 cwts., delivered free on rail at maker's works, in maker's bags, nett cash with order. The price charged by dealers and merchants other than manufacturers is not to exceed 6½d. per pound. These prices are to apply to sulphate of copper, blue vitriol, or blue stone of a standard quality of not less than 98 per cent. purity. They do not apply to sulphate of copper sold for export. The prices stated above are below the market prices recently ruling.

HOLD FAST TO YOUR GARDEN CATALOGUES.

—Horticulture, already very sorely tried, will now have to face a new difficulty owing to the Order that forbids the issuing of catalogues by post, except in response to request. May we suggest that it would be as well for all amateurs and gardeners to keep their present lists for reference? In the circumstances, nurserymen and seedsmen may not deem it prudent to print the bulb, herbaceous, Rose, Coniferæ and fruit catalogues usually distributed in autumn and winter.

SIR JOHN T. DILWYN LLEWELYN, BART.

Horticulturists will learn with deep regret of the loss sustained by Sir JOHN LLEWELYN in the death of his wife, on the 5th inst., at Penllegar, near Swansea. Sir JOHN LLEWELYN is a distinguished personality in the gardening world, and his beautiful gardens at Penllegar bear testimony to his enthusiasm for plants, and especially for choice trees and shrubs. He is a former member of the Council of the Royal Horticultural Society, and was for many years the President of the Horticultural Club. Ever ready to forward the interests of horticulture, he served as President of the National Potato Society, and is a vice-president of the National Chrysanthemum and National Carnation and Picotee Societies, and Patron of the National Dahlia Society. In 1907 he was awarded the Victoria Medal of Honour.

WAR ITEMS.—The American horticultural Press records the death at the front of Mr. HAROLD B. BRIDGET, florist, of Seattle, Washington, U.S.A., with the English Army. Mr. BRIDGET, who was only 52 at the time of his death, being an Englishman, joined a Canadian regiment and went with it to France.

—Second-Lieutenant HERBERT DENNIS PHILLIPS has been killed in action. He was the second son of Mr. F. G. PHILLIPS, of Wulverle, Otton, and was 26 years of age. Mr. PHILLIPS, whose death was instantaneous, was a keen trade grower of Daffodils, a member of the Horticultural Club, and a member of the committee of the Midland Daffodil Society.

—Private T. S. PAGE, of the Worcester-shire Yeomanry, whose death has occurred in action, was formerly employed in the Earl of Derby's gardens at Witley Court.

—Private ALLEN PARKES, reported killed in France, was gardener to Mr. J. D. HARWARD, ex-Mayor of Stourbridge, Winterford, Chaddesley Corbett. He was 51 years of age.

THE LOCAL SOCIETIES.—Both before the beginning of the war and since, Elstree Horticultural Society, of which the Hon. VICARY GRUBS is President, has been doing good work in promoting horticulture, especially with regard to the cultivation of vegetables. The membership is a large one, and until recently an annual show was held. In place of the usual exhibition, prizes are now offered for the best Potato crops, growing crops, and vegetables. Allotments are being provided all over the district, and practical members are given much by way of giving advice. Lord ALDENHAM has provided allotments, free of charge for the time being, adjoining Elstree village, and the land is now being broken up and cultivated. Between 30 and 40 tons of seed Potatoes have been purchased and distributed by Mr. W. J. PRITCHARD, secretary of the society. A depot has been established at Elstree for providing fresh vegetables and fruit for the Fleet.

* *Algae*. Vol. I. By G. S. West, M.A., D.Sc., Mason Professor of Botany in the University of Birmingham, Cambridge University Press, 1916.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE BLEEDING OF VINES.—W. J. S. (p. 104) could stop the bleeding of his vines by the following method. Get a small Potato, cut it in half, make an incision rather smaller than the wood, and then push it on nearly up to the bud. I have seen this plan very successful after other methods had failed. W. Chitty.

HYBRIDISING WATER LILIES. In connection with Mr. Hudson's exhibit at the last meeting of the Horticultural Club of lantern slides of Marliac Water Lilies, it is of interest to remember that Sir Joseph Paxton called attention sixty-five years ago to the desirability of British Horticultural experiments on the hybridisation of Nymphaeas.

He wrote as follows (*Gard. Chron.*, July 10, 1852):—"How is it that aquatic plants are seldom or never brought under the influence of hybridism? They are objects of great beauty, are, and always must be much in request, and appear to be just as submissive to man as other plants. Their constitutions may certainly be affected by crossing quite as much as the Rhododendron. Yet, while the tender crimson species of the Indian Rhododendron are brought to act upon the hardy pale faces of the United States, the delicate white Water Lily of our rivers is left to wild nature in the presence of the most glowing tints possessed by her tropical kindred. It may be said that there are physical difficulties in the way of crossing Water Lilies. We grant it. The yellow Nymphs are not likely to breed with the white and blue and crimson Nymphaeas, and perhaps Victoria may refuse all alliance with either. But then it is the same everywhere: a Currant will not breed with a Gooseberry, nor an Apple with a Pear. Nevertheless, Gooseberries find kindred blood among Gooseberries, and Currants among Currants; and why may it not also happen to the Nymphaeas themselves? This sort of crossing is certainly possible. It has been done.

"Some years since mules were obtained in the horticultural garden between the tender blue Nymphaea of the Cape of Good Hope and the hardy white one of England. But owing to neglect they were allowed to perish, and that experiment came to nothing." He then describes *Nymphaea Devonensis*, which was produced by crossing *N. rubra* with *N. Lotus*, and adds:—"Let us hope that this example will not be thrown away. There can be no difficulty in operating to any extent upon the white *Nymphaea*, which we should take for the mother of the brood that it is hoped will come." The brood came, but at the hands of M. Marliac. Frank Crisp.

THE LATE M. ETIENNE SALOMON. I was sorry to read on p. 103 of the death of this famous French vine-grower, who spoke excellent English. The last time I met him was at that charming little reunion at Ledoyen's on the occasion of the Schneider banquet in Paris in 1907. Messrs. E. Salomon et fils were prominent exhibitors of vines and Grapes, especially at the Paris Autumn Shows. C. H. P.

SUGAR BEET FOR PRESERVES. Mr. T. C. Deans, The Council School, Long Crendon, Thame, has advised in the daily press the use of Sugar Beet in making jam. He says, "Mixed with the fruit and well boiled, not only is less fruit required, but practically no sugar is

needed. In the case of very sweet fruits like Strawberries no sugar at all is needed provided that the jam is boiled well and is not kept too long. The Beet should be boiled separately and the pulp added, the proportion varying from one-half to two-thirds, according to the ripeness and sweetness of the fruit." In view of the shortage of sugar it would be of much interest and real value to know if any readers have tried Sugar Beet for this purpose, and what is their experience with it for preserves. T. W. Bolus, *Mount Stewart Gardens, Co. Down.*

HOME-GROWN AND FOREIGN BULBS.—In any consideration of the future of the British bulb-growing industry, the fact that there are bulb merchants and flower growers who are not necessarily bulb-growers must not be overlooked. Nor should it be forgotten that when prohibition Orders are withdrawn from foreign bulbs duties may be imposed upon those classes of goods which may be grown in this country. If such duties are imposed upon imported bulbs at the last moment, this may be done without the benefit of the advice that should be forthcoming

Management Committee for 1916, of which the following paragraphs are extracts:—

EXTRACTS FROM THE REPORT.

The more stringent lighting regulations issued last autumn have not tended to encourage attendance at evening meetings in town, and for this reason the programme of the club was cut down.

The annual general meeting took place on February 22, when the president, Sir Frank Crisp, Bart., presided. The social dinner which generally follows this meeting was omitted.

On the kind invitation of the president about five members visited Firar Park on June 22, the date of the annual outing. On former occasions our visits to the president's famous gardens had taken place in July, and the earlier time was chosen last year in order to give the visitors an opportunity of seeing more of the rock-garden plants in flower.

On October 10, Mr. Reginald Farrer gave an account of his recent explorations in Tibet, and described many of the interesting and beautiful plants he discovered there.

The way in which the members have supported the club during the war is most satisfactory. There have, nevertheless, been a few resignations and some deaths. Mr. J. Gomes Rowley, whose death occurred during the year, was a member of the club. The committee has induced Mr. W. A. Biney to succeed him in that office.



FIG. 39. NYMPHAEAS IN BLOSSOM. *N. ALBA ROSEA* IN FOREGROUND, *N. ELLISIANA* IN BACKGROUND.

(See p. 112.)

from the trade. It is essential, therefore, that this question should be considered at once, so that terms acceptable alike to the trade and the Government may be drawn up. In the event of any duty being imposed upon imported bulbs, the basis of weight rather than numbers should be adopted. C. K.

SOCIETIES.

HORTICULTURAL CLUB.
ANNUAL MEETING.

FEBRUARY 27. The annual meeting of the members of the Horticultural Club was held in the Club Room at the Hotel Windsor, Westminster, on the 27th ult. The chair was occupied by the president, Sir Frank Crisp, Bart., and the attendance of members was satisfactory. Mr. R. Hooper Pearson, hon. secretary, read a letter from Mr. Harry J. Veitch, regretting his inability to be present owing to a severe chill. Mr. Pearson then read the report of the

The number of members at the present time is 120 (including 4).

The sum of £190 has been invested in the War Loan making the club's investments up to £600 (including £400). The sum of £50, promised to the War Horticultural Relief Fund, has been paid.

The president congratulated the members on the satisfactory nature of the report and the sound condition of the finances. The motion was seconded by Mr. R. W. Wallace, and carried unanimously. The next business was the election of the Management Committee. The members of the committee for 1916 were unanimously re-elected *en bloc*, their names being as follows: P. Rudolph Barr, W. A. Biney, E. A. Bunyard, W. B. Cranfield, W. Cuthbertson, H. R. Darlington, Chas. T. Draney, W. J. Jofferies, H. E. May, George Monro, George Paul, J. F. McLeod, C. E. Pearson, E. Finches, and Edward White.

LECTURE ON WATER LILIES

About forty members and friends of the Club assembled for dinner at 6.30, and afterwards Mr. James Hudson gave a lecture on Water Lilies, illustrated by coloured lantern slides. Mr. Hudson said that his interest in Water Lilies

begin sixty or more years ago, when he was still a schoolboy, but it was about twenty-five years ago that he first took up their cultivation seriously, when he purchased a dozen of the earliest of M. Latour-Marliac's hybrids for 52s. The varieties included *alabata*, *chromatella*, *rosea*, *carnea*, *N. odorata rubra*, *N. o. rosea*, *N. o. exquisita*, *N. o. sulphurea*, *N. pygmaea helvola*, and *N. flava*. His experience with these varieties was that all were hardly except *N. flava*. Mr. Hudson said that M. Marliac's work in hybridizing Water-Lilies had enriched our gardens with some of the most beautiful of plants. He described M. Marliac's nursery at Temple-sur-Loire as an ideal place for Water-Lilies, containing as it did a warm spring, the water of which never fell below 55° Fahr. Even the tropical species such as *N. stellata* and *N. zanzibarensis* luxuriated there, whilst the *Nelumbium* was also quite at home. M. Latour-Marliac senior spent fifteen years in hybridising in the early days of the nursery, but unfortunately lost his whole stock, and was obliged to begin afresh, this time with the happy results well known to all Nymphaea-lovers. The late Herr Froebel, of Zürich, had also experimented in the raising of seedlings, and to him we owe the beautiful *N. Froebeli*. Mr. Dreer and others in the United States had likewise been successful in raising several meritorious hybrids. The list of hybrids had now become a formidable one, and a beginner would find it difficult to select a list of fifteen or twenty. During the spring of 1916 the plants at Gimmersbury House had been overhauled, and only the choicest retained. The best specimens of these had been photographed in colours, and it was from these portraits that the slides he was now using had been prepared by Mr. R. A. Malby. The varieties were as follows: *Gladstoniana*, *Moyreana*, *pygmaea*, *helvola*, *collosa*, *suavisima*, *caroliniana*, *rosea*, *Marliacea*, *rosea*, *formosa*, Mrs. Richmond, *Incida*, *Seignouretii*, *sanguinea*, *Masoniella*, *Galatee*, *Necton*, *Jas. Brydon*, *Jas. Hudson*, *Escarboucle*, *Listeri*, *gigantea*, *Hudsoniana*, *Attraction*, *atrapannus*, *W. Falconer*, and *Compteur*. It was well known that the habit of Nymphaea flowers was to expand in sunshine, and close at dusk, but he had often noticed that on bright moonlight nights in September the blooms would be fully expanded. He issued a word of warning to would-be Nymphaea growers against allowing water-fowl to have access to the plants, on account of their destructive habits, swans, ducks, and moorhens being specially troublesome. Certain good hybrids were liable to fail through exhaustion, and he had lost in this way *N. odorata rosea*, *N. o. exquisita* and *N. gloriosa*. Most of the hybrids were the latter for occasional division, the best crowns only being replanted. Indeed, division was necessary in the case of certain hybrids, or their growth would become too crowded. For very vigorous hybrids he would recommend water up to 9 or 10 feet in depth; those which needed such treatment made is evident by their very long petioles, and leaf-stalks.

In the course of discussion after the lecture, Sir Frank Crisp remarked that he had not been aware that Water-Lilies required such deep water; he had certain varieties growing in about 2 feet, and they were perfectly successful. The foliage was freely thinned. Mr. R. Farrer was surprised that the lecturer had not referred to *Nelumbium speciosum*, which is perfectly hardy. He had seen it growing and flowering freely in the rivers from Ceylon northwards to Japan and to the centre of China. Sir Frank Crisp said that he had grown it for ten or fifteen years, but had never been able to induce it to flower. Mr. R. W. Wallace said that he considered Nymphaeas to be amongst the easiest of all plants to grow. The plants should be frequently divided and replanted in hard mud, placing a mulch around the crown every spring. There was, in his opinion, no finer variety than *Escarboucle*. If he were to grow six only, he would select them as follows: *Gladstoniana*, *Marliacea rosea*, *Escarboucle*, *William Falconer*, *James Brydon*, and Mrs. Richmond.

CROPS AND STOCK ON THE HOME FARM.

BARLEY.

BARLEY is one of the most useful of farm crops, and the meal is invaluable for fattening pigs, especially when mixed with steamed or boiled Potatoes. For poultry, too, Barley as meal and as whole corn is wholesome. When grown sufficiently well to be used for malting, Barley is a particularly profitable crop, and the straw is good for spreading in cattle yards, especially in the lambing fold, as it does not twist around the legs as the longer Wheat or Oat straw does. By Strawberry growers, too, Barley straw is much appreciated for "bedding" the plants, to prevent the fruit from being soil splashed. Barley can follow a Wheat crop if the land is in good condition. In some counties Barley follows Rape, Turnips, or Kale, eaten off by sheep; in others, it is sown on a clover or grass ley, ploughed and pressed in the autumn. The chief point is to avoid too rich land, as the straw is liable to be laid by heavy rains. If this happens before the straw is ripe, it does not rise again. Barley is the quickest of all cereals to germinate, and when the ears are lying on the ground the corn quickly "sprouts." A light, loamy soil, or overlying chalk, is the best for Barley; heavy soils, especially clay, are unsuitable. Preparation of the soil is important. A fine surface tilth is imperative, produced by autumn ploughing, with repeated stirrings of the soil at seeding time by the plough or cultivator, and the breaking of all surface clods by the harrow or roller. Sowing should be done in fine weather; the middle of March, if fine, is a good time. Drilling is the best method of sowing; when the seed is buried at irregular depths part of the crop ripens early and some late. Chevalier and Archer's Stiff Straw are good varieties. Three bushels of seed per acre is ample. After sowing, harrow sufficiently to bury the seed, and use the roller if the surface is rough. Even growth is all important, and it cannot be obtained without a good tilth.

THE COTTAGER'S PIGS.

Cottagers and smallholders who do not keep pigs are advised to do so if the food can be bought reasonably. To the cottager the keeping of pigs has three advantages—bacon for his family, pigs to sell, and manure for his garden.

We hear much about feeding pigs upon house refuse, commonly known as swill. I fear some persons may foster the idea that, by collecting such material as Potato peelings, Cabbage leaves, scraps of meat, bread and liquor in which meat of any kind has been boiled, especially bacon—they are providing the pigs with the major portion of their food. I would strongly advise no one to attempt to keep small pigs on such rations without adding quantities of other food such as sharps, bran or barley-meal. Such refuse may serve to feed a sow, with but a small quantity of bran added, until she has a litter of young pigs, when improved rations should be served her. The serious objection to the indiscriminate use of swill is when it contains the "washing up" water heavily charged with common washing soda and pieces of soap, which in themselves act as an irritant to the stomach and intestines. The proper method of dealing with house refuse generally is to lail the matter together, afterwards adding meal liberally. The period March to April is a good time to start with pigs eight weeks old. Earlier, they are liable to suffer from cold, especially when but one or two are kept together. Clean, dry straw in their sleeping quarters is much appreciated, as warmth is necessary. Some persons use only leaves for litter. A few collected in March or April, when quite dry, are safe, but those collected in the autumn while containing much sap quickly heat by the warmth of the pigs when huddled together, and when the animals are afterwards exposed to the air they feel the cold severely. *E. Molynous.*

PUBLICATIONS RECEIVED.—Food Producton in Cottage and Allotment Gardens. By S. Hoskin. Bulletin No. 79, The West of Scotland Agricultural College, Glasgow.—*The Worker's Garden.* By Gerald W. Butcher and Cyril Harding. (London: The Vacant Land Cultivation Society, 14, Buckingham Street.) Price 6d.

Obituary.

CHARLES WINN.—We learn with regret that Mr. Charles Winn, The Uplands, Solly Hill, Birmingham, died on the 1st inst., the eve of his 33rd birthday. At one time Mr. Winn grew *Oxchids* extensively and well, and during recent years he was very successful with Show and Alpine *Auriculas*, which he exhibited at the spring shows of the Midland Auricula and Primula Society at the Edgbaston Botanical Gardens.

ANSWERS TO CORRESPONDENTS.

CYANIDING FOR MEALY BUGS: N. and S. We think it probable that the cause of your failure lies with the strength, or purity, of the articles used, or perhaps both. We notice that the phosphoric acid used is 1500, whilst that generally used is 1750. $\frac{1}{2}$ oz. cyanide, $\frac{1}{2}$ oz. acid, and $\frac{1}{2}$ oz. water per 1,000 cubic feet will usually kill black and white fly, but only, of course, if the gas is generated, which we think in your case it probably was not. We may say that it is not easy to buy sodium cyanide 130 per cent., and equally difficult to get phosphoric acid at the proper strength.

FERTILISERS FOR BROCCOLI: A. C. A nitrogenous manure is the most suitable fertiliser for this crop, and this is not included in those you mention. You could use the superphosphate at the rate of 2 oz. to the square yard and the kainit 1 oz. to the square yard when the ground is dug after the Lettuce, and dress with 1 oz. of sulphate of ammonia when the Cauliflowers are planted.

MOSS ON A HARD TENNIS COURT: D. L. Seeing that the court is of brick and sand, with no turf, you can use a strong weed-killer to destroy the moss.

NAME OF FRUIT: Dignar. Apple Cellini.

NAMES OF PLANTS: Rec. 1, *Cestrum* (Habenroth among) fasciculatum; 2, *Acacia* sp., probably *A. saligna*. — S. F. *Gyneryum argenteum* (Pampas Grass).

PEAS AND BEANS FOR WINTER USE: H. B. and E. H. N. Dried Peas for winter use should be harvested in exactly the same manner as if required for seed purposes. The plants are best left on the sticks until the pods are thoroughly well ripened, and in autumn an opportunity should be taken of dry weather to take them indoors to be threshed. Should the seed, owing to unfavourable weather conditions, be at all damp, it should be spread out in an airy place to get thoroughly dry. Unless this care is taken the seeds will not keep in good condition. Of course, there is a great deal of difference in different varieties, some being specially suitable, boiling tender and retaining the colour and flavour. It is also, of course, important that care be exercised in cooking. The Haricot Beans that are usually sold for winter consumption come from abroad, and it is doubtful if many of them could be successfully ripened in this country. Three varieties which cook best and can be ripened in normal seasons here are *Excelsior*, a light brown Bean; *Lightning Runner*, a very tender white Bean; and *The Car Runner*, a larger white Runner Bean.

RICHARDIAS: G. A. K. The basal internal portions have been attacked by the bacterial "soft rot." There is also present on the surface the grey "mould," *Botrytis cinerea*. No remedial measures are likely to save the plants attacked by the bacteria, and the affected plants should be destroyed promptly. — D. H. C. The brown discoloration of the spathes is not due to the attack of any organism. The appearance suggests scorching, or a deposit from water or dew.

Communications Received.—T. R.—T. J. H.—H. B.—W. Roberts, Boston—W. Sargent (You have not stated the name of the establishment at Kingston Hill)—W. J. G.—D. W. S.—Sir H. V.—Sir F. W. M.—S. L. & Co.—A. W.—A. D. R.—Cpl. E. W. J.—Sir F. C.—A. T. H.—E. M.—A. C. H.—H. R.—H. M. L.—E. B.—A. D. W.

STANDARD CURRANTS

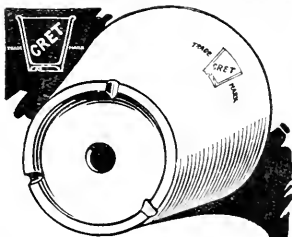
We can offer fine trees with 4½ ft. stems, stout enough to stand without stakes, at 5/- each.

Extra strong heads 7/6 each.

GEORGE BUNYARD

& CO., LTD.,

Royal Nurseries, MAIDSTONE.



Interesting Booklet for Flower Pot Users

Besides being so porous and root-roomy, CRET Pots are priced per hundred. This saves all the ordering difficulties of pot buying. You get exactly what you want—reliable, uniform, healthful pots too. Specimen CRET Prices:—2½ ins. 4 - per 100; 7½ ins. 21 - . Safe delivery guaranteed. Orders over 20/- carriage paid. FREE SAMPLE "CRET" POT on request, with the booklet giving prices and special assortments. Write to-day. PETER BAILEY & SONS, LTD., 2, Heaton Mersey Pottery, near Manchester.

PAUL'S ROYAL NURSERIES. Waltham Cross, HERTS.

Large stocks of the following in excellent condition for Spring Planting, at very modest prices:— ROSES, in all forms, new and old varieties. FRUIT TREES, for the orchard and garden. HARDY TREES and SHRUBS. HARDY CLIMBING PLANTS. RHODODENDRONS and CAMELIAS. HERBACEOUS PLANTS. SEEDS and Garden Sundries.

Price Lists on application stating articles required.

Wm. PAUL & SON, WALTHAM CROSS, LTD.

RIVERS'

Fruit Trees, Roses, Vines, Figs, Oranges, AND Orchard House Trees.

A LARGE AND SELECT STOCK ALWAYS ON VIEW.

ILLUSTRATED AND DESCRIPTIVE CATALOGUE POST FREE.

THOMAS RIVERS & SON

Sawbridgeworth, Herts.

STATION: HARLOW, G.E.R.

A. F. DUTTON'S Noted Carnations.

Strong flowering plants in 5in. pots. In 6 good Standard varieties, 15/- per doz., 96/- per 100. In 6 good Novelties, 20/- per doz., 128/- per 100.

Packed free for cash, carr. forward.

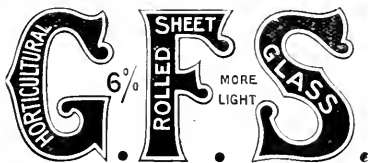
The Nurseries, IVER, BUCKS.

FORBES' ILLUSTRATED CATALOGUE.

Florist's Flowers, Hardy Plants, Vegetable and Flower Seeds.

Free on Application.

JOHN FORBES (Hawick), LIMITED, The King's Nurserymen, HAWICK, SCOTLAND.



A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 3/4 in. (or equal) to about 21 oz. in thickness. Can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of GENUINE WHITE LEAD PAINT.

"BLACKFRIARS BRAND." Mixed ready for use. In 14lb. tin and 1 cwt. wide-neck cans.

AND BEST LINSEED OIL PUTTY.

Complete Price List of Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, LTD., 34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.

And Blackfriars Wharf, Upper Ground Street, R.F.

Quote GARDENERS' CHRONICLE.

TURF LOAM.

Very Fibrous Yellow Turf Loam

For VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid or Delivered.

A. B. JOHNSTON, New Park, Cranleigh, SURREY.



SWEET PEA PLANTS.

Autumn Sown - Cold Grown.

Our Great Speciality.

All devotees of this charming flower should send for our New List. It contains

90 Varieties, including 23 Novelties. These are a selection of the "Cream," and we honestly believe that there has never been offered as plants such a comprehensive collection of First class varieties. Everyone who has a greenhouse should aim at flowering these early as possible. Tomato crop can follow. No heat is required. Plant or pot NOW.

"Collections" of plants each, 12 varieties, one-shed, 33 12-shed, 59 20-shed, 106 20-shed, 18 6.

TOMATOES.

Another Strong Line, of which we offer as follows:

Alita Craig Comet	Seed	12	16
Filib's sket, K indine	and	50	16
Supreme, Sunrise	1	100	29
Balch's Gem Beatal	1	25	16
Bird's Roar, It	only	100	26
Buck's Tesco	only	100	46
Early Cauliflower, transplanted,	8d doz.	4	100

TERMS: W.O. Please remit extra for postage.

BUCKS, St. Johns, IPSWICH.

SANKEY'S FAMOUS GARDEN POTS

The BEST and Cheapest.

State quantity of each size required and have "carriage paid" notation ("Carriage" frequently amounts to half value of goods) or write for Price List, from SPECIAL POTS in all descriptions. Best Bowls and Fern Pots from 2s. each.

RICHARD SANKEY & SON, LTD. Dulwell Potteries, NOTTINGHAM.

EVERY GARDENER KNOWS THAT

Clay's gets there and makes the Garden gay all the year round

Sold everywhere in TINS at 6d. & 1s., and in BRANDED & SEALED BAGS: 7 lbs., 2s. 6d., 14 lbs., 4s. 6d., 28 lbs., 7s. 6d., 56 lbs., 12s. 6d., 112 lbs., 20s. Or direct from the Works, Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mills & Bone Crushers, STRATFORD, LONDON, E.

IT IS THE STANDARD FOOD FOR PLANTS.

MARKETS.

COVENT GARDEN, March 7.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eos.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.s.d.	s.d.s.d.	
Aiums, per doz.	3 0-4 0	Lily of the Valley, per doz. bun.	24 0-30 0
Azalea, white, per doz. bun.	5 0-6 0	Narcissus, Grand Primo, per doz. bun.	6 0-7 0
Camellias, white, per doz. blms.	1 6-2 0	— Pheasant Eye, per doz. bun.	6 0-7 0
Carnations, per doz. blooms.	2 0-3 0	— Soliel d'Or, per doz. bun.	2 6-3 6
— best American varieties ..	2 0-3 0	— Carfaxsey, per doz. bun.	2 6-3 6
— Carola (Crimson), ex large ..	3 6-4 0	Orchids, per doz.:	
Daffodils, Golden Spur, per doz. bun.	9 0-10 0	— Cattleya ..	15 0-18 0
— Henri Irving, per doz. bun.	9 0-10 0	— Corcyne, per doz. blooms.	2 0-2 6
— Emperor, per doz. bun.	9 0-10 0	— Cypridium ..	2 0-3 0
— Sir Watkin, per doz. bun.	8 0-9 0	— Odo notoglossum crispum ..	3 0-4 0
— pryncipes, per doz. bun.	8 0-9 0	Pelargoniums, per doz. blooms:	
— double, per doz. bun.	12 0-15 0	— double scarlet ..	15 0-18 0
— Eucharis, per doz. blooms.	8 0-9 0	Roses ..	
— Sir Watkin, per doz. bun.	8 0-9 0	— Richmond, per doz. blms.	6 0-9 0
— Victoria, per doz. bun.	12 0-15 0	— Pink Queen, per doz. blms.	12 0-15 0
— double, per doz. bun.	12 0-15 0	— Sunburst, per doz. blooms.	10 0-12 0
— Eucharis, per doz. blooms.	8 0-9 0	— Snowdrops, per doz. bun.	2 0-3 0
— Sir Watkin, per doz. bun.	8 0-9 0	Tulips, white, per doz. bun.	30 0-36 0
— yellow ..	30 0-36 0	— Darwin, per doz. bun.	24 0-30 0
— Darwin, per doz. bun.	24 0-30 0	— small leaves ..	24 0-30 0
— short ..	3 0-3 6	Violets, single, Princess of Wales ..	4 0-5 0
— long ..	3 0-3 6		
— short ..	3 0-3 6		

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.s.d.	s.d.s.d.	
Ailanthum (Maidenhair Fern) best, per doz. bunches ..	9 0-10 0	Cycas leaves, per doz. ..	3 6-6 0
Asparagus plumosus, long trails, per half-dozen ..	2 6-3 0	Fern, French, per doz. bunches ..	6 0-8 0
— medium ..	12 0-18 0	Ivy leaves, per doz. bun.	2 0-2 6
— Sprenger ..	10 0-12 0	Moss, gross bunches ..	6 0-7 0
Bronze foliage ..	3 0-6 0	— French, per doz. bunches ..	1 0-1 3
Carnation foliage, doz. bunches ..	4 0-5 0	Smilax, per bun. of 6 trails ..	1 3-1 6
Croton foliage, doz. bunches ..	12 0-15 0		

French Flowers, &c.: Average Wholesale Prices.

	s.d.s.d.	s.d.s.d.	
Anemone, double pink, per doz. ..	2 0-2 6	Mimosa (Acacia), per doz. ..	6 0-7 0
— single, mixed, per doz. bun.	4 0-5 0	Narcissus Paper white, per doz. ..	—
Lilac, white, per doz. sprays ..	6 0-6 6	Stock, white, per doz. bun.	3 6-4 6
Marguerite, yellow, per doz. bun.	3 0-3 6	— pink, per doz. bun.	4 6-5 0
		Violets, single, per doz. bun.	—

REMARKS.—The first consignment of Primroses for the season reached the market this week. Home-grown Daffodils and Narcissus poeticus are less plentiful, and there is only a limited supply of Lilium longiflorum, but Richardson (Arams) are more numerous. There is a plentiful supply of Carnations, and prices are lower. Roses are becoming more numerous; fine blooms of Richmond, Sunburst, and Ladylove are offered for sale. There is also a good selection of Darwin Tulips, which are selling freely. Lily of the Valley is arriving in good condition and is more plentiful and cheaper. Larger consignments of cut blooms are arriving from the Channel Islands, and they are much lower in price. French flowers consist chiefly of Acacia (Mimosa), Violets, and Anemones. A few baskets of white Stock and yellow Marguerites had a ready

sale. It is rumoured that the last consignment of these flowers may arrive this week-end, but nothing definite is known.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.s.d.	s.d.s.d.	
Aralia Sieboldii, dozen ..	5 0-6 0	Ferns in 32's, per doz. ..	12 0-18 0
Asparagus plumosus nanus, per doz. ..	10 0-12 0	— choicer sorts, per doz. 48's ..	8 0-12 0
— Sprenger ..	8 0-10 0	Geonoms gracilis, 60's, per doz. ..	6 0-8 0
Aspidistra, per doz. green ..	24 0-36 0	— larger, each ..	2 6-7 6
Cacti, various, per tray of 15's ..	4 0-5 0	Kentia Belmore, 60's, per doz. ..	4 0-8 0
— per tray of 12's ..	6 0-7 0	— larger, per doz. ..	18 0-36 0
Cineraria, 45's, per doz. ..	12 0-15 0	— Forsteriana, 60's, per doz. ..	5 0-8 0
Coccos Weddelliana, 48's, per doz. ..	18 0-30 0	— 60's, per doz. ..	5 0-8 0
— 60's, per doz. ..	8 0-10 0	Lantana borbonica, per doz. ..	12 0-30 0
Croton, per doz. ..	18 0-36 0	Lilium longiflorum, per doz. ..	36 0-42 0
Cyclamen, 48's, per doz. ..	21 0-24 0	— lancifolium, per doz. ..	24 0-30 0
Dafodils, 48's, per doz. ..	12 0-15 0	— album ..	24 0-30 0
Ferns in thumbs, per 100, in small and large 60's ..	14 0-24 0	Marguerites in 48's, per doz. ..	12 0-15 0
— in 48's, per doz. ..	6 0-7 0	Pandanus Veitchii, per doz. ..	36 0-48 0
		Phoenix raphis, colica, each ..	12 6-21 0
		Spiraea, per doz. ..	12 0-15 0

Vegetables: Average Wholesale Prices.

	s.d.s.d.	s.d.s.d.	
Artichokes, Globe, per doz. ..	4 0 5 0	Horse-radish, per doz. ..	42 0-0
— per scale, per bag ..	20 0-0	Kale, per bag ..	1 6-0
Asparagus, Paris Green, per bun.	6 0-6 6	Leeks, per doz. ..	2 6 5 0
— Beetroot, per bag ..	10 0-0	Lettuce, Cabbage per doz. ..	2 6-3 0
Beans, English, per lb. ..	3 0-0	— Mushrooms, per lb. ..	1 3 1 9
— Broad, per bush ..	3 0-0	— Mustard and Cress, per doz. ..	1 0-1 6
— Broccoli, purple sprouting, per bag ..	5 6-0	Onions, per bag ..	33 0-0
— Broad Beans, per pad ..	9 0-10 0	— spring, per doz. bun. ..	8 0-0
Brussels Sprouts, per bus. ..	12 0-0	— Parsnips, per bus. ..	5 0-0
— Cabbage, per tally ..	10 0-12 6	— Peas, per lb. ..	—
— Carrots, per bag ..	13 0-0	— Potatoes, new, per lb. ..	6 0-8 0
— Cauliflowers, per bus. ..	16 0-20 0	— Radishes, per doz. bun. ..	1 6-1 8
— Celeriac, per doz. ..	6 0-0	— Rhubarb, forced, per doz. ..	3 0-1 9
— Celery, per doz. bundles ..	24 0-36 0	— Savoy, per tally ..	13 0-20 0
— Cucumbers, per case ..	18 0-24 0	— Seakale, per doz. punnets ..	20 0-24 0
— Endive, per doz. ..	4 6-5 0	— Shallots, per lb. ..	0 6-0
— Greens, per bag ..	5 6-0	— Spinach, per bus. ..	12 0-0
— Garlic, per cwt. ..	41 0-0	— Swedes, per bag ..	8 0-0
— Herbs, per doz. bun. ..	4 0 8 0	— Turnips, new, per bag ..	10 0-0
		— Tups, per bag ..	6 0-0
		— Watercress, per doz. ..	0 9-1 0

Fruit: Average Wholesale Prices.

	s.d.s.d.	s.d.s.d.	
Almonds, per cwt. ..	74 0-0	Grapes, con. Gros Colman, per lb. ..	4 0-6 0
Apples—		— Grape Fruit, per case ..	32 0-33 6
— Californian X 60's, per case ..	17 0-19 0	— Kent Cobs, per lb. ..	1 0-1 3
— English, per case ..	14 0-18 0	— Lemons, per case ..	16 0-25 0
— Main States, barrels ..	50 0-60 0	— Netclaires, per box ..	4 6-8 0
— Oregon, per case ..	18 0-22 0	— Nuts, Brazil, new, per cwt. ..	100 0-0
Bananas, Red, per ton ..	25 0-0	— Cocoanuts, per 100 ..	31 0-32 0
— Jamaica, per cwt. ..	18 0-0	— Oranges, per case ..	21 0-50 0
Chestnuts, per bag ..	38 0-40 0	— Seville Sour, per cwt. ..	48 0-50 0
Cranberries, per case ..	14 0-0	— Peaches, per box ..	5 0-8 0
Dates, per box ..	8 0-0	— Pears—	
Grapes, Almeria, per brl. ..	20 0-30 0	— Californian 15's, per box ..	3 0-5 0
		— Plums, per box ..	2 6-8 0
		— Tangerines, per box ..	20 0-26 0
		— Walnuts, per per cwt. ..	56 0-85 0

REMARKS.—The principal supply of Apples from home growers is of the variety Bramley's Seedling, and there is a good quantity of colonial Apples, principally howell Pines, Melons, and No. 100's. The supplies of English Grapes are shortening, but the Cape and Almeria kinds are on sale. There are no Tomatoes from Tenerife. The following forced vegetables are available: Dwarf Beans, Asparagus (English and French), Chicory, Seakale, Mushrooms, and New Potatoes. French Salads are arriving in limited quantities. The commonest green and red vegetables are becoming scarcer each week. F. H. R., Covent Garden Market, March 7, 1917.

Potatoes.

REMARKS.—The large demand for Potatoes is in excess of the stocks in London. Edward J. Neaborn, Covent Garden and St. Pancras, March 7, 1917.

THE WEATHER.

THE WEATHER IN SCOTLAND.

The spell of bright, cold weather which obtained during the first half of February was followed by a sequence of dull, foggy days lasting almost to the end of the month. There was very little rain, the gauge only collecting a total of 1.25 inch. This was distributed over six days, the heaviest fall, of 1.02 inch, being on the 20th. The sun shone on 20 days, yielding 37.2 hours for the month, giving a mean of 3.1 hours, and a percentage of 31. During the month the barometer varied from 30.81 inches on the 9th to 29.65 inches on the 3rd, with a mean of 30.157 inches. The mean temperature for the month, giving a mean maximum of 41° and a mean minimum of 31°, the mean range being 11°. On the 28th the highest maximum, of 50°, was reached, and on the 6th the lowest minimum, of 17°. Thus the absolute range was 33°. The lowest maximum was 39°, on the 4th and 6th, and the highest minimum 39°, on the 28th. On 17 days the temperature fell to the freezing point or below. There were 22 days of ground frost, the thermometer falling as low as 13° on the 6th. The relative humidity of the air was 87 per cent. Soil temperature at a depth of 1 foot fell from 34° to 33°, and then rose to 36°. Prevailing winds were westerly. A display of aurora was observed on the 15th. James Malloch, St. Andrew's Training College Gardens, Kirkton of Mauns, near Dundee.

GARDENING APPOINTMENTS.

- Mr. H. Langdown, for the past 15 years Gardener to F. CRYSTAL STATION, E-q., Englefield Lodge, Englefield Green, Surrey, as Gardener to Sir JOHN BELL, Bait., Framewood, Stoke Poges, Buckinghamshire.
- Mr. W. Penton, late of Roekness, Godstone, as Gardener to Sir ARTHUR PATER, Warren House, Kingston Hill, Surrey.
- Mr. A. Dryden, for the past 15 years Gardener to the late Col. H. E. BRASSEY, Lowesly Hall, as Gardener to Viscount GALWAY, Serby Hall, Watney, Yorks.
- Mr. W. Grooll, for the past 3 years Gardener at Helberst, Regate, as Gardener to Mrs. WARNER CAMPBELL, Upper Gatton Park, Merstham, Surrey.

CATALOGUES RECEIVED.

- SEEDS. D. S. THOMSON AND SONS, Wimbledon. JOHN FORBES, LTD., Hawick. E. P. DIXON AND SONS, LTD., Hail. FAHM seeds, KENT AND BRYDON, Dullington.—FAHM seeds.
- MISCELLANEOUS. BLAVKHOFF AND LANGDON, Twerton Hill Nursery, Bath. Begonias, Carnations, &c. D. S. THOMSON AND SONS, Wimbledon.—Roses, Fruit Trees, Shrubs and Strips. JOHN FORBES, LTD., Hawick.—Hardy Plants.

FOREIGN.

PETER HENDERSON & Co., 35 and 37, Colindale Street New York.—Seeds and Plants.

'MY GARDEN' SERIES

MY GARDEN IN SPRING.

By E. A. BOWLES, M.A.

Acting Chairman of the Scientific Committee of the Royal Horticultural Society.

MY GARDEN IN SUMMER.

By the Same Author.

MY GARDEN IN AUTUMN AND WINTER.

By the Same Author.

Price 5 6 each post free from—

THE LIBRARIAN,

THE "GARDENERS' CHRONICLE," LTD.,

41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C.

(Continued from page iii)

WANTED, IMPROVER (INSIDE and OUT); able to take duty; wages £1 per week, and Botby; duty and overtime paid.—Apply, H. A. PAGE, The Gardens, Belize Court, Hampstead, N.W.

WANTED IMPROVER, with some experience, and able to take duty; about 17.—State full particulars and wages required, with B. THY, Ave. J. HARRIS, The Gardens, Woodhatch, Reigate.

WANTED, IMPROVER, Inside the House and Out; age 19; wages 17s. and 2s. war bonus; Botby, vegetables, and milk.—E. MORGAN, Wissant Hall Gardens, Hull.

WANTED, YOUTH, for Fruit Houses; 16s. per week; Botby and vegetables; duty and overtime paid.—WILGIM, B. Morgan Gardens, Angley.

WANTED, STRONG YOUTH, 16 to 17, for Fruit Houses; some experience, good wages, 6s.—Apply, H. WENMAN, The Gardens, Temple Newsam, Leeds.

WANTED, TWO YOUNG GIRLS, to work together under Head Gardener, in charge of Lawns and Vegetables, for Sussex—Apply, stating references and wages, to MRS. LORING, 51, Station Street, Mayfair.

WANTED, at once, TWO STRONG LABS for outside, age about 17, good references and experience; £1 per week, with Botby.—W. WARD, Kenwood Gardens, Hampstead, N.W.

WANTED, COWMAN, two Cows, a little poultry, assist in Garden, single, intelligible.—MRS. DUNDALE, Meadowcroft, Chislehurst.

TRADE.

WANTED, FOREMAN TOMATO GROWER to take charge, must have specialism in Tomatoes. Full particulars, references, wages, &c., to A. E. DUTTON, The Nurseries, Ivor, Bucks.

WANTED, FOREMAN, experienced Grapes, Tomatoes, &c., wages 20s. overtime extra.—Write age, exp. references, BILLEN, Hangleton Nurseries, near Goring, Wiltshire.

WANTED, a good PROPAGATOR and GROWER, one used to Roses, Chrys., Gilly, southernisms, and General Nursery Stock. Apply with particulars, wages, &c., to THE DEVON ROSERY AND FLIGHT FARM, LTD., Torquay.

WANTED, Reliable MAN, for general Garden Work, consistent employment and permanent place, wages 7s. commission on orders, and overtime extra. Apply, MORLEY & CO., 150, Finchley Road, N.W.

SEED TRADE. Required, experienced ASSISTANTS made on terms for a first-class winter in shop, permanent positions to suitable applicants. Apply, with copies of references, facing wages and when discharged, to W. POWELL & CO., Seed Merchants and Nurserymen, Woodford.

WANTED, experienced LADY ASSISTANT for Florist and Fruiters' Shop. Apply by letter, stating age, experience, and wages, CUBRANS, 12, Market Street, Manchester.

WANTED, LEDGER and INVOICE CLERK, intelligible, a good opening for a really smart man. Please state age, experience, and salary required, and enclose copies of references to JOHN PEED & SON, The Nurseries, W. & N. Wood, S.E.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d for each succeeding Eight words or less.

PRIVATE.

G. ABBEY, open to Re-engagement; first-class experience in all branches of Horticulture, recommended by present employer, Aston Rowant Gardens, Wallingford, Oxon.

GARDENER (HEAD).—LADY VICTORIA PARKS very highly recommends W. ELSWORTH as above, 7 years here, in Under, leaving through estate being sold; age 42; no family; North preferred.—W. ELSWORTH, Gardens, Buntinghough Hall, York.

MRS. L. SALOMONS Recommends her HEAD GARDENER, 20 years, Norton Park, life experience all branches, good manager, Apply, G. KENT, 15, Dikham Lane, Dorking.

GARDENER (HEAD), and manage small farm if required, 30 years' experience, 12 years as Head here; holder of Botanical, Agricultural, and Horticultural certificates; disengaged end of March.—G. GUMMER, Norton Manor Gardens, Sutton Sotney, Hants.

GARDENER (HEAD). F. R. H. S., Gold and Silver Medalist; 10 years last place; knowledge of estate work; life experience in large establishments; active, good manager; highest references for character and abilities; age 45.—A. Box 25, 41, Wellington Street, Covent Garden, W.C.

GENTLEMAN recommends his GARDENER (HEAD WORKING); practical life experience in private gardens; reliable and trustworthy; married; age 41; intelligible; near London preferred.—BAIKRETT, Hatfield Heath, near Harlow.

GARDENER (HEAD WORKING) or GARDENER BALLIEF; well up in all requirements of good establishment; thoroughly experienced outside and under glass; good manager of labour; aged 48; wife dairy, poultry if required.—W. CHANDLER, Clansford, Framingham.

GARDENER (HEAD WORKING); thoroughly experienced in all branches of Gardening, Inside and Out, 15 years as Head, age 36; married (no family).—HEATH, Hatfield Broad Oak, Harlow, Essex.

GARDENER (HEAD WORKING), where one or more are kept, thoroughly experienced, Inside and Out, permanent place and comfortable house preferred, out of military age; near London preferred.—Apply, J. HORTON (Gardens' Cottage, Fencham Hall, Ware, Herts.

GARDENER (HEAD WORKING); life experience in all branches. For many years Foreman at Charles Park, Woking, age 45, married (no family).—R. RUDNER, The Cottage, Alibsey, Cotenry.

GARDENER (HEAD WORKING), permanent, seeks re-engagement where several are kept, life experience in all branches, intelligible; age 40; married (no family).—A. SMITH, 36, Oakridge Rd., High Wycombe, Bucks.

GARDENER (HEAD WORKING); life experience in all branches, age 41, married; good situation, 2s. war bonus; Head of 15 1/2 years previous; can be highly recommended.—T. KING, 7, Portland Terrace, Harley Street, Bath.

GARDENER (HEAD WORKING); thoroughly experienced in all branches, married, intelligible; age 35, 7 years present situation as Head; disengaged.—CLEMENS, Gardens, Ebbot, Tonworth, Staffs.

GARDENER (HEAD WORKING); 28 years' experience, Inside and Out; good references; 4 s. war bonus; 30 years as Head, married, no family.—E. BROWN, 55, Azamoun Road, W. Hampstead, N.W. No circulars.

GARDENER (HEAD WORKING), where several are kept, thoroughly experienced in all branches, age 40, married, 12 years as Head, and holder of GARDENER, Bentley Cottage, near Kenilworth, Warwickshire.

GARDENER (HEAD WORKING) seeks re-engagement, more order, 16 years present situation, age 47.—Apply, SANDERS, Westcot, Tatton, Cheshire, St. Mary, Devon.

GARDENER (HEAD WORKING), 6 of more are kept in normal time, life experience in all branches, age 47, married, no family; excellent references from present and previous employers.—BEALE, York Cottage, Llanwrnog, Newport, Mon.

GARDENER (HEAD WORKING) seeks re-engagement with lady or gentleman in good establishment, life experience in all branches and stock, age 32; wages 20s; house and firing J. SHEDDEN, 253, Norton Way, Lechlade, Herts.

GARDENER (HEAD WORKING); practical experience in all branches; used to the produce of large quantities of Vegetables, Fruit and Florists; can be highly recommended.—J. BROWN, The Gardens, Telfordville, Balch, Breconshire.

GARDENER (HEAD WORKING), where 5 or more are kept in normal time; life experience in all branches, age 46, married, understands Electric Light Plant.—W. J., 219, Goldhurst Terrace, Hampstead, N.W.

GARDENER (HEAD WORKING), where 4 or 5 are kept, life experience, Inside and Out, married, no family, age 49; disengaged.—G. STEINLEY, Park Lane, Hertsford, Brentwood.

GARDENER (HEAD WORKING), where 4 or 5 are kept, well versed in Hardy Fruit and Vegetables, 13 years in last situation as Head; age 45, married, no family.—W. BARNES, 74 Grove Road, Windsor.

GARDENER ELECTRICIAN (HEAD WORKING), seeks situation, life experience in all branches of Gardening; take charge, and do running repairs to electric installation, age 45; married (no family); highest possible references.—Write, Age, to M. J., Box 26, 41, Wellington Street, Covent Garden, W.C.

DISCHARGED Soldier (N.C.O.), SINGLE HANDED GARDENER or good SECOND; 15 years' experience, Inside and Out; good references; married, with cottage preferred.—CRACKNELL, 14, Second Avenue, Mortlake, S.W.

GARDENER, Experienced, Single-handed or Second, seeks situation; discharged from Army, age 31; married, no family; disengaged end of month; wages 50s. and cottage, Surrey preferred.—SHADE, The Limes, West Molesey.

GARDENER, as Second, seeks re-engagement; experienced, Inside and Out; good references, intelligible; married, when suited.—Apply, T. CRESSWELL, The Mount Gardens, Bishop's Cleeve, Hereford.

GARDENER seeks Situation, with cottage; good at Vegetables and Fruit (growing no objection to the cows, poultry, &c.).—Write, D 47, Box 21, 41, Wellington Street, Covent Garden, London.

LADY GARDENER requires post as HEAD; several years' practical experience in all branches.—Apply, M. PRIOR, The Gardens, Heathfield, Ascot.

EXPERIENCED LADY GARDENER requires post (April). Head preferred, Scotland, York, or Midland Counties.—L. G., Box 20, 41, Wellington Street, Strand, W.C.

LADY GARDENER seeks Situation as UNDER GARDENER; within 20 miles of London; 5 months' experience in Nursery and Gardens.—E. B. H., Klea Avenue, Clapham Common, London.

TRADE.

FOOD PRODUCTION.—Advertiser seeks managerial position; intensive crops, pigs, poultry, forage for cattle, Fruit, Tomatoes, conversion raw produce into unique articles of food.—STRATHMORE, Llanfornip, Anglesey.

MANAGER or INSIDE FOREMAN; life experience; capable of producing everything required for market or shop sale; good references.—LON, 103, Box 16, 41, Wellington Street, Covent Garden, W.C.

FLORISTS.—LADY desires Re-engagement, First Hand, 14 years' experience floral designs, used to taking charge, pls. FLORAL, Box 19, 41, Wellington Street, Strand, W.C.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table with 2 columns: Description of ad type and corresponding rates in s. and d.

Foot page (no display allowed) 1/- per line space. (Headline counted as two lines.)

For discounts apply to address below.

SITUATIONS WANTED. 26 words, 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS. THE UNITED KINGDOM ... 15/- per annum. ABROAD ... 17/6 ..

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C.

Telegrams: 1543 "GARDENERS, RAND, LONDON" Telephone: 1543 GERRARD.

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Gardening, Alphabet of.** By T. W. Sanders. Illustrated by diagrams. 1s. 9d.
- Gardening, Encyclopædia of.** By T. W. Sanders. A Dictionary of Cultivated Plants, Flowers, Fruit, Vegetables, Trees and Shrubs, with Description and Popular and Technical Names, Cultivation, etc. 466 pages. 3s. 11d.
- Gardening, Home.** By W. D. Drury. A manual for the Amateur, containing instructions for the Laying-out, Stocking, and Cultivation of Small Gardens. 1s. 3d.
- Gardening, Pictorial Practical.** Edited by Walter P. Wright. Illustrated. Paper, 1s. 3d.; cloth, 1s. 9d.
- Gardening, School, A First Book of.** By A. Logan. 1s. 9d.
- 1,500 Gardening Questions Answered.** A useful Handbook for the Amateur Gardener, dealing with every phase of Gardening, both inside and out. Paper, 1s. 4d.
- Gardening, School, Cottage, and Allotment, A Practical Guide to.** By John Weathers. 2s. 10d.
- Glass, The Garden Under.** By W. F. Rowles. Illustrated. 6s. 6d.
- Grafting and Budding, The Handy Book of.** By James Udale. 7d.
- Grape Growing for Amateurs.** A thoroughly practical book. 1s. 3d.
- Grape, The Book of the.** Together with a Chapter on the History and Decorative Value of Vines. By H. W. Ward. Illustrated. 2s. 9d.
- Greenhouse and Conservatory, Construction and Heating.** By Paul N. Hasluck. With 228 Illustrations. 2s. 4d.
- Greenhouse, The Amateur's.** By T. W. Sanders. 416 pages, 154 Illustrations. 5s. 5d.
- Greenhouse Management, Pictorial.** Edited by Walter P. Wright. Illustrated. Paper, 1s. 3d.; cloth, 1s. 9d.
- Greenhouse, The Book of the.** By J. C. Tallack. Head Gardener at Shipley Hall. Illustrated. 2s. 10d.
- Hardy Flower Book, The.** By E. H. Jenkins. A Descriptive and Practical Guide to the Cultivation of Hardy Flowers. Illustrated. Cloth. 2s. 11d.
- Hardy Trees, Flowering Shrubs, Conifers and Evergreens.** By Geo. Bunnard. A Popular Handbook of 160 pages. 50 Illustrations. Useful hints. English and Latin names. 3s. 10d.
- Herb Garden.** By Francis A. Bardswell. 16 Full-page Illustrations in Colour. 4s. 3d.
- Holly, Yew and Box.** By W. Dallimore. 280 pages. 175 Illustrations. Contains the Illustrations of Hollies published in the monograph by the late Thomas Moore, in the GARDENERS' CHRONICLE, 8s.
- Horticultural Directory.** Almanac and Address Book for present year. 1s. 4d.
- Horticulture, A Primer of Practical.** By J. Wright. 1s. 2d.
- Insect and Allied Pests of Orchard, Bush and Hothouse Fruits.** By F. V. Theobald, M.A., etc. 328 Illustrations. 30s. 6d.
- Insects, Injurious and Useful.** An Introduction to the Study of Economic Entomology. By L. C. Miall, F.R.S. 100 Illustrations. 3s. 10d.
- Intensive Culture of Vegetables on the French System.** By P. Aquatias. Illustrated. 3s. 11d.
- Iris, The Book of the.** Illustrated. By R. Irwin Lynch. 2s. 10d.
- Judging, Rules for.** Issued by the Royal Horticultural Society. Latest Edition. 1s. 6d.
- Land of the Blue Poppy, The.** By F. Kingdon Ward. With Illustrations and Maps. 12s. 6d.
- Lawns.** By Sutton and Sons, Reading. In paper cover. Well Illustrated. 1s. 3d.
- Lawns and Greens.** By T. W. Sanders. A Guide to the Formation and Management of Lawns, Tennis Courts, etc. Illustrated. Paper, 1s. 2d.
- Lily, Book of the.** By W. Goldring. Illustrated. 2s. 9d.
- Little Gardens and How to Make the Most of Them.** By H. H. Thomas. A handy and useful work for the Amateur. Paper, 1s. 3d.; cloth, 1s. 9d.
- Mango, The.** By G. Marshall Woodrow. An account of its Culture and Varieties. 1s. 1d.
- Manures and the Principles of Manuring.** By C. M. Aikman. 6s. 10d.
- Manures for Garden and Farm Crops.** By W. Dyke. Cloth, 1s. 9d.
- Manuring, The Science and Practice of.** By W. Dyke, with Introduction by J. Wright. A most practical work for the Amateur, Market and Professional Gardener. 1s. 2d.
- Manuring of Market Garden Crops, The.** By Bernard Dyer and F. W. L. Shrivell. New Edition. 1s. 3d.
- Market Gardening, The Book of.** By R. Lewis Castle. Illustrated. 2s. 9d.
- Mendelism.** By R. C. Punnett, F.R.S. New and Enlarged Edition. 5s. 4d.
- Mendel's Principles of Heredity.** By W. Bateson, F.R.S. 12s. 6d.
- Mushroom Culture for Amateurs.** By W. J. May. New Edition. Thoroughly revised. Illustrated. 1s. 2d.
- Mushrooms, and How to Grow Them.** By John F. Barber. An excellent Treatise. Illustrated. 1s. 2d.
- Orchids, The Book of.** By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bt. Illustrated. 2s. 9d.
- Orchids, The Culture of Greenhouse.** By Frederick Boyle. Supervised by Joseph Godseff. Coloured Plates. 8s. 5d.
- Orchids for Everyone.** By C. H. Curtis. With 53 Coloured, and 43 Black and White Illustrations. 21s. 8d.
- Orchids, Fertilisation of.** By Chas. Darwin. Illustrated. 3s. 11d.
- Orchid Growers' Manual.** By the late B. S. Williams. 800 pages. Numerous Illustrations. 16s. 8d.
- Pansies and Violets.** By D. B. Crane. Paper, 1s. 2d.; cloth, 1s. 9d.
- Pears and Plums, The Book of.** By the Rev. E. Bartrum, D.D. Illustrated. 2s. 9d.
- Pinus, The Genus.** By George Russell Shaw. Price £2 13s. 6d.
- Plant-Breeding.** Being Five Lectures upon the Amelioration of Domestic Plants. By Prof. L. H. Bailey. Illustrated. 5s. 4d.
- Plant Life.** By C. A. Hall. £1 0s. 6d.
- Plants and Trees, Diseases of Cultivated.** By George Masece. Well Illustrated. 7s. 11d.
- Plants, A Popular Treatise on the Physiology of.** By Dr. Paul Saurau. Translated by F. E. Weiss, D.Sc. With 33 Illustrations. 9s. 6d.
- Practical Plant Physiology.** By Frederick Keeble, F.R.S. Illustrated. 3s. 10d.
- Practical Tree Repair.** By Elbert Peets. The Physical Repair of Trees—Bracing and the Treatment of Wounds and Cavities. Illustrated. 7s. 11d.
- PRESENT-DAY GARDENING.** Edited by R. Hooper Pearson, Managing Editor of the GARDENERS' CHRONICLE. Each of the seven-teen volumes following contains 8 full-page Coloured Plates. 1s. 10d. each.
- Sweet Peas.** (Second and Revised Edition, 1914.) By Horace J. Wright, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by Thos. Stevenson.
- Pansies, Violets, and Violets.** By William Cuthbertson and R. Hooper Pearson.
- Daffodils.** By the Rev. J. Jacob. With Preface by the Rev. W. Wilks, M.A.
- Orchids.** By James O'Brien, V.M.H. Secretary of the Orchid Committee of the Royal Horticultural Society.
- Root and Stem Vegetables.** By the late Alexander Dean.
- Carnations and Pinks.** By T. H. Cook, Head Gardener at Sandringham; James Douglas, V.M.H.; and J. F. McLeod, Head Gardener to the late Mr. Pierpont Morgan.
- Rhododendrons and Azaleas.** By W. Watson. With Preface by Sir F. W. Moore, M.A. (The first popular volume published on this subject.)
- Lilies.** By A. Grove. With Preface by H. J. Elwes, F.R.S.
- Apples and Pears.** By George Bunnard, V.M.H., Chairman of R.H.S. Fruit Committee.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841 No 3977

No. 1577. VOL. LXI. (THIRD SERIES) SATURDAY, MARCH 17, 1917. {Registered as a newspaper. (PRICE 3d. POST-FREE, 3d.)

Subscription—Inland, 15-1 Foreign, 17/6 (22fr. 10s.) [84 26s.] per annum. Entered at New York Post Office as a second-class matter. Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—OERRARD 1543

For CONTENTS see PAGE 113.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

YOUR GARDEN NEEDS FOOD!
To obtain the Finest Vegetables and Flowers, use **WEBB'S GARDEN FERTILISERS.**
PERFECT PLANT FOODS Used by the Leading Growers and Exhibitors. Manufactured at Webb's Manure Works, Saltney, Chester, 5 acres in extent.
POTATO MANURE, 10s. 6d. 1/2 cwt., 20s. cwt.
TOMATO MANURE, 13s. 6d. 1/2 cwt., 26s. cwt.
GENERAL MANURE, 10s. 6d. 1/2 cwt., 20s. cwt.
VINE MANURE, 12s. 6d. per 1/2 cwt., 25s. cwt.
LAWN MANURE, 12s. 6d. per 1/2 cwt., 25s. cwt.
Rose, Carnation, Chrysanthemum, and Sweet Pea Manures. Carriage Paid.
For particulars, see Webb's Garden Catalogue, post free on request.

WEBB & SONS, LTD., The King's Seedsman, STOUTBRIDGE.

WALLACE'S NEW CHINESE PRIMUM HELIOPONA, A.M.L. R.H.S. 1915. Other new Chinese Primulas, and BEHRIS, NEW CHINESE STURGES, LILIES, GLADIOLI, BEGONIAS, &c.
Our SPRING CATALOGUE post free on application. R. WALLACE & CO., LTD., Kimfield Gardens, Colchester.

JAMES GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W.3. Wire, 201, Western London. Telephone 201 Western.

ROSES—Wm. Paul and Son, Waltham Cross, Ltd., beg to offer a fine stock of all the best varieties, new and old, for present planting. Price catalogue on application. PAUL'S ROYAL NURSERIES, Waltham Cross, Herts.

GREENHOUSE PAINTING & GLAZING—"Astoria" superior to White Lead Paint. "Plastine" surpasses all putty. Full particulars from W. CARSON & SONS, Grove Works, Bittersea. Agents throughout the country.

WATERER'S GOLD MEDAL RHODODENDRONS—We cordially invite you to come and select any plants you require. We have over 50 varieties, comprising the finest collection in cultivation. Catalogue free. JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Bagshott, Surrey.

WM. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham Conservatory, Winter Gardens, Nurseries, Peach-houses, Portable Bushings, &c. Catalogues gratis.

DOBIE & CO., ROYAL SEEDSMEN. EMBROIDERED will send a copy of their 1917 Catalogue, and Guide to Gardening, 160 pages, nearly 150 illustrations, free, if this paper is mentioned.

WATERER'S ROSES & FRUIT TREES. Grand stocks of the best varieties. Lists free. JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Bagshott, Surrey.

SUTTON'S VEGETABLE SEEDS. SUTTON'S FLOWER SEEDS. The Best.

SUTTON & SONS, The King's Seedsman, READING.

BATH'S CARNATIONS, PANSIES, DAHLIAS, CHRYSANTHEMUMS, and other flowers. New Illustrated Catalogue of the best new and standard varieties is ready, and will be sent post free on application. (Dept. A) R. H. BATH, LTD., The Floral Farms, Wisbech.

BATH'S SELECT SEEDS—New illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application. (Dept. A) R. H. BATH, LTD., The Floral Farms, Wisbech.

KELWAY'S graceful and beautiful LANGRIM HYBRID GLADIOLI—These new Gladioli are most graceful, and provide a new and original shades not to be found in any other large-flowered hybrid Gladioli. They are quite hardy and flower in July and August. They flourish in towns, and are invaluable for decorative hospitals, churches, and the home. Seed for reduced War Price Lists of our new varieties.

KELWAY & SON, Retail Plant Dept., LANGPORT, SOMERSET.

GISHURST COMPOUND—Insecticide and Fungicide. Over 50 years' reputation; highly recommended. R.H.S. Scientifically controlled. Trials at Wexley, 1914-15. Sold by Dealers in Garden Sundries. Wholesale: PRICE'S PATENT CANDLE CO., LTD., Battersea, London, S.W.

PEACH LEAF BLISTER—Bunyard's Mocha has been proved by hundreds of practical gardeners a certain cure for this trouble, to be applied 3 or 4 times and April, 25, per quart, 5s. 6d. per gallon, in cans. (Edo) BUNYARD & CO., LTD., Royal Nurseries, Maidstone.

LAXTON'S SEEDS AND FRUIT TREES—New Catalogues of the above now issued gratis. Grand New Early Peas, Laxton's Superb, &c. Fruit Trees. A fine stock to order may still be safely planted. Pamphlet on Cultivation on receipt of stamped envelope. LAXTON BROTHERS, Nurserymen, Bedford.

DICKSON'S HORTICULTURAL MAXIM and other high class Fertilisers; also Dickson's Improved Mushroom Spawn. Fertiliser circulars free on application to DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.

FERNS—FERNS!—Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns. Hardy Garden Ferns, catalogues free. J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

"ROCK GARDEN PLANTS, Where and in What Soils to Plant Them," with Catalogue, free on application. Special selections, 12, 3s. 6d., 25, 5s. 6d., 50, 12s. 6d., 100, 25s. All different, named, strong stock, please state position and soil.—G. R. PHIPPS, Alpine Nursery, Barnham, Bognor.

BUSH ROSES—To be sold cheap; good stuff. From Karl Droschke, Mr. John Long, Care of Testout, High Dunsick, Gen. Dickson, Lyons, Liberty, and quantity Hybrid Tea. WILLIAM GRAY, Rose Grower, Brox, Chertsey, Surrey.

For Advertisement Charges see page 11.

NEW PHLOXES.
A GRAND STOCK of these Brilliant Flowers in all shades, now ready for delivery—For lists, with full particulars, apply **GUNN & SONS**, Olton, Warwickshire.

BARR'S VEGETABLE and FLOWER SEEDS of finest selected strains and tested growth at strictly moderate prices. Descriptive Catalogue free.

BARR'S Beautiful LILIES, GLADIOLI, Cannas, Montibretus, Tigridias, Anemones, Ranunculus, &c. for Spring Planting. Catalogue free. BARR & SONS, King Street, Covent Garden, London.

BUNYARD'S ASPARAGUS—Orders are now being booked for these plants for delivery in March. List, with full directions and prices, on application.—(Edo) BUNYARD & CO., LTD., Royal Nurseries, Maidstone.

MESSRS. FIDLER & SONS beg to announce, with sincere regret, that they will not be able to accept, at the present time, any more orders for Seeds or Seed Potatoes.

Since the break-up of the frosty weather, they have been inundated to such an astounding extent with orders, that severely handicapped as they are in respect to labour, there is considerable difficulty in dealing with the accumulation.

As soon as arrears have been met to the necessary extent, they hope to again commence accepting orders, when the fact will be announced in the Press. FIDLER & SONS, Royal Berkshire Seed Stores, Reading.

OMISSIONS and Failures made good by purchasing Storrie's Seedlings, just ready for planting out or putting on at current dates for best possible results. All popular Greenhouse plants, Summer Bedding, and Hardy Border Flowers, &c. Grand list of Cyclamen now ready. Write for catalogue. STORRIE & STORRIE, Flower Seeds Specialists, Glenearse, Perthshire.

BLACKMORE & LANGDON, Bath, will have pleasure in sending a copy of their 1917 catalogue of Begonias and Delphiniums, &c., free, if this paper is mentioned. Magnificent strong roots of our unequalled Delphiniums in superb variety.

SANDERS, Orchid Growers, St. Albans.

YOUNG ORCHARD, eight years old. Fruit trees must be ordered to plant Potatoes, Apples, Peas, Plums, 1s. 6d. each, 12s. per dozen. Specimen Trees in Standard or Bush, 1s. 6d. to 3s. 6d. each. Varieties include Newtowns, Bramleys, Christmas Pippin, Williams' Victoria, and all leading varieties. Large Bushes in Gooseberries, and Red, Black, and White Currants, 6d. each, 5s. per dozen. All in full profit. No waiting years for fruit.—FRID PARKES, Vine Gardens, Wyllerton, Boston.

SPORTSMEN, Farmers, Horsemen—Try our splendid Yorkshire Whipped Tweed; wears like leather; showproof; 7 yards for 17s. 6d. Patterns free.—BRADFORD WOOLLEN CO. (LTD.), Bradford.

ORCHID PEAT, 6s. and 7s. 6d. per sack; 100 lb. Peat, 10s. 6d. per yard in trucks; in bags 2s. 6d. each, 5s. 6d. dozen; Oak and Beech Leaf Mould, Yellow Loam, Sacked and Fresh Out, Silver Sand; 4-ton lots for 45s.; G.N. Fibre, 24s. dozen bags; list free.—J. HANDSCOMBE, F.R.H.S., Feltham, Middlesex.

SALES BY AUCTION.

WEDNESDAY, at 12 o'clock. 1,500 FRUIT TREES

and Bushes, Herbaceous and Rock Plants, Roses, Lily of the Valley, Carnations, Lilies, and Gladioli in variety, and other Bulbs,

and at 3 o'clock,

JAPANESE LILIES.

In cases, and other Bulbs, for the trade.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 4, on view morning of sale and catalogues had.

ROSES, THURSDAY NEXT.

MESSRS. PROTHEROE & MORRIS will sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 4, on Thursday, March 22nd, and every succeeding Thursday at 1 o'clock, consignments of well-grown ROSES, especially lotted to suit all buyers.

On view morning of sale and catalogues had.

FRIDAY NEXT.—ORCHIDS.

A selection of Established Orchids, together with many in flower and bud.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, E.C.

On Friday, March 23rd, at 1 o'clock.

On view morning of sale and catalogues had.

BUSINESSES WANTED.

WANTED to Rent, near London (Surrey or Middlesex), Glasshouses, with or without cottage, and some land; near station.—G., Box 17, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED to Rent, near London, small Nursery Business, with some Glass if possible.—E. FOWNES, 28, Trafalgar Road, Twickenham.

BUSINESSES TO LET.

NURSERY TO LET; commanding position; five minutes from rail and tram; 330ft. glass; 11 acres land, house, &c.—MILES, Royal Hotel, Sheerness.

BUSINESSES FOR SALE.

LONDON, N. — Market Nursery, near Station, to be sold; 11 Greenhouses; total length 710 feet; all well heated, rent £52; no stock; immediate possession. — Particulars of PROTHEROE & MORRIS, 67, Cheapside, E.C.

TENDERS.

TO BE SOLD BY TENDER.

THE ROYAL NURSERIES, FELTHAM, MIDDLESEX.—The Receiver for the Debenture Holders invites Tenders for the above Freehold Nurseries and Contents (formerly the Property of Messrs. Jas. Veitch & Sons, Ltd.) To be sold as a going concern.—Full particulars can be obtained on application to the Receiver at the Nurseries, or from Messrs Crawford & Marchmont, 7, Southampton Row, W.C.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

MOTOR LAWN MOWER, Secondhand, wanted, 24 inches, must be in first class order. State make and price.—COPEMAN, Chisden, Shenfield, Essex.

PLANTS, &c., FOR SALE.

PLANT now, GIANT ASPARAGUS, Strong, 3 years, 4s. 6d. 100, Lilium Candidum, White Madonna Lilies, immense bulbs, 2s. 6d. dozen 15s. od. 100, fresh, plenty grand for wreaths.

JOHN FLOWER, Asparagus Grower, Moreshead, Winchester.

100,000 LARGE GARDEN FERNS, 20s. 100; Palms, Begonias, Crotons, Dracenas, Roses, Ericas, Gloxinias, Lilies, Hydrangeas, &c.; catalogues free.—J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

CERANIUMS, strong July struck, Cranford, Denmark, Jacoby, Tollack, M.Mahon, Whites, Raspey, Turner, Grossy, 12s. 100.—PARKER & CORNEY, Basildon, Essex.

The Gardeners' Chronicle

SCALE OF CHARGES FOR

ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table with 4 columns: Description of ad placement, and 2 columns for rates in £ s. d. (pence, shillings, pounds).

Front page (no display allowed) 1/- per line space, (Headline counted as two lines.)

For discounts apply to address below.

SITUATIONS WANTED.

26 words, 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

Table with 2 columns: Country and Annual Rate.

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD., 41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2. Telegrams: 1643 "GARDCHRON, RAND, LONDON." Telephone: 1643 GERRARD.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

Will an Employer recommend HEAD GARDENER over 2 men and to take charge of small estate and poultry. State age and wages cottage and garden provided and when free VISCOUNTESS K., Kitesworth Hall, Royston, Herts.

WANTED, HEAD WORKING GARDENER and SECOND GARDENER, for middleman's place in Cheshire.—Apply, MRS. GLEGG, 76, Albert Hall Mansions, Kensington.

WANTED, WORKING HEAD GARDENER, where 2 or 3 kept. Kitchen Garden, Greenhouse, Lawns, and small petrol engine.—LT. COL. BT CROFT, Dursley, Gloucestershire.

WANTED, GARDENER (HEAD WORKING), for duration of war, small, well kept place in Bucks, 25 miles from London, Under Gardener and strong boy kept, wages £2, with cottage, coal, oil, and vegetables. —Apply, by letter, or personally, before 10 or after 6, to MR. BOLDING, 42, Rochester Terrace, London, W.

WANTED, HEAD WORKING GARDENER, particularly for Vegetables and Fruit, meligible, one who understands electric light plant, formal; help given; cottage.—Send references to CAPTAIN C. H. FEWICK, Cranford Hall, Kettering.

WANTED, WORKING HEAD GARDENER, where 3 are kept; must be experienced in and out; good cottage and garden provided; reply, stating age, experience, and wages, &c., good references essential.—G. GARNOSS WILLIAMS, Ashburnham Estate Office, Barry Port, Carmarthenshire.

WANTED, WORKING HEAD GARDENER (meligible); thoroughly experienced in all outside work: Vegetables, Fruit, Strawberries, Grounds, Hay, &c.—Apply by letter to G. Normantwell Hampton Wick.

WANTED at once, SINGLE HANDED GARDENER for private house in Boston; Conservatory, Greenhouse, and Kitchen Garden, good wages to suitable man.—Apply, W. W. JOHNSON & SON, LTD, Boston, Lincs.

WANTED, capable SINGLE HANDED GARDENER, help given; for country house; no Greenhouse, cottage with garden.—Address, G. B. c/o Vinton's, 5, Broad's Buildings, London, E.C. 4.

WANTED, SINGLE HANDED GARDENER, some Glass, small cottage; 30s. per week, all particulars to P. BURGESS, Waltham Hall House, near Coventry.

WANTED, a good SINGLE HANDED GARDENER, with help, chiefly Kitchen Garden; able to milk 2 cows and look after pigs and poultry; good wages and cottage. —Apply, J. LADY KESEVEN, Shillingbury, Stamford, Lincoln.

WANTED, GARDENER (SINGLE HANDED); boy to assist; Mixed Garden, small greenhouse. —N. Priory House, Godstone, Surrey.

WANTED, SECOND GARDENER; good all round experience; take turn with duty; 3 or 4 wages 32s. per week.—J. CHAMBERS, The Gardens, High Holme, Streatham, S.W.

NATIONAL FOOD PRODUCTION FOR GOVERNMENT FACTORY.

WANTED at once, GARDENERS (Meligible or substitution men), for the cultivation of food crops on an extensive scale; good wages; housing accommodation available men to work; good food available at Works Canteen at moderate prices.—Apply at once to MR. R. GREENFIELD, Garden Superintendent, White & Poppe, Ltd., Coventry.

WANTED, GARDENER (WORKING), for Kitchen and Fruit Garden; must be meligible, or National as well as Military Service.—Write, stating particulars, and wages required, to MISS S. NORTHBRIDGE, Bradford-on-Avon, Wilts.

WANTED, good GARDENER, with wife is good housekeeper on a gentleman's place; without taking in or growing-up family ages about 50; cottage (with a bath) Garden kept, Church people.—Address, stating wages required, length of service in last place, and particulars to W. E. Smith's Library, Berking.

WANTED, GARDENER, capable of running a good private electric light installation; permanent position; meligible vegetables.—Write to H. F. S., c/o 241 & 202, H. Royal Exchange, London, E.C. 3.

WANTED, TWO UNDER GARDENERS, Second and Improver, for Inside or Inside and Out, English, milk, and vegetables, and attention provided; good wages and overtime paid.—Apply, T. DOWNS, Rising Park Gardens, Alton, Hants.

WANTED, a woman, at St. Leonards School, Brighton, Sussex, to act as HEAD GARDENER and INSTRUCTOR in GARDENING; knowledge of the growth and sale of Vegetables and the care of Grass is essential, and some experience in teaching desirable. For further particulars apply to the HEAD MISTRESS.

LADY GARDENERS WANTED, Sussex, as HEAD, 4 Under Gardeners kept; understand horticulture; Potatoes, Vines, Orbits, &c.; good organiser. (2) Bucks, SINGLE HANDED, with help, 2 days a week from Head Man Gardener, 1 small Greenhouse, Kitchen Garden, and Veg. tables, willing to learn electric light plant. (3) Sussex, as HEAD, take charge of garden 3 acres, chiefly Vegetables and Potatoes, assist in care given by 2 other ladies. (4) Surrey, as CHIEF, FINE GARDENER, work under Man Gardener and have car, 30 h.p. Lion Bull. (5) Surrey, as UNDER, Head Man Gardener kept, mostly outside work. (6) Sussex, 2 wanted as HEAD and UNDER; 3 in all kept; charge of electric light plant. Lady Gardeners are shared entirely free of charge.—MRS. HUNT, LTD., 86, High Street, Marylebone.

WANTED, LADY GARDENER (HEAD), in girls' school, large Gardens, some Glass; good experience essential.—Apply, HEAD MISTRESS, Heathfield, Airedale.

SITUATIONS VACANT continued on page viii.

THE
"Double-Purpose"
 Garden.

THE 1917 garden will be a patriotic garden—divided between vegetables and flowers. A generous vegetable patch to help Lord Devonport and a floral-space where tired warriors and workers may find peace midst beauty and fragrance.

SOW
RYDERS SEEDS

The Seeds of Success, and both sides of your garden will give you complete satisfaction. Get Ryders Seed and you will get the *fullest germinating power*, freshness and trueness to name at the cost of 1½d. per packet. (The familiar and popular 1d. packet has had to be abandoned temporarily owing to the war.) Even with this slight increase in price *Ryders Seeds still represent the highest obtainable expression of quality and economy.*

ILLUSTRATED CATALOGUE FREE.

Ryders 1917 Illustrated Catalogue contains over one hundred illustrations and much useful information. Send a post-card for a free copy now. Only address, no agents.

RYDER & SON, LTD.,
 Seed Specialists, ST. ALBANS.

Beware of Imitators. Order your seeds now—stocks are low.

LETHORION ::
 VAPOUR
 CONE **Fumigator**



Introduced 1885.
 The marvellous effect of this simple and cheap method of Fumigating Greenhouses is fully borne out by the enormous increase of sales year by year.

Only a match required for starting the Cone. Full directions for use on each Cone.

Thousands of testimonials received from all parts.

Registered Trade Mark 6507.
 Prices. No. 1, 500 to 1,000 cubic ft., 6d.; No. 2, 1,500 cubic ft., 8d.; No. 3, for 2,000 to 2,500 cubic ft., 1s.

"TENAX" THE NEW AND MOST SUCCESSFUL
Grafting Wax

It is a much required "HOME-MADE" article to meet the requirements of all Nurserymen and Gardeners.

It is rapidly taking the place of all Foreign and other preparations for all Grafting and Budding Purposes.

In This, each 6d., 1s., 2s., 4s., 6s. Also in bulk at reduced rates.

To be obtained through the Nursery and Seed Trade generally.

CORRY & CO., Ltd.,
 Bonded Chemical Works, Shad Thames,
 LONDON, S.E.


BENTLEY'S
WEED DESTROYERS :

Liquid : Concentrated Strength 1 to 80.
 Double Strength 1 to 50.
 Patent Powder : 1 to 25.

BENTLEY'S DAISY KILLER

(LAWN SAND).

BENTLEY'S INSECTICIDES.

BENTLEY'S FUNGICIDES.

BENTLEY'S FUMIGANTS.

BENTLEY'S MANURES.

Catalogue on application.

JOSEPH BENTLEY, Ltd.,
 Chemical Works,
 Barrow-on-Humber, HULL.

SANKEY'S FAMOUS GARDEN POTS
 The BEST and Cheapest.
 "A large quantity of each size figured and built 'extra light' and 'standard' of earthenware, thoroughly glazed with water of quality, and made up in the best form."
 SPECIAL POTS of all descriptions. High Bowls and Fern Pots from 25 each.
RICHARD SANKEY & SON, LTD.,
 Bulwell Potteries, NOTTINGHAM.



SWEET PEA
 (Autumn Sown. Cold Crown.)
 and **TOMATO PLANTS**

Our Great Specialities,

NAB Dealers of the Sweet Pea should send for our catalogue. It contains 90 Varieties, including 20 Novelties. These are a selection of the "Cream," and we honestly believe that there has never been offered as plants such a comprehensive Collection of First-class varieties.

THE EDITORS of many Gardening Papers have commended our selection.

We cannot too strongly emphasize the fact that these plants are Autumn Sown and Cold Crown. There is a vast difference between such plants and those raised in the Spring in heat.

TOMATOES.

Varieties	Seedlings	Transplntd.
Alisa Craig, Comet	6d.	2s. 1s.
Filbasket, Kondino	and	2s. 1s.
Supreme, Sunrise	1s.	10s. 2s.
Balch's Com Beattal	1s.	2s. 1s.
Bird's Recruit	1s.	2s. 1s.
Buck's Tresco	only	10s. 4s.
Early Cauliflowers, transplanted,	8d. doz.	4s. 10s.

TERMS.—C.W.O. Please remit extra for postage.
BUCKS, St. Johns, IPSWICH.

ORCHIDS! ORCHIDS!!

Catalogue of

COWAN'S LARGE and FINE COLLECTION OF ORCHIDS,
 and particulars of

COWAN'S NEW ORCHID POTTING MATERIAL.

POST FREE ON APPLICATION.

It is now a statutory offence to post a catalogue unless a written application is made for it.

JOHN COWAN & CO.,
 Gateacre Nurseries, Gateacre,
 LIVERPOOL.

RIVERS'

Fruit Trees, Roses,
 Vines, Figs, Oranges,
 AND
 Orchard House Trees.

A LARGE and SELECT STOCK
 ALWAYS ON VIEW.

ILLUSTRATED AND
 DESCRIPTIVE CATALOGUE
 POST FREE.

THOMAS RIVERS & SON
 Sawbridgeworth, Herts.
 STATION : HARLOW, G.E.R.

FORBES' ILLUSTRATED CATALOGUE.

Florist's Flowers, Hardy Plants,
 Vegetable and Flower Seeds.

Free on Application.

JOHN FORBES (Hawick) LIMITED,
 The King's Nurserymen,
HAWICK, SCOTLAND.



BY APPOINTMENT.

PAULS' ROYAL NURSERIES.
 Waltham Cross, HERTS.

Large stocks of the following in excellent condition for Spring Planting, at very moderate prices:—
ROSES, in all forms, new and old varieties.
FRUIT TREES, for the orchard and garden.
HARDY TREES and SHRUBS.
HARDY CLIMBING PLANTS.
RHODODENDRONS and CAMELIAS.
HERBACEOUS PLANTS.
SEEDS and Garden Sundries.

Price Lists on application stating articles required.

Wm. PAUL & SON,
WALTHAM CROSS, LTD.

'MY GARDEN' SERIES

MY GARDEN IN SPRING.

By E. A. BOWLES, M.A.

Acting Chairman of the Scientific Committee of the
 Royal Horticultural Society.

MY GARDEN IN SUMMER.

By the Same Author.

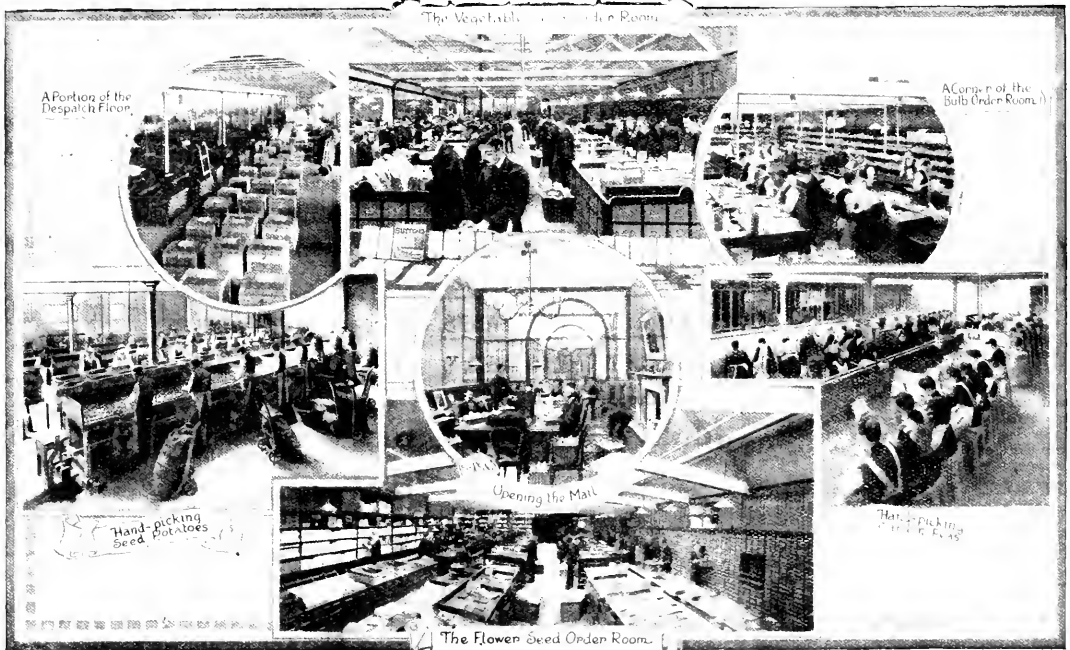
MY GARDEN IN AUTUMN AND WINTER.

By the Same Author.

Price 5/6 each post free from—

THE LIBRARIAN,
 THE "GARDENERS' CHRONICLE," LTD.,
 41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C.2.

THE HOME OF PURE SEEDS.



Interiors of a few of the twenty-one Departments of the Royal Seed Establishment, where growers are being supplied with Seeds for the National Food Supply.

SUTTON & SONS, THE KING'S SEEDSMEN, READING.

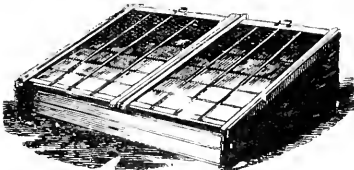
"BULL'S"
THE NATIONAL FERTILIZER
THAT MADE THE
CHELSEA NURSERIES FAMOUS
BULL'S PLANT FOOD Co. 536, KINGS ROAD, CHELSEA.

FOOD SUPPLY.

PORTABLE PLANT FRAMES

(supplied from stock)

Suitable for Allotments and Gardens at Reasonable Prices.



These Frames are made of the best materials, and can be put together and taken apart in a few minutes by any handy man.

Catalogues of Prices sent free on Application.

R. HALLIDAY & Co.,
Royal Horticultural Works, MIDDLETON, MANCHESTER.

STANDARD CURRANTS

We can offer fine trees with 4½ ft. stems, stout enough to stand without stakes, at 5/- each.

Extra strong heads 7/6 each.

GEORGE BUNYARD

& CO., LTD.,

Royal Nurseries, MAIDSTONE.



"SANITAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as **Worms, Rats, Mice, Sparrows, Cats, &c.**

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt (net, London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
Limehouse, London, E.

Awarded Medal at Royal Horticultural Exhibition, 1911.

A. F. DUTTON'S

Noted Carnations.

Strong flowering plants in 5in. pots.
In 6 good Standard varieties,
15/- per doz., 96/- per 100.
In 6 good Novelties,
20/- per doz., 128/- per 100.
Packed free for cash, carr. forward.

The Nurseries,

IVER, BUCKS.

NEW AND RARE
HARDY PLANTS
WATER LILIES
PERRY'S
CATALOGUE,
Harley Plant Farm,
Enfield,
Middlesex.

Exterminated by
"LIVERPOOL" VIRUS
RATS
No Danger to Animals.
NO SMELL
In Tins baited for Rats 2/6 and 6/- for Mice 1/6
Of all chemists, or write for particulars to—Dept. C.
EVANS & SONS LESCHER & WEBB Ltd.,
54, Hanover Street, LIVERPOOL.



THE Gardeners' Chronicle

No. 1677.—SATURDAY, MARCH 17, 1917.

CONTENTS.

Black rot of Cabbages... 115
Books, notices of... 115
Transplants of the New Zealand Institute... 116
Bracken as a vegetable... 115
Bull garden, the... 115
Late Snowdrops... 115
Crown gall disease... 115
Farm, crops and stock on the home... 120
Fruit register—American Apples... 116
Glass houses and food production... 115
Grass orchards and insects... 115
Hall, Mr. A. D... 115
Hull public parks... 119
New Zealand, flues and Oaks in... 116
Orchard site at Watton Grange, Bathoning... 115
Paper restrictions, the... 115
Pleasants, thimble... 115
Planting main crop potatoes... 114

ILLUSTRATIONS.

Plan of vegetable-ripping... 115
Telopea speciosissima... 119

MY POTATO PATCH IN 1916: AND SOME NOTES ON THE "MYSTERY" MANURES.

TWO patches are used in alternate years for maincrop Potatoes and general crops. For the latter a good dressing of stable manure is used, with here and there artificials as may be indicated, for the former only a heavy dressing of dead leaves and leaf-mould is applied as a foundation for various experiments. Since this routine has been adopted, the yield of Potatoes per plant has progressively increased, thus the patch in 1914 gave a grand average of 2.05 lb., and in 1916 3.41 lb. per plant, whilst the patch used in 1915 has risen to 5.3 lb., with maximum 6.7 and minimum 4.0 lb. per plant per row. Distance between rows 30 inches; between sets, 18 inches. As it was anticipated that my presence might be required elsewhere, no very elaborate system of trials was started, however, I had the opportunity of weighing the crop before leaving home.

One part was dug after the manner described in Gardeners' Chronicle, March 4, 1916, page 136 namely, besides ridging, which has been done every autumn for five seasons, the bottom of each furrow was treated as in trenching. Thus the third spit in its loosened condition is only one spit deep from the depressed surface, and having no great weight above, it is more patent to the air than in ordinary trenching, wherein it is buried at once under two spits. The average per

plant on this area, excepting rows with special treatment, was 4.04 lb., against the control part (only ridged and not manured), 3.36; the grand average of the whole crop was 3.44 lb.; the variety Sutton's Superlative.

Professor Bottomley kindly supplied me with some of his Humogen; the new supply did not arrive in time for putting in at planting time, so some of the previous year's supply was used. Also, a small quantity of "Rito" was kindly supplied by the proprietors. The results were:—

RIDGED ONLY.

Table with 2 columns: Treatment, Yield per plant. Rows include old dry Humogen, Rito, New moist Humogen, and Control rows.

RIDGE TRENCHED.

Table with 2 columns: Treatment, Yield per plant. Rows include New Humogen, Soil + sulphate, Control rows, and Grand average.

It will be seen that there was some apparent beneficial effect of Humogen, except on the "ridge-trenched" area, whilst the "Rito" showed depression almost to the minimum yield of any single row. The beneficial effect of the yeast and lime may be noted, though it is not a manure that can be ordinarily obtained; no doubt part of the influence was due to the lime, a matter that will be again mentioned in considering the effect of the "mystery manures" on other crops.

Other Crops.

Humogen and Rito were also tried on some other crops.

WINTER ONIONS.

Table with 2 columns: Treatment, Final Crop. Rows include Control, Humogen, Rito, and Grand average.

SPRING SOWN ONIONS.

Table with 2 columns: Treatment, Final Crop. Rows include Control, Humogen, Rito, and Grand average.

SHALLOTS.

Table with 2 columns: Treatment, Final Crop. Rows include Control, Humogen, Rito, and Grand average.

CARROTS.

Table with 2 columns: Treatment, Final Crop. Rows include Control, Humogen, Rito, and Grand average.

LEAFY ROOTED PARSNIPS.

Table with 2 columns: Treatment, Final Crop. Rows include Control, Humogen, Rito, and Grand average.

Celeriac. This crop was not ready for harvesting on my departure. Half the patch was treated with Humogen, 25 grams to each plant; subsequently they were watered with a weak tea-coloured infusion of Humogen instead of plain water. In August half of each part was given a good sprinkling of lime. On October 30 it was noted that the Humogen patch was the most vigorous, and particularly so where no lime was given. It was hardly attacked by fly; on the other hand, the control part, especially that with no lime, was far less luxuriant and badly infested with fly.

For a further purpose, a few plants of "Field Beets" (Mangel Wurzel) were grown from seeds kindly supplied by Messrs. Sutton and Sons. Half of these were given 1 oz. of Humogen at the time of sowing, and a further dose later. Of Sutton's Tankard:

Control roots taken at 100, yield with Humogen... 113
Control leaves taken at 100, yield with Humogen... 114

Sutton's Sugar—

Control roots taken at 100, yield with Humogen... 165
Control leaves taken at 100, yield with Humogen... 140

REMARKS UPON THE ABOVE RESULTS.

After the experience of the previous year, the effect of the Humogen treatment, particularly upon Potatoes and Onions, was not in accordance with anticipation. And it seemed clear that there must be some factor whose presence or absence affected the influence of the peat products, Chittenden (R.H.S.J., XLI., 1915, p. 320 especially, and again Gardeners' Chronicle, August 12, 1916, p. 80) has not been able to show any marked benefit from the use of Humogen; in the latter reference he expressly states that the soil was a poor sandy one. He also tried the effect of adding lime during growth; this caused depression when used alone, and, speaking generally, it did not enhance the yields where Humogen was also used. Unfortunately, he does not give the carbonate analyses of the soils. Having had nearly 50 per cent increase with Humogen in 1915 with Onions, the depression found on weighing the thinnings was especially striking, and it seemed worth while to investigate the carbonate contents of the patches. Four nine-inch samples were taken from each part, and three twenty-gram* lots of each were tested, after a preliminary boil with distilled water to drive off any free CO2 that might be present. The control patch gave 0.48 per cent., the Humogen patch 0.33 per cent., and the Rito patch 0.26 per cent. of carbonate reckoned as CaCO3 (loss of CO2 by action of peat products).

It is regrettable that a further sampling could not be done at the time of the final cropping, when the conditions may have changed somewhat. Furthermore, an isolated observation cannot be taken as proof; but when consideration is given to those plants which prospered particularly—viz., Celeriac and "Field Beets"—it appears that these are plants which are not particularly exigent in the matter of carbonate of lime. Mr. Chittenden's trials have shown that late additions of raw lime do not solve the problem, and it is to be hoped that in further experiments, soil, in which a lime addition has been allowed time to mellow, will form one of the control plots. Moreover, the carbonate analyses of the trial plots will not be without interest, and may help to unravel the discrepancies which have been recorded. The fixing or precipitating power of lime or its carbonate on soluble humus is well known, and some such fixation may be necessary for subsequent utilisation. In some experiments with soluble humus it was found that magnesia had comparatively slight precipitating power; which leads one to the idea that excess of magnesia and paucity of lime may lead to the loss of humic matter by leaching out, and consequently impoverish the fertility of the soil from loss of this important constituent H. E. Durham.

* 3 mm. sittings.

VEGETABLES.

A CROPPING PLAN

The plan reproduced in fig. 40 shows the system of cropping to be followed in the kitchen garden at Moreton Paddox, Warwick, in the forthcoming season, as set out by the gardener, Mr. B. H. Martin. Most gardeners draw up a scheme of cropping each season, for it has obvious advantages, but only an expert draughtsman such as Mr. Martin could be expected to make so complete a plan to scale, which is in-

the furrow of the first crop, the second crop to receive a generous amount of short manure. The bush and small fruits are planted in square or parallelogram plots for easy and economical netting. Our correspondent states that the same rule applies to the permanent crops such as Rhubarb, Sea Kale, and Globe Artichokes, because the trenching necessary for these is best done in square breadths. The site for the Asparagus beds is the best drained and lightest soil, and is removed from trees. The central squares are so arranged that crops can be rotated from 1, 2, 3, and 4 in successive seasons.

cultivator. For main crop varieties I recommend Prolific (a strong grower), Carter's Royalty (medium), King Edward VII., a good all-round variety, also The Factor, which is one of the best late-keeping Potatos. It must be borne in mind that it is possible to grow two crops of Potatos in one year in the open air. Therefore the thing to aim at is the greatest possible production of Potatos for the year ahead of us. It is not difficult to accomplish, nor is it, as some may contend, bad practice. The four essentials are: (1) That the second crop must be planted during the first week in

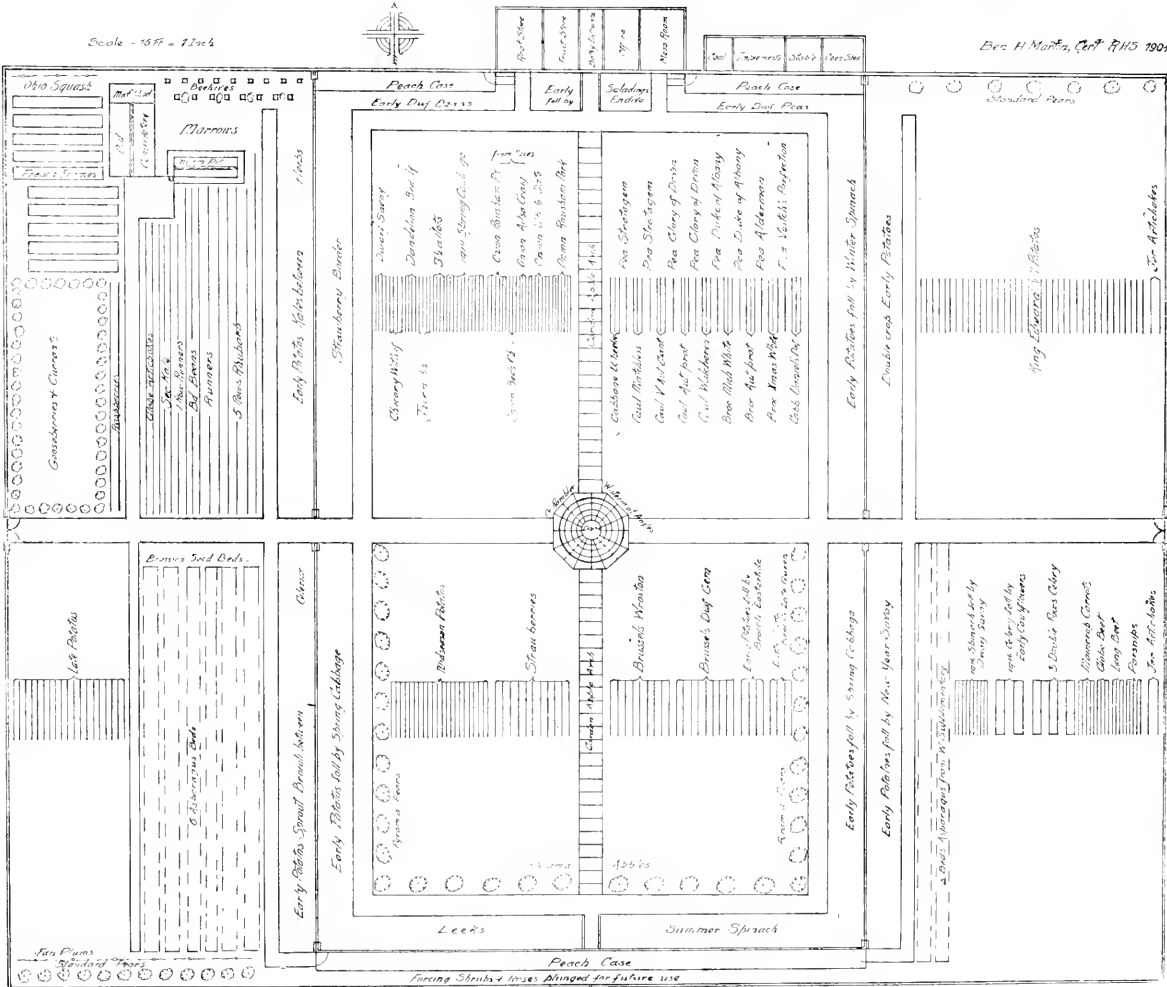


FIG. 40.—PLAN OF THE KITCHEN GARDEN CROPS AT MORETON PADDOX, WARWICK.

tended to be hung in the men's mess room for daily reference. It is not claimed that the cropping is perfect, particularly with regard to the rotation of the crops, the Brassicas being too scattered. Mr. Martin was requested by his employer early last year to crop only with Potatos, but in May it was decided to produce all the varieties of vegetables possible. The change resulted in confusion, which it has not been possible wholly to correct this season. On one border the North-country practice of cropping twice with Potatos in the same season will be followed, care being taken to plant the second crop on the site of

and give a complete change of ground to the different kinds of vegetables.

PLANTING FOR THE MAIN CROP OF POTATOS.

GIVEN prepared seed and well-tilled land, then comes the operation of planting Potatos. With regard to the time of planting, the main crop much depends upon the locality, but mid-April, generally speaking, would be soon enough, planting the sets 15 inches asunder and setting the rows 2 feet to 3 feet apart. Much depends upon the habit of growth of the variety, a knowledge which is soon gained by an observant

July: (2) that vigorous seed must be used, preferably Scotch; (3) that the sets must be sprouted before planting; (4) that attention must be paid to spraying. The tubers intended for planting to produce this second crop must be kept in as cool a place as possible, provided frost is excluded. In May or early June they should be placed in the open air to complete their sprouting. Sturdy shoots, about 2 inches or less in length, will then be produced by July. These, if planted in rich soil, will quickly appear above the ground; this method is a most powerful factor in securing this second crop.

As soon as the growths are a few inches high, draw up to the young tops some soil on both sides, even to covering them, when frost threatens. The Potato is a plant very susceptible to frost, but immunity from harm may be gained at the cost of a little labour. Subsequent stirring of the soil between the drills for the purpose of aerating and loosening the ground will be necessary, together with hand weeding, and followed by a final moulding before the haulms have attained an inconvenient size for working, will complete the treatment till the time for spraying. Healthy growth above ground should be encouraged to the utmost. Should the growths be at all weak, a dressing of one of the special concentrated manures is of value if sown between the rows when rain is expected.

Spraying, now looked upon as an essential part of successful Potato culture, should be commenced before signs of disease appear, in dry weather, usually about the middle of June. One or two sprayings later on, at intervals of a foot, right, should also be given. A popular mixture for spraying consists of 2 lb. sulphate of copper, 2½ lb. washing soda, and 10 gallons of clean water. The sulphate of copper is powdered and dissolved, and also the washing soda; the solutions are then mixed with the proper amount of water, stirred continuously. The mixture is applied to the haulms in a fine spray by a machine. In dull, dry weather is the best for spraying, and should heavy rain fall before the spray has dried on the foliage it is advisable to give a further dressing. It is largely the grower's fault if his Potatoes rot in the field. Spraying is no longer an experiment, it is a necessity, and those who recognise this fact will reap their reward.

Finally, lift the Potatoes as soon as they are matured, as I am quite sure many are thus saved from disease. Some growers believe that unless the tubers are thoroughly ripe they do not keep so well, but in my opinion that is quite a mistake. I have, when fearing a spell of wet weather, had them all lifted by the second week of September, and the sprouts were of the size I prefer storing the crop in a cool shed. *James E. Pater, Aldenham.*

SULPHUR FOR DAMPING OFF OF SEEDLINGS.

When raising Cauliflower, Cabbage, and Brussels Sprouts under glass last spring, when I was forced to do owing to the heavy rains, I found that they were much affected by mildew and covered with the white mould. I sprinkled the boxes lightly with flowers of sulphur, with the best results. The fungus disappeared in a few hours, and these seedlings dressed with the sulphur grew much more sturdily and rapidly than the others.

POTATOS AND GREEN MANURING.

The finest crop of Potatoes here last year was obtained from a patch of "rogues," the tubers being large, handsome, and clear-skinned, averaging 5½ ozs. per root. The original crop (Up to Date) had been lifted the year before, and the ground subsequently used for burying all the green rubbish from the house, dead flowers, and green-stuff of no use to the farm, for which trenches were opened up as required, and it is curious that the small Potatoes left in the ground were not discovered. In the spring there was such a good show of young shoots covering the patch that they were left untouched, and, of course, could be neither hoed nor earthed up. In spite of which, this excellent crop was obtained and showed no sign of disease.

The cottagers in the New Forest often grow a crop of Trifolium and clover in preparatory to a Potato crop, and in these days of shortage of farmyard manure it may be well to practise green manuring for Potatoes more frequently.

Some small tests of sulphate of ammonia and superphosphate for Potatoes were made here last summer with the object of getting the small holder and cottager to use artificials. It was found that a sprinkling of the two manures after earthing up gave an increase of 5 lbs. of tubers to the square yard, at the cost of under 4d. The ground had been dressed with farmyard manure in the usual way for both samples.

Without artificials we got 14 lbs. to the square yard, and with them 19 lbs. *A. M. Martineau*

SELECT VEGETABLES.

It may interest *J.*, page 71, to know that Messrs. Sutton offer seeds of the Haricot Bean Green Gem, the original of which was, and probably is, still very popular in the French markets. The pods are beautiful in shape and colour, retaining the latter when cooked. The ripe seed is also pale green and retains this colour when cooked. In pre-war days they offered White Haricot as well. Any Dwarf Bean can be used as Haricots Verts, when gathered in the young state, but Green Gem and White Haricot are best in the dried state. Messrs. Barr and Sons offer Green Haricot, Messrs. Dobbie and Co. offer Dwarf Bean Golden Butter. Last year Messrs. H. Cannell and Sons offered Mont d'Or Dwarf and Mont d'Or Runner, both Wax Pod and Golden Butter Beans; probably they still offer them. I was interested in the statement that Asparagus Kale was more productive and lasting than either South or Cottagers' Kale. This is not quite my experience. Asparagus Kale is valued chiefly for the succulent young flower-stems that shoot up in the spring of the second year. Young sprouts of Cottagers' Kale are used much in the same way in spring. The thirty South housekeeper beans gathering the young leaves of Curled Kale as soon as they are large enough for use, and of times to do so all the summer, while the leaves remain tender. After the advent of frost every green leaf becomes tender and available. In spring the young flower-stems and leaves are very tender. An all round bed for complaint to me last November, that the leaves were tough. I advised him to wait until the frost was past, and he now agrees that it was all right. *J. E.*

BLACK ROT OF CABBAGES.

The bacterial disease of Cabbage and other Brassicas due to *Bacterium campestris* has recently made its appearance in South Africa, near Pretoria, where it has been investigated* by Dr. E. M. Dodge. This author has made the interesting discovery that the disease was introduced in seeds from England. It had previously been suggested that the disease is distributed in this manner, and the accuracy of the suggestion has now been verified. For disinfection of the seed a solution of formalin, 1 in 240 of water, or mercuric chloride, 1 in 1,000, for 15 minutes, is recommended.

TIPS ON THE SOWING OF SEEDS.

Having too much importance can be placed on the sowing of the various vegetable seeds which will require to be sown during the next six weeks, or two months in the open ground. More especially is care needed where the land is of a tenacious and unkindly nature.

A serious mistake many cultivators make is that of getting in the seed on a certain date, no matter whether the soil is in a proper condition or not, the result being imperfect germination and unsatisfactory results. It is better to wait for several days, or even weeks, than risk sowing when the land is unsuitable, but my advice is never miss an opportunity of fine weather to rake the soil to a fine tilth.

Another mistake often made is that of sowing too thickly, resulting in a waste of seed, and entailing much labour in thinning. If there is a doubt as to their germinating properties, seeds

should always be tested; a good rule is to sow just about as thick again as the plants are finally to grow, and thin to the proper distance apart. I have for many years practised the system of sowing the majority of vegetables in shallow boxes, raising the seedlings under glass, and planting them out later when the weather is genial. This system has many advantages over that of sowing in the open, as the seedlings can be cultivated in more favourable conditions, the plants consequently being much stronger, and benefiting rather than otherwise by being transplanted. I refer to Peas, Beans of all kinds, Onions, Leeks, Lettuces, Cauliflowers, Cabbage, Brussels Sprouts, Broccolis, Parsley, and others. But this plan is not suited to the majority of root crops.

The seeds should always be buried to about their own depth, whether sown in the open, in pots, or in boxes.

Wherever possible, sowing in drills, in the open, should be adopted in preference to the slovenly method of broadcasting. This remark applies more especially to permanent beds.

After sowing, shallow alleys should be thrown out between the beds, and the surface of the latter finally and properly raked level. All the rows should be neatly labelled and the date of sowing recorded. *Edwin Borkett.*

SPINACH BEET.

More attention has been directed to this exceedingly useful vegetable within the last few years than was formerly the case. Even now, however, its merits are often overlooked, yet there are few, if any, vegetables that possess the "cut and come again" quality in so marked a manner as this. In small gardens the Spinach Beet is particularly valuable, as it gives such liberal returns for the small amount of space occupied. In my suburban garden, which is in a hot and dry position, the common Spinach runs to seed quickly, while the Spinach Beet is very satisfactory. The first sowing is made at the end of March or early in April, and picking commences in about six weeks or a little more from that date. This crop will keep by a succession till autumn is well advanced, and, in fact, given mild weather, leaves may be gathered in the winter. The best yield at that season is, however, furnished by a second sowing, made towards the end of July, at which time if well watered when necessary the plant grows rapidly. Those from both sowings will, however, if allowed to stand over the winter yield frequent pickings again in the spring. At present they present a very unlovely appearance, owing to the severe weather, but are quite safe and ready to start into growth again. A good plan is before this takes place to cut off all the old and partially decayed leaves, then run a hose between the rows, and give a dressing with some stimulant, or a soaking with liquid manure. A good plan is to sow the seeds in drills 13 inches apart, though sometimes a less distance is recommended. The plants may be thinned out to 6 inches or thereabout from each other, the thinnings supplying the first cooking. Rich, well-drained soil is necessary for the best results. The New Zealand Spinach is also suitable for dry soils, but it is killed by the first frost. While I much prefer the flavour of the Spinach Beet, there are, of course, on this point differences of opinion. *W. T.*

THE BULB GARDEN.

LATE SNOWDROPS.

Snowdrops are very late everywhere, and here there are hardly any in bloom. In the higher parts of Dumfriesshire I saw a clump in the drooping stage in the garden of Mr. J. A. Mather, Hastings Hall, Moniaive, early in February. The garden is about 390 feet above sea level. The Snowdrops were in the grass and in a sheltered place. *S. Arnott.*

* *S. African Journal of Science*, Vol. XII, No. 10.

BRITISH WHOLESALE FLORISTS' FEDERATION.

The first general meeting of this society was held on Tuesday, the 13th inst., at Essex Hall, Strand, London, at 3 p.m. Nearly one hundred members of the wholesale trade attended, and Mr. George Monro, jun., was elected to the chair. It was decided that the title of the federation should be as given above, and the objects were stated to be to enrol as members all wholesale florists, whether growers or salesmen, in the British Isles; to protect and further the interests of members and of the wholesale florists' trade generally; to anticipate and promote legislation, and influence contemplated legislation affecting the trade; to disseminate information concerning improved methods of production and business organisation; to encourage a spirit of goodwill and mutual helpfulness between employers and employees; and to facilitate social intercourse and encourage the spirit of friendly regard among the members.

The chairman referred to the advantage it would be to the trade in general, especially in influencing the Government on the question of proposed restrictions, to be represented by an organisation which covered the whole, instead of a section only, of the wholesale florists of this country.

The provisional committee formed on January 15 had met on several occasions, and had co-opted other members for dealing with specific subjects. For instance, the Government had issued an order to commandeer all stocks of raffia amounting to over 2 cwt. each, and the committee had approached the Board of Trade, with the result that the order was made to apply only to raffia at the docks, the stock in the hands of dealers and the trade being untouched. The clerical work of the Federation had already assumed such large proportions that offices had been taken at 35, Wellington Street, and the services of Mr. C. H. Curtis engaged as secretary. The committee had considered the question of the importation of foreign cut flowers, and had approached the Board of Trade with a view to obtaining a promise that the prohibition of importation of cut flowers should be applied in the case of Dutch bulbous flowers. At that time, it was the opinion of the authorities that the trade was so small as not to be worth troubling about, but since the committee's visit the trade had been stopped. He then referred to the new railway regulations, to come into force on April 1, by which all freights by passenger train were payable in advance, and goods were sent at consignee's risk. This would be a serious hardship for growers, and would be certain to involve heavy losses. In regard to national service, it was a relief to find that it was not the intention of the Government immediately to close down all so-called non-essential trades, as these trades would be needed again immediately after the war, and complete cessation would involve disorganisation. Referring to the serious shortage of food, he urged the members of the Federation to do all they could to increase supplies, and expressed disagreement with the view that the lack of Potatoes was due to their being held up by owners of stocks. He stated that the committee had considered the future of the British bulb-growing industry. It was proposed by the committee from time to time to co-opt members, if necessary from outside the membership of the Federation, to deal with special subjects such as market credit, railways, rating, and land tenure, thus obtaining the best expert opinion on all matters in which the trade would be interested. The chairman concluded by an appeal for funds to carry on the immediately necessary work.

Arising out of the chairman's statement, Mr. Philip Ladds moved: "That the members of the British Wholesale Florists' Federation pledge themselves to devote at least 50 per cent. of their open ground to food production, and to grow only sufficient flowers and plants to keep the florists' trade alive and preserve the stocks which will be necessary for immediate development at the close of the war." This was seconded by Mr. Harry Mount, and carried unanimously.

The rules drawn up by the provisional committee were adopted, with one slight alteration. Mr. Geo. Monro, jun., was elected president of the Federation, and the members of the provisional committee, including those co-opted, were elected *en bloc*, together with nine others, to constitute the committee of the Federation.

PINES AND OAKS IN NEW ZEALAND.

Mr. T. W. Adams, the well-known arboriculturist, has lately published, in *Trans. N. Z. Zealand Institute*, 1916, pp. 216-228, lists of the Pines and Oaks that have been introduced into New Zealand. He enumerates 55 species of Pine. *Pinus insignis* makes astounding growth; trees planted in 1875 at Greendale, in the South Island, have now attained 128 feet in height, and are still growing vigorously. No other species yet planted in New Zealand can compare in rate of growth with this tree. The Corsican Pine is, perhaps, the best species for timber production. The Scots Pine, introduced by seed in quantity in 1864, was attacked by an aphid, and only a few specimens survive. The Maritime Pine is the best for seaside planting, while *Pinus muricata* makes a valuable shelter tree. *Pinus yunnanensis*, introduced in 1909, is a beautiful species, which is much admired for its rapid growth and fine form.

About 65 kinds of Oak are now growing in New Zealand, but most of them are represented only by young specimens. *Quercus pedunculata* grows well, a tree planted at Greendale in 1869 being 59 feet high and 6 feet 4 inches in girth. The American *Q. alba* does not seem to thrive much better in New Zealand than in England, where it is a complete failure. *Q. Mirbeckii*, the representative of our common Oak in Algeria, succeeds well. The red Oaks, *Q. coccinea*, *Q. rubra*, and *Q. palustris*, have done fairly well, and are of ornamental value on account of their beautiful autumn colouring. *Q. dentata* has the finest foliage. Although not so large as those of *Q. macrocarpa*, the leaves resist the wind much better, and are retained on the tree till spring. The Evergreen Oak (*Q. Ilex*) was early introduced, and grows well throughout New Zealand. *J. Henry*.

FRUIT REGISTER.

AMERICAN APPLES.

Knowing how difficult it is to obtain desirable English dessert Apples after Cox's Orange Pippin is over, I planted last autumn a few trees of American varieties obtained from an English nursery. One variety I am testing is Grimes' Golden Pippin, an Apple of high quality and of good appearance when grown in the States. American cultivators consider that the variety makes its best growth on well-drained, fertile, moist soil. Stayman Winesap is a standard variety of Virginia, where it does best on good loam, not too rich in organic material. Delicious is thought highly of by those who have grown it; it is said to be vigorous, free in bearing, and with fine-grained, juicy, melting flesh. *E. M.*



THE FLOWER GARDEN.

By W. J. GUISE, Gardener to Mrs. DEMPSTER, Keele Hall, Staffordshire.

TIGRIDIA (FERRARIA).—In cold, wet districts Tigridia are usually lifted, stored in sand, and placed in a frost-proof shed. Replanting may now commence, selecting a sunny position and light, sandy soil.

HERBACEOUS BORDERS.—As soon as the soil is in a workable condition planting should be concluded with all speed. Where the soil is light and warm autumn is much the best time to renovate the hardy flower border, but in heavy retentive soil, similar to what we have to deal with here, better results are obtained by spring planting. It may be necessary to divide and replant certain strong-growing plants that have outgrown their space, such as perennial Asters, Helianthus, Achillea, Astrantia, Campanula, Chrysanthemum, and Solidago. Surplus plants put in the reserve garden will provide blooms for cutting, or they may be utilised to fill spaces in shrubberies. When planting is finished fork the surface and apply a mulching of manure and decayed leaves in equal proportions. In planting new borders careful consideration must be given to provide a progression of colour rather than a contrast. For example light and dark blues grouped, with shades of yellow and white, followed by pink shades, then rose, crimson, scarlet, and orange, concluding with rich yellow, make a pleasing floral scene.

SPRING FLOWERS.—Failures in beds or borders caused by the severe weather should be made good forthwith. Stir the soil lightly between Wallflowers, Polyanthus and similar plants with the hoe or a small hand fork. Trim the grass verges and roll them; paths should be thoroughly scarified with an iron rake to dislodge moss, and the scarifying should be followed by rolling.

THE KITCHEN GARDEN.

By J. DENN, Foreman, Royal Gardens, Windsor.

GLOBE ARTICHOKE.—The protecting litter may be removed from Globe Artichokes and the ground between the rows forked. If new plantations are to be made, prepare the ground, but defer the planting for another month.

CELERY.—Sow Celery seed in gentle warmth, covering the seeds lightly with fine soil. Keep a watch for slugs when the seedlings are showing through the surface. Prick off the plants as soon as they are large enough and never allow them to suffer from want of moisture at the roots. Sow the seeds thinly, and always allow sufficient space between the plants to ensure a stocky growth.

RADISHES.—Frequent small sowings of Radishes should be made in a slightly heated pit. Water the crop liberally to promote a quick growth. When ventilation is necessary, before the plants are well through the soil, guard against birds destroying the crop.

FRENCH BEANS.—Sow seeds of French Beans in 8-inch pots, or boxes having a depth of 7 inches, to produce a supply of pods in May. The receptacles should be filled to within 2 inches of the top with rich soil, thus leaving sufficient space for top-dressings as growth proceeds. Plants from which pods are being gathered should receive frequent applications of liquid manure and the pods gathered as they become large enough, whether required for immediate use or not. A light position and plenty of atmospheric moisture are necessary, or the plants may soon become infested with red spider. Later batches of plants should be top-dressed as it becomes necessary, and a number of twigs placed in the pots to keep the plants upright.

TOMATOS.—The earliest plants of Tomatos are swelling their fruits, and will be benefited by a top-dressing of fine loam and concentrated

manure, which should be applied carefully and made firm on the surface, so that it may not be disturbed in watering. Remove all side-shoots as they appear and thin the foliage as it becomes necessary, with a view to increasing the size of the fruit. Plants raised early in the year will soon be ready for their final potting, and for this purpose a compost of two-thirds turfy loam and one-third decayed manure, with a good sprinkling of old lime rubble, should be prepared in advance. Crock the pots carefully and pot the plants moderately firm, taking care not to break the roots. If the plants are well watered a few hours before they are potted, so that the soil is in a moderately moist condition when they are shifted, watering will not be necessary for a few days. A strong stick should be placed by each plant after it is potted to keep the shoot upright. Grow the plants in a house with a temperature of 60°, and admit air on all favourable occasions. Make another sowing for succession, and pot all young Tomatoes as it becomes necessary.

FRUITS UNDER GLASS.

By JAS. HUDSON, Gardener to LEOPOLD DE ROTHSCHILD, Esq., C.V.O., Gunnersbury House, Acton, W.

LATE VINES.—Earlier in the season I recommended that no great haste should be made in starting the vines in late houses, but the vineries must now be closed in order that there may be time to obtain perfect ripening of the berries by the autumn, and especially varieties of the Muscat of Alexandria type. Certain black Grapes, including Lady Downe's and Gros Colman, need a fairly long season to bring them to perfection. It will be well, therefore, to close the houses by the end of the present month at the latest. It is surprising how soon the vine responds to a little extra warmth at this season with regular syringings. There is no need to start the Black Hamburg house, even if it contains a few vines of Madresfield Court variety, but rather let the rods break naturally. There are no black Grapes that equal these whilst they are in season, and during September and October they are invaluable. In closing the houses containing the varieties mentioned earlier a slight turn of the hot water valves is recommended, seeing that there are almost continuous morning frosts. If the thermometers register 55° at the time the fires are banked it will suffice for the first few weeks. Young rods that have been allowed a considerable extension should be watched to see that they break regularly, and should a bud remain dormant just where a shoot is needed it will be well to bind a little Sphagnum moss around but not right over it.

VINES NOW IN ACTIVE GROWTH.—Vines that are now growing freely, and with bunches approaching the flowering stage, should receive every encouragement by closing the ventilators early on sunny days and damping freely. Give almost daily attention to stopping the young growths. My practice is to stop them at two joints beyond the bunch and the lateral shoots at the first leaf. Aim at a regular distribution of the shoots, and never allow sub-laterals to extend to the detriment of others and the crowding of the foliage. I never tie the shoots permanently until the bunches are thinned. Keep a watchful eye for insect pests; red spider soon spreads on shoots near the water-pipes. Thrips that may have been brought into the vinery on other plants must be guarded against, but mealy bug is the worst pest.

STRAWBERRIES.—The berries on plants that were started early in January are showing indications of colouring. At that stage watering must be done with extreme care, and plenty of light is necessary. At no time during the forcing of Strawberries should liquid manure from the farmyard be used. Soot-water is a good stimulant, and perhaps the best of all. When the berries become too heavy for the stem to support it is a common practice to place a forked stick under them, but I prefer wire supports, made by Messrs. Timby and Sandwith. Do not keep plants that have been forced early for planting out, as it does not pay, but some of

the later, or mid-season, batches may be used for the purpose.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcote, Eastwell Park, Kent.

MARGUERITES.—The white varieties of Marguerite are especially useful for church decoration at Easter. Plants potted last autumn and kept gently growing actively through the winter have filled their pots with roots, and care must be taken, as the sun gains power, to give ample supplies of water and stimulants such as soot or weak manure-water, varied with an occasional pinch of a safe fertiliser. Plants for later blooming should be pinched again, and potted into larger pots. Use a rich compost and leave plenty of space in the pot for watering. Cuttings inserted now will quickly make roots and develop into useful specimens. The double white variety Mrs. F. Sander is excellent for pot cultivation.

BULBS.—Spring-flowering bulbs will grow very fast now, and fresh batches should be removed to cool frames under a north wall, regulating the supply according to requirements. Most bulbs require plenty of water when in full growth, and they must be sheltered from cold draughts. If the flowers are required late in the season shade the house or pit heavily, and admit plenty of ventilation. As the early batches pass out of bloom remove them from the flowering house to a cold frame, and continue to water the roots until the foliage dies down.

COLEUS THYRSODEUS.—The house in which Coleus thyrsoides is grown should not be kept too cool when in bloom; the spikes last splendidly under the treatment usually given to winter-flowering Begonias. Well-rooted plants can be forced into bloom early in the year, and a later batch will carry the flowering period over three months. As the plants get shabby, cut off the flower spikes, but not too low down, and place them in a warm, light house. Keep the roots somewhat dry, but spray the plants lightly overhead. After they have rested they will freely produce shoots suitable for making cuttings. Take these off when sufficiently strong, and strike them in a warm propagating frame.

HUMEA ELEGANS.—The pleasantly scented Humea elegans winters best if the pots are stood on, or plunged in ashes in a cool frame. In these conditions the roots require very little water in winter. The plants should never be allowed to become pot-bound in their early stages, or they will receive a check, and the leaves will turn yellow. They should therefore be potted into their final pots in late autumn. An abundance of air should be given in genial weather, and the plants stand on a cool, damp bottom as long as possible, before removing them to the conservatory. Care in watering is necessary at all stages of growth; for Humea, if kept too damp, are apt to collapse suddenly, when an examination of the plant will reveal decay in the stem at a point just above the soil.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. F. DAVEY, Abbot's Wood, Godalming, Surrey.

PLANTING.—There is just time for further planting, provided the trees are at hand or can be secured locally, so that the roots will not be long enough out of the soil to get dry. Late planting is often worth the risk, as a season may be gained thereby. All newly-planted trees should be securely staked, and those in the open or on walls trained in position. The soil about the roots should be trodden firm.

EARLY PEARS.—When the blossom on early Pears in showing colour get ready some light protective material for use when the flowers expand, or before they show signs of opening. Spray the trees with a very weak, fine spray of soluble petroleum to check the Pear fly, which appears at this date. The female deposits her eggs in the ovary, and appears later in the fruit in the form of a maggot, causing the embryo to sicken and drop. The Pear midge is a dreadful scourge, and I do not hesitate, on a warm, fine

day, when the flowers are open, to give a soft, gentle spray that will not harm the pistil or ovary. The same spray may also be applied to Apricot trees, just before the flowers actually expand, and Peaches, to keep aphid in check.

AMERICAN BLIGHT.—This troublesome pest must be watched for, as any insects that have escaped destruction in the winter dressings of the trees will soon be on the move. At the first sign of the insect use strong measures to arrest its progress, such as Kerosene Emulsion applied with a hand-brush, by syringing, or, in the case of large trees, a strong sprayer. The pest spreads rapidly and soon infects clean trees; every means should be directed to check its progress and eradicate it.

BIG-BUD IN BLACK CURRANTS. The bushes of Black Currant should be examined for the big-bud mite, and, if any doubt exists, investigate with a powerful magnifying glass. If the mite appears to be present cut away the affected branches and burn them. Dress or spray the remaining branches with lime and sulphur, mixing the sulphur in milk. A good dressing of fine lime mixed with a little petroleum should be applied under the bushes. Ants are a great trouble to fruit trees in blossom, and especially those growing in light, dry soils.

THE PROPAGATION OF FRUIT BUSHES.—Cuttings of bush fruits inserted in the ground earlier in the season have probably been loosened by the action of frost, and should be made quite firm again in the soil. Bushes raised from cuttings inserted in 1915 that have not been transplanted should be given more room.

THE ORCHID HOUSE.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Godalming Park, Reigate.

CATTLEYA.—Plants which have been resting since passing out of flower are now developing new roots. Any necessary repotting may be attended to at this period. Vigorous plants which have outgrown their pots should be shifted into larger ones. Specimens in sour soil should be taken out of their pots, all the old compost shaken out, the dead roots cut off, and useless pseudo-bulbs removed. Where the rooting material is still in good condition and there is room in the pot for the plant to develop, some of the old soil may be picked from between the roots with a pointed stick, and replaced by new material. Vigorous plants should be afforded more root space than those of weaker habit.

MEXICAN HOUSE.—The numerous varieties of *Laelia auripus* will by now have passed out of bloom, and as soon as young roots are developed to be emerging from the base of the last developed pseudo-bulb, any necessary repotting or top-dressing should be done at once. Specimen plants growing in receptacles sufficiently large for the next season's growth should not be disturbed, unless the old compost has become loose and decayed. It should in such cases be carefully removed with a pointed stick, washing out all small particles from the drainage, and replacing it with new material. Plants that have outgrown their space and become open in the centre should be taken out of their receptacles, cutting away all decayed roots and useless pseudo-bulbs, and leaving three or four behind each leaf. If large specimens are desired, place several growths in the same receptacle, distributing the leads equally over the surface; or to increase the stock of any particular variety the portions may be potted up separately. Medium-depth pans with out-side holes are suitable to their requirements. Keep the rhizomes on a level with the rim of the pan, which should be about half filled with drainage. A suitable compost consists of equal parts of manure and F. Fibre cut up rather roughly, with the small particles removed, pressed rather firmly around the rhizomes, with some pieces of crocks inserted at intervals to ensure a free passage of water. After repotting, water should be applied with discretion, merely pouring it around the outside edges of the compost, to induce root action. If too much moisture is applied at this stage the old roots will decay. As the season advances, the amount of water should be increased, together with atmospheric moisture and frequent sprayings overhead.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHERS; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and such unnecessary delay and confusion arise when letters are misdirected.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years as Greenwich, 41.9°.

ACTUAL TEMPERATURE.—*Gardeners' Chronicle* Office, 41, Wellington Street, Covent Garden, London. Thursday, March 15 (10 a.m.) Bar. 30.2; temp. 44.5°. Weather—Sunshine.

SALES FOR THE ENSUING WEEK.

MONDAY.—Nursery Stock, Sheds, &c., at Russell's Nursery, Shaftesbury Lane, Harrow, at 2 p.m.; at Protheroe and Morris's Rooms.

WEDNESDAY.—Fruit Trees, Roses, Herbaceous Plants, &c., at 12 noon. Japanese Lilies at 3, at Protheroe and Morris's Rooms, 67, Cheapside, E.C.

THURSDAY.—Roses, at 67, Cheapside, at 1 p.m.; at Protheroe and Morris's Rooms.

FRIDAY.—Orchids, at Protheroe and Morris's Rooms, at 1 p.m.

The Restriction of Paper and the *Gardeners' Chronicle*.

It is a matter of common knowledge that imports of all objects other than those immediately essential to the prosecution of the war are being restricted. Among those objects is paper. It is, therefore, obligatory on every journal and newspaper to take its full share in reducing the amount of paper it has been accustomed to use. There are two methods by which this reduction can be effected. The indirect method consists of increasing the price, and so bringing about a reduction in circulation; the direct method is to decrease the size of the paper. The publishers and editors of the *Gardeners' Chronicle* have decided to adopt the latter method. A journal which is devoted to horticulture, and able to give assistance and advice with respect to food production, ought not to reduce its potentialities for usefulness, particularly at a time when so many are offering suggestions and urging measures which are remarkable rather as evidence of patriotism than of practical knowledge. It is the duty of horticultural journals to play the part of guide and helpful critic.

In accordance with this view, the *Gardeners' Chronicle* will devote an increasing amount of its space to the essential subject of food production. Those of our readers who have been accustomed week by week to find some moments of quiet distraction in reading of the manifold floral subjects with which for so many years we have been wont to deal in detail will, we feel sure, recognise with us that public need should come before private interest. Like the many cultivators who, for lack of labour and for other reasons, are compelled to reduce the stocks of their plants to the bare minimum, but who endeavour to preserve them from destruction, so we shall endeavour to keep alive the stores of horticultural knowledge already

gained in order that when the present crisis is over normal life and progress may be resumed. As heretofore, our columns will be open to all gardeners who can offer contributions towards the solution of the difficult problems in Food Production which beset alike the nation and (in a particular degree) horticulturists of all classes. We invite such contributions, and the only proviso we attach to them is that they be succinct as well as practical.

We would take this opportunity of asking our readers to inform us of any difficulty they may experience in obtaining copies of the *Gardeners' Chronicle*, and of urging them to make sure of securing their copies by placing their orders with newsgagents or railway book-stalls. The system of "returns" whereby unsold copies are sent back to the publishers entails a considerable amount of waste—waste of paper and of energy. It is likely that this system will be discontinued in the near future, and if so, only copies of journals and newspapers "ordered in advance" will be printed. We, therefore, strongly recommend such of our readers who have been in the habit of purchasing the *Gardeners' Chronicle* at any convenient book-stall to place their orders for regular delivery without delay.

Glass Houses and Food Production.

We have already pointed out on more than one occasion the help which owners of glasshouses can give to small gardeners and allotment holders, and we shall return to the subject again. But for the moment we wish to urge the extreme importance of utilising glass to prevent so far as may be the shortage of green vegetables which threatens during the coming summer. The severe weather has caused widespread damage to Cabbage plants which were set out in gardens in autumn. According to reports which we have received, injury and loss of this crop are widespread. Although this loss cannot be wholly compensated for, it may in part be mitigated. If early-maturing varieties of Cabbage are sown under glass even now, and the seedlings pricked out, grown on and hardened off, there is good prospect of the plants turning in and making good hearts before the autumn. The Royal Horticultural Society's trials at Wisley indicate that the following varieties are among the most suitable for this purpose:—Best of All (Barr), Barbinger (Nutting), Express (Nutting), Earliest (Sutton), First Crop (Johnson), First (Cooper, Taber). We hope that owners of gardens and gardeners in charge of glass will at once sow one or other of these varieties, and will let it be known in their several neighbourhoods that the plants will be at the disposal of holders of small gardens and allotments. We are well aware that the course which we recommend is bound to entail a certain measure of waste; for in the absence of any local organisation it will not be easy for gardeners to ascertain the extent of the demand which is likely

to be made upon them. We understand that steps are being taken to institute local organisations to ascertain and provide for the horticultural needs of each district. But any general organisation on these lines must take time. On the other hand, some districts are already well organised, and we hope that those who are willing to help in this direction will at once make sowings of the varieties of Cabbage mentioned above, and will then take steps to ascertain the requirements of their neighbours, in order to ensure that a sufficient number of seedlings may be pricked out to meet those demands so far as possible.

NEW SECRETARY TO THE BOARD OF AGRICULTURE.—SIR SYDNEY OLIVER will shortly vacate the office of Permanent Secretary of the Board of Agriculture and Fisheries, and will be succeeded by Mr. A. D. HALL, F.R.S., member of the Development Commission and technical and expert adviser to the Board. Mr. HALL was formerly Director of the Rothamsted Experimental Station, and first Principal of the South-Eastern Agricultural College, Wye. His appointment will give general satisfaction.

BRACKEN AS A VEGETABLE.—The well-known surgeon, SIR JAMES CRICHTON-BROWNE, in a communication to *The Observer*, states that the young shoots of Bracken are used as food in Japan, and considered to be a delicacy. The tender parts of the Bracken shoots are picked and carefully washed in fresh water. They are then plunged in boiling water, and remain there for two minutes, after which they are removed and placed in cold water, where they are left for two hours. After this preliminary preparation, they can be cooked in a variety of ways, notably as a *puree*, like Spinach, and with melted butter, like Asparagus heads.

THINNING OUT THE PHEASANTS.—The Destruction of Pheasants Order made by the Board of Agriculture and Fisheries extends to March 31 the season for killing pheasants, and authorises the War Agricultural Executive Committee of each county to take such action as is necessary to reduce the stock of pheasants on any land where there is a risk of substantial injury therefrom to crops. For this purpose the Committee may authorise the occupier to kill pheasants subject to certain limitations to be inserted in the authority, which will include those applicable to the killing of ground game under the Ground Game Act.

SCOTCH SEED POTATOS.—The Director General of Food Production has issued an appeal to Scottish farmers for the supply of Scottish-grown seed Potatos for use in England, and states that he is prepared to purchase the whole of the available stocks of the chief varieties of Potatos grown in the North. He has also appointed a representative committee of Scottish Potato merchants to act on his behalf, the chairman being Mr. ROBERT PATON.

ORCHID SALE AT WALTON GRANGE.—The catalogue of the collection of Orchids of the late Mr. WILLIAM THOMPSON, which will be sold by Messrs. PROTHEROE AND MORRIS on the premises at Walton Grange, Stone, Staffordshire, on Tuesday, April 24 and two following days, is a list of rare and beautiful Orchids, some of them being unique.

CROWN GALL.—Investigations carried out by Prof. CLAYTON SMITH show that certain species and varieties of Prunus possessed a considerable power of resistance to artificial inoculation with the bacterium responsible for the disease known as crown gall. A variety of *P. hortulanum*, Golden Beauty, is very resistant, and has, as well, other qualities which recom-

mend it for use as a stock; and *P. pumilus* is entirely resistant.

THE WARATAH (see fig. 41)—This rare Australian shrub, *Telopea speciosissima*, is flowering in the Cape House at Kew Gardens. The plant is sometimes called *Embotrium speciosissimum*, but is familiarly known in New South Wales, of which it is a native, as the Waratah, or Native Tulip. The shrub is an evergreen, from 6 to 8 feet high, with beautiful spikes of crimson blooms. It can be grown in a cool stove; it requires a good deal of water when making growth, but in winter it should be rested and kept very dry.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

GRASS ORCHARDS AND INSECTS.—*Southern Grower* on p. 106 asks if grass in orchards fosters injurious insects; my experience is quite contrary to that suggestion. One remarkable case occurred at Belvoir some five or six years ago. A double row of bush Apple trees in the kitchen garden suffered from a very bad attack of winter moth, which almost stripped them of leaves in the spring; in spite of repeated syringing, but trees close by in grass orchards escaped the attack, and the bush trees were cleared afterwards by gnaw landing in the autumn. Plums also, as standards on grass, escaped the aphid which sometimes attacked the trees on the walls. As a general rule, syringing with soft soap and carbolic acid just as the buds were bursting would prevent any trouble from aphid on Plums, but last year that did not prove effectual, possibly owing to lack of skill in application. Grass orchards are recommended for strong soils where the trees naturally grow vigorously, but not for poor, light or thin soils, where very little growth is made by the trees. Every effort should be made to encourage growth during the first ten years after planting, under all conditions of soil, as standard Apples take such a long time to produce a remunerative crop. There is not the least doubt about grass checking the growth of the trees, but if kept fed off by sheep or cattle it does not encourage insects. *W. H. Divers, "Wetdean," Hook, Sarbiton.*

THE HULL PUBLIC PARKS.—I had the pleasure of spending the greater part of Friday, the 2nd inst., in the company of Mr. Witty, the superintendent of the Hull Parks. In the afternoon we visited East Park, which is 76 acres in extent, and a most beautiful place. I was astonished on entering the large conservatory situated in the centre of the park to see a most lovely show of bloom, including well grown batches of *Cypripediums*, *Azaleas*, *Cyclamens*, *Cinerarias*, *Lilies*, *Begonias*, *Freesias*, *Carnations*, and *Lilacs*. Another park which must be a delightful place in the summer months is Pearson's Park. I am eagerly looking forward to being able, in the near future, to visit some of the other parks. One thing I would like to mention, namely, the fine avenues of street trees, with wide lawns running on either side of the roadway, each one being a mile in length. This idea might with advantage be carried out in other large towns, as the effect in summer must be delightful. At the present time Mr. Witty is busy with a food production scheme, and is preparing many acres of land with motor ploughs, etc. *Gunner Arthur James Ward.*

SUGAR BEET FOR PRESERVES.—My experience of boiling Sugar Beet is that, after seven hours, it shows no sign of pulping. By that time it becomes as soft as ordinary garden Beet after 1½ hour boiling. The Sugar Beet in this state has a distinct "mawkish" taste. I certainly should not like to spoil good fruit of any kind by adding Sugar Beet with the object of adding to the stocks of preserves. The water in which the Sugar Beet is boiled becomes quite sweet. Whether that would be of value in bottling fruit I cannot say. Some of the liquid is being tested in air-tight vessels to ascertain the length of time it can be preserved in its present condition. *E. Molgynce*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

FEBRUARY 27.—*Present:* Mr. E. A. Bowles (in the chair), Dr. A. B. Rendley, Messrs. W. Hales, E. J. Allard, W. G. Worsdell, Col. H. E. Rawson, J. Fraser, E. M. Holmes, Sir Everard in Thurn, and F. J. Chittenden (hon. sec.). *The late Mr. George Masson.*—The chairman referred to the great loss the committee had sus-

prised this is possible in every organ down to the finest filament, and in the case of even minutely serrated edges of leaves. In considering changes in the colour of light at different altitudes of the sun such modification should not be overlooked. The importance of this observation will be evident to those who believe that changes in the Tropæolum which Col. Rawson has exhibited from time to time are the result of a response to changes in light intensity. *Scale on Ixora coccinea.*—Mr. W. Hales exhibited scales of a curious filamentous shape occur-

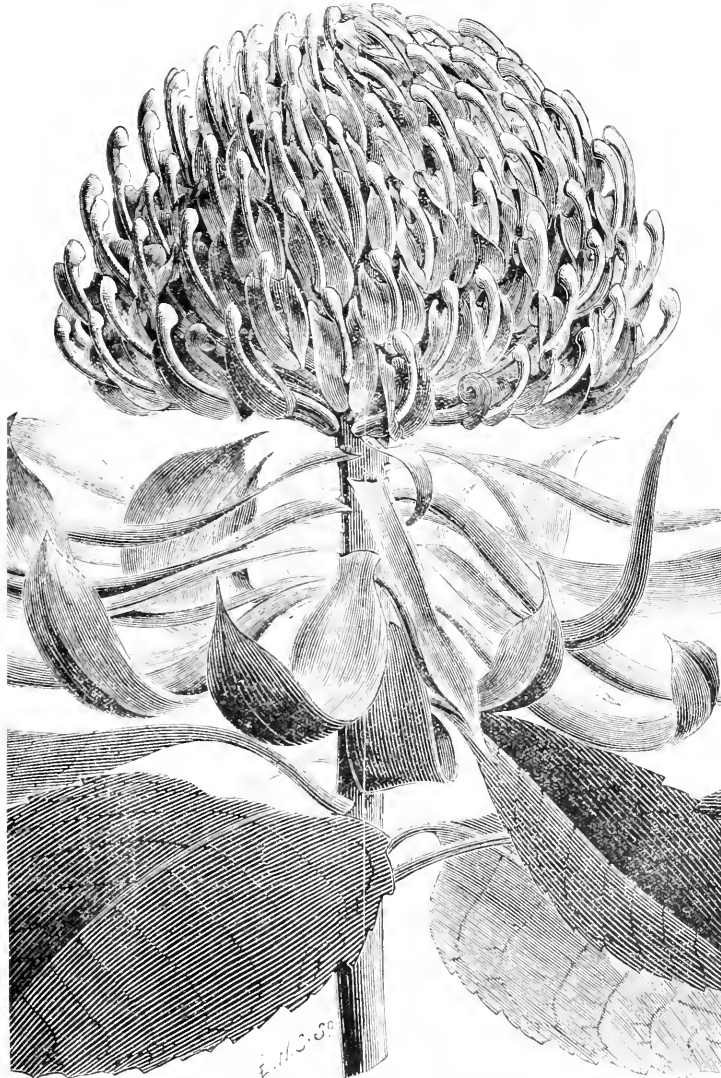


FIG. 41. *TELOPEA SPECIOSISSIMA*. FLOWERS ORN. RED, BRACTS CRIMSON.

tained in the death of Mr. George Masson, F.M.H., who had for many years been a valued member of the Scientific Committee, and the committee unanimously desired that its expression of sympathy should be sent to his family.

The Action of Light in Inducing Variation.—Col. H. E. Rawson stated that by the method of selective screening which he adopts with plants the coloured diffraction bands due to interference at any opaque edge are entirely transformed or their saturation modified. With the aid of a

ring on the foliage of *Ixora coccinea* at the Chelsea Physic Garden, and remarked upon the difficulty of removing them by ordinary sponging. The scale appeared to be *Tachnaspis filiformis* (figured in the *Monograph Brit. Coccolp. I.*, p. 20, pl. xxxvii).

Anthoxanthum Puelii.—Mr. Fraser exhibited dried specimens of *Anthoxanthum Puelii* and of *A. odoratum*. The former he had found growing in the grounds at Holland House. It is an annual of tufted growth, and regarded as a pas-

turf or lawn grass quite useless—contrasting remarkably in its habit and growth with the more valuable *A. odoratum*.

MARCH 13.—The fortnightly meeting of the R.H.S. was held on Tuesday last in the Drill Hall, Buckingham Gate, Westminster. The exhibition was the largest since the New Year, and there were good exhibits in all sections.

The Floral Committee awarded ten Medals to groups.

The exhibits before the Narcissus Committee included one of the best groups in the hall; this was composed of Daffodils and Tulips in bowls of fibre.

The Orchid Committee awarded one First-class Certificate, one Award of Merit, one Preliminary Commendation to a novelty, and three Medals to groups.

The principal exhibit in the Fruit and Vegetable section was a collection of Apples from Messrs. SEABROOK AND SONS.

At the 3 o'clock meeting of the Fellows Mr. Edwin Bokett gave an address on "The Cultivation of Vegetables."

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Veitch, Messrs. Jas. O'Brien (hon. secretary), William Bolton, C. J. Lucas, R. Brooman-White, Walter Cobb, W. H. White, T. Armstrong, J. Charlesworth, Frederick J. Hanbury, H. G. Alexander, Stuart Low, and R. A. Rolfe.

FIRST-CLASS CERTIFICATE.

Laelio-Cattleya General Munde (*L. C. Rubens Lambanum* × *C. Hardyana*), from Messrs. CHARLESWORTH AND CO. A magnificent Laelio-Cattleya with extraordinarily large and finely coloured flowers, and of dwarf, compact growth. The flower, which is more than 7 inches across, has broadly ovate sepals and broader petals, both bright rosy-mauve colour, veined with a darker tint. The showy lip, with front lobe almost circular in outline, is deep ruby-purple. The tube is rose-colour with a yellow tinge, and the disc has yellow lines from the base to the centre.

AWARD OF MERIT.

Laelio-Cattleya Sirhan var. The President (*L. C. St. Gothard* × *C. Enid*), from Messrs. CHARLESWORTH AND CO. This is the finest hybrid of a very numerous batch raised by Messrs. Charlesworth and Co., and it gives an instance of the advantages to be obtained from good parents, no matter how remote. In the fine flower of the plant shown, C. Warner obtained through L. C. St. Gothard, was the prevailing feature both in size and colour. The broad sepals and petals are bright rose colour, the lips ruby-crimson with a bright yellow disc and yellow lines from the base.

PRELIMINARY COMMENDATION.

Odontoglossum cultans var. *Valcan* (*oreellens* × *Ossulstonii*), from Messrs. ARMSTRONG AND BROWN, Orchidhurst, Tunbridge Wells. A grand flower, and the second of the batch to receive the award accorded to noteworthy seedlings. The plant bore one large flower of fine substance and with very broad sepals and petals of a dark chocolate-red with pale yellow tips and margin. The lip is white, with red-brown blotches in front of the yellow crest.

(To be concluded.)

LECTURE ON VEGETABLES.

Before a crowded audience at the R.H.S. meeting on Tuesday last, Mr. BECKETT gave an address on "The Cultivation of Vegetables." The chair was taken by the Rev. Joseph Jacob. Mr. BECKETT stated that there were 17,000,000 acres of waste land in England which might be employed in producing food. He advocated thorough trenching of the soil, and gave the best methods of manuring, a system of rotating the crops, and other cultural details, including mulching. Early thinning of the crops was advised, and a selection of the most useful vegetables was enumerated, the lecturer drawing special attention to the great value of Potatoes. As a green winter vegetable the value of the Brussels Sprout was emphasised. At the close of his address Mr. BECKETT showed lantern pictures of vegetables growing at Aldenham, together with pictures of Leeks, Potatoes, Celery, Onions, and collections of vegetables.

CROPS AND STOCK ON THE HOME FARM.

CARROTS.

I do not know a root crop that will produce a greater yield per acre of food value than Carrots. Horses most appreciate the roots, which impart lustre to their coats. Pigs, too, relish them. Carrots can be lifted and stored in the autumn, and are thus always available, and unaffected by the weather. Carrots require special soil if they are to yield the fullest return for labour. From shallow, stony ground it is useless to expect a heavy crop. Deep, sandy soil, free from stones, is the most suitable, although good results may be obtained from soil of a heavy character, if well prepared in the autumn by deep ploughing and by thorough working in dry weather in February, to obtain a good tilth. Eight pounds of seed per acre should be drilled in March, in rows 14 inches apart, for the smaller growing red-skinned varieties. The Belgian White Carrot, which grows more vigorously, should have 18 inches of space between the rows. A fine surface tilth is an advantage, as the seed should not be drilled deeply. Belgian White is the best variety for cattle.

POTATOS ON GRASS.

Appropos of my remarks in this column, a correspondent from Halifax asks for advice on the ploughing of $\frac{1}{2}$ acre of pasture for Potatoes and other vegetables, how to till the soil afterwards by hand, and the quantity of "seed" tubers required for planting one acre.

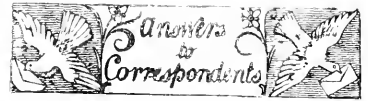
I have already advised that Potatoes should not be grown on newly ploughed grass land, but as there appears to be a desire on the part of some to do so, and I will state the best manner of procedure. I may first state that my objections to growing Potatoes in this way are as follows:—(1) The risk of wireworm attacking the seed tubers; (2) the plough not burying the grass sufficiently deep, and the too-brief time for the grass to decay to be of manurial value to the crop; (3) the difficulty of earthing-up the plants owing to the scarcity of soil above the turf, except by hand; and (4) the still greater difficulty of digging the crop among the unrotted turf.

The most effective method of ploughing such land would be to adjust the skim coultter that it strips the turf line at least $\frac{1}{2}$ inch deep. This will enable the plough to turn the turf effectively into the furrows, especially if these are narrow. The ploughing should be at least 6 inches deep, and a greater depth would be an advantage. After the soil has settled down somewhat, make the drills with a hoe for the Potatoes in each third furrow at least 5 inches deep. Strew along the furrow superphosphate and sulphate of ammonia, 5 cwt. of the former to 1½ cwt. of the latter per acre. Cover the tubers by means of the hoe, and in due course level the soil from the furrows when hoeing the plot, for this will facilitate the work of earthing up the plants later by hand, as the unrotted turf would prevent the use of the plough. An alternative method of planting would be to dig over every third furrow, burying the turf deeper; this would entail much labour, but would be effective in better planting.

To plant one acre, 13 cwt. of tubers averaging 14 ounce, or 14 cwt. at 2 ounces, will suffice. My correspondent also asks as to basic slag as a manure for Potatoes. I do not think that this fertiliser will act quickly enough to benefit the Potatoes this season.

He also asks what other vegetables I would recommend. If the soil had been cultivated for some years I should advise Carrots and Parsnips to be grown freely, but in the present conditions I would advise various green crops, such as Brussels Sprouts, Cauld, Cottage's and Asparagus Kale, and varieties of Cabbage. I look upon Brussels Sprouts as the best of all green winter vegetables. They are ready for use in October and last continuously until April. Can this be said of any other green vegetable?

Onions and Turnips are useful. For late summer and autumn cropping, Scarlet Runner Beans will produce huge crops of food when highly cultivated, and of a superior, large-podded variety such as A1 or Emperor. The surplus pods can be preserved in salt for use in winter. *E. Molynax*



ACACIA DEALBATA: *Ignaramus*. *Acacia dealbata*, the Silver Wattle, is the most robust of all Acacias. It is therefore not adapted for growing as a pot plant, but when planted out in the border of a large greenhouse or conservatory it seldom fails to thrive and flower freely. The plant requires a light, rich compost, consisting of turfy loam and leaf-mould, freely intermixed with sand. During the spring and summer months Acacias need liberal supplies of water, both at the roots and overhead, to keep down attacks of red spider. Drought at the roots may have been the reason of your plant shedding its leaves. In the vicinity of large towns fog will often cause both leaves and flower-buds to drop. Acacias should be pruned immediately after flowering; the stronger growths should be cut hard back. A moist, close atmosphere is necessary to encourage the plants to break freely; afterwards a free admission of air, with full exposure to sunshine, is essential for the development of flowers. Plants growing in pots will be benefited greatly by plunging them out-of-doors from June to September. A temperature of 45° is suitable in winter.

MARKET WEIGHTS AND MEASURES: *G. B.* The following are the approximate weights of the various measures you mention: Broad Beans, pod, 14lbs.; Brussels Sprouts, bushel, 30lbs.; bag, 28lbs.; Cabbages and Cauliflowers, tally, five dozen; Parsnips, bushel, 1 cwt. The Leeks are quoted at per dozen bundles, not bunches.

NAMES OF FRUIT: *G. B. N.* 1, Newtown Pippin; 2, Gloseberry Pippin; 3, Tower of Glammis.

PEACH SHOOTS DISEASED: *A. L. Hooly*. The shoots sent are attacked by disease caused by the fungus Botrytis. Cut out the affected growth and spray the trees with permanganate of potash, using sufficient of the crystals to make a rose-colored solution. It is probable, as you suggest, that contact with the wire trellis during the severe frost may have contributed to the trouble.

POTTING PLANTS, &c.: *J. H. H., Siam*. Over potting is generally very harmful to plants, and it is not wise to shift them direct from very small pots into the largest-sized receptacles in which they are expected to flower. The root system is not at first able to make use of a large mass of soil, which becomes sour through being constantly saturated in watering the plants and is, in consequence, insufficiently aerated. Moreover, this dead, inert soil prevents the air from reaching the roots and thus predisposes them to decay. Manure rubbish is one of the best forms of lime to apply to garden soils, and you would be wise to use it freely on your clay land. You are not likely to cause harm to the plants by its freest use, but an excess might have the effect of liberating more plant food than the crops could assimilate, and this would result in a loss of fertility. Plants of the Ericaceae, including *Ericas* and *Rhododendrons*, are intolerant of lime in the soil, and it must not be used in their case. It is quite true that *Encharis grandiflora* flowers throughout the greater part of the year, but at indeterminate periods. You will find your plants give better results if they are partially rested for a period than if kept always in active growth. The seeds you mention are not to be found in the general nursery lists; you would doubtless be able to obtain them from a botanic garden.

Communications Received—O. R. L.—A. T. B.—A. W.—H. D.—F. J.—M. S. A.—B. E. F.—L. L.—J. W.—J.—W. W.—T. B.—H. B.—Young Reader—E. McL.—G. A.—M.—T. J. H.—G. P.—C. W.—J.—A. T. H.—A.—W.—P. S.—C.—A. E.—M.—T. H.—C.—A. C.—G. A. R. of A. C.—C. C.—C. C.—H. B.—W. B.

ORCHIDS,

Clean, well-grown and cheap; also
 Many Rare and Choice Varieties
 STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
 Kindly send for Catalogue.

JAMES CYPHER & SONS,
 Exotic Nurseries, CHELTENHAM.

CARNATIONS, PERPETUAL FLOWERING.

FOR SALE, good clean plants, grown in thimbles and
 60s, well broken ready for potting on.
 Colleen, Enchantress Supreme, White Enchantress,
 White Wonder, Beacon, Mikado, Mayday, Scarlet Seedling,
 Enchantress, Salmon Enchantress and other good varieties.

4. per dozen. Cash with order
MAYTHAM GARDENS, ROLVENDEN, KENT.

Ammanford and Pontyberem
 SOLE AGENT:
T. T. PASCOE,
 York Chambers,
SWANSEA.

Tele. (phone 1048 Central.
 grams Pascoe, Swansea.

Best Anthracite Large Coal for Horticultural
 purposes and Cobbles for House Furnaces.

Quick Dispatch. Best Quality.
Lowest Prices.

Burpee's Seeds Grow

THE truth of this famous slogan is proved by thousands of
 pleased and permanent customers. The Burpee Idea of
 Quality First,—combined with efficient service has built the
 World's Greatest Mail-Order Seed Business. **Burpee's Annual,**
The Leading American Seed Catalog for 1917 is a
 bright new book of 204 pages, in colors, and a Safe Guide to
 Success in the garden. Mailed free. Write for it today.

W. ATLEE BURPEE & CO., Seed Growers,
 Burpee Buildings, Philadelphia, Pa., U. S. A.



More Root Room on Same Staging.

That is only one advantage of root-
 roomy CRET Pots. The free booklet
 will demonstrate to you the exceptional
 porosity, drainage, cleanliness, and
 healthfulness of CRETS also.

Specimen CRET Prices:—2 ins. 4/-
 per 100; 1 1/2 ins. 75/-. All are per 100.
 Carriage Paid on orders over 20/-.
 Safe delivery guaranteed.

FREE SAMPLE "CRET" POT on
 request, with interesting booklet giving
 prices, special assortments, etc. Write
 to day.

PETER BAILEY & SONS, LTD.,
 2, Heaton Mersey Pottery, near Manchester.



Food Production on Farms & in Gardens.

To obtain the best results sow
Dicksons Seeds
 which are all carefully selected from
 the finest and most productive strains,
 and are always reliable.

Prices moderate. Catalogues free.
Dicksons Seed Growers Chester.

MARKETS.

COVENT GARDEN, March 17.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that the quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eds.

Cut Flowers, &c.: Average Wholesale Prices.

Anemone fulgens, per doz. bun. 3 0-3 5	Narcissus s.d.s.d. Grand Primo, per doz. bun. 6 0-7 0
Arabis, per doz. 3 0-4 0	— Pheasant Eye per doz. bun. 6 0-7 0
Azalea, white, per doz. bun. 5 0-6 0	— Soliel d'Or, per doz. blms. 1 6-2 0
Camellias, white, per doz. blms. 1 6-2 0	— Guernsey, per doz. blms. 1 6-2 0
Carnations, per doz. blooms, best American varieties .. 2 0-3 0	— Paper white per doz. bun. 5 0-6 0
— Carolina (crimson), ex. large .. 3 6-4 0	Orchids, per doz.: — Cattleya .. 15 0-18 0
Daffodils, Golden Spur, per doz. bun. .. 7 0-8 0	— Cologney per doz. blooms 2 0-2 6
— Barri, per doz. bun. 8 0-9 0	— Cypripedium 2 0-8 0
— Emperor, per doz. bun. .. 8 0-9 0	— Odontoglossum crispum 3 0-4 0
— Henry Irving, per doz. bun. 5 0-6 0	Pelargoniums, per doz. bunches, double scarlet 15 0-18 0
— Princess, per doz. bun. .. 6 0-7 0	Primroses, per doz. bun. .. 2 6-3 0
— Sir Watkin, per doz. bun. 6 0-8 0	Roses: — Richmond, per doz. blms. 6 0-8 0
— Victoria, per doz. bun. .. 9 0-10 0	— Pink Queen, per doz. blms. 9 0-10 0
Eucryphia, per doz. blooms	— Sunburst, per doz. blooms. 7 0-8 0
Freesia, per doz. bun. .. 2 6-3 0	Snowdrops, per doz. bun. 2 0-3 0
Heather, white, per doz. bun. 12 0-0	— Tulips, white per doz. bun. .. 30 0-30 0
Lilium longiflorum long. 4 0-4 6	— yellow,
— short .. 3 0-3 6	— Darwin variety, per doz. bun. 21 0-24 0
— Album long. 3 6-4	— mauve Darwin pink, per doz. bun. 24 0-27 0
— rubrum, per doz. long. 3 6-4	— Violets, single, Princess of Wales, .. 2 6-4 0
— short .. 3 0-0	
Lily of the Valley, per doz. bun. 21 0-24 0	

Cut Foliage, &c.: Average Wholesale Prices.

Adiantum (Maidenhair Fern) best, per doz. bunches .. 9 0-10 0	Cycas leaves, per doz. .. 3 0-6 0
Asparagus plumosus long trails, per half-dozen .. 2 6-3 0	Fern, French, per doz. bunches 0 6-0 8
— medium, .. 12 0-18 0	Ivy leaves, per doz. bun. .. 2 0-2 6
— Sprengeri .. 10 0-12 0	Mosses, grossularis bunches 6 0-7 0
Bronze foliage .. 3 0-6 0	Myrtle, doz. bun. small-leaved 6 0-0
Carnation foliage, doz. bunches 4 6-5 0	— French, per doz. bunches 1 0-1 3
Croton foliage, doz. bunches 12 0-15 0	Smilax, per bun. of 6 trails .. 1 3-1 6

French Flowers, &c.: Average Wholesale Prices.

Allium (Star) per doz. bun. .. 3 0-3 6	Freesia, per doz. bun. .. 3 6-4 0
Anemone double pink, per doz. bun. .. 2 0-2 6	Marguerite yellow, per doz. bun. .. 3 0-3 6
— single, mixed, per doz. bun. 4 0-4 6	Stock, white, per doz. bun. .. 3 6-4 6
— single, red, per doz. bun. 2 6-3 0	— pink, per doz. bun. .. 4 6-5 0

REMARKS.—Home-grown Daffodils are more plentiful, and Pheasant Eye Narcissus, which advanced considerably in price last week, owing to the short supply, are now daily increasing in quantity and prices becoming lower. There is a good supply of Carnations, Snowdrops, Violets, Darwin Tulips and red Roses. Pink Roses are not arriving in any considerable quantity. Larger consignments of flowers are being sent from the Channel Islands, chiefly white Narcissus, Violets, Allium (Star of Bethlehem), and Anemone fulgens, and considerable quantities of yellow Narcissus and Daffodils are being received from the Scilly Islands. Small consignments continue to arrive from France, consisting of double and single Anemones, white Stocks, yellow Marguerites, Freesia, Acazia, and Parma Violets. The arrivals, however, are very irregular. Next Saturday, the 17th inst., is Shrove-tide Day, but there will not be the usual quantity of fruit from Ireland this year, on account of the difficulties of transit.

Plants in Pots, &c.: Average Wholesale Prices.

Aralia Sieboldii, dozen .. 5 0-6 0	Ferns in 32's, per doz. .. 12 0-18 0
Asparagus plumosus nanus, per doz. .. 10 0-12 0	— choicer sorts, per doz. 48's, 8 0-12 0
— Sprengeri .. 8 0 10 0	Geonoma gracilis, 60's, per doz. .. 6 0-8 0
Aspidistra, per doz. green 24 0 36 0	— larger per doz. .. 2 6-7 6
Cacti, various, per tray of 15's 4 0-0	— do. .. 4 0-8 0
— larger per doz. of 12's 5 0-0	— do. .. 18 0-36 0
Cineraria, 48's, per doz. .. 12 0-15 0	— do. .. 60's, per doz. 5 0-8 0
Cocos Weddelliana 48's, per doz. .. 18 0-30 0	— do. .. 60's, per doz. 8 0-10 0
— 60's per doz. 3 0-10 0	— do. .. 18 0-36 0
Croton, per doz. 18 0-36 0	Cyclamen, 48's, per doz. .. 21 0-24 0
Dafodils, 48's, per doz. .. 12 0-15 0	— per doz. .. 21 0-24 0
— 60's, per doz. 18 0-30 0	— per doz. .. 12 0-15 0
Ferns in thumbs, per 100 .. 10 0-15 0	— small and large 60's .. 14 0-24 0
— per 100, in small and large 60's .. 14 0-24 0	— in 48's, per doz. 6 0-7 0

Vegetables: Average Wholesale Prices.

Artichokes, Globe, per doz. .. 4 0-5 0	Horseradish, per doz. .. 66 0-72 0
— Jerusalem, per cwt. .. 12 0-16 0	Kale, per bag .. 5 6-0
Asparagus, Paris (Green), per lb. 6 0-6 6	Leeks, per bun. .. 4 0 6 0
Beetroot, per bag 10 0-0	Lettuce, Cabbage per doz. .. 1 6 2 0
Beans, English, per lb. .. 2 0-0	Mushrooms, per lb. 1 9-2 0
— sprouting, per bag .. 6 0-0	— Mustard, and Cress, per doz. punnets .. 1 0-1 6
Broad Beans, French, per pad .. 9 0-0	Onions, per cwt .. 36 0-40 0
Brussels Sprouts, per bus. .. 8 0-10 0	— spring, per doz. bun. .. 8 0-0
Carrots, per bag 8 0-12 0	— Parsley, per bus. 10 0-0
— tall .. 8 0-10 0	— Parsnips, per cwt. 14 0-16 0
Cauliflowers, per doz. .. 6 0-0	— Potatoes, new, per lb. .. 1 0-1 2
— (celerie), per doz. 6 0-0	— Radishes, per doz. bun. .. 1 6 2 0
Cucumbers, per doz. .. 18 0-24 0	Rhubarb, forced, per doz. .. 1 6-2 0
— doz. .. 10 0-18 0	Savoy, per tally 10 0 16 0
— Enlève, per doz. 4 0-0	Seakale, per doz. punnets .. 20 0-22 0
Greens, per bag. 6 0-0	— Shallots, per lb. 9 0-8 10
Garlic, per lb. 0 10-0	Spinach, per bus. 12 0-0
Herbs, per doz. bun. .. 4 0 8 0	— Swedes, per cwt. 10 0-0
	— Turnips, per cwt. 5 6-6
	— Tops, per bag 6 0-0
	Watercress, per doz. .. 0 8 0 9

Fruit: Average Wholesale Prices.

Almonds, per cwt. .. 74 0-0	Grapes, con. Gros Colman, per lb. .. 4 0-6 0
Apples — Californian New Town, per case .. 17 0 19 0	— Grape Fruit, per case .. 32 0-33 6
— English Cooking, per bus. .. 14 0 18 0	Kent Cobs, per lb. 1 0-1 3
— Main States, barrels .. 50 0 60 0	Lemons, per case 16 0-25 0
— Oregon, per case .. 18 6 22 0	Nectarines, per box .. 4 6 8 0
Bananas Red, per ton .. £25-0	Nuts, Brazils, new, per cwt. 100 0-0
— Jamaica, per ton .. £20-0	— Coconuts, per case .. 31 0-32 0
— Chestnuts, per bag .. 38 0-40 0	Oranges, per case 21 0 50 0
— Cranberries, per case .. 14 0-0	— Seville Soars, per half-chest 48 0-50 0
Dates, per doz. boxes .. 8 0-0	— Peaches, per box 5 0-8 0
Grapes, Almeria, per brl. .. 20 0 30 0	— Pears — Californian 15 0-22 0
	— Cape, per box 3 0 5 0
	— Plums, per box 2 6-8 0
	— Tangerines, per box .. 20 0-26 0
	Walnuts, per per cwt. .. 56 0-85 0

REMARKS.—There is a fairly plentiful supply of Apples. Grapes are limited in quantity, but there are a good number of the Almeria kind. The first consignment of the new season's Brazil Nuts has reached Covent Garden. Forced Strawberries are commencing to arrive. Seakale, Cucumbers, Mushrooms, French Beans, New Potatoes, Asparagus and Salads are all available in fairly large quantities. The supplies of Mint are increasing. The only Bananas obtainable are the West Indian varieties. E. H. R., Covent Garden Market, March 17, 1917.

Potatoes.

REMARKS.—There is no fresh development in the Potato trade; supplies are still scarce and not sufficient to satisfy demands. Edward J. Newburn, Covent Garden and St. Pancras, March 17, 1917.

DEBATING SOCIETIES.

WARGRAVE AND DISTRICT GARDENERS'.—At the meeting of this Association, held on the 28th ult., Mr. J. F. Massord, Gardener to Mr. H. C. Bond, Wargrave Court, read a paper on "A Few Plants for Greenhouse and Conservatory Decoration." He described various bulbous flowering and foliage plants which succeeded one another from the commencement to the end of the year, giving short cultural directions. An exhibit of hardy flowering plants was staged by Messrs. Waterer, Sons, and Crisp, Ltd.

BATH GARDENERS'.—At the monthly meeting of the Bath Gardeners' Society, held on the 12th inst., Mr. F. Folwell, Gardener to Mr. C. Morley, of Stockerwick, read a paper on "The Vine."

GARDENING APPOINTMENT.

Mr. M. L. Sargeant, for nearly 8 years Gardener at Rockshaw, Merstham, as Gardener to D. STONER CROWTHER, Esq., Hay Green, Kingston Hill, Surrey.

NOW READY

THE HORTICULTURAL

DIRECTORY

AND YEAR BOOK FOR 1917.

Owing to the paper shortage, an unlimited number of copies of this work cannot be guaranteed, and purchasers are advised to order AT ONCE to avoid disappointment.

Orders will be dealt with in strict rotation.

The 1917 edition contains no name or address which has not been verified. The information given is therefore absolutely trustworthy.

Apply, enclosing 1/4 for each copy required, to:—

GARDENERS' CHRONICLE, LTD.,
41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

WANTED, LADY GARDENER, to take charge of small Garden in Regente for duration of war; experience necessary. some Glass.—Apply to L. G. & W. P. BOND & Son, Redhill Nurseries, Surrey.

WANTED, at Sleep Hall School for Girls, St. Ives, Hunts, 2 LADY GARDENERS (Head and Under), 3 acres; no glass.—Apply, HEAD MISTRESS.

WANTED, LADY GARDENER, in small training school of gardening, chiefly Fruit and Vegetables; resident; good salary for competent help.—Apply, PRINCIPAL, Training Gardens, Stonehouse, Glos.

WANTED, LADY GARDENERS for Houses and Pleasure Grounds, in a garden possessing wide horticultural interests, and excellent opportunities for learning—Apply, stating experience and wages expected, without lodgings, to A. J. COBE, Dutton Gardens, Cardiff.

WANTED, WOMAN GARDENER; good experience, Inside and out; wages 25s. per week.—Apply, WM. A. NELSON, The Gardens, Birborough Hall, Chesterfield.

WANTED, LADY GARDENERS (Two). Inside, some experience, good Bothy. Give particulars and wages required.—C. JENNINGS, Littlegreen, Petersfield, Hants.

WANTED, TWO WOMEN GARDENERS, with some experience preferred, one for Glass, &c., the other for Borders, Roses, and to take turn with duty, one fire; wages 25s. per week, with comfortable lodgings close to work.—Apply, HEAD GARDENER, Moulton Grange, Northampton.

WANTED, for Exhaust Park Gardens, near Basingstoke, Hants, 2 WOMEN GARDENERS, to do out and in; some experience necessary. Bothy and no lodgings. Apply, with full particulars, stating wages expected, to E. MATTHEWS, Starfield House, Mortimer, R.S.O.

WANTED, for Kitchen Gardens, Two or four LADY GARDENERS, furnished accommodation.—Apply, stating wages required and with references, to PERCY DIDDING, Shrubland Park Estate Office, Bayham House, near Ipswich.

WANTED, FOREMAN, for Inside and Out, including, married or single, good Bothy or cottage, &c.—Apply, with references, stating wages required, to ESTATE OFFICE, Boshall Park, Hatfield, Herts.

WANTED, a FOREMAN for the Glass house, must be a good Plant and Fruit Grower, including Orchids and Cucumbers, good wages, good Bothy, milk, and vegetables.—Full particulars to J. PREATER, Park Place, Bentley-on-Thames.

WANTED, JOURNEYMAN, First under Head Gardener, also IMPROVER, outside and in, both willing to assist in growing War Vegetables and Potatoes.—Apply, with particulars, and state wages expected, to A. SHAKELTON, The Gardens, Brough Hill, Melton Mowbray.

WANTED, good experienced JOURNEYMAN (Inside), for gentleman's place in Surrey; wages 32s. per week, with good accommodation.—Apply, with full particulars and references, to GARDENER, c/o W. R. BOND & Son, Nurserymen, Station Road, Redhill.

WANTED, JOURNEYMAN (INSIDE); 24s. and Bothy; duty 2s. extra, 1 o'clock Sat. days. E. BRISTOW, Leywood Gardens, Greenbridge, Tunbridge Wells.

WANTED, MAN with good general experience; ineligible; capable in routine of Kitchen Garden. Apply, stating wages and particulars, to A. H. LAWLEY, Witham-on-the-Hill, near Bourne, Lincs.

WANTED, reliable MARRIED MAN, over 40; distemper preferred, for Kitchen Garden and Pleasure Grounds.—Particulars, with wages, to A. READ, Heysham Tower Gardens, near Mossburne.

WANTED, MAN, mostly for Kitchen Garden work, wages 25s., with good lodge and garden.—Apply, E. SOUTHAM, The Gardens, Boycott Manor, Buckingham.

WANTED, a strong SINGLE MAN, over military age, as ASSISTANT GARDENER, near Bentley, discharged soldier would suit. Write, K., 517, c/o Shelley's 38, King William Street, E.C.4

WANTED, YOUNG MAN, for Fruit and Plants; Inside; no Bothy.—State wages and experience to W. R. ALLENDER, Park Hill Gardens, Hayfield, Stockport

WANTED, an Ineligible YOUNG MAN or DISCHARGED SOLDIER for Kitchen Garden; Horse and Sowing, Bothy, &c.; state wages.—Apply, WILLIAM HEMPLEY, Priests Court Gardens, Newbury.

WANTED, YOUNG MAN for Plant Houses, ineligible; good wages; duty and overtime paid.—Apply, with particulars, to W. G. BAKER, Botanic Gardens, Oxford.

WANTED, TWO young WOMEN; one good experience of work under Glass, all plants, one for Rock and Rose Gardens and Herbaceous Borders.—State particulars, wages expected, to S. BURGESS, The Gardens, Ramdagh Club, Barnes.

WANTED at once, YOUNG WOMAN, for Inside and Out, with experience. State wages. Bothy—R. LEARMOUTH, Sheffield Manor Gardens, Basingstoke

WANTED, IMPROVER (Inside and Out), some experience and able to take duty, age over 17, wages 18s. per week and Bothy, &c.; duty and overtime paid.—Apply, W. WESMAN, Hickleton, Doncaster.

WANTED, THREE IMPROVERS, for Inside and Out, Bothy provided. Apply, stating age and wages expected, to H. MINTY, Oakley Court, Windsor.

WANTED, STRONG YOUTH, 16 to 17, for Fruit, Hoses, some experience, good wages, &c.—Apply, H. WESMAN, The Gardens, Temple Newsam, Leeds.

WANTED, at once, TWO STRONG LADS for Outside, age about 17, good references and experience, £1 per week, with Bothy. W. WARD, Kenwood Gardens, Hampstead, N.W.

WANTED, COWMAN; Two Cows, little milky, assist in Garden, ineligible, single. MRS. TONDALE, Meadlands, Christchurch.

TRADE.

WORKING FOREMAN WANTED, for Market Nurseries, Cucumbers and Tomatoes, Ended by 4 o'clock, wages 35s. per week and 10 hours' State duty, experience, to be discharged, and send copies of references, to S. Box 16, 41, Wellington Street, Covent Garden, W.C.C.

WANTED, a good PROPAGATOR and GLOVER, one used to Roses, Clematis, Chrysanthemums, and General Nursery Stock.—Apply, with particulars, wages, &c., to THE DEVON ROSERY AND FINE FARM, LTD., Torquay.

WANTED, an Experienced PEACH and TOMATO GLOVER for market, F. E. CLEFFORD, Bath Road, Cranford, Hemsworth, West-lessex.

WANTED, a GROWER for Cucumbers, also a GLOVER for Tomatoes.—Apply, with copies of references and stating wages asked, to SMITH, Hopsea Nurseries, Tamworth.

GARDENER WANTED; Nursery and outside work, &c.; wages 30s.—TAYLOR, 55, Hook Road, Epsom.

WANTED, a superior, well-educated, young MAN, to do charge of the packing shed, able to do simple book-keeping and good at making up wreaths, crosses, bouquets, &c., under supervision, hours are 7 a.m. to 5.30 p.m., with hour for breakfast and dinner, 1 o'clock Saturdays.—Apply, with references, stating wages expected, to THE GILFLOTH SHED, The Horticultural College, Swanley, Kent.

WANTED, young LADY FLORIST; must be well up in floral designs. Apply by letter, WILLS & NEAVE, Florists to His Majesty, Ouseway Circus, South Kensington.

WANTED, LEDGER and INVOICE CLERK, ineligible, a good opening for a really smart man.—Please state age, experience, and salary required, and enclose copies of references to JOHN FRED & SON, The Nurseries, West Norwood, S.E.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d for each succeeding Eight words or less.

PRIVATE.

GARDENER (HEAD).—LADY VICTORIA DAWKAY very highly recommends W. ELSWORTH as above, 7 years here, 6 Under, leaving through estate being sold; age 45; no family; N.S. in preferred. W. ELSWORTH, Gardens, Benningsbrough Hill, York.

MISS DINGWALL-FORDYCE recommends her GARDENER as Head of an S., or good Singlehanded, practical, experience, Inside and Out, a hard-working, trustworthy, reliable man, single, ineligible; distance no object. State wages, with furnished room preferred.—G. FERKINS, Llancon, Fochfar, Cardigan, Wales.

SITUATION required as HEAD GARDENER, married, no family, life experience Inside and Out, discharged. Please state wages.—G. W. KISLINGBERRY, Stoke Road, Oyston, Surrey.

GARDENER (HEAD); large establishment; good references gained in life experience; married when suited; ineligible.—A. SANDERS, Park Place Gardens, Henley-on-Thames.

GARDENER (HEAD, of good SINGLE-HANDED). Life experience in all branches; age 45; married; 4 good references. Please state wages.—WOOD, 5, Chapel Fields, Biggleswade, Beds.

GENTLEMAN, giving up Country House, recommends his GARDENER (HEAD WORKING), practical life experience in all branches; reliable and trustworthy; married; age 41, ineligible.—BARKETT, Hill Field Heath, Harlow.

GARDENER (HEAD WORKING) seeks re-employment with lady or gentleman in good establishment, life experience in all branches and stock; age 40, wages 35s., house and firing.—J. SHRIMPTON, 353, Norton Way, Letchworth, Herts.

GARDENER (HEAD WORKING); 28 years' experience, Inside and Out, good references; 4 years present situation, age 44, married, no family. C. DORRAN, 55, Agamemnon Road, W. Hampstead, N.W. No circulars.

GARDENER (HEAD WORKING); life experience, Inside and Out, gained in good establishments, 34 years present situation; 24 previous, good references, married, ineligible.—H. NEWTON, The Gardens, Chesham, Cheshamstead.

GARDENER (HEAD WORKING), 2 or 3 kept, all round experience, institution or private, knowledge electric plant and stock, ineligible, 6 years last, age 35, wages, age, W. K. Box 14, 41, Wellington Street, Covent Garden, W.C.2.

GARDENER (HEAD WORKING), 6 or more are kept in normal time, life experience in all branches, age 47, married (no family), excellent references from present and previous employers.—BEALE, New Cottage, Newport, Llanwrn, Mon.

LADY GARDENER requires post under Head, good April; excellent practical experience in all branches; would teach Gardening.—Apply, M. PRIOR, The Gardens, Heathfield, Ason.

LADY GARDENER requires War Work, i.e., growing Vegetables mainly, 2 years' training at Swanley Horticultural College and private experience, Home Counties preferable, living in preferred. G. C. FLETCHER, The Green, Feltham, Middlesex.

LADY GARDENER wishes post under a Lady Head Gardener, chiefly Outside work, Inside work monthly. State hours, &c., &c., Box 7, 41, Wellington Street, Covent Garden, W.C.2.

YOUTH seeks Situation as IMPROVER under a GARDENER, 17 years' experience, 1 year's references, Bothy provided. J. WILLS, The Gardens, Ingstree Hill, near Stafford.

YOUNG WOMAN wants work in Gardens, inexperienced, but strong, active, and bold of outdoor work.—Apply, stating wages, to E. D. SMITH, Prestwood, Longborough.

TRADE.

FOOD PRODUCTION.—Advertiser desires managerial position, intensive crops, Fruit, Tomatoes, pines, poultry, conversion law, proceeds into profitable public commodities, valuable postal address, c/o NEWBATHROW, Llanfair, Ang. 957.

GARDENER seeks Employment in Market Garden, for the period of the War; Inside and Out; age 49, first class references.—S. WRIGHT, Copley Lodge, outwood, Redhill, Surrey.

FLORIST, as MANAGERESS in high-class business, accepts 8 R., Box 15, 41, Wellington Street, Covent Garden, W.C.2.

By Special Appointment to  His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE EUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H. and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No. 3978

No. 1578. VOL. LXI. (THIRD) SATURDAY, MARCH 24, 1917.

{Registered as a Newspaper. {PRICE 3d.
POST-FREE, 3d.

SUBSCRIPTION—Inland, 15/-; Foreign, 17/6 (22/-fr. 10/-) {4/- 20/-} per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 121.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

SANDERS, Orchid Growers,
St. Albans.

BLACKMORE & LANGDON, Bath, will have pleasure in sending a copy of their 1917 Catalogue of Begonias and Delphiniums, &c., &c., free, if this paper is mentioned. Magnificent strong roots of our unequalled Delphiniums in superb variety.

OMISSIONS and Failures made good by purchasing Sorrie's Seedlings, just ready for picking out or potting at all correct dates for best possible results; all popular Greenhouse plants, Summer Bedding and Hardy Border Flowers, &c. Grand lot of Cyclamen now ready. Write for catalogue.—**STORRIE & STORRIE, Flower Seeds Specialists, Gloucester, Fifehire.**

MESSRS. FIDLER & SONS beg to announce, with sincere regret, that they will not be able to accept, at the present time, any more orders for Seeds or Seed Potatoes.

Since the break-up of the frosty weather, they have been inundated to such an astounding extent with orders, that, severely handicapped as they are in respect to labour, there is considerable difficulty in dealing with the accumulation.

As soon as arrears have been met to the necessary extent, they hope to again commence accepting orders, when the fact will be announced in the Press. **FIDLER & SONS, Royal Berkshire Seed Stores, Reading.**

BARR'S VEGETABLE AND FLOWER SEEDS of finest selected strains and tested growth. Catalogue free on application.

BARR'S Hardy PERENNIALS, ALPINES, ROCK PLANTS, Aquatics, Climbers, &c. for Spring planting. Catalogue free on application.

BARR'S Beautiful LILIES, GLADIOLI, CANNAS, MONTIBRETTIAS, TIGRIDIAS, &c. for spring planting. Descriptive Catalogue free. **BARR & SONS, King Street, Covent Garden, London.**

NEW PHLOEX.

A GRAND STOCK of these Brilliant Flowers in all shades now ready for delivery. For lists, with full particulars, apply **GUNN & SONS, Olton, Warwickshire.**

LAXTON'S SEEDS AND FRUIT TREES.—New Catalogues of the above now issued gratis. Grand New Early Red Laxton's Superb, &c., Fruit Trees. A fine stock to order may still be safely planted. Pamphlet on Cultivation on receipt of stamped envelope.—**LAXTON BROTHERS, Nurserymen, Bedford.**

GISHURST COMPOUND has over half a century's reputation for its efficacy in preventing and destroying Red Spiders, S. de. Mealy Bug, Thrips, American Blight, Green and Brown Fly, &c. Sold in boxes about 1lb., 3lb., and 12lb. by Dealers in Garden Sundries. Wholesale: **PRICE'S PATENT CANDLE CO., LTD., Battersea, London, S.W.**

SUTTON'S VEGETABLE SEEDS
SUTTON'S FLOWER SEEDS.
The Best.

SUTTON & SONS, The King's Seedsmen, READING.

DICKSON'S HORTICULTURAL MANURE and other high class Fertilisers, also Dickson's Improved Mushroom Spaw. Priced circulars free on application to **DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.**

PEACH LEAF BLISTER.—Bunyard's Modela has been proved by hundreds of practical gardeners a certain cure for this trouble; to be applied in March and April; 2s. per quart, 5s. 6d. per gallon, in cans.—**W. BUNYARD & CO., LTD., Royal Nurseries, Maidstone.**

GREENHOUSE PAINTING & GLAZING.—Vitreoline, superior to White Lead Paint. "Plastone" super-siles putty. Full particulars from **W. CARSON & SONS, Grove Works, Battersea. Agents throughout the country.**

ROSES.—Wm. Paul and Son, Waltham Cross, Ltd., beg to offer a fine stock of all the best varieties, new and old, for present planting. Priced catalogue on application. **PAUL'S ROYAL NURSERIES, Waltham Cross, Herts.**

JAMES GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineer, Danvers Street, Chelsea, London, S.W.3. Wire, 201, Western London. Telephone: 201 Western.

WALLACE'S NEW CHINESE PRIMULA HELODIXA, A.M., R.H.S. 1916 Other new Chinese Primulas, &c. **BERBERIS, NEW CHINESE SPECIES, LILIES, GLADIOLI, BEGONIAS, &c.** our SPRING CATALOGUE post free on application. **R. WALLACE & CO., LTD., Kilnfield Gardens, Colchester.**

BUNYARD'S ASPARAGUS.—Orders are now being booked for these plants for delivery in March. List, with full directions and prices, on application.—**W. BUNYARD & CO., LTD., Royal Nurseries, Maidstone.**

ROCK GARDEN PLANTS. Where and when to plant them. With Catalogue, free on application. Special selections, 12, 2s. 6d., 25, 5s. 6d., 50, 12s. 6d., 100, 25s. All different, named, strong stock, please state position and soil. **G. R. PHIPPS, Alpine Nursery, Barnham, Bognor.**

YOUNG ORCHARD, eight years old in Strong, 1-acre, cleared to plant Potatoes.—Apples, Pears, Plums, 1s. 4d., 12s. 6d. per dozen. Specimen Trees in Standard or Bush, 1s. 6d. to 2s. 6d. each. Varieties include Newtons, Bramleys, Christmas Pears, Williams, Victorias, and all leading varieties. Large Bushes in Greenhouses, and Red, Black, and White Currants, 6d. each, 5s. per dozen. All in full profit. No waiting years for fruit.—**FRED PARKES, Vine Gardens, Wytherton, Boston.**

PLANT NOW, GIANT ASPARAGUS.—Strong, 1-acre, 4, 50, 100, Lilium Cabellum, White Madonna Lilies, immense bushes, 2s. 6d. dozen, 15s. 6d. 100, fresh, plump, grand for salads. **JOHN FLOWER, Asparagus Grower, Morestead, Winchester.**

For Advertisement Charges see page 111.

WATERER'S ROSES & FRUIT TREES. Grand stocks of the best varieties. Lists free.—**JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Twyford, Berks.**

DOBBIE & CO., ROYAL SEEDSMEN. **EDINBURGH** will send a copy of their 1917 Catalogue, and Guide to Gardening, 160 pages, nearly 150 illustrations, free, if this paper is mentioned.

W.M. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham Conservatories, Winter Gardens, Vineries, Peach-houses, Portable Buildings, &c. Catalogues gratis.

WATERER'S GOLD MEDAL RHODODENDRONS. We cordially invite you to come and select any plants you require. We have over 60 years' experience the finest collection in cultivation. Catalogue free.—**JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Bagshot, Surrey.**

KELWAY'S PERFECTLY GLORIOUS PAEONIES. Kelway's beautiful blue Delphinium. Kelway's brilliantly coloured Phloxes. Kelway's Colour Borders, ever in bloom. Kelway's new and choice hardy perennial plants of all kinds.

NOW is the time to ORDER for Spring planting Kelway's famous Gladoli. Kelway's many coloured Pyrethrums. Kelway's gay Galliaras.

NOW is the time to SEND for particulars to **KELWAY & SON, Retail Plant Department, LANGFORD SOMERSET.**

BATH'S CARNATIONS, PANSIES, DAHLIAS, CHRYSANTHEMUMS, and other flowers. New Illustrated Catalogue of the best new and standard varieties is ready, and will be sent post free on application.—(Dept. A) **R. H. BATH, LTD., The Floral Farm, Walsley.**

BATH'S SELECT SEEDS.—New illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application.—(Dept. A) **R. H. BATH, LTD., The Floral Farm, Walsley.**

CALANTHE VEITCHII for Sale: good strong bulbs, 2s. per doz. **R. L. Box 21, 41, Wellington Street, Covent Garden, W.C.2**

SPORTSMEN, Farmers, Horse-men.—Try our splendid York and Whitford Tweed, wears like leather, shockproof; 7 yards for 17s. 6d. Patterns free. **BRADFORD WOOLLEN CO. (Ld.), Bradford.**

ORCHID PEAT. 6s. and 7s. 6d. per sack: Brown Peat, 10s. 6d. per yard in trucks; in bags 2s. 6d. each, 3s. dozen; Oak and Beech Leaf Mould, Yellow Loam, Straked and Fresh Out, Silver Sand; 4-ton lots for 45s.; O.N. Fibre, 24s. dozen bags; list free.—**J. HANDSCOMBE, F.R.H.S., Feltham, Middlesex.**

CABBAGE ROOT MAGGOT. A sure remedy against this pest, cheap, portable, effective, tarred felt sheet will protect your Cabbages and Cauliflowers from maggot attacks; 8s. per 1,000, 1s. per 100 (postage extra, 3d. for 1,000, 4d. for 100), full instructions supplied; cash with order.—**F.F.P. ROBINSON, 13, Langdale Road, Victoria Park, Chester.**

SALES BY AUCTION.

WEDNESDAY, at 12 o'clock.
1,500 FRUIT TREES

and Bushes, Herbaceous and Rock Plants, Roses, Lily-of-the-Valley, Carnations, Lilies, and Gladioli in variety, and other Bulbs,

and at 3 o'clock,
JAPANESE LILIES,

In cases, and other Bulbs, for the trade.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 57 and 68, Cheapside, London, E.C. On view morning of sale and catalogues had.

ROSES,
THURSDAY NEXT.

MESSRS. PROTHEROE & MORRIS will sell by auction at their Central Sale Rooms, 57 and 68, Cheapside, London, E.C., on Thursday, March 29th, and every succeeding Thursday at 1 o'clock, consignments of well-grown ROSES, especially lotted to suit all buyers.

On view morning of sale and catalogues had.

BUSINESSES TO LET.

NURSERY TO LET; commanding position: five minutes from rail and trams; 5300. Glass 1½ acres land, house, &c.—MILES, Royal Hotel, Sheerness.

BUSINESSES FOR SALE.

AUBREY & CO., Nurserymen's Agents, 10, Duke Street, Adelphi, London, offer excellent Nursery, Fivots, and Seed Business, Lamsheath, comprising 1½ acres land, 4000 ft. glasshouse, 4000 ft. Frames, and good Dwellinghouse; turnover about £1,000; low rent; about 2750 required for Glasshouses, stock, &c.

NURSERY Worthing, for Sale; Glasshouses, 11000 feet, fitted; Grapes, Tomatoes, and good house; 3 acres—"Horticulture" care CLAYTON, Valuer, West Worthing.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, 3 strong Plants FUCHSIA TRYPHILLA, and 3 TRYPHILLA HYBRIDS—Size and price to W. B. HARTLAND & SONS, Ardavan, Cork.

URGENTLY WANTED, for Military Hospitals, green Vegetables, Fruit and Roots; high prices given. Large or small quantities.—DENNIS, Old Eastbourne.

PLANTS, &c., FOR SALE.

100,000 LARGE GARDEN FERNS. 20s 100; Palms, Begonias, Crotons, Dracaenas, Roses, Erica, &c. Catalogues, 27 10s. &c.; catalogues free—J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

FERNS! FERNS!—Tree Ferns, Climbing Ferns, Basket Ferns, Stone and Greenhouse Ferns, Ferns, &c. Catalogues, 27 10s. &c.—J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

CABBAGES, 10 feet high (Jersey) seeds 7d. packet.—C. KEEPING, Kirby Road, Leicester.

PAUL CRAMPLE, 1,500 young Steels—real good, fine plants, ready for 4-inch pots, 27 10s. the lot; Marguerites, Mrs. Stauden's, 500, big stuff, 41 5s.—B. W., Box 19, 41, Wellington Street, Covent Garden, W.O. 2.

LILIUM RUBRUM MAGNIFICUM; splendid Botanical Ferns, just started in growth, 7s. 6d. per 100. Packing free on rail.—CHIFFERFIELD, Florist, Hampton Hill, Middlesex.

DEATH.

MRS. HOSKING.—We regret to announce the death, on the 17th inst., of Mrs. HOSKING, wife of Mr. Arthur Hosking, Superintendent, Horticultural Department, West of Scotland Agricultural College, Glasgow, after a long and painful illness.

MISCELLANEOUS.**THEY WILL KEEP YOU DRY!**

BEACON OILSKINS never fail to keep out the wet. That's why they are worn by hundreds of farmers, gamekeepers, and other outdoor men, women and children. You should wear them if you want weather comfort. They aren't sticky like ordinary oilskins. We return your money at once if they don't satisfy you. The Beacon Book will show the style which suits you best. Men's Coats from 9/- up; Children's 8/6 up; Ladies' Smart Oilskins, 18/6; Sou'westers, from 1/6. Send postcard to-day for this Free Booklet of "Weather Comfort."—Send now—before you forget!—BARBOROES, LTD., 69, BEACON BUILDINGS, SOUTH SHIELDS. (1)

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Internals at Post offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

GARDENER (HEAD) WANTED at once, to be in place in Sussex (near Havant) Heath. A good, all-round, energetic man, not afraid of work; married (without family), ineligible, preference to man who, in addition to usual in and outdoor garden duties, has a good knowledge of estate work, landscaping, tree and shrub planting, &c.; wages £2 2s. weekly, with comfortable cottage, firing, &c.—Apply, with full particulars as to age, experience, with copies only of references, to A. B. C., Box 14, 41, Wellington Street, Covent Garden, W.O. 2.

WANTED, WORKING HEAD GARDENER (ineligible); 2 Under-Gardeners kept; must be experienced in in and outside work; good cottage, reply, stating age, experience and wages; good references required.—Apply, MR. G. A. BEAZLEY, Quarry Hill, Reigate, Surrey.

WANTED at once, SINGLE-HANDED GARDENER for private house in Boston; Conservatory, Greenhouse, and Kitchen Garden; good wages to suitable man.—Apply, W. W. JOHNSON & SONS, LTD., Boston, Lincs.

WANTED, capable SINGLE HANDED GARDENER for country house, if possible, capable of running electric light installation, no Greenhouse, but fit Kitchen Garden; help given, furnished room or cottage and garden if married. Send ref., particulars, and wages asked, to H. A. BROWN, Esq., Glen-don, Aberstone.

NATIONAL FOOD PRODUCTION FOR BRITAIN FACTORY—Wanted, at once, GARDENERS, ineligible for military service, or substitution men, for the cultivation of food crops on an extensive scale, good wages; housing accommodation available at works; good food at works' canteen at moderate prices. Apply at once to MR. K. GREENFIELD, Garden Superintendent, White & Popple's, Ltd., Coventry, (Coal Glass).

WANTED, an experienced GARDENER, Apply, MR. JOHN EBERSTEIN, The Chase, Slades Hill, Enfield.

WANTED, GARDENER for Institution; good all-round man; well up in Vegetables; abstemious, ineligible.—Apply, stating age, experience, and wages required, SPT., Turners Court, near Wallingford, Berks.

WANTED, GARDENER for Vegetables, small greenhouse and Herbaceous Borders; wages 28s., with good cottage and garden; help given; ineligible for Army.—C., "Mid-Sussex Times" Office, Haywards Heath, Sussex.

WANTED, UNDER GARDENER for outside work; good wages. Apply by letter, stating wages, &c.—to H. E. INMAN, The Grange, Branch Hill, Hampstead, London.

WANTED, UNDER GARDENER, chiefly for Kitchen Garden; ineligible service man not objected to.—Apply, HEAD GARDENER, Newtown Hall, Newtown, Montgomeryshire.

WANTED, WOMAN GARDENER; good experience, inside and out; wages 28s. per week.—Apply, WM. A. NELSON, The Gardens, Barborough Hall, Chesterfield.

WANTED, TWO LADY GARDENERS, to work under lady Head; inside and out; cottage, immediately. State wages, experience, &c.—MISS F. LLEWELLYN, The Gardens, Lower Woodside, Hatfield.

WANTED, TWO experienced LADY GARDENERS, chiefly inside; 6 other women kept; good body.—Wages, &c., C. H. COOK, Knowsley, Prescot.

WANTED, good, Practical WOMAN GARDENER for Herbaceous Borders, Rock Garden, &c., under Forewoman; body and the usual perquisites Apply, stating age and experience, to A. FRESHWATER, Pains Hill Gardens, Colham, Surrey.

WANTED, LADY GARDENERS (Two); inside, some experience; good body. Give particulars and wages required.—C. JENNINGS, Luttrell Green Gardens, Petersfield, Hants.

WANTED, for Greenhouses, a trained WOMAN GARDENER; knowledge of Vases essential, state wages required.—Apply to HON. MRS WOOD, Hengrave Hall, Bury St. Edmunds, Suffolk.

WANTED, WOMEN GARDENERS, to work under Head Man Gardener; general outdoor work chiefly; wages 20s. per week, with furnished rooms; half-day on Saturdays.—Apply to R. G. BATTY, Balstrule Estate Office, Gerrard's Cross.

WANTED, LADY GARDENER, experienced; to live in house; high testimonials; no Glass. MRS. A. ROGERS, The Rookery, Yarlinton, Wincanton, Som.

WANTED, TWO WOMEN GARDENERS, with some experience preferred, though not essential; chiefly for Kitchen Garden and Pleasure Grounds.—Apply, stating particulars and wages required, with Body and vegetables, to F. HARVEY, The Gardens, Sulby Hall, Welford, near Rugby.

WANTED, LADY GARDENER, for Cottage, Bucks; help with poultry, &c.—Particulars to C., 4, Cheslow Mansions, London, W. 2.

WANTED, a good, experienced FOREMAN, married, wages 32s., with cottage.—Apply, W. HIGGS, The Lodge Gardens, Hollyport, near Mauldenhead.

WANTED, FOREMAN, for Kitchen Garden, cottage provided; also experienced MAN for Houses, to live in Body. State wages required.—Address, G. L. WIGG, Rockshaw, Merstham, Surrey.

WANTED, JOURNEYMAN (INSIDE); 24s. and Body; also IMPROVER, 18s. and Body; duty and overtime; jump man.—Apply, Leyswood Gardens, Greenbridge, Tunbridge Wells.

WANTED, at once, experienced MAN (indoor); ineligible, or discharged soldier; duty alternate works; 24s. Body, vegetables.—GIBSON, Altrinton Park, Derbyshire.

WANTED, reliable MARRIED MAN, over 40; for Kitchen Garden and Lawns.—Apply to A. BEAD, Heyslam Tower Gardens, near Morecambe.

WANTED, handy, reliable MAN; chiefly for Kitchen Garden work; wages 28s.; good cottage and garden.—Apply, W. FOOTE, The Garden, Burscote House, Abingdon.

COMPETENT MAN WANTED, to help in Garden; discharged soldier preferred; good wages.—Apply by letter, stating particulars, FORBES, 3, Lombard, E.C. 2.

WANTED, good VEGETABLE GROWER for North Wales; over military age or discharged from Army; must have previous experience.—State wages required, and full particulars, to COLONEL PARRY, Drum Cottage, Drumoak, Aberdeenshire.

WANTED, IMPROVERS, under Glass, for large Garden; State wages, with Body, milk, and vegetables; overtime paid for all travelling expenses.—Apply to H. J. GUISE, Keele Hall Gardens, Newcastle, Staffs.

WANTED, IMPROVER, for Houses; age about 17; with some experience; wages 18s., with Body, &c.—Apply, WM. HOWE, The Gardens, Park Hill, Streatham Common.

THE HOME OF PURE SEEDS.



Interiors of a few of the twenty-one Departments of the Royal Seed Establishment, where growers are being supplied with Seeds for the National Food Supply.

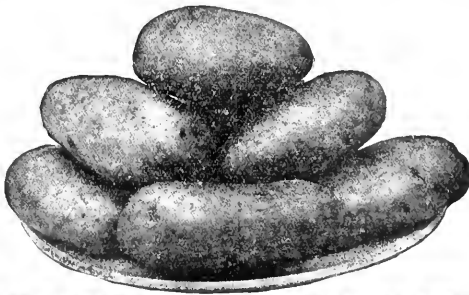
SUTTON & SONS, THE KING'S SEEDSMEN, READING.

BULL'S FOOD FOR PLANTS & VEGETABLES

Increases the National Food Supply.

TREMENDOUSLY INCREASES THE YIELD OF POTATOS.

Sold by all Seedsmen and Nurserymen.
Per cwt. 20/-
56 lbs. 12 6
28 lbs. 7 6
14 lbs. 4 6.



Manufactured solely by

BULL'S PLANT FOOD
Co.,
536, King's Road,
CHELSEA,
LONDON, S.W.

STANDARD CURRANTS

We can offer fine trees with 4½ ft. stems, stout enough to stand without stakes, at 5/- each.

Extra strong heads 7/6 each.

GEORGE BUNYARD & CO., LTD.

Royal Nurseries, MAIDSTONE.

A. F. DUTTON'S Noted Carnations.

Strong flowering plants in 5in. pots.
In 6 good Standard varieties, 15/- per doz., 96/- per 100.
In 6 good Novelties, 20/- per doz., 128/- per 100.

Packed free for cash, carr. forward.

The Nurseries, IVER, BUCKS.

FORBES' ILLUSTRATED CATALOGUE.

Florist's Flowers, Hardy Plants, Vegetable and Flower Seeds.

Free on Application.

JOHN FORBES (Hawick), LIMITED,
The King's Nurserymen,
HAWICK, SCOTLAND.

CARNATIONS, PERPETUAL FLOWERING.

FOR SALE, good clean plants, grown in timbles and 40's, well broken ready for potting on.
Golden, Enchantress Supreme, White Enchantress, White Wonder, Beacon, Mikado, Mayday, Scarlet Scending, Enchantress, Salmon Enchantress and other good varieties.

4/- per dozen. Cash with order.
MAYTHAM GARDENS, ROLYENDEN, KENT.

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
State quantity of each size required and have carriage paid.
*Medium "Sankey's" frequently amounts to half value of goods, so write for Price List, free.
SPECIAL POTS of all descriptions. Bulb Bowls and Fern Pans from 2d. each.
RICHARD SANKEY & SON, LTD.
Bulwell Potteries, NOTTINGHAM.



The Gardeners' Chronicle

No. 1678.—SATURDAY, MARCH 24, 1917.

CONTENTS.

Acetylene, forcing by .. 125
Allotments in Scotland, 126, 127; in France .. 127
Bracken as food .. 129
Beet, Sugar .. 130
Boston flower show .. 127
Centenarian gardener, a .. 127
Farm, crops and stock on the home .. 129
Foreign correspondence—
Pomological work, a rare .. 122
Frost and the garden .. 127
Hampshire garden, notes from a .. 121
Lime spraying .. 126
Novice, confessions of a .. 124
Obituary—
Burt, G. .. 128
Orchid notes and gleanings .. 121
Overshading trees .. 129
Potato difficulties .. 127
Research in market gardening .. 126

ILLUSTRATIONS

Berberis Gaznepainii .. 122
Clematis Cherry Ripe .. 123
Piper, Mr. Thomas, portrait of .. 127

SELECT VARIETIES OF ROSES.*

THE National Rose Society has recently issued to its members a small volume of 124 pp. which is in effect a combination in one volume of the Society's Official Catalogue of Roses and its Pruning Book, the latter perhaps the most popular of all the Society's publications. The new volume begins with selections of Roses for various purposes arranged in fifteen groups, of which we may hope to say something on another occasion. This is followed by the catalogue or descriptive list of Roses arranged first in alphabetical order and then in their several groups, while the last half of the volume is devoted to pruning instructions.

In the Descriptive List of Roses a somewhat drastic excision of the older varieties has been adopted, for, notwithstanding the introduction of eighty or ninety new names, the 623 Roses recommended in the 1914 edition of the Catalogue have been reduced to 453. This is no doubt an advantage in many ways and has on the whole been carefully done, but many will think that some older Roses of tried merit and good constitution have been taken out to make room for new varieties of poor constitution and doubtful longevity. For instance, Arish, with its fine growth and beautiful foliage, Lina, 'L'Ami-Michel, still the best pillar Rose we have, Andre Gimon, Clara Watson, Cramoisie Superieure, Mme. Bonnet-Duchier, Marquise Litta, L'Idéal and Paul Trauson no longer appear, though few who grow them are likely to be willing to discard them just yet, or to find more useful, or even equally good Roses among the new arrivals, while Killarney, Leuchtstern and Mrs. Edward

Mawley, though no doubt they have their defects, will not be banished from our gardens for many a year to come.

Speaking generally, the slaughter of the innocents has taken place on the lines that have become familiar of recent years. Thus we find the Bourbons have disappeared, and Zéphirene Prouhin is the only Hybrid Bourbon remaining. The Hybrid Perpetuals, notwithstanding two new-comers, are reduced to a very small body. A K. Williams is gone, its faultless shape has not saved it, nor has the fine growth of Charles-Lobvie, which Dean Hole thought, "when at its best, the best." Some may sigh over the loss of Gustave Piganeau and the fragrance of Sénateur Vaisse, hardly compensated for by the huge size of the new Candeur Lyonnaise, but the lack of continuity of flowering in the Hybrid Perpetual, the large proportion of inferior flowers it produces, together with the trouble and attention in the matter of feeding and disbudding required to obtain flowers of perfect character, make it certain that the reign of the H.P. is drawing to a close and its end only awaits some deepening in colour and fragrance and refinement of shape in the H.T. section.

The Tea Roses seem rather out of fashion just now, in spite of their great delicacy of tint and beauty of form and foliage, and only one Rose, Lady Plymouth, appears as a new-comer to this group, while there are many exclusions. Harry Kirk, with the doubtful exception of Killarney, the most be-mildewed Rose in the garden, has rightly gone (how can the R.H.S. have described this in their recent pamphlet as mildew-free?), but Little Dorrit and Mme. Henri Berger, which have also gone, ought to have been retained. The former, though not free from black spot, has great beauty as a decorative flower, and Mme. Henri Berger, though not large, is so uniformly good in form and its clear pink is so distinct in this group, that neither can be well replaced by any more modern Rose.

The arrangement of varieties under their different groups will doubtless be a subject of controversy, but it is a little difficult to understand why Pemberton's White Rambler should be placed by itself as a Hybrid Multiflora while Adrian Riverehon and Carmine Pillar, which are clearly also hybrids, should appear under the heading "Multiflora Rambler." Again, some Hybrid Teas, Mrs. F. W. Vander Velt and Mrs. C. E. Pearson, have been transferred from their true group to the unfortunate heading Pernetiana. The N.R.S. seems to have been peculiarly unhappy with regard to this name. Having made a mistake, as we think, in adopting it, they apparently try to justify the use of the term by describing it as R. lutea. There is no evidence of this. The Roses so described are not direct hybrids of R. lutea, but derived sometimes by a series of hybrids from Sabail d'Or, itself a descendant of Persian Yellow, the origin of which is unknown.

The last half of the volume is devoted to the pruning instructions, which follow very much the lines of the old Pruning Book, with a few simplifications and improvements. An alteration has, however, been made in the case of the illustrations. In the old book these consisted of line drawings showing how the pruning should be carried out, and they have now been replaced by photographs depicting the plants before and after the operation. These are doubtless more accurate than the old line drawings, but require rather more careful examination to find the position of the buds, to which regard must be had in carrying out the operation. It will be interesting to hear by which form of plate the novice finds it most easy to work. The book has no date, which is inconvenient.

In a year like the present, when the pruning of Rose bushes must in many, if not in most, cases, of necessity be trusted to inexperienced hands, the issue of this little volume should be very helpful.

ORCHID NOTES AND GLEANINGS.

DENDROCHILUM LATIFOLIUM LINDE.

AN inflorescence of this rare and elegant species taken from a plant collected in Borneo is sent by Mr. W. H. Bacon, gardener to Sir Marcus Samuel, Bart., The Mote, Maidstone. The slender, arching spike, 1 foot in length, bears thirty-five flowers, each about 1/2 inch across. The acuminate sepals are whitish, tinged with red, the narrower petals cream colour. The base of the lip is pale yellow, the narrow side lobes and blade of the front lobe, which is recurved at the apex, being coloured light chocolate. The pseudo-bulbs and broad dark green leaves resemble those of Coelogyne laevis, and the flowers are freely produced. The plant is also known as Platyclinis latifolia.

BRASSO-LAELIO CATTLEYA DIANA

A flower of this pretty new hybrid, between Brasso Cattleya Mrs. J. Leeman and Laelio Cattleya Dominicana, is sent by Messrs. Stuart Low and Co., Jarvisbrook, Sussex, with whom it has just flowered for the first time. The derivation gives Cattleya Dowiana aurea twice, and Laelia purpurata and Brassavola Digbyana once each. As might be expected, C. Dowiana shows more in this than in most other Brasso-Cattleyas, so far as the shape of the flower is concerned, but, on the contrary, its dark tints are eliminated, the colour of the hybrid reverting to a lighter tint than B. C. Mrs. J. Leeman. The sepals and petals are cream white, the lip pale lilac with greenish-sulphur disc and fringed margin. The sepals are spotted with purple on the reverse side and the flower is delicately fragrant.

NOTES FROM A GARDEN IN EAST HAMPSHIRE.

WE could see exactly how deep the frost—16°—went here under the grass, because we chanced to be trenching for a new Potato patch, and the men had to work with picks. Each day it had crept down and down until at last, at its deepest, it reached a depth of exactly 12 inches. That is bad for the roots of many plants; and let us trust we may not again in our time have such frost without the protection of snow.

As usual, there are contradictions. Adenocarpus anagyris has changed its brilliant ever-green dress for one of rusty red (it seems past recovery), while Euclyphia pinnatifolia, about equally soft, one would have supposed, is quite unaffected; and both are in the same situation. In climbers, too, Fortune's Yellow, a Rose generally reckoned about as delicate as, say, Maréchal Niel, beyond curling up a tip or two, has simply laughed at the frost; and the same is true of Jasminum primulinum on an east wall. Myrtus communis proved indifferent, M. Lina curled up its leaves (quite correctly), but now has uncurled them again. Not one of the above was protected except at the roots. Crinodendron Hookeri, which was unfortunately forgotten at matting-time, is apparently gone for good, and, though Grevillea sulphurea seems all right, G. rosmarinifolia looks ominously dark. Phylgelus capensis (an African plant?) only lost its extreme tips, while at its base it nursed a young shoot, which it started to lengthen at the first chance. A Silver Wattle Acacia dealbata 10 feet high, growing in the ground in a walled corner, shows so far no signs of failure. It is not actually matted up, but our matting is stretched straight across the angle to break the wind, and as both sides are wide open one can look in and see it in its cave. We shall not know about the matted-up things till later; and, of course, it is early to be sure of the others. They may go yet; one can but hope, and hope is the main-spring of gardening.

Speaking of our matting, I hope everybody knows of this excellent thing. It is so much better than Archangel mat, which, by the way,

* National Rose Society's Select List of Roses and Instructions for Pruning. Price 5s.

one cannot buy now. The old matting was all very well for hard, woolly things—an old Pomegranate, *Magnolia grandiflora*, or "Scented Verbena" but not really perfect for soft things, because it was too airless; it imprisoned the damp. (I am sure it killed my *Sollya* last year.) Coir matting is perfect, and lasts much longer.

Is it worth while growing those hardy plants? Some people say, "Grow what you know you can grow, and know you can keep; the rest is weariness." I am not certain; this may be true of, say, *Kalmia* in limestone or *Rhododendron* in chalk, but even if one has to replace one's treasures every few years, I am sure it is worth it, for the sake of the pleasure they give one in between.

Ten to twelve degrees of frost seems to be about

affected. Only where the waterfalls formed great masses of ice are the Hart's-tongues now all black.

Sir Herbert Maxwell referred (see *Gard. Chron.*, p. 105) to the evergreen *Berberis Knightii* as unaffected by frost. It is so here, and another *Berberis* that has been absolutely indifferent, though in a most exposed and wind-swept place, is *B. Gagnepainii* (see fig. 42). Another extraordinarily hard shrub is *Raphiolepis japonica*. It is here growing on an east wall, and seems to rejoice in a temperature which has considerably affected *Choisya ternata*, its next neighbour in the same position. Ours, it may be well to say, is by no means a "New Forest" climate. We are nearly 400 feet above sea-level, but the force of the wind is a good deal tempered by trees and buildings.

Of course, we might summer-fallow the ground, but to do that is to make a brand-new garden, which is exactly what one does not want.

In an ill moment we decided to leave out this winter (of all winters!) most of our Oleanders, as they were planted in a walled-in place that seemed quite sheltered from wind. To begin with, beyond heeling up the roots, we did nothing; but when the leaves began to curl we swathed the plants up in tiffany. It remains to be seen how they will pull through; at present they look like a lot of ghosts. The same thing was true of our beautiful *Crimums* of various sorts (like so many things in this garden, one of Mr. Elves' generous gifts). I planted them deep enough, as I thought, to be safe from frost, and protected them with litter, but have an uncomfortable feeling that the frost may possibly have caught the crown of the bulbs.

Sir Herbert Maxwell's remarks upon *Cyclamen* are interesting. Yet, which is "*Europaeum*"? If the leaves are already out when the flowers appear (they are out now), I call it *hederaefolium*, but when the flowers arrive on a bare plant, or flowers and leaves come up together, then, for me, it is *europaeum*. My *C. europaeum* (which I cannot even find at this moment) I obtained a good many years ago at Yzouvona (3,000 feet), in Corsica. While waiting for the train, I pulled the corms with my fingers out of the loose, gritty forest leaf-mould by the station entry. I suppose it is pretty generally known that *Cyclamen hederaefolium* possesses the power of killing, or, at any rate, of dominating, Ivy? Sir Herbert Maxwell's remark that he is planting it under a Pine tree reminds me that a few years ago in a Cornish garden I was shown some large patches of this plant under a Conifer, and that its owner, a very honest man, assured me that the whole thing had been a mass of Ivy, such as one so often sees under Conifers. He said that the Ivy had not been dug up but that the *Cyclamen* had been planted in the Ivy, with the result that it had entirely subdued or dominated it. In the garden here, where there are patches of *C. hederaefolium* which were planted some fifty or sixty years ago, you may see the same thing. They are growing in beds of Ivy; that is to say, there is Ivy all round them, while the *Cyclamen* patches remain clear. I have been examining this more carefully, and I find that occasionally long strands of Ivy do grow from one side to the other through the *Cyclamen* patch, but that, though there are leaves on either side, the growth where it runs through the *Cyclamen* is merely a bare stalk. It would be interesting to know wherein lies this property by which Ivy, so vigorous and masterful, can be checked. Even if *Cyclamen* were poisonous, this would not explain it, for poisonous plants, so far as I know, do not poison other plants. (We may except the case of certain trees, for here a different principle seems to be involved.) *Cyclamen* is certainly not poisonous to animals, for in some country—I think, perhaps, in Spain—I have seen pigs feeding on it. This reminds me that in the present difficulty, when people are so hard up for food for their pigs, they might do worse than raise *Asphodel* for this purpose. *Asphodelus ramosus* is easily raised, and its tuberous roots are a favourite food with wild swine. *Aubyn Trevor-Battye, Ashford Chase.*

FOREIGN CORRESPONDENCE.

A RARE POMOLOGICAL WORK.

I have read with much interest the note by Mr. E. A. Bunyard, in *Gardeners' Chronicle*, January 20, concerning the rare publication, *Pomologia Batava*, by Mathieu van Noort. It may be worthy of note that a copy of this work is in the library of the Massachusetts Horticultural Society, which agrees in all details with the description given by Mr. Bunyard. *William P. Rich, Secretary and Librarian, Massachusetts Horticultural Society.*



FIG. 42. BERBERIS GAGNEPAINII.

the limit which a good many things can stand without showing signs of failing. Certain of the Veronics, for instance, hold out quite well to about that point, and then collapse; *Hypericum Mosirianum* also, and Hedge-Fuchsia (*F. Coralina*). But this refers to simple frost; they will not stand so much as that where there is wind or things were wet. Wind will shrivel up even so strong a native plant as Hart's-tongue Fern. Along the stream that runs through this garden Hart's-tongue grows very luxuriantly; those plants which live on the top of the banks are all laid flat, their fronds look dried up and "chippy"; but the plants which grow low down under the protection of the bank are quite un-

About sixty years ago a "wild garden" was made here (they probably did not know it by that name, but that is what it was). In the neglect of many years it had practically reverted to woodland again, and we have lately been clearing it. The process has revealed various surviving remnants of plants, originally brought from abroad; now, after years of waiting, they again see the light. But they will hardly have time to flower before the evil fate will overtake them that now lies in wait. All over that ground are peeping out little pointed growths which visitors take to be Snowdrops; but I know better—they are the folded leaves of Garlic. This and Dog's Mercury are among our great enemies. What can we do?

VEGETABLES.

PLANTING FOR THE MAIN CROP OF POTATOS.

MR. PAICE gives sound advice on p. 114 in recommending the lifting of Potato tubers as soon as they are matured. It is too commonly considered that Potatos will not keep well unless they remain in the ground until their skins are perfectly set. We often raise our crop before it reaches that stage, and have, I consider, saved many from becoming diseased, without in the least impairing the quality or keeping powers. I commenced this practice in order to stop the "growing out" of the tubers, and, on finding its advantages, have continued to lift early. In giving a farmer friend, some years ago, advice relative to this subject, he was found to be sceptical, but after giving it a trial, he has since adopted it with success. This method is particularly beneficial where the land, as in our case, is heavy. It is advisable, however, not to store the unripe Potatos in large quantities at the time they are lifted. *Thos Coomber, The Hendon Gardens, Monmouth.*

FRUIT AND BRASSICAS

I FIRMLY believe in the under-cropping of fruit plantations, especially in private establishments, where the kitchen garden is none too large to meet the requirements of a large, well-staffed house.

Whilst working in a garden in Hertfordshire a few years ago, I was much impressed by the fine quality of the vegetables of the whole Brassica tribe, all being grown under mixed fruit trees, comprising standard Apples, Pears, Plums, and Damsons. I have rarely seen trees to heat them for cleanliness and healthiness. The trees were never sprayed, but every season washed with a mixture of lime and flowers of sulphur, half a pint of paraffin being added to every 3 gallons of the wash. The trunks and larger branches were treated thoroughly by means of a stiff brush.

Groove bands were applied to the Apple and Pear trees, and these were regreased occasionally. The soil consisted of a very heavy lay, and the digging and manuring of the ground kept the soil in a sound state of fertility, which, had it been laid down to grass, would most likely have been too heavy and waterlogged.

Organic manures were used in large quantities, and these too helped to improve the soil.

French Beans are a profitable crop to grow between the trees of a young fruit plantation.

During these times of food production and the ploughing of all available ground for Potatos, would it not be advisable to turn over the orchard land and plant it with winter greens, which might be expected to give a fair return, whilst Potatos on such land would be a very uncertain crop? *M. S. Ashford B.E.P.*

RIDGE CUCUMBER

In small gardens, where there is little or no glass, Ridge Cucumbers are very acceptable. Raise the plants singly in 3 inch pots in heat and harden them gradually. The position chosen for planting out of Jocos should be fully exposed to sunshine. Prepare a bed of leaves and litter, and on this place a layer one foot deep of rich soil in the form of a ridge, but with a flat top. The end of May is early enough to put the plants out. Cucumbers in the open are often a failure through lack of moisture at the roots. Spraying the plants morning and night is beneficial to hasten their development. Remove the points of the leading growths when the latter have attained a reasonable length, and peg the shoots to the soil to hold them in position against high winds. When the fruits have set, feed the roots with liquid manure at every fourth watering. In wet, sunless weather shield the plants from rain as much as possible, and if pro-

tected with something that is not transparent, remove it as soon as the rain ceases. *C. Davis, Holy Wells Park gardens, Ipswich.*

THE RELATIVE FOOD VALUES OF DIFFERENT VEGETABLE CROPS

At a time like the present, when due recognition of the food value of the various vegetable crops is of vital importance, more could be done to increase the food supply in "food units," or calories, if the information now being disseminated so freely were the product of careful thought. Much is being written that is true only so far as it goes, but is not calculated on a "stable basis."

For instance, as to the relative value of "food units" contained in 1 lb. Parsnips as against 1 lb. Potatos, the fallacy of which you so clearly point out on p. 86., the value of food units per lb. must be taken in conjunction with the number of lbs. of crop produced per unit of area. To this I should add the unit of time, or period required to mature the crop.

On this basis the Parsnip compares even more unfavourably with the Potato (than $\frac{1}{3}$ to 1).

Taking the time period of the Parsnip as 100, March to November, the period from date of sowing to the harvesting of the matured crop—against the time period of the Potato first or second earlies, i.e., April to August, it can be calculated thus, taking Parsnip as $\frac{1}{3}$, Potato as 1, and on the basis of 8 and 12 tons per acre respectively:

Parsnip,	Units Period, 100 months	Units Area, 1 Acre	Units Crop, 12 Tons	Units Food, 16
Potato	3	1	8	14

It will thus be seen that 1 unit of Potatos has double the food value of 1 rod of Parsnips, and that to this must be added the important fact that, whilst the Parsnip crop occupies the land for the whole growing season, the Potato crop can be lifted, and the land sown or planted with other Beans or Carrot, Turnip, Kohl Rabi, Sutton's Earliest, or Christmas Drumhead Cabbage, early in August, and again produce a crop of economic value. *D. W. Siggins*

EARLY VEGETABLES INDOORS

When glass is available, much can be done to obtain early crops of vegetables. Where portable frames can be spared, a sowing of Spinach should be made at once in rows drawn one foot apart in rich soil. The plants will supply an abundance of fibrous, fleshy leaves, far in advance of the outside crop, especially if the frames be placed on a good bed of leaves. Keep the lights closed until the seeds germinate; after, admit air on all favourable occasions. Dump the crop overhead, and close the frame fairly early in the afternoon of bright days, to husband the warmth. When the plants are well advanced, more air may be given, and the plants must not be allowed to suffer from want of moisture. An occasional sprinkling with sea water is beneficial, and stirring between the rows with the hoe. Thin the plants to about 8 inches apart in the rows. The Carter is a reliable variety.

French Climbing Beans are more remunerative than the Dwarf sorts after this date, and where a house with very slight heat is available, I would advise that they should be grown trained on the back wall of vineries, or on any available space, up strings or wires. I know of few things that give such a good return, and for such a length of time as these Climbing Beans. Sow the seeds in small pots in a temperature of 60°, and grow them as near the glass as possible until well established when they may be planted at 9 in. in the ground, kept watered and syringed. After the first flowers have set, give occasional waterings with liquid manure, and the plants will continue to crop until well into the summer. I find Princess of Wales an excellent variety.

Vegetable Marrows, if sown in heat, grown on in pots, and planted out in frames over a hot-bed at the beginning of April, will give valuable

early crops. Pollinate the flowers as they develop, and keep the growths well thinned. After a few fruits have set, water the roots liberally with liquid manure water. The lights may be left off entirely as the weather gets warmer and danger from frost is over. Moore's Cream, Table Dainty, and Improved Custard are all good varieties.

The more forward plants of the autumn sown Cauliflowers should be picked out, planted in houses, on borders, or in frames, kept well watered, syringed in bright weather, and fed liberally after they are well established. The heads will be ready by about the middle of May. First Crop and Mignon Bonum are suitable varieties for a succession. *H. E. Kemp, Priory Gardens, Blythe.*

GROW GARDEN BEET.

THE scarcity of Potatos has so impressed itself on the people's minds that everyone is insisting on growing Potatos. Nor would we for our part say a word to discourage them. But many who have come late into the market are finding a difficulty in obtaining "seed." To them particularly, and to all gardeners, we would point out the virtues of the Garden Beet. It yields well, and, as is well known, contains a high percentage of sugar. It is specially useful for late summer sowing. Sown in the South of England in the end of July, it stands even such severe frosts as those we have experienced during the past winter, and may be left in the ground and pulled when required. Furthermore, the seedlings transplant easily, and the thinnings may be planted in any piece of vacant ground and will produce fair roots.

Whether any simple means can be made use of to extract the sugar is extremely doubtful, but it is probable that it would be more economical to let one's own digestive organs do the extraction. Not the least that can be said in favour of the Beet is that as an article of diet it improves upon acquaintance. Not so long ago, the present writer turned up his nose at it except as an occasional ingredient in salads; but during the present winter he has made continuous use of it, now cooked, now raw, and by its aid he has been able to keep well within the sugar limits imposed by the Food Controller. Furthermore, it is well to remember that, although starch, so wide-spread in vegetables, gets itself changed into sugar by the digestion it undergoes when taken as food, sugar is, as it were, a ready-made (or almost ready-made) food, and is therefore among the best of energy-producing foods.

THE CULTIVATION OF KITCHEN GARDEN SOIL.

AMONGST the many pamphlets issued recently for the guidance of inexperienced cultivators this one will specially appeal to those who do not understand the many points that make soils suitable or unsuitable media for the roots of plants. It does not concern itself with particular crops, but it explains what the plants look for in the soil, how soil is improved by digging, trenching and hoeing. Next is explained the objects of manuring, how sour soils may be sweetened by slaked lime or chalk, and cases where one or other is the more appropriate for use. These things lead up to the consideration of special manures, organic and inorganic, and the particular uses of each are described in language which will be understood even by those "piano-funers" who are supposed to have turned their thoughts to agricultural work.

SUGAR BEET

MESSES BAKER AND SON, LTD., send us seeds of a variety of Sugar Beet known as Saccharina. They advise sowing in April or May in drills 18 inches apart and 1 1/2 inch deep. The seedlings must be thinned. The roots should be ready to lift at about the end of August.

* The Cultivation and Manuring of the Kitchen Garden, by E. Kothe, F.R.S., and F. J. Chittenden, (Royal Horticultural Society, Price 3d.)

CONFESSIONS OF A NOVICE.—XIV.

ADVICE TO ADVISORS

So many gardeners are now being called on to help inexperienced cultivators that a few hints on the art of advising may, perhaps, be of use. Inasmuch as "we are more of us infallible, not even the youngest," men more experienced than this present novice will forgive the presumption of one who, knowing so little, makes suggestions to those who know so much. But the times are urgent, and in the difficult condition in which the farmers—the wholesale suppliers of food—find themselves, a heavy duty is imposed on the small cultivators, the retailers, as it were—to supplement supplies from gardens and allotments.

Fortunately, the gardeners whose advice is sought have the first essential for advisors—knowledge—and therefore they will not make the fatal mistake of only talking about things; they will show them. Patient they are also, and hence they will not expect that once showing is enough. Reiteration, the recently discovered secret of advertisement, is the secret of teaching, and the great teacher is he who reiterates without tediousness.

Next to knowledge, good humour, a virtue not prized nearly so highly as it should be, is the quality of greatest worth to a teacher. It is the bouquet of the wine of character, just as knowledge is its body. It is because of their lack of good-nature that so many clever people fail to be good teachers, and remain only superior persons.

Descending from these remote heights of generalities to the lower level of actual pressing things, the advisor who can get his pupils on the ground actually to be cultivated can do more in half an hour than in twice that time spent in merely talking about cultivation. A handful of soil squeezed in the fist of each pupil may be made the basis of a whole story of garden lore: why clays must not be worked in wet weather, and why trampling over ground is bad. A hole dug in the ground reveals "form at a glance"—whether the sub-soil is near the surface, and whether it should be broken or left alone, and whether it will hold water like a pond or lose it like a sieve. I suppose it may be taken as a maxim of universal truth that, whilst the unskilled gardener has a passion for the watering-can, the skilled gardener loves the hoe, and therefore, although love is not always easy to explain, the advisor will do well to explain why he holds the hoe in such regard. But the good teacher does not explain over-much, for that is going out to meet trouble.

I like to think that in this new time the older gardeners are becoming the missionaries of the countryside, giving their knowledge in a great national war loan raised for the purpose of freeing the land from the heavy mortgage of indifference which town-bird men have laid upon it.

If to the qualities I have enumerated the body of knowledge and the bouquet of good humour, the advisor brings the spirit of enthusiasm, the wine of his advice will prove of such fine vintage as surely to rejoice the hearts of those who receive it.

I know, alas! that in many cases, though men of garden experience are willing enough to assist others, they lack the labour in their own gardens to give them much liberty to help others; but I also know that since the war gardeners have, if they ever pursued it—and I have heard it whispered that they did—lost the art of grumbling; and so, in spite of the difficulties which surround and confront them, this sincere friend of theirs, who is and will always be a novice, wishing to do the one little thing which he is able to do, ventures, admonitory proceeds notwithstanding, to offer advice to advisors. A. N.

TREES AND SHRUBS.

EFFECTS OF FROST ON SHRUBS AT ALDENHAM

Not since the year 1895 have we experienced anything like such severe weather as we have just gone through, and its effect on many of the shrubs is most marked.

Although the thermometer here registered a degree and a half below zero in '95, the most frost we have experienced this year is 29°, and yet in many cases things have suffered more severely. It is interesting to note how the many hundreds of new plants recently introduced from China have come through this ordeal of frost; and it is gratifying to be able to state that, so far as we are able to tell at the present moment, they have vindicated their reputation for hardiness.

Among the many beautiful Berberis introduced by Mr. Wilson nearly all have proved to be hardy. There are one or two exceptions, *Berberis lavis*, for instance, has suffered very badly indeed, and *B. subauliflata* is cut. Some few others have been "browned," but not, so far as we can tell, severely injured. Such species as *B. Sargentii* and *B. Julianeae* appear to be more hardy here than *B. Wallichiana* or *B. Knightii*.

The degree to which many plants have suffered appears to some extent to be due to the positions in which they are placed. Where one plant has been exposed to the cutting wind it has often been damaged, whereas another specimen of exactly the same species or variety has been untouched in a more sheltered position, only, perhaps, a few yards away. For instance, *Rhamnus Alaternus variegatus* in a sheltered position is quite sound, while other specimens more exposed are badly damaged.

Pyracantha Gibbii bears no severe marks of the frost, but the numbered *Pyracantha* collected by Forrest have appreciably suffered. Many *Veronias* which have been standing for some years have been injured, but many of the *V. Traversii* type, *V. Darwini*, and *V. decumbens*, have come through very well. The following species and varieties have suffered most.

E. Beckettii, Aldenham House, Gardens, Elstree, H. H. Woodhatch

Aristida Macqui and *A. M. variegata*
Azara integrifolia—very badly cut
Azara microphylla
Berberis lavis—almost killed
Berberis subauliflata
Berberis medeolensis
Ceanothus azureus and *varieties*—slightly cut
Ceanothus luteus
Colletia erucifolia—slightly cut
Cornus pumila—badly cut
Cotoneaster angustifolia } both practically killed
Cotoneaster panicosa }
Crocodendron Hookeri
Drumys Winteri
Escallonia floribunda—very badly cut
Escallonia longylevis }
Escallonia macrantha } cut according to position
Escallonia argentea }
Escallonia perfoliata
Leucantheum Bonsteanum
Leucantheum officinale
Laportea heterophylla
Langens sigillata
Ligustrum Henryi—apparently the only Chinese variety which has suffered severely. *L. Quilom*, only very slightly injured.
Mexica californica
Nesaea subfolia
Olonia Gummii
Osagei Traversii—very badly cut
Paeonia gracilis
Philomus cashmerianus
Philomus Davidsonii
Platanus palmifolia
Pectaneta attenuata—killed
Pyrus bursifolia
Pyrus betulaefolia
Quercus longifolia bambusaefolia
Rhamnus alaternus
Spiraea glauca
Veronica glauca obovata—badly cut
Veronica Li Solisiana (type)
Yonquera ternstroemii
Yucca Awabaki (var. *obovatisissima*)—killed.
Yucca cylindrica
Viburnum betulina (this species is of little value)
 Very badly cut in many cases.
Viburnum betulina reticulatum—not badly cut.
Viburnum lobophyllum
Viburnum Henryi
Viburnum propinquum.



PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcott, Eastwell Park, Kent.

FREESIA.—The flowers of late batches of *Freesia* should be neatly staked and tied whilst they are still upright. Increase the supply of water, and let healthy plants have a little stimulant to assist them to develop their flower spikes. Plants of the earlier batches that have bloomed should be returned to a frame, and watered until the growths show signs of ripening off, when the amount of water should be reduced gradually. When the foliage is quite dead, no more water should be given, and the bulbs should be exposed to full sunshine to ripen.

BOUVARDIA.—Plants of *Bouvardia* that were cut down after blooming are breaking into growth. Turn them out of the pots, shake most of the old soil from the roots, and repot them in much smaller pots, using a light compost. Grow the plants in a warm house, and as the shoots develop pinch out the points of the stouter ones, to ensure a bushy habit.

MAY-FLOWERING TULIPS.—May-flowering and Darwin Tulips are easy to cultivate and quick in flowering, being suitable for growing in pots or ornamental bowls. If the blooms are cut when fully grown, but before they have expanded, they will last fresh a long time in water. These late Tulips are not good subjects for hard forcing, and are much more satisfactory if allowed to flower without the use of fire-heat. Forcing results in inferior blooms that soon fade. For stakes use thin, neat Bamboo "points" or Hazel shoots.

PERPETUAL-FLOWERING CARNATIONS.—Even from plants that have been kept quite cool during the winter plenty of good cuttings are now available. Insert the shoots in shallow boxes filled with sand, and root them in a moderately warm house, shading the cuttings from strong sunshine. Keep them uniformly moist, and let the temperature range from 55° to 60°.

NERINE.—Plants of *Nerine* should be well supplied with water, whilst the foliage remains green. Grow the plants in a position exposed to full sunshine. When the leaves show signs of ripening, gradually decrease the amount of water, and when they have passed, withhold water entirely. The bulbs should be placed on a shelf for the summer and exposed to full sunshine and fresh air to ensure thorough ripening.

THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

CUCUMBERS IN BOX FRAMES.—The present is a suitable time to make preparation for growing Cucumbers in frames. If horse-droppings and leaves are available they should be collected and placed together in equal parts to ferment. After the material has been thoroughly mixed and turned several times the bed should be made 18 inches wider than the frame all round to permit of fresh hot-bed material being placed around the frame when, later, the heat begins to decline. The soil should consist of turfy loam and leaf-mould in equal parts, and it should be placed in the frame several days before the plants are put out. When the plants have made two rough leaves the points of the shoots should be removed, and the plants stopped again at the second or third joint. Syringe the plants lightly in the early part of the day in fine weather, but see that the foliage becomes dry again before night.

CAULIFLOWER.—Plants in cold pits should be hardened gradually by removing the lights on mild, sunny days. If suitably hardened they should be ready for planting out-of-doors about April 10. Seeding Cauliflowers raised this spring should be pricked into a cold frame before they become drawn. They should be ready to plant out by the end of April.

LETTUCE.—A sowing of Lettuce seed may be made on a warm, south border in order to pro-

duce supplies in June. Seedlings raised from sowings made in October and wintered in cold pits should be planted at the earliest opportunity. A warm border should be selected for the purpose, and a space of 1 foot allowed between the plants each way. Keep a sharp look out for slugs, and protect the crop from birds if this is necessary.

ONIONS.—Young Onion plants should be pricked off before they become drawn. Grow them in a cool, light frame and ventilate carefully until the plants become established, after which they should be hardened gradually so that they will be ready for planting out about the end of April.

POTATOES.—Early and second early Potatoes should be planted in quantity as soon as the state of the soil permits. Potatoes are a most important crop, and special efforts should be made to have the soil thoroughly prepared, digging it deeply, and breaking the surface fine as the work proceeds. Allow a space of at least 30 inches between the rows and 15 inches from plant to plant in the row. A sprinkling of decayed leaves or spent manure from a Mushroom or Cucumber bed placed in the trenches before planting will do much to promote quick, healthy growth. The soil rulers of main crop and late varieties should receive attention at once.

MUSHROOMS. Mushroom beds sown in January are developing quantities of small button kinds. Mushrooms, which require very careful treatment. Do not use fresh-laid but endeavour to keep the temperature of the house as near 55° as possible by closing the ventilators and matting up the door so that cold draughts are excluded. When water is necessary, use rain-water very sparingly applying it through a fine rose. A covering of clean straw placed lightly over the surface will serve to keep the bed damp. Damp the walls and floor of the house as it becomes necessary to keep a moist atmosphere. Continue to collect and preserve material for successional beds, which should afford a supply in six weeks from the date of spawning.

VEGETABLE MARROW.—To obtain early Marrows sow the seeds singly in 4 inch pots and germinate them in gentle warmth. As soon as the plants have made two rough leaves they may be planted in a slightly heated pit, where plenty of ventilation can be applied in favourable weather.

CARROTS IN PITS. Carrots in pits should be ventilated freely and thinned as soon as they become large enough. Water the bed freely through a fine rose, and if necessary, cover the rows of Carrots with fine soil to keep them from turning green. A large sowing of Carrots may be made in the open as soon as the soil is in a suitable condition.

LETTUCE. Frames in which Lettices are growing should be ventilated freely in favourable weather and the soil between the plants stirred lightly with a small hoe. Dust the plants frequently with soot as a deterrent to slugs. Plants raised under glass should be hardened gradually and planted on a warm border as soon as they are large enough for shifting.

LEeks. The principal sowing of Leeks should be made with as little delay as possible. Young plants raised from early sowings should be carefully pricked into boxes of rich soil and grown in a cool pit until the time for planting.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

COELOGYNE. Plants of *CoeLOGYNE pandurata* are commencing to make new growths and will soon be developing roots. Any plants that have overgrown their receptacles may be repotted at this stage. The plants are best grown in shallow pans or teak wood baskets, and suspended from the rafters in the warmest house. In the process of repotting remove some of the old pseudo-bulbs, leaving only two behind the leading shoots. Plenty of room is necessary in the receptacle, as the rhizomes extend some inches each year after being potted. Plants that have sufficient room for the development of

their present season's growth, but with sour soil, should have as much as possible of the old rooting material picked from between the roots by means of a pointed stick. The drainage should be examined and fresh compost applied. This should consist of three parts Osmunda or Al fibre and one part fibrous loam from which all the small particles have been removed, and sphagnum moss, the whole chopped small and mixed together, adding sufficient crushed crocks to keep the soil porous. *CoeLOGYNE Massingiana*, *C. Dayana*, *C. Lowii*, *C. Mooreana* and *C. bipitata* are also becoming active at the roots, and any repotting necessary may be attended to. A suitable compost is formed of equal parts Osmunda fibre and Al fibre, with a small quantity of chopped sphagnum moss. The plants are best grown in shallow pans and suspended in the warmer end of the Cattleya house. After repotting, water should be applied very sparingly until the plants have rooted freely in the new compost, when they should receive liberal supplies of moisture until growth is completed.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. F. DAVY, Ashurst Wood, Guildford, Surrey.

PLANTING STRAWBERRIES.—The present is a good and opportune time for making an extra Strawberry bed. The plants will become established this year and make a good bed for 1918. It sometimes happens that spring planting is necessary because ground could not be spared in the autumn, or could not be got in a suitable condition. It is not to be expected that the crop this season will be large, but there will be sufficient for dessert purposes, especially if the variety Royal Sovereign is chosen, thinning the flowers, as they open, and assisting the development of the berries by dipping with liquid manure. Such plants could serve in their usual position, for if the flowers were removed they would produce early runners and stock plants. The ground should have been well prepared by double digging or trenching. In planting, tread the ground, make the surface firm, and afterwards rake the surface even. Turn the plants out of their pots carefully, preserving the roots and crown from injury, and set them at 12 inches apart in rows 2 feet asunder. I invariably secure my earliest fruits from these late plantings.

LABELLING FRUIT TREES. Examine the plants on fruit trees and remove any that have become undesirable. The Aime and the Ideal are two good labels, when dirty or disfigured they may be cleaned easily by washing with paraffin.

PREPARATIONS FOR GRAFTING. Suitable shoots for a vine, having been inserted in the soil under a north wall to have them a fortnight later in development than the stock, it is time to prepare the grafting mixture. Clay, free from stones or other rough material, should be mixed with cow manure in the form of a stiff paste. If preferred, soft泥 may be purchased from the horticultural supplier. Success in grafting depends chiefly on getting a joint union between stock and scion, which needs much practice.

FRUITS UNDER GLASS.

By JAS. HENSON, Gardener to Lordship House, Richmond, Esq., C.V.D. Gomersbury House, Ascot, W.

PEACHES AND NECTARINES. The earlier Peach and Nectarine trees are passing out of flower and will soon be making young growth; those in favour of local trees are probably more forward. Disbudding should be done gradually, removing a few shoots here and a few there, but I have seen crops spoiled by the sudden removal of the surplus growth. Disbudding gradually encourages the formation of small fruiting spurs, and I have a method that these short shoots frequently have many fruit buds forming on them, whilst long, elongated shoots have but few. We have at Gomersbury a trained tree of Royal George Peach in full flower with numbers of these short fruiting spurs. The same remark applies also to pit trees, which

frequently give a full crop on spur growths. Again, in dealing with a trained tree that is over- vigorous in growth, its goodness may be checked at the start if it is not disbudded too early. Trees that were lifted in the autumn to check exuberant growth are developing their wood buds slowly, and this is as it should be.

MELONS.—The earliest Melon plants are sufficiently advanced for planting permanently. A large border is not necessary; I have been successful with Melons grown in a narrow trough, so to speak, in a three-quarter span Pine-stove. No fermenting material was provided, only a layer of drainage material, and the space for the soil was about 10 inches deep and the same in width, with about 2 feet up to the wire support. The plants were easy to attend to in every respect. Two fruits were allowed to each plant, and the plants were set about 18 inches apart. A Pine-stove is not essential; any low house with a suitable temperature would be suitable. I have already stated that I favour the cultivation of early Melons, and even with nets it is not essential to provide fermenting material at any stage. I have used a hotbed and I have done without it, and I could not find any real advantage in its use. Pots of 12 inches diameter (8's) are a suitable size for Melons. Inverted Sealable pots are also excellent for the same purpose. These I have used from strong shelves near the roof glass with distinct success. In every instance, whether planted out or not, see that the soil is made firm, and make it firm whilst it is in a fairly dry condition. Good, friable, turfy loam needs no manure, but crushed mortar or rubble may be necessary. A small quantity of good soil goes further than double the quantity of inferior compost, and a heap of good loam will always repay its cost in fruit culture. Sow more seed for a succession.

THE FLOWER GARDEN.

By W. J. GRICE, Gardener to Mrs. DUMFRIES, Keele Hall, Staffordshire.

THE ROSE GARDEN.—The protecting material should be removed from Roses and in warm, sheltered districts some of the hardiest varieties may be pruned. The frost has injured the tips of the Rambler varieties, which should be thinned, retaining the strongest growths of last season. Certain varieties may be cut back closely, to cause them to break strongly. In all cases cut back to a bud pointing outward. The pruning of the more tender sorts is best left for another fortnight. Planting should be concluded without delay. Roses of the dwarf Polyantha section are very effective planted in the foreground of shrubberies, or on banks. They require very little pruning, and continue to bloom for a long period. Mrs. Cutbush, Orleans, Annie Muller, Dr. Ricard, Katherine Zeimet and Jessie are all good varieties. Jessie has flowers of a bright cherry crimson, and is very effective in masses.

THE ROCK GARDEN. Remove dead foliage and superfluous growths from Alpines and rock garden plants. With a small hand fork loosen the soil between the plants, exercising care not to disturb the roots in the process. In preparing composts for top-dressing the plants do not use animal manures. A gritty compost, consisting of loam, leaf-mould and coarse sand, with the addition of sandstone or limestone chippings, is suitable for many Alpines, but others need a mixture of loam, peat, and leaf-mould.

THE WALL GARDEN. Dry walls in which no mortar has been used may be covered with plants of a scrambling nature. The pockets should be made deep enough to hold sufficient soil for the roots. For growing in crevices select plants of a close growing nature such as *Alyssum*, *Arabis*, *Sium*, *Antennaria*, *Saxifraga*, *Hypericum*, *Moschata*, *Trollius*, *Veronica repens*, *Cypripedium*, and *Eidweiden*. On the top of the wall may be planted *Cerastium tomentosum*, *Androsace lanuginosa*, *Campanula fragilis*, *Androsace*, *Primula*, *Polygonum affine*, *Helianthemum*, *Lithospermum prostratum*, and *Saxifraga* in variety. Some of the smaller, close-growing varieties may be planted in the crevices of paved paths. Frequent waterings will be necessary until the plants are established.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents should oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, March 27.—Roy. Hort. Soc., Comms. meet. at Drill Hall, Buckingham Gate, Westminster.

WEDNESDAY, March 28.—Ann. meet. of The Nursery and Seed Trade Assoc., at 28, Gresham Street, London, at 3.30 p.m.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 43.1°.

ACTUAL TEMPERATURE:—*Gardeners' Chronicle* Office, 41, Wellington Street, Covent Garden, London. *Thursday, March 22* (10 a.m.) Bar, 29.4; temp., 39.5°. Weather—Sunshine.

SALES FOR THE ENSUING WEEK.

WEDNESDAY.—Sale of Fruit Trees, Rhododendrons, Roses, Gladioli and Lilies, at 67 and 68, Cheapside, by Protheroe and Morris, at 12 o'clock. Japanese Lilies in cases at 3.

THURSDAY.—Roses, at 67 and 68, Cheapside, by Protheroe and Morris, at 1 o'clock.

Research in Market Gardening.

The second report* of the recently established research station at Chesham is interesting, not only because of the summary which it contains of the investigations carried on during the past year, but also because it indicates the large scope of enquiry which is open to research into the cultivation of plants under glass.

As the director points out, the grower of market crops under glass possesses to a degree not met with in open-air cultivation the power to control the conditions under which his plants are grown. He is able to control, within wide limits, the soil, the temperature, and the water supply, and he can, if he chooses, supplement the light which the heavens afford him. It is true that so far no systematic attempts have been made to use artificial light to eke out the meagre ration of sunshine which falls to our lot during many months of the year, and it is likewise true that it is not yet known whether the cost of artificial light would be returned in the increased yield of produce. Only thorough investigation can determine

this, but with the advent of new and powerful half-watt lamps, it may prove that electricity has been brought within the reach of the market gardener.

Turning, however, from the purely speculative side of market garden research to the severely practical, it is interesting to observe that the Chesham research station is engaged in investigating the different types of "soft" growth known to practical growers. Softness of growth, which is inimical to fruitfulness, may be induced by more than one set of conditions—for example, by excess of moisture or by over-manning. Whether the softness induced by the one agency is identical with that called forth by the other remains to be determined. In addition to the larger problems, the solution of which will require a long period of investigation, the Research Station is engaged in working out what may be called special problems of immediate practical value. Among these is the question whether the addition of lime to fresh loam used for Tomatos is or is not beneficial. The series of experiments made to determine this point lead to the conclusion that the Tomato has no particular partiality for lime, and that the addition of either lime or chalk to fresh loam deficient in calcium compounds leads to no increase in the crop.

Tests with humogen led, both in 1916 and in the previous year, to negative results, and the experimental use of this substance at the Research Station has been abandoned.

There is so much ignorance in administrative circles of the importance of the market gardening industry that we hope that steps will be taken by the Research Station to correct this unfortunate state of affairs. A short statement of yield obtained from a given area of glass throughout the year as compared with agricultural yields might, we think, be prepared and included in the report. It should prove illuminating, and might lead to a healthy change of view on the subject of the importance to the nation of this great industry.

The Best Time to Spray.

Experiments carried out by Mr. A. H. Lees,* of the National Fruit and Cider Institute, lead to the conclusion that there is but little risk of damage from lime-spraying up to the time at which the buds begin to burst. April 10 may be taken as a safe date, though, of course, seasonal variations must be taken into consideration. In this connection we may recall Mr. Molyneux's statement in *Gard. Chron.*, April 1, 1916, p. 188, that lime spraying when the trees were in full blossom caused no injury, and that the fruits carried fine in the eye until the time of ripening. In the case of the Apple, the four chief pests against which lime-spraying is directed are the Apple sucker, the rosy Apple aphid, the blossom and stem Apple aphid, and the permanent Apple aphid. Of these pests the

Apple sucker begins to hatch, in normal years, during the beginning of April, and hatching goes on for about three weeks.

Since the rosy Apple aphid begins to hatch about the middle of April, a compromise with respect to the date of spraying must be effected.

Mr. Lees recommends the use of Jump lime of 98 per cent. purity, derived, if possible, from carboniferous limestone, and that common agricultural lime should not be used. The lime should be allowed to slake for six hours at least, and must be kept covered with water. The strength to be employed is 20lb. to 10 gallons of water, and the mixture of that strength should be strained through a metal sieve with sixteen meshes to the inch.

Contrary to expectations, the late spraying in a series of experiments, begun on March 17 and ended on April 28, had very little injurious effect. Until as late as April 25 no serious damage was observed in any of the many varieties which were sprayed, but on that date Lord Derby and Cox's Orange Pippin showed signs of injury, although the damage was not considerable.

Since, however, in Mr. Lee's experiment damage was occasionally sustained as a result of late spraying, he fixes the date already mentioned, April 10, as one on which risk of damage is so slight as to be negligible.

FORCING BY ACETYLENE.—The *Berke Horticult.* describes a new method of forcing by means of acetylene gas. The results are apparently similar to those obtained by etherification. An ordinary calcium carbide lamp is used, but not lighted, the gas being allowed to escape freely. Most plants remain in the forcing-house for 48 hours none more than this time—but in the case of Lilac 24 hours is sufficient after the middle of November. In order that the flow of gas may be as even as possible, it is well, if practicable, to renew the carbide two or three times. As to the quantity of gas to be used, roughly, for every cubic metre of air, 6 grammes a day are necessary. It is unnecessary to protect the roots, as the acetylene is not injurious to them. The forcing should be done in a warm house.

BRACKEN FOR FOOD.—MR. SHIPLEY, the gifted Master of Christ's College, Cambridge, has been entertaining the readers of the *Times* by descending on the hidden treasure, in the form of starch, which exists in the rhizomes of the Bracken. How this source of supply is to be made use of is not clear. To turn undergraduates, or even conscientious objectors to the digging of the rhizomes would result in the expenditure of more energy than the starch won from the soil would return to the diggers. To serve Bracken as Asparagus—if the opinion of those who have tried it is to be believed—would, we fear, not be acceptable, say, to the High Table at Christ's. For our part we would suggest that the best use to be made of Bracken is to use it for fire-litter. Cut in August, the fronds are still rich in nitrogen and have a fair amount of potash in them, and a stack of Bracken used as litter during autumn and winter will return in the manure a large proportion of these plant-foods.

GARDEN ALLOTMENTS IN SCOTLAND.—Glasgow Corporation has received applications for four thousand allotments, and nearly three thousand plots have been allotted. There is a surplus of ground in a few districts, but a great shortage in others.

* Experimental and Research Station, Turner's Hill, Chesham, 1916.

* *Journal of the Board of Agric.*, Feb., 1917.

SUNDAY LABOUR ON ALLOTMENTS.—The Glasgow Parks Committee, at a meeting on March 7, unanimously agreed to advise the Corporation to withdraw the regulation prohibiting Sunday labour on allotments. Maxwelltown Parks Committee has also had the same question under consideration, and has agreed to the suspension during the war of the prohibition of Sunday labour on the allotments under its management.

BOSTON FLOWER SHOW.—The Massachusetts Horticultural Society proposes to hold a flower show in the first two weeks of June, on the lines of the R.H.S. Chelsea exhibitions. The site selected for the show is in front of the Wentworth Institute in Huntington Avenue, and the principal exhibits will be staged in tents. Professor SARGENT, of the Arnold Arboretum, will exhibit *Azaleas*. An important exhibit from this country will be MESSRS. WATERER, SON AND CRISP's group of Rhododendrons. A guarantee fund of about \$10,000 has been formed.

ALLOTMENT GARDENS IN FRANCE.—We learn from our contemporary *Le Jardin* that the movement towards the cultivation of waste land and the formation of cottage gardens is proceeding apace in France, and already assumes important proportions. The War Minister has placed at the disposal of the Minister for Agriculture more than seventy professional horticulturists, many of them old pupils of Versailles, who are lecturing and directing operations in the gardens near the front. Monsieur LAUREN CHAVRE, who is now over military age, has left the Army, and undertaken the work of co-ordinating the activities in each commune, forming for each district a separate committee, which will in its turn superintend the work of allotment-holders and assign the required plots. In Paris the well-known "workmen's gardens" society, founded by the Abbé LEMIRE, has undertaken to cultivate the ground around the fortifications, of which there is much still uncultivated, and for which volunteers are being invited to apply. Monsieur M. DEBROCK, the director of allotment gardens to the Minister of Agriculture, is devoting much energy to the task of bringing into cultivation all the waste land in the suburbs of Paris. All over the country the allotment gardens are increasing in number, and men (civilians over military age, and soldiers on leave), women and children are all taking up the work with enthusiasm. The work of children of school age is being organised very thoroughly, and an appeal to all school authorities has been sent out from the Ministry of Agriculture with a view to utilising the help of the scholars in the best way. The Minister of Public Instruction has arranged for the closing of the primary, secondary, and normal schools for a period of from 15 to 20 days at Easter, beginning with the last week in March, to allow the school children of France to help with the spring farmwork, especially the planting of Potatoes. It is expected that by this means four million young workers will be set free. There will also be 29,000 boys and 25,000 girls from 15 to 18 available from the secondary schools, and 50,000 boys and 50,000 girls from the lycées and colleges to speed up the harvest.

GARDENER CENTENARIAN. We have pleasure in reproducing the portrait of Mr. T. PYPER, 52, Red Lion Lane, Hemmer-smith, who celebrated his 100th birthday on February 5 last. He was born in Bess-shire, and whilst still a child was taken to Edinburgh, where his father was engaged in laying out the gardens in Prince's Street. Later on he was apprenticed to Mr. MCXAR, who was superintending this work. His first appointment in England was at Lord VERNON'S, at St. Hilary Hall, Derby. About 1840 he went to Chatsworth, and was employed for a time under Sir JOSEPH PAXTON, the Duke of that day showing marked appreciation of his work. Leaving Chatsworth,

he went to Lord LECONFIELD'S, at Petworth, and to Mrs. RAE'S, in Gloucestershire. Mrs. RAE appears to have been one of the first to take up Orchid growing, and under her instruction Mr. PYPER became a skilful grower. This experience with Orchids led to an engagement with Lord DICBY at Minterno, which lasted for twenty years. On leaving Minterno, Mr. PYPER went to Melton Constable, where he remained for ten years, only leaving on the death of Lord HASTINGS, and with the approval of the executors of the estate. After a short interval, he was appointed gardener to Colonel PENNY and his sister, Lady SMITH, at Somerton Esleigh, in Somersetshire. Here he remained for over twenty years, this engagement practically ending his active career at the age of 78. Very shortly after this, having been a regular subscriber to the Gardeners' Royal Benevolent Institution for many years, and having been unfortunate enough to lose what little money he had saved, he was elected to the benefits of the Institution. Mr. PYPER enjoys good health, but it is only just possible for him to sign his name owing to impaired eyesight.

WAR ITEMS.—Captain PHILIPPE RIVOIRI, secretary of the French Chrysanthemum Society, after doing military duty as a reserve officer



M. LÉONARD LILLÉ, WHO RECENTLY CELEBRATED HIS 100TH BIRTHDAY.

since the beginning of the war, has been released from service, and is back in Lyons. He hopes in the near future to revive the publication of the society's official journal, *Le Chrysanthème*. The nursery of Messrs. RIVOIRI, PERE ET FILS has been closed since the beginning of the war, but their seed business is being carried on. Similar information reaches us in regard to M. LÉONARD LILLÉ'S nursery.

We learn with regret that Mr. WILLIAM EDWARD DOR, son of Mr. Dor, gardener at Parkwood, Henley-on-Thames, has been killed in Mesopotamia. The deceased soldier was a member of the garden staff at Rangemore. Mr. Dor, *senr.*, has three sons in the Forces; the eldest, Sergt. E. Dor, is at Salonika, wounded.

PUBLICATIONS RECEIVED.—*Lawn Tennis Almanac*, 1917. (London: F. H. Ayres, Ltd., 111, Abchurch Lane.) Price 1s. 6d.—*Rational Fruit Culture*. By H. C. Davidson. (London: Garden Life Press, Hatton House, Great Queen Street.) Price 2s. 6d.—*The Commercial Absorption of Ex-Naval and Military Men*. By Lionel Vexley. (London: The Fleet, Ltd., 11, Henrietta Street, Covent Garden.) Price 2d.—*Plantae Wilsonianae*. Vol. III., Part III. By C. S. Sargent. (Cambridge: The University Press.)—*Herb Collecting for Boys and Girls*. By Mrs. T. Chamberlain and Miss E. C. Wheelwright. (London: National Herb Growing Association, 44, Queen Anne's Chambers, S.W. 1.) Price 3d. Second edition.

HOME CORRESPONDENCE.

POTATO DIFFICULTIES.—Of the recent Potato regulations, one rule is still in force which will do great mischief if not relaxed. I refer to the regulation that all seed Potatoes not sold by April 1 will have to be sold as for eating, or at the price fixed for eating. Owing to the abnormal season and scarcity of labour, a large quantity of land intended for Potatoes is still untilled, and probably a large proportion will not be ready for planting until May is well advanced. Are all the small growers who have not much storage room to be deprived of the chance of obtaining seed tubers unless they are ready to plant by April 1? The seedsmen are approaching the authorities through their Association to obtain a relaxation of this regulation, as the matter affects almost all gardeners and next season's food supply. *Charles E. Pearson, Secretary to the Horticultural Trades' Association.* [Since this letter was written the Ministry of Food Control has announced that it is prepared to grant licenses to seedsmen to sell hand-picked seed Potatoes of any variety up to 56 lbs. of one kind, at the prices advertised in catalogues that were already in circulation, the sale under these conditions being permitted up to May 31. Licenses to be applied for by individual firms, accompanied by a copy of their catalogues, to the Secretary, Ministry of Food Control, Grosvenor House, Park Lane, London. Eds.]

THE FROST AND THE GARDEN.—Sir Herbert Maxwell is to be congratulated not only on his delightful pictures of his Galloway garden, but on the charmed life of the plants he tends and knows so well. Here in the South of England the frost has played havoc, and has destroyed or crippled not only rare, but many of the common things. The tree Laurus look woebegone dry sticks. The leaves of Portugal Laurels are dirty coloured, the distal halves dead and brown, the stalks green. *Olearia macrodonta* has cast off most of its leaves. Wallflowers are crippled and Stocks look as though they had been trampled on. *Lithospermum* are burned as with fire, and *Helianthemum scosus* to have disappeared. This is not a complaint, but an attestation, and no doubt things are by no means as bad as they seem. For instance, although autumn-sown Cabbage has gone the way of the Stocks, Peas sown in the autumn, which were showing through the ground when the frost and cold winds came, have survived the ordeal, and are beginning to grow vigorously. To one can have any ground when the Grasses have come, but now all traces of them in the Grasses show when the Earth like the tips of the Grasses show their green, when the exquisite first young leaf of the *Strawberries* appear, and the fruit buds of the *Prunus* begin to show like mosaics of mother of pearl. Of the more tender things, which have suffered I will not speak, lest I should disprove my contention that I am only recording, and not lamenting. J. V.

RHS AND THE PURCHASE OF BOOKS.—The one who read the report of the annual meeting of the Royal Horticultural Society in your issue of last month may remember that I suggested that the time had come for the committee to have some real power. The following incident, which has taken place since the meeting, shows (noted as it is typical of the conduct of the Council, and I think abundantly justifies my suggestion.) Acting on what was said by the above, that on that occasion, I reported a rare French work by Rivoiri to the chairman of the Library Committee as a suitable purchase. The book was sent by the dealer on approval, and it was refused. But by whom? By the Library Committee, which presumably exists for the purpose of advising about book buying, and whose members are believed by the public to be experts? No. No meeting of this body was called. The Council evidently did not think it was worth while to summon it, although in the case of an expensive work, and a very rare one, a committee would naturally think they would have done so. No; they sat on it themselves. First, Who does the Library Committee come in? and Why have a committee at all if this is how it is to be treated? Some members of the R.H.S. think the Council's ways want mending. Verbum sat sapienti. *Joseph Jacob, Whitwell, Salop.*

SOCIETIES.

ROYAL HORTICULTURAL.

(Concluded from p. 120.)

Floral Committee.

Present—Messrs. H. B. May (chairman), Chas. E. Shea, W. P. Thomson, C. Dixon, W. Cuthbertson, J. Dickson, A. Turner, John Heal, G. Reuthe, Geo. Harrow, W. J. Bean, John Green, J. F. McLeod, A. G. Jackson, E. F. Hazleton, Chas. E. Pearson, H. Cowley, E. H. Jenkins, John Jennings, R. C. Nottcutt, W. B. Cranfield, Jas. E. Hudson, J. W. Barr and George Paul.

The following medals were awarded to groups—

Silver Flora Medals to Messrs. R. and G. CUMBER, Southgate, for *Lachenalia Nelsonii*. The plants were remarkably well flowered and model specimens in every respect. Messrs. W. CRIBBS and SON, Highgate, for forced shrubs.

Silver Banksian Medals to Messrs. STRAIGHT LOW and CO., Enfield, for *Carnations* and *Cyclamens*. Their new *Cyclamen Cherry Ripe* (see fig. 45), was conspicuous amongst other varieties by reason of its brilliantly-coloured flowers, which are a glowing carmine; Messrs. H. B. MAY and SONS, Edmonton, for *Ferns* and *greenhouse flowering plants*; and Mr. J. JENNER, Liverpool Nurseries, Rayleigh, for *Perpetual-flowering Carnations*.

Bronze Flora Medals to Messrs. ALLWOOD BROS., Wivelsfield, Haywards Heath, for *Perpetual-flowering Carnations*; Messrs. BARR and SONS, King Street, Covent Garden, for trays of hardy bulbous flowers; Messrs. JAMES CARTER and CO., Raynes Park, for *Primula macleoides King Albert*, a very charming plant, with a profusion of rosy-mauve-coloured flowers; Messrs. J. CHEAL and SONS, Crawley, for a miscellaneous group of hardy flowers and shrubs; and Mr. G. REUTHE, Keston, Kent, for hardy flowers.

Fruit and Vegetable Committee.

Present: Rev. W. Wilks (in the chair), F. Perkins, W. H. DIVERS, G. P. Berry, E. Harries, J. C. Allgrove, A. R. Allan, H. Markham, J. G. Weston, A. Bullock, E. A. Bunyard, A. W. Metcalfe, and E. Beckett.

Messrs. W. SEABROOK and SONS, Chelmsford, showed seventy-four varieties of Apples, for which a Silver Knightian Medal was awarded.

Mr. EDWIN BECKETT, Aldenham House Gardens, Elstree, showed his new *Onion Autumn Triumph*.

Narcissus Committee.

Present: Mr. E. A. Bowles (in the chair), Miss E. Willmott, Messrs. W. Pount, G. Leak, G. Reuthe, F. H. Chapman, W. B. Cranfield, Joseph Jacob, G. Mouro, H. Smith, P. R. Barr, J. D. Pearson and C. H. Curtis.

Messrs. R. H. BATH, LTD., Wisbech, were awarded a Silver-gilt Flora Medal for a large exhibit of Daffodils and Tulips grown in bowls of fibre.

A Bronze Banksian Medal was awarded to Mr. G. W. MILLER, Wisbech, for an exhibit of hardy bulbous flowers.

Orchid Committee.

GROUPS

Sir JEREMIAH COLMAN, BART., Gatton Park, Surrey (gr. M. Collier), was awarded a Silver Flora Medal for a group of finely-grown and profusely-flowered *Dendrobiums* raised at Gatton. The new forms were *D. Gatton Jewel* (*Bartelsianum* × *melanolicum*), a pretty white flower with cream-yellow base to the lip; *D. Gatton Monarch* (*Lady Colman* × *nobile* Harefield Hall), white, tipped with rosy-lilac, the lip having a dark purple centre; *D. Helms Wigania* (*signatum aureum*), primrose-yellow with a slight rose tint on the petals; and *D. Lady South-walk* (*Lady Colman* × *Chessingtonense*), a fine white flower with a shade of yellow. The lip is dark purple in the centre, the apex being rose-colour.

Messrs. CHARLESWORTH and CO., Haywards Heath, were awarded a Silver Flora Medal for an effective group of fine *Odontoglossums*, *Odontiodas* and *Laelio-Cattleyas*.

Messrs. ARMSTRONG and BROWN, Orchidhurst,

Timbridge Wells, were awarded a Silver Flora Medal for a good group containing a fine selection of *Odontoglossums* and *Odontiodas* flowering for the first time. Large size, perfect form and fine substance characterises the whole strain, and some new departures in the disposal of the colours were noticeable, a special example being *Odontoglossum Baghdad*, which has wax like white flowers with concentric clusters of purple spots on the segments.

Messrs. SANDER and SONS, St. Albans, staged a group which included *Lycaste Sküeneri* G. Hamilton Smith, probably the largest form of the species and good in all respects; good white hybrids, including a *Laelio-Cattleya Trimyra* var. *Charm*, a clear, milk-white flower with orange centres; *Cattleya Mary Sander*, and *C. Snow Queen*, of fine quality.

Messrs. FLORY and BLACK, Orchid Nursery, Slough, showed a darkly blotched hybrid *Odontoglossum*, a finely-coloured seedling *O. crispum*, a good form of *Dendrobium nobile*, and the white *Cattleya Suzanne Hæ de Cron*.

PANTY RALL, Esq., Ashford Park, Surrey (Orchid grower Mr. W. H. White), sent *Cattleya Apelles* (White) × *Mendeli* var. *King George V*), a good flower with white sepals and petals tinged with bright purple.



FIG. 45.—CYCLAMEN CHERRY RIPE: COLOUR OF FLOWERS BRIGHT CARMINE (R.H.S. Award of Merit, February 27, 1917.)

TRIALS OF SAVOYS.

The further following awards have been made by the Council to Savoy Cabbages after trial at the Wisley gardens:

AWARDS OF MERIT.

Green Curled, sent by Messrs. Dobbie and Co., Edinburgh; *Late Drumhead*, sent by Messrs. Nutting, London; *New Year*, sent by Messrs. Sutton, Reading; *Ormskirk Late Green*, sent by Messrs. Sydenham, Birmingham; *Ormskirk Harlequin Selection*, sent by Messrs. A. Dickson, Newmarket; *Ormskirk*, sent by Messrs. Nutting, London.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

MARCH 1. *Committee present*: The Rev. J. Crombiedine (in the chair), Messrs. R. Ashworth, D. A. Cowan, J. C. Cowan, Dr. Craven Moore, J. Cypher, A. G. Ellwood, J. Evans, P. Foster, A. R. Handley, A. J. Keeling, D. McLeod, W. Shackleton, H. Thorns, and H. Arthur (secretary).

AWARDS

FIRST CLASS CERTIFICATES.

Laelio Cattleya Linda (*L. C. Trachin* × *C. aurea*), from R. ASHWORTH, Esq.
Odontioda Guitierrezii (*Od. seedling* and *Od. Rands-haerum Cookson's var.*), from S. GRAVIX, Esq.

AWARDS OF MERIT.

Cymbidium Sgill Congyglow var. (Pauwelsii × chinensis), and *Odontoglossum tauchristensis Congyglow var.*, both from Dr. CRAVEN MOORE, Esq.
Cypripedium Clarke var. compactum, and *Odontioda Dorothy*, both from P. SMITH, Esq.
Odontioda Madeline var. Evansae, from R. ASHWORTH, Esq.

Odontioda Hargyi, from Messrs. ARMSTRONG and BROWN, Esq.

Odontoglossum Mary (amabile × crispum Franz Maserdy), from S. GRATIAX, Esq.

Cymbidium Alexanderi × Yvonne, from J. WALKER, Esq.

Cypripedium Iowa Carter Place var., from T. WORSLEY, Esq.

AWARDS OF APPRECIATION.

Odontoglossum James O'Brien (Dunroverianum × Harringtonae)—1st class—and *Odontoglossum Distinctum*—2nd class—From R. ASHWORTH, Esq.

Odontioda crinum Papillon—1st class—From Dr. CRAVEN MOORE.

Odontoglossum Fabin (L. Aiglon × crinum), from Messrs. ARMSTRONG and BROWN.

SCOTTISH HORTICULTURAL.

MARCH 6.—The monthly meeting of this Association was held at Edinburgh on this date, Mr. John Phillips, the president, being in the chair.

Mr. J. W. M'Hattie, Superintendent of Parks and Gardens, Edinburgh, read a paper on "Garden Allotments." He dealt with the preparation and manuring of the soil, the best crops to grow, dividing them into summer and autumn, and winter and spring groups respectively, and he emphasised the necessity for growing vegetables of a substantial kind, thus making the most of the allotments, which numbered approximately twenty to the acre. He concluded by giving directions as to cultivation.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

ANNUAL MEETING.

MARCH 12.—The annual general meeting of the above Society was held at the Royal Horticultural Hall, Westminster, on the 12th inst. Mr. Chas. H. Curtis presided. The chairman presented the annual report of the committee, and drew attention to the fact that, owing to the Government regulation that all friendly societies must make up their accounts to December 31 in each year, the period under review consisted of eleven months only. He stated that a sum of £1,200 had been invested in War Loan. Thirty-eight members had died during the past year, including twenty-five engaged with the Forces.

The finances of both sections were stated to be in an eminently satisfactory condition.

The adoption of the report was moved and seconded and adopted unanimously.

The secretary, treasurer, and retiring members of the committee were all re-elected.

The meeting afterwards resolved itself into a special general meeting, to consider the proposed alterations of rules and the formation of a Juvenile Branch of the Society. The altered rules provide for a sliding scale of contributions from new members; allow certain insured members to again contribute to Scale A; and give "preferential treatment" to members who have joined H. M. Forces and have fallen into arrears.

It was unanimously decided to form a Juvenile Section of the Society, and subject to ratification by the Registrar, the section will consist of "males between the age of 12 years and 16 years who propose to follow the horticultural profession."

Obituary.

GEORGE BURT.—We learn with regret of the death, on the 11th inst. of Mr. George Burt, aged 75. Mr. Burt was appointed gardener at Broomfield Hall, Sunningdale, in 1862, to the late J. Rice, Esq., and served there for 27 years. On the death of Mr. Rice, he engaged in landscape gardening for 18 years, and had a good local patronage. A Dorsetshire man, he gained his experience in good private establishments.

DEBATING SOCIETIES.

WARGRAVE AND DISTRICT GARDENERS.

With commendable energy the members of this Association have undertaken to give as much assistance as possible to allotment holders and other cultivators. On Wednesday, the 14th inst., Mr. Thos. Hasket, Gardener to Mrs. Rhoads, Hennerton, gave a lecture on "Potato growing." About 100 were present. The hon. secretary, Mr. Coleby, showed several interesting and easily made experiments respecting the use of lime in the soil, and several gardeners spoke on certain points raised in the lecture.

READING AND DISTRICT GARDENERS.—At the meeting of this Association, held on the 5th inst., Mr. W. F. Giles, of Messrs. Sutton & Sons, gave a lecture on "Salad Plants." The lecturer enumerated and briefly described most of the cultivated salads, including Lettuce, Beet, Tomatoes, Cucumbers, Celery, Celeriac, Endive, Radish, Onions, Mustard, Cress, Watercress, Chervil, and Dandelion. Lantern slides, reproduced from photographs taken in England, France, Holland and Italy added greatly to the interest of the lecture. — On the 19th inst. before the members of this Association, Mr. T. Parrot, chairman of the Beth Gardeners' Debating Society, gave a paper on "The Growing of Large or Exhibition Fuchsias." A first-class coral certificate was awarded to Mr. A. H. Fuller, The Gardens, Elmhurst, for a large, excellent Fuchsia in cordons, and a similar award was made to Mr. D. Turner, The Gardens, Coker Park, for plants of Cyclamen, carrying large flowers and beautiful foliage.

ABERAMAN HORTICULTURAL.—At the meeting of this Society, held on the 7th inst., Mr. A. J. Cobb, of London Gardens, Cardiff, gave an address on "How to Grow a Ten-perch Plot."

GARDENING APPOINTMENT.

Mr W A Baldwin for 10 years Gardener to T J Lewis Bowen, Esq., Clifton, Bristol, Pembroke Square, is Gardener to the Lady BENNING, Melton in Goring, Berkshire.

CATALOGUES RECEIVED.

T H WEBSTER, Stock, Essex. Catalogue for 1917.

MARKETS.

CROWN GARDEN MARKET.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing market prices for various cut flowers and plants. Columns include item names (e.g., Anemone, Tulips, Carnations) and their prices per dozen or bunch. Prices range from 0.50 to 10.00.

French Flowers, &c.: Average Wholesale Prices.

Table listing market prices for French flowers and plants. Columns include item names (e.g., Allium, Anemone, Freesia) and their prices per dozen or bunch. Prices range from 0.50 to 6.00.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing market prices for cut foliage and plants. Columns include item names (e.g., Adiantum, Asparagus, Fern, Myrtle) and their prices per dozen or bunch. Prices range from 0.50 to 15.00.

Remarks.—Business in plants is improving. There may now be had various in variety, Boninas, Erica, Primula, E. White-veina, and Anemone. All French are improving in quality, but flowers are more plentiful than in former weeks past. Large quantities of blooms are arriving from the Channel Islands, consisting chiefly of Anem. in single and double Dutch, Bellis, Narcissus, Soliel-d'Or, Narcissus Grand Prince, and Pansy White. Coloured flowers are much in demand, and white flowers, although in smaller and a ready sale. Single Violets are more plentiful and the blooms are larger. R's'sials are more plentiful, the varieties include Madame A. Chateaux and Joseph Lowe. Sueda, a large variety of French flowers, consisting of Anemone, large double and single, Anem. (Mimosa), white and pink Stocks, Allium (see B. Bulletin), and Parma A. flowers arriving daily. Single Violets arrive from the Netherlands.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing market prices for plants in pots. Columns include item names (e.g., Aralia, Asparagus, Aspidistra, Cineraria) and their prices per dozen or per tray. Prices range from 0.50 to 12.00.

Vegetables: Average Wholesale Prices.

Table listing market prices for various vegetables. Columns include item names (e.g., Artichokes, Asparagus, Beans, Broccoli, Broad Beans) and their prices per dozen, per bag, or per bushel. Prices range from 0.50 to 15.00.

Remarks.—There are larger quantities of boxed Apples on offer this week, but none in barrels are offered. The supplies of Grapes (from Germany) are limited. A few forced Strawberries are now available and English Tomatoes are commencing to arrive. French Beans and New Potatoes are in short supply. Most of the Mushrooms, Sea-kale and Cauliflower in the market are from France. Broad Beans, Spinach and Parsnips are arriving from Broadbalk in some quantities. English Chervil and Hamburg Parsnips are in short supply. There are fewer Parsnips, but good quantities of Swedes.

CROPS AND STOCK ON THE HOME FARM.

POTATOS.

Tubers set up in boxes for sprouting require plenty of air to induce a stocky growth. Surplus sprouts may be removed during wet weather, and if such work be done now it will help things forward. When the "seed" is lying in bulk the tubers should be discouraged to grow by frequently turning them over, for when the sprouts grow in a mass they are useless, merely weakening the tubers. An extra ploughing of the land should be done to provide a finer tilth. The end of the month is a suitable time for planting.

POTATOS ON GRASS.

As my remarks on this subject on p. 120 may be misconstrued and deter some from planting this crop on grass land, I may state that I do not advise Potatoes to be planted on newly-ploughed grassland, for the reason that there would not be sufficient depth of soil to earth the plants well, and the planting would not be easily done except by hand.

Ordinary ploughing only disturbs the soil to a depth of 4 inches to 6 inches, but if a second plough were used in the same furrow and sufficient soil thrown on the turf to bury the grass deeply the circumstances would be considerably altered, and success could reasonably be expected. I was anxious not to recommend any method of culture that might end in disappointment.

Where a grass plot is to be planted with Potatoes by hand the circumstances are entirely altered, as the turf can be buried one foot deep, which is ample for all purposes of cultivation, and with animal or artificial manure added success would follow.

CHARLOCK.

In many counties on light soils Charlock (Brassica sinapis) is a terrible pest among spring-sown crops, such as Oats, Barley and roots. The seed of Charlock can lie dormant in the ground for many years, and directly deeper ploughing is practised a crop will appear. Autumn sown Wheat and Oats are not affected, as Charlock cannot withstand frost. The most efficient remedy is spraying annually with copper sulphate directly the first rough leaf has formed. No harm is done to the corn crops by spraying, though it may turn the leaves a little brown at the tips. This discoloration quickly passes off, but Turnips, Vetches, Mangolds, and any plants with a rough leaf surface must not be sprayed, as the solution adheres to the leaves as in the case of Charlock, and injures the plant. For corn land a 3 or 4 per cent. solution, or 30 or 40 lb. of copper sulphate to 100 gallons of water, is a safe quantity to use, with a sprayer which distributes the solution in the form of a fine mist. Fifty gallons per acre is sufficient.

JERUSALEM ARTICHOKE.

In view of the scarcity of seed Potatoes, tubers of Jerusalem Artichoke, if available, should be planted for a crop. In well manured, deeply ploughed land the tubers should be at once planted in every third furrow at 15 inches apart.

BRIEF REMINDERS.

OATS.—No time should be lost in sowing Oats provided the land is in a fit condition to receive the seed, remembering that early-sown plots give the best returns in corn and straw, and the crop ripens earlier, which means much at harvest time. GRASS FOR HAY.—"Lay up" the pasture from which hay is to be cut this season. If there is any doubt about the richness of the soil being sufficient to give adequate results, some assistance should be given in the shape of artificial manure. A dressing of 4 cwt. of superphosphate, 2 cwt. of sulphate of ammonia, or 1 cwt. of nitrate of soda per acre would give a fillip to the growth of the grass previous to harrowing, which is beneficial in scattering droppings and removing moss. Afterwards, firmly roll the surface, for this attention will prove of much value when cutting the grass. Apart from leveling such obstructions as mole hills, repeated harrowing and rolling favours the growth of the grass. Where obtainable, a compost of decayed manure, vegetable refuse, wood ash and quicklime would make a vast improvement on the growth of the turf, producing close, sweet herbage. E. Molyneux.

ANSWERS TO CORRESPONDENTS.

COLD STORAGE FOR LILiums: *O. H. L.* You do not state what acids are used to produce the temperature of 23°, nor whether you can maintain this temperature steadily throughout the period of storage. We cannot advise you without this information.

CULTIVATION FOR ALLOTMENTS: *W. J. M.* The Planet Junior combined cultivator and horse-hoe, with its fittings for various kinds of work, is a very useful implement for a small holding, market garden, or large allotment. It should not be a large-size implement if only one horse is to be used with it, to work it all day, or even more than a few hours at a time. There are ploughing attachments to a large-size cultivator, but the illustrations of them do not seem to show that any considerable depth of soil could be turned over by them. We have no experience with the Retro-force implement.

EXTRACTION OF SUGAR FROM BEET: *Nonon and Young Reader.* We are afraid that the extraction of sugar from Beetroots cannot be undertaken successfully in a small way with ordinary household utensils. It needs special plant. The roots are cut into slices and put into big communicating kettles. Water runs through these and extracts the sugar by diffusion. During the process the amount of sugar increases progressively, and the water forms a juice containing, besides sugar, mineral salts which have to be eliminated. Special plant is used to "lime" the juice, then a saccharate of lime is formed, which is separated from the other salts by other machinery again is required to eliminate the lime through "carbonation." Finally the solution of sugar has to be concentrated in order to come to crystallisation. The machinery is complicated and expensive, and a regular supply of roots from a large acreage is necessary before a factory can be started with any chance of success. Extracting sugar at home by macerating the root slices in water and evaporating would involve a large waste, both of sugar and of fuel. It is much more economical to eat the roots raw in salad and cooked as a vegetable. Then the digestive system does the extraction free of cost.

FANSEL WEED IN A POND: *G. W. B. G.* Skim off as much of the weed as possible and treat the water with copper sulphate, as you suggest. First ascertain the amount of water in the pond by multiplying together the average length, breadth and depth, and multiplying the number of feet thus obtained by 64, the approximate number of gallons in one cubic foot. Then, to every 100,000 gallons of water take 1 pound of copper sulphate, break it up, and enclose in a bag of loose texture. Draw the bag backwards and forwards through the pond in parallel lines 10 or 20 feet apart. The sulphate will dissolve and become diffused throughout the water, killing all the weeds. If used in the proportions given above the copper sulphate is not likely to injure fish, and may even benefit them by ridding them of parasites.

GARDENING ENGAGEMENT UNDER THE REGISTERED OCCUPATIONS ORDER: *M. S.* The Order was dated February 23, 1917, and directed that after that date men, between the ages of 16 and 60 inclusive, in the various scheduled trades (including domestic service, both indoor and outdoor) should not be freshly engaged. We understand from your letter that your engagement was entered into and finally completed on February 23 last. It would seem therefore that the Order does not apply to you, although it would have done so had you accepted the post on the following morning. If your engagement should fall through, and you find it impossible to make a livelihood except as a gardener, you should communicate with the Director-General of National Service, St. Ermin's, Victoria Street, Westminster.

GARDENER'S WAGES DURING ILLNESS: *H. M.* The fact of your being insured does not entitle your employer to refuse to pay your wages on account of illness. If your employer wishes to escape liability his proper course is to give you the usual notice to terminate your engagement.

GLASS SUBSTITUTE FOR FRAMES: *W. H.* The best material for your purpose is the special oiled paper sold by the Willsons Paper and Canvas Company, Willsons Junction, London, N.W.

HEPATESTRUM (AMARYLLIS) BULBS: *J. M., Ocean.* The red staining on the bulbs may have been caused by mites, and the remedy would be to spray them with an insecticide or dust with flowers of sulphur. To destroy the newly big sponge the plants occasionally with a weak insecticide. If the plants are in a bad condition, and do not promise to flower for some time, turn them out of their pots, cleanse the leaves and bulbs thoroughly, remove decayed portions of the roots, and dip them in weak insecticide. In re-potting, use rather smaller pots than the plants previously occupied.

LITTER FOR STRAWBERRIES: *Miss E.* It is the practice of many to use littery material instead of straw, which, you state, you cannot obtain. The litter should be applied before the flower-spikes develop in order that there may be time for the rains to wash the straw clean, and it will be bleached by the sun. Alternatives are to use peat litter or cocoa-tub fibre.

LYCASTE SKINNERS: *Bonchait.* Lycaste Skinner does not commonly bear two flowers on one inflorescence, but exceptionally well-grown plants sometimes produce twin flowers. We have seen a specimen with all the flowers in pairs. Examination of the spike above the bract will often disclose a rudimentary bud, which, failing excessive vigour, remains dormant. The same thing happens with *Cypripedium* insignis and other Orchids which usually bear but one flower, when they are well-grown. With regard to the spotting of the pseudo-bulbs in former years, it is very probable that the addition of lime to the compost has been the cause of the pseudo-bulbs being free from "spot" this season.

MANURES FOR POTATOS: *Constant Reader.* Dig the lime into the soil now, scatter the superphosphate at the time of making the rows, and use the sulphate of ammonia and wood-ash when disturbing the soil in earthing-up the plants.

NAMES OF PLANTS: *M. S., Altrincham.* Hoffmannia (Cheshboughtii, sometimes called Hegensia and Camphylotrys in gardens.—*Constant Reader.* Chlorophytum elatum variegatum (the green leaf with yellow edge); Ophiopogon japonicus variegatum (yellow with green markings). The others send when in flower, and number the specimens.—*P. J. W.* The leaf is of a *Criminum* of the *C. Moorei* and *C. Powellii* section. The plant should be grown in a greenhouse or conservatory, and watered in the usual way until the leaves fade in the end of the summer, when water should be withheld until growth commences again. If planted deeply in a sheltered situation on the open ground, at the foot of a wall, or a plant-house for preference, it would probably prove to be hardy in winter. We do not recognise the portion of root-stock. *Lilium auratum* should be kept in the frame until growth is well advanced, when the plant should be removed to a greenhouse.

NEWLY-PLANTED RASPBERRIES: *Constant Reader.* Cut the canes to within 1 foot of the ground.

OVERHANGING TREES: *J.* Your neighbour is entitled to cut off those portions of your trees which overhang his land, but it would be a very unneighborly act on his part if he did so without first discussing the matter with you in a friendly way. He cannot, however, enter upon your land for the purpose unless he first notifies you of his intention so to do. If he cuts off anything more than actually overhangs his land you can bring an action against him. The boughs which are cut off would still belong to you.

STRAWBERRY ST. ANTOINE DE PADOUÉ: *S. Jack-son.* To obtain a supply of good fruits of Strawberry St. Antoine de Padoue during the late summer and autumn, remove all but four or five of the earliest runners on each plant as soon as they develop. These runners should be encouraged to root where they grow, and they will come into bearing at the time stated above. The plants do best in a hold-

ing soil, liberally treated and well supplied with water. The present is a suitable time to make new beds, allowing a space of 2 feet between the rows and 18 inches between the plants. Make new plantations every third, fourth, or fifth year, or when the plants show signs of falling.

TIME FOR INTERVIEWS: *Landford.* You enquire whether you cannot claim time off to keep an appointment with a prospective employer. As we presume you mean time that would naturally be spent in work, we think the matter is one for arrangement between yourself and your present employer; but it, after being asked for permission, he refuses, we think it would be better for you to fix any future interviews at such hours as will enable you to keep them in your spare time.

TREATMENT OF CODIAEUMS (CROTONS) AND EUPHOBIA PULCHERRIMA (POINSETTIA): *Chick, Horsely.* The present is a suitable time to strike cuttings of Crotons. Place the cuttings singly in small pots and plunge them in a propagating case with a bottom heat of 80° to 85°, and keep the frame close until the cuttings are rooted, when they should be inured to more light and air gradually. Another method is to cut the stem nearly half through, and bind damp moss around the cut part. Crotons and Poinsettias should be potted in friable loam mixed with a little peat or leaf-mould and sharp sand. Put plenty of drainage material in the pots, for during their growing season the plants need plenty of water; shade them very lightly. If the atmosphere is kept well charged with moisture, Crotons will not suffer from an excess of heat, therefore frequently syringe the stages and floors morning and evening, but do not drench the plants overhead. Suitable temperatures during the winter months are 60° to 65° by night and 65° to 70° by day; in summer, 70° at night, rising to 85° or 90° after closing early, with sun heat and moisture. Ventilation should only be admitted at the top of the house, and regulated in accordance with the weather. Poinsettias should be dried off gradually and the pots placed on their sides under a greenhouse stage, where the temperature does not fall below 45°, about the middle of May, water the roots and place the plants in a light house to form suitable shoots for cuttings. Make the cuttings with a heel, when the shoots are about 5 inches long, and insert them in small pots filled with fine soil and sand. Their treatment should be the same as for Codiaeums (Crotons). The old plants may be cut back to within 3 inches of the current year's growth, the soil shaken from the roots, and repotted into pots a size larger than they occupied before. Shade the plants in the middle of hot summer days, and towards autumn, as they develop in growth, gradually increase the amount of ventilation. Grow both the Poinsettias and Crotons close to the roof-glass.

VINES SPLITTING: *B. W. B.* The splitting of your Vine rods was doubtless due to frost acting on immature growth. Probably the stopping of the shoots was not attended to at the right time, and the growth overlapped, thereby obstructing the light from where it was most required, and growth continued late in the season when the sunlight was feeble. The consequence was that the cells contained more water than they usually do in winter, when the canes have ripened properly, and the expansion of this water under the action of frost caused a rupture, and with the subsequent warmth the cracks opened wider. The wounds will heal in the course of the season, but in future you must remember that leaves situated where daylight cannot reach them are useless, and so are those made late in the season. If the protective outer bark was removed from your Vines (a practice which is not yet obsolete), the frost would be better able to freeze the sap. We doubt the accuracy your thermometer, which indicated 50° of frost, and yet tender plants in a cold house were not much injured.

RYDERS SEED Catalogue FREE.

Send Postcard for Ryders 1917 Catalogue, over 100 illustrations

All Seed Orders are dispatched by Return Post.

All Orders over 2 6 sent Carriage Paid.

SUGAR BEET FOR JAM MAKING.

The best variety for growing in this country.

8D.

Full instructions for sowing, growing and using with each packet.

per oz 4 lbs. 2 6.

No Agents.

Only Address.

RYDER & SON, LTD.,
Seed Specialists, ST. ALBANS.

Beware of Imitators.

BY APPOINTMENT.
PAULS' ROYAL NURSERIES.
Waltham Cross, HERTS.

Large stocks of the following in excellent condition for Spring Planting, at very moderate prices:—
ROSES, in all forms, new and old varieties.
FRUIT TREES, for the orchard and garden.
HARDY TREES and SHRUBS.
HARDY CLIMBING PLANTS.
RHODODENDRONS and CAMELIAS.
HERBACEOUS PLANTS.
SEEDS and Garden Sundries.

Price Lists on application stating articles required.

Wm. PAUL & SON,
WALTHAM CROSS, LTD.

Horse Shoe Boilers

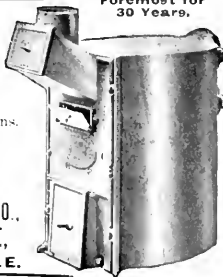
Foremost for 30 Years.

For Economy.

As used in the Botanical and Zoological Gardens.

PRICE OF COMPLETE APPARATUS ON APPLICATION

C. P. KINNELL & CO., Ltd.,
Southwark St.,
LONDON, S.E.



Once Fried, Always Used.

The "PATTISSON" HORSE BOOTS

SIMPLEST! STRONGEST! MOST ECONOMICAL!

SOLES of best English Sole Leather (Waterproofed), with Motor Tyre Rubber Straps, out of solid Rubber. Fig. 1 can be refitted repeatedly, equal to New Boots. Rubber Soles Strongly Recommended.

USED FOR MANY YEARS IN THE ROYAL AND IN 4 THOUSANDS OF THE PRINCIPAL GARDENS.

The "PATTISSON" BOOTS are the most durable on the market, out-strip several sets of ordinary boots, and when worn out can be many times refitted and are then equal to new ones, but this may only be satisfactorily done by us, the makers,

SILVER MEDALS. Hundreds of Testimonials. 1911 Horticultural Soc., 1904 rais. The "Field" says—A 1911. Royal International "As good as anything that Exhibition, 1912."

Illustrated Price Lists, from the Makers.

H. PATTISSON & CO.,
4-6, Greyhound Lane, STREATHAM, S.W.
CONTRACTORS TO H.M. GOVT.

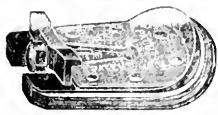


Fig. 1.



Fig. 2, A Quality.



Fig. 2, B Quality.

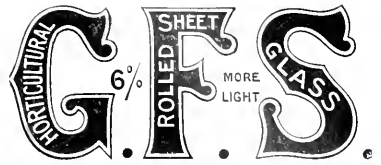


Food Production on Farms & in Gardens.

To obtain the best results sow
Dicksons Seeds
which are all carefully selected from the finest and most productive strains, and are always reliable.

Prices moderate. Catalogues free.

Dicksons Seed & Flower Showers Chester.



A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/4 in. (or equal to stout 21 oz.) in thickness. Can be made to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of
GENUINE WHITE LEAD PAINT.

"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cans.

AND
BEST LINED OIL PUTTY.



Complete Price List of
Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, LTD.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C. 6
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.



SWEET PEA and TOMATO PLANTS

Our Great Specialities.

Sent by rail New East. 10 plants

90 Varieties, including 20 Novelties.
THE EDITORS of many Gardening Papers have commended our selection.

This week we are publishing the "Novelties" as follows:—

Barbara	Schön orange self	9d.	1 4
Dot Alvar	French lavender	9d.	1 4
Edward Cowdy	Full hot orange and white	9d.	1 4
Fiery Cross	Following white and pink	1 1	1 10
Golden Glory	Self colour orange	1 1	1 10
Harmony	Light lavender and pink	1 1	1 10
Inspector	Light orange and white	1 1	1 10
John Ireland	Orange buff and red variegated	9d.	1 4
Job Ladder	Especially fine, deep crimson	9d.	1 4
King Beaver	Light orange and white	9d.	1 4
Mrs. E. Cowdy	Grand maroon, vigorous	9d.	1 4
Rebecca	Light orange and white	9d.	1 4
New Miriam Beaver	Clean, softest pink	9d.	1 4
Peace	Cleanest pink, many double flowers	1 1	1 10
Rosy Rapture	White ground, maroon and pink	1 1	1 10
Stanley Crisp	Pure white of great substance	9d.	1 4
Victory	Light orange and white self	1 1	1 10
The Lady's Melrose	Grand new variety	1 1	1 10
Victory	Light of deep salmon red	1 1	1 10
Warrior	Rich, double maroon	1 1	1 10

PLANT IN THE OPEN NOW.

COLLECTIONS from GENERAL COLLECTION not the above novelties, 5 plants each, 12 varieties, our selection, n. 3 3; (24) 5 9; (24) 10 6; (24) 10 6.

Important. We cannot but draw to the notice the fact that the above novelties, 5 plants each, 12 varieties, our selection, n. 3 3; (24) 5 9; (24) 10 6; (24) 10 6.

Important. We cannot but draw to the notice the fact that the above novelties, 5 plants each, 12 varieties, our selection, n. 3 3; (24) 5 9; (24) 10 6; (24) 10 6.

TOMATOES.

Varieties	Seed	Seedlings (ready for transplant)	Transplanted (ready for potting)
Alisa Craig, Comet,	6d.	25 1	12 1 6
Flitbasket, Supreme,	1 1	25 1	12 1 6
Kondie, Sunrise	6d.	25 1	12 1 6
Balch's Gem, Beattall	1 1	25 1	12 1 6
Bide's Recruit	1 1	25 1	12 1 6
Bucks' Tomato	only	10s.	4 6 10s. 10 6

COLLAR PLANTS. That you may TEST which suits you BEST. 5 plants each 4 4; 10 plants each 8 8; 15 plants each 10 10.

Early Cauliflower Plants 8d. 4 2, 4 10.

TERMS. C.W.O. Please remit notes for postage.

BUCKS, St. John's, IPSWICH.

THE ROCK GARDEN

A practical work on the cultivation and management of Rock Gardens, written by Reginald Farrer. One of the best and most popular works on the subject.

Contains 8 plates in colour. Price 1/10 post free.

THE PUBLISHER,
The Gardeners' Chronicle, Ltd., 41, Wellington Street, Covent Garden, London, W.C. 2.



Those Channels at the bottom of CRET

Pots assure proper drainage and air to your plants. Exceptional porosity, and root-roominess comply to the healthfulness of CRETS. Try them. Only the best are good enough now!

Specimen CRET Prices: 2½ ins. 4/- per 100; 1½ ins. 75/-. All are per 100. Carriage Paid on orders over 20/-. Safe delivery guaranteed.

FREE SAMPLE "CRET" POT on request, with interesting booklet giving prices, special assortments, etc. Write today.

PETER BAILEY & SONS, LTD.
2, Heaton Mersey Pottery, near Manchester.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.

STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

JAMES GYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges,
AND
Orchard House Trees.

A LARGE AND SELECT STOCK
ALWAYS ON VIEW.

ILLUSTRATED AND
DESCRIPTIVE CATALOGUE
POST FREE.

THOMAS RIVERS & SON

Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.

TURF LOAM.

Very Fibrous Yellow Turf Loam

For VINE BORDERS, CARNATIONS,
ROSES, MELONS, CHRYSANTHEMUMS,
FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid or Delivered.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.

ROSES

(Vol. 10 of PRESENT DAY GARDENING), by H. R. DARLINGTON

Edited by R. HOOPER PEARSON, Managing Editor of "Gardeners' Chronicle."

A good practical book for all Rose lovers. Contains much valuable information. 5 full-page coloured plates. A double volume. Price 2 10, post free. Special presentation edition with beautiful cover design, in cloth gilt, gilt top, price 3 10 post free.

THE PUBLISHER,

"Gardeners' Chronicle" Offices, 41, Wellington Street, Covent Garden, London, W.C. 2

NOW READY.

Root & Stem Vegetables

WRITTEN by the late Alexander Dean, will be a valuable companion to the grower of Vegetables. It has a calendar of operations that will prove a useful guide to both the amateur and professional gardener, and the many hints given in the chapter on growing for Exhibition are invaluable. The work is beautifully illustrated by 8 plates in colour. Price 1/10 post free.

THE PUBLISHER,

"GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C. 2.

CLIMBING PLANTS

(Present-Day Gardening Series)

By WILLIAM WATSON.

(Introduction by William Robinson.)

A Practical Handbook on the Treatment of Climbing Plants, both hardy and tender species. Illustrated with 24 full page plates, 8 of which are reproduced in colour.

Price 2/10 post free from:

The PUBLISHING DEPT.,

"GARDENERS' CHRONICLE" OFFICES,
41, Wellington Street, Covent Garden, W.C. 2

ROYAL GARDENERS' ORPHAN FUND

B. WYNNE, Sec.,

19, Bedford Chambers, Covent Garden,
London, W.C.

NOW READY

THE

HORTICULTURAL

DIRECTORY

AND

YEAR BOOK

FOR 1917.

Owing to the paper shortage, an unlimited number of copies of this work cannot be guaranteed, and purchasers are advised to order AT ONCE to avoid disappointment.

Orders will be dealt with in strict rotation.

The 1917 edition contains no name or address which has not been verified. The information given is therefore absolutely trustworthy.

Apply, enclosing 1/4 for each copy required, to:—

GARDENERS' CHRONICLE,
LTD.,

41, WELLINGTON ST., COVENT GARDEN,
LONDON, W.C. 2.

EVERY
GARDENER
KNOWS
THAT

Clay's gets there
and makes the Garden
gay all the year round

Sold everywhere in TINS at 6d. & 1s., and in BRANDED & SEALED BAGS: 1½ lbs., 2s., 6d.; 14 lbs., 4s., 6d.; 28 lbs., 7s., 6d.; 56 lbs., 12s., 6d.; 112 lbs., 20s. Or direct from the Works, Carriage paid by the United Kingdom or Cash with Order (except 6d. TINS)

CLAY & SON, Manure Mills & Bone Crushers, STRATFORD, LONDON E.

IT IS THE
STANDARD
FOOD FOR
PLANTS.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841 No 3979

No. 1579. VOL. LXI. (THIRD SERIES) SATURDAY, MARCH 31, 1917.

{Registered as a Newspaper.} PRICE 3d. POST-FREE, 3d.

SUBSCRIPTION—Inland, 15-; Foreign, 17/6 (22/-. 10s.) (\$4 26c.) per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2.

Telegraphic Address—"Gardchron, Rand, London."

Telephone—Gerrard 1543.

For CONTENTS see page 131.

NOTICE TO ADVERTISERS.

Friday next, April 6th, being Good Friday, the "Gardeners' Chronicle" will be published on Thursday, April 5. Advertisements for next week must therefore reach the Office not later than TUESDAY, 5 p.m. April 3.

BATH'S CARNATIONS, PANSIES, DAHLIAS, CHRYSANTHEMUMS, and other flowers. New Illustrated Catalogue of the best new and standard varieties ready, and will be sent post free on application.—(Dept. A), R. H. BATH, LTD., The Floral Farms, Wisbech

BATH'S SELECT SEEDS.—New illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application.—(Dept. A), R. H. BATH, LTD., The Floral Farms, Wisbech.

NOW IS THE TIME TO PLANT

KELWAY'S Gladioli Bulbs (all British), if you wish to have a glorious display of flowers in the autumn when blooms are scarce.

Kelway's, the champion growers of Gladioli, are offering a wide selection of beautiful varieties in all colours at greatly reduced prices during the war.

Write at once for their illustrated catalogue, and make a selection that will enable you to send flowers to the Wounded Soldiers in Hospitals and Nursing Homes from July till the frosts come. Gladioli are invaluable for cutting, as every bud opens in water. They last for a fortnight, and are so bright and cheerful that they are particularly well suited to Involve. For decoration of all kinds the Gladioli Kelway is pre-eminent.

Carrriage paid and packing free for prepaid order.

KELWAY & SON,

Retail Plant Department, Langport, Somerset.

WALLACE'S NEW CHINESE

PRIMULA HELODOXA, A.M., R.H.S.,

1315. Other new Chinese Primulas, &c.

BERBERIS, NEW CHINESE SPECIES,

LILIES, GLADIOLI, BEGONIAS, &c.

Our SPRING CATALOGUE post free on application.

R. WALLACE & CO., LTD., Kilmfield Gardens, Colchester.

WM. DUNCAN TUCKER & SONS,

LTD., Lawrence Road, South Tottenham, Cuisineries, Winter Gardens, Vineries, Peach-houses, Portable Buildings, &c. Catalogues gratis.

DOBBIE & CO., ROYAL SEEDSMEN,

EDINBURGH will send a copy of their 1917 Catalogue, and Guide to Gardening, 150 pages, nearly 150 illustrations, free, if this paper is mentioned.

WATERER'S ROSES & FRUIT TREES.

Grand stocks of the best varieties. Lists free.—JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Twyford, Berks.

DICKSON'S HORTICULTURAL

MAXURE and other high-class Fertilisers, also Dickson's Improved Mushroom Spawn. Priced circulars free on application to DICKSON'S, Royal Seed Warehouse and Nurseries, Okester

SANDERS, Orchid Growers,

St. Albans.

SUTTON'S VEGETABLE SEEDS.

SUTTON'S FLOWER SEEDS.

The Best.

SUTTON & SONS, The King's Seedsmen,

READING.

PEACH LEAF BLISTER.

Bunyard's Medica has been proved by hundreds of practical Gardeners a certain cure for this trouble, to be applied in March and April; 2s. per quart, 5s. 6d. per gallon, in cans.—GEO. BUNYARD & CO., LTD., Royal Nurseries, Maidstone.

OMISSIONS and Failures made good by

purchasing Sutton's Seedlings, just ready for picking out or putting on at correct dates for best possible results: all popular Greenhouse plants, Summer Bedding and Hardy Border Flowers, &c. Grand list of CYCLAMEN now ready. Write for catalogue—STORRIE & STORRIE, Flower Seeds Specialists, Gloucester, Fenchurch.

WATERER'S GOLD MEDAL RHODO-

DENDRONS.—We cordially invite you to come and select any plants you require. We have over 50 acres, comprising the finest collection in cultivation. Catalogue free.—JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Bagshot, Surrey

GISHURST COMPOUND.

Insecticide and Fungicide.—Over 50 years' reputation; highly Commended R.H.S. Scientifically-controlled Trials at Wisley, 1914-15. Sold by Dealers in Garden Sundries. Wholesale PRICES PATENT CANDLE CO., LTD., Battersea, London, S.W.

LAXTON'S SEEDS AND FRUIT TREES.

New Catalogues of the above now issued gratis. Grand New Early Peas, Laxton's Superb, &c., Fruit Trees. A fine stock to offer—may still be safely planted. Pamphlet on Cultivation on receipt of stamped envelope.—LAXTON BROTHERS, Nursermen, Bedford.

BARR'S Beautiful LILIES, GLADIOLI,

CANNAS, MONTIBRETIAS, TIGRIDIAS, &c., for spring planting. Descriptive Catalogue free on application.—BARR & SONS, King Street, Covent Garden, London.

BARR'S VEGETABLE AND FLOWER

SEEDS of finest selected strains and tested growth. Catalogue free on application.

BARR'S Hardy PERENNIALS, ALL

PINES, ROCK PLANTS, Apatites, Climbers, &c., for Spring planting. Catalogue free on application.

"ROCK GARDEN PLANTS. Where and

In What Soils to Plant Them," with Catalogue, free on application. Special selections, 12, 3s. 6d.; 25, 5s. 6d.; 50, 12s. 6d.; 100, 25s. All different named.

strong stocks; please state position and soil.—G. R. PHIPPS, Alpine Nursery, Barnham, Bognor.

PAUL CRAMPEL, 1,500 young Stools,

real good fine plants, ready for 4 inch pots; what offers the lot? Marguerites, Mrs. Saunders, 500, big stuff, £1 5s. R. W., Box 19, 41, Wellington Street, Covent Garden, W.C. 2.

100,000 LARGE GARDEN FERNS.

25s. 100; Palms, Begonias, Crotons, Draecenas, Roses, Eranas, Gloxinias, Lilies, Hydrangeas, &c.; catalogues free.—J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

For Advertisement Charges see page iii last week.

VIOLAS, finest Scotch, 12 Bedding

Varieties, correctly named, 2s. 3d., post free. Early Chrysanthemums, 12 very fine varieties, 3s. 9d., post free. Strong plants—DOBBIE & CO., Florists, Edinburgh.

BUNYARD'S ASPARAGUS.

—Orders are now being booked for these plants for delivery in March. List, with full directions and prices, on application.—GEO. BUNYARD & CO., LTD., Royal Nurseries, Maidstone.

MACKENZIE and MONCUR, Limited,

Hothouse, Builders and Heating Engineers, London, Edinburgh and Glasgow. By special Appointment to H.M. the King. London Office, 8, Camden Road, N.W.

JAMES GRAY, LTD., Builder of Con-

servatories, Greenhouses, &c., and Heating Engineers, Dunvers Street, Chelsea, London, S.W. 3. Wire, 201, Western London. Telephone: 201 Western.

ROSES.—Wm. Paul and Son, Waltham

Cross, Ltd., beg to offer a fine stock of all the best varieties, new and old, for present planting. Priced catalogue on application.—PAULS ROYAL NURSERIES, Waltham Cross, Herts

GREENHOUSE PAINTING & GLAZING

"Vitrolite," superior to White Lead Paint. "Plastine," super-sensitized putty. Full particulars from W. CAMSON & SONS, Grove Works, Battersea. Agents throughout the country.

BLACKMORE & LANGDON, Bath, will

have pleasure in sending a copy of their 1917 Catalogue of Begonias and Delphiniums, &c., &c., free, if this paper is mentioned. Magnificent strong roots of our unequalled Delphiniums, in superb variety.

MESSRS. FIDLER & SONS beg to an-

nounce, with sincere regret, that they will not be able to accept, at the present time, any more orders for Seeds or Seed Potatoes.

Since the break-up of the frosty weather, they have been inundated to such an astounding extent with orders, that, severely handicapped as they are in respect of labour, there is considerable difficulty in dealing with the accumulation.

As soon as arrears have been met to the necessary extent, they hope to again commence accepting orders, when the fact will be announced in the Press.—FIDLER & SONS, Royal Berkshire Seed Stores, Reading.

FERNS! FERNS!—Tree Ferns, Climbing

Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns; catalogues free.—J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

FOR SALE, cheap, 280 Bulbs, Calanthe

Bryan, and 12 Wm. Murray.—Write, R. H., Box 17, 41, Wellington Street, Covent Garden, W.C. 2.

ORCHID PEAT, 6s. and 7s. 6d. per sack;

Brown Peat, 12s. 6d. per yard in trucks, in bags 2s. 6d. each, 30s. dozen; Oak and Beech Leaf Mould, Yellow Loam, Stacked and Fresh Out, Silver Sand; 4-ton lots for 45s.; C.N. Fibre, 48s. down bags; list free.—J. HANDSCOMBE, F.R.H.S., Feltham, Middlesex.

SPORTSMEN, Farmers, Horsemen.—Try

our splendid Yorkshire Whipped Tweed; wears like leather; showproof; 7 yards for 17s. 6d. Patterns free.—BRADFORD WOOLLEN CO. (71), Bradford.

SALES BY AUCTION.

WEDNESDAY NEXT, at 12 o'clock.
1,800 FRUIT TREES.
Herbaceous Plants, Rhododendrons.

3,000 ROSES

in variety, Carnations, Lilies, Gladiolus, and other autumn-flowering Bulbs
Cases of Japanese Lilies, retailed and newly imported,
at 3 o'clock.

MESSRS. PROTHEROE & MORRIS
will sell the above by auction at their Central Sale Rooms, 67 and 69, Cheapside, E.C.
On view morning of sale and catalogues had.

TO MARKET GROWERS.
TO BE SOLD.

FREEHOLD NURSERY.

3,000 FT. RUN OF GLASS (over 1 acre),
useful Trade Buildings, and 2 acres of
Land. Special terms of payment can be arranged. Immediate possession. — Particulars of PROTHEROE & MORRIS, 67, Cheapside, E.C. 2.

BUSINESSES WANTED.

WANTED, NURSERY, to Rent; about 1,000ft. Glass; with house and ground.—Full particulars, PERRY, Hill Grove Nursery, Kidderminster.

BUSINESSES FOR SALE.

FOR immediate disposal, old-fashioned
Freehold Nursery, about 3 acres, well planted with Fruit, &c.; 10 Greenhouses; about 500ft. run, mostly heated; dwelling-house, stable, 2 offices, &c.; artesian well; extensive frontage on main road. Good health only reason for selling.—For terms, write E. D., Box 16, 41, Wellington Street, Covent Garden, W.C. 2.

NURSERY, to be Let or Sold; old established house and shop, main road, 200ft Glass (heated); acre good land, having to join Army — W. PARSONS, Braunton Road, Clifton-on-Sea.

PUBLISHERS' NOTICES.

SANDERS' List of Orchid Hybrids, complete with Addenda to January, 1917.
Concise, reliable, and indispensable to all who take an interest in orchids, giving the names and parentage of all known Hybrid Orchids.
Price, including the Addenda, 21s., post free.
SANDERS, ST. ALBANS, ENGLAND.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock, cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

PLANTS, &c., FOR SALE.

YOUNG ORCHARD, eight years old
Fruit Trees, must be cleared to plant Potatoes—Apples, Pears, Plums, Is. 3d. each, 12s. per dozen. Specimen Trees in Standard or Bush, 1s. 6d. to 3s. 6d. each. Varieties include Newtons, Bramleys, Christmas Pearmain, Williams, Victorias, and all leading varieties. Large Bushes in Gooseberries, and Red, Black, and White Currants, 6d. each, 5s. per dozen. All in full profit. No waiting years for fruit.—FRED PAREES, Vine Garden, Wyberton, Boston.

PERPETUAL FLOWERING CARNA-
TIONS, strong, healthy plants, now ready, amongst which are the following varieties: 3s. 6d. per doz. out of sand, 5s. 6d. per doz. in pots.—Enchantress, Snowstorm, May Day, Lady Northcliffe, Mikado, Rose Pink Enchantress; 6s. per doz. out of sand, 7s. per doz. in pots.—Enchantress Supreme, Salmon King, Gorgeous White Enchantress, Champion, Triumph. Price List of Latest Novelties on application.—J. C. JENNER, Lynwood Nurseries, Rayleigh, Essex.

MALMAISON.—Extra strong Plants, well rooted, in 10 varieties. What offers to clear? F. H., Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

THE BOOK OF THE MOMENT.

Root & Stem Vegetables

By ALEXANDER DEAN, V.M.H.

At the present crisis the food problem bulks largely. The question of which vegetables contain the most food is a pressing one, and it is found that root and stem vegetables, such as Potatoes, Carrots, Turnips and Parsnips, contain much higher percentages of food value than green vegetables, valuable though these are as adjuncts.

"ROOT AND STEM VEGETABLES"

is a book which treats *only* of those vegetables the root or stem of which is eaten, and is therefore especially valuable to all who are endeavouring to concentrate their attention on growing the most economical forms of food. It contains eight coloured plates reproduced from photographs.

To be obtained from—

**THE LIBRARIAN,
Gardeners' Chronicle, Ltd.,
41, WELLINGTON ST., W.C. 2.**

PRICE 1/10 POST FREE.

MISCELLANEOUS.

THEY'RE NOT STICKY.

Beacon Oilskins are quite free from any stickiness, and, what is more important, they never fail to keep out the heaviest rain or sleet. Hundreds of farmers, gamekeepers, and other outdoor men, women and children wear them because they bring weather comfort. You ought to wear them if you want to keep dry in any drizzle. The Beacon Booklet will help you to choose the style you need. Children's Coats from 8/6. Men's from 9/5. Ladies' Smart Oilskins, 10/6. Long Leggings from 2/9. Soot-westers, from 1/5. Your money back if they don't satisfy you entirely. Send a postcard to-day for our Free Booklet of "Weather Comfort."—Send now—before you forget—to BARKER'S, LTD., 69, BEACON BUILDINGS, SOUTH SHIELDS.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

PRIVATE

WANTED, a thoroughly efficient GAR-
DENER and BALLIFF, a good supervisor of men and well able to carry out improvements of all kinds on a large estate of 600 acres, recently purchased, where a good deal of work is now in progress and in contemplation; salary no object, providing an efficient and energetic man can be obtained; references required as to ability and character.—R. T., Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, HEAD WORKING GAR-
DENER (ineligible); thoroughly experienced Vegetables, outdoor Plant, and small home-farm, Herbaceous Borders, small Greenhouse; preference to man with son under military age as Second; house, coals, and vegetables found.—Full particulars of experience, age, wages, and copies of testimonials (if any) to PRESQOTT, Highlands, Woldingham.

WANTED, HEAD WORKING GAR-
DENER, as soon as possible, for Hampshire; 2 others kept; good cottage; experience of electric light preferred, or willing to learn. Reply, J. P., c/o Stansby's Library, 179, Sloane Street, S.W. 1.

WANTED, a good SINGLE-HANDED
MAN as GARDENER who understands the work in all its branches. — The Hollies, Elphinstone Road, Hastings.

WANTED, SINGLE-HANDED GAR-
DENER; married man; act as caretaker; wages 30s. to good Vegetable and Tomato Grower.—Apply, with references, to J. E. THOROLD, Estate Office, Hursley Park, Winchester.

WANTED, experienced GARDENER
Apply, MR J. EBERSTEIN, The Chase, Shades Hill, Enfield.

WANTED at once, GARDENER, expe-
rienced, for large country garden, Worcestershire; single assistance given; little Glass. MRS. MILWARD, Poxhatch, Redditch.

WANTED, GARDENER, for Inside and
out. — Apply, stating wages required, to G. EDWARDS, Newstead Gardens, 103, Leigham Court Road, Streatham, S.W.

NATIONAL FOOD PRODUCTION FOR
NUTRITION FACTORY.—Wanted, at once, GARDENERS, ineligible for military service, or substitution men; for the cultivation of food crops on an extensive scale; good wages; housing accommodation available at good food of work; contract at moderate prices.—Apply at once to MR. R. GREENFIELD, Garden Superintendent, White & Poppe's, Ltd., Coventry. Usual clause.

WANTED, KITCHEN GARDENER; at-
tend gas engine; also 6 strong YOUTHS, about 17 (one for flowers, experienced); good wages and Bath. WILLIAM PENTON, Warren House Gardens, Combe Wood, Kingston Hill.

WANTED, unmarried, ineligible UNDER
GARDENER, or widower with no children. — Apply, 3, Horton Crescent, Rugby.

WANTED, from April 16 to September 30,
good Practical WOMAN GARDENER, to look after Herb and Rose Garden and Herbaceous Borders; could live in with other servants, or have lodgings near; good wages given.—Write full particulars, REV. MALLESON, Woodlands, Leadbury, Herefordshire.

WANTED, good, Practical WOMAN
GARDENER for Herbaceous Borders, Rock Gardens, &c., under Forewoman; Bothy and the usual perquisites. Apply, stating age and experience, to A. FRESHWATER, Pains Hill Gardens, Cobham, Surrey.

REQUIRED, ONE or TWO LADY GAR-
DENERS for General outside work, under experienced Gardener; also MALE GARDENER (ineligible); cottage provided.—Apply, "Ryndir," Ro Hampton Lane, Putney.

WANTED, TWO WOMEN GAR-
DENERS, with experience; one chiefly Inside; good wages; furnished rooms or lodgings.—THE GARDENER, Harcourt House, near Salisbury.

WANTED, TWO WOMEN GAR-
DENERS (sisters or friends), as Head Working and Under, with help; excellent references essential; good wages; furnished cottage and coal.—Apply, F. SCHUSTER, Esq., The Hut, Bray, Maidenhead.

LADY GARDENERS WANTED.—(1)
Hants, Head and Under, girls' school, Vegetables, Flowers, and Fruit, not dull place. (2) Hexham, Head and Under, Vegetables only, little Glass, entire charge. (3) Sussex, Head, care of Garden, about 3 acres, chiefly Vegetables and Potatoes, 2 other ladies assist. (4) Stanmore, Under, work under 2 Head Lady Gardeners, Houses, Vegetables, Pleasure Grounds (5) East Sheen, single-handed, some help given, about 2 acres, chiefly Vegetables. (6) Bedford, temporary, 5 months, care of Rock and Rose Garden, Borders (Herbaceous), other gardeners kept for Vegetables. (7) Perth, work under own Garden, Pleasure and Conservatory, one experienced in Lady, care of Roses and Vegetables. (8) Perth, work under own Garden would do. Interview in town. Lady Gardeners are suited entirely free of charge.—MRS. HUNT, LTD., 86, High Street, Marylebone, W. 1.

WANTED, at once, experienced MAN
(Indoor); ineligible, or discharged soldier; duty alternate weeks; 24s. Bothy, vegetables.—GIBSON, Altrorton Park, Deobury.

WANTED, for Sandwich Bay, MAN, to
take charge of electric light plant and Garden; Lawn and Shrubs only; wages 30s. per week, with house, garden, and coals.—WM. CANN, The Gardens, Chivedon, Taplow, Bucks.

WANTED, YOUNG WOMEN, for Fruit
and Plant Houses in large Gardens; some experience preferred; state wages, with Bothy, milk, and vegetables; overtime paid for, also travelling expenses.—Apply to W. J. GUSE, Keele Hall Gardens, Newcastle, Staffs.

WANTED, IMPROVER, Inside Houses
and Out; age 16; wages 18s.; Bothy, vegetables, and milk.—E. MORGAN, Wassand Hill Gardens, Hull.

WANTED, a YOUTH about 16, for In
house, 21s. and Bothy.—Apply, SHENNAN, Holdenby, Northampton.

WANTED, an intelligent YOUTH, for Inside and Out; wages 7s and 8s.—Apply, W. FIRTH, The Gardens, Foston Hall, Derby.

WANTED, COWMAN; Two Cows, little Poultry, assist Growing Vegetables.—MRS. TYNDALE, Meadowcroft, Chislehurst.

TRADE.

WANTED, for high-class Flower, Fruit and Seed Business, MANAGERESS or MANAGER (singleable); must be well up in Wreaths and all Floral work; seaside town, West of England.—Write, stating full experience, salary and references, to W. W. Box 4, 1 Wellington Street, Covent Garden, W.C.2.

WANTED, experienced Peach and Tomato Grower for Market; good wages for suitable man.—F. E. CLIFFORD, Bath Road, Cranford, Hounslow.

WANTED, thoroughly trustworthy Grower of Pot Plants, 500, for Covent Garden Market; good reference.—E. A. DAVEY, Church Road Nurseries, Bexley Heath.

WANTED, ONE or TWO MEN, experienced in Rockery Building and General Landscape work.—Apply, stating wages, experience, with copies of references, to BROADHEAD, Woodale Nurseries, Thongbridge, Huddersfield.

WANTED at once, a practical WORKING MAN for the general work of a small Nursery, no House only, for working Roses and Clematis; must be successful Budding and Grafting, and good Hand Picking and Transplanting all outside Nursery Stock, and good at Wiring; must be intelligible or beyond any military call; cottage found close to the Nursery. Apply, with references, stating age and wages required, to JAS. HOLDER & SON, Crown Nurseries, Reading.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d for each succeeding Eight words or less

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send the copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

PRIVATE.

WM. CUTBUSH & SON have several high-class GARDENERS, all their references who can be well recommended. Full particulars on application to Highgate Nurseries, London, N.6.

G. ABBEY open Re-engagement; first-class experience in all branches of Horticulture recommended by present employer, Aston Rowant Gardens, Oxon, Wallingford.

GARDENER (HEAD); thoroughly experienced in all branches; good manager; could moderate management of small estate; excellent references for character and abilities; age 50.—F. Box 17, 41, Wellington Street, Covent Garden, W.C.2.

GARDENER (HEAD); life experience all branches; 17 years as Head, good Vegetable and Fruit Grower, Inside and Out, married, age 31, 1 girl, 13. GARDENER, Church Road, Pimlico, Woking

GARDENER (HEAD WORKING) of GARDENER-BAILIFF, well up in all requirements of good establishment; thoroughly experienced, both Outside and Under Glass; aged 46, 14 years present place; wife dairy if required. CHANDLER, Cranford, Pimlico, Hounslow.

GENTLEMAN recommends his GARDENER (HEAD WORKING); practical life experience in private gardens; reliable and trustworthy; married; age 41, intelligible; London preferred. HARRITT, Holford Heath, near Harlow.

HEAD WORKING GARDENER, with Horticulture and Pleasure Grounds, can do any kind of work on estate or would take situation under good man; please state wages, etc., age 49, married.—Apply, c/o T. Brown, Hazeley Heath, Bartley Wintney, Winchester, Hants.

GARDENER (HEAD WORKING); practical experience in all branches; used to the production of large quantities of Vegetables, Fruit, and Flowers; no family; very highly recommended.—J. BROWN, The Gardens, Treberford, Bech, Breconshire.

GARDENER (HEAD WORKING); permanent, where several are kept, energetic, good manager; life experience all branches, intelligible, age 41, no family.—A. SMITH, 46, Oakridge Road, H. ch Wexcomb, Bucks.

GARDENER (HEAD WORKING), where more are kept; thoroughly experienced in all branches, Inside and Out; over military age; permanent place and comfortable home; near London preferred or Kent.—J. HORTON, The Gardeners' Cottage, Farnham Hall, Ware, Herts.

GARDENER (HEAD WORKING); life experience Inside and Out, 4 years present situation; good references; age 44; married, no family.—C. DODMAN, 55, Azaminnon Road, W. Hampstead (No circulates).

GARDENER (HEAD WORKING), of 2 or 3; experience Inside and Out; knowledge electric and acetylene gas; 50 married, one child, aged 8; good reference.—E. RELE, Stagbury, Ban-todd, Surrey.

GARDENER (HEAD WORKING); life experience, Inside and Out, gained in good establishment, 31 years' present situation; 81 previous, good references; married; intelligible.—H. NEWTON, The Gardens, Chislehurst, Chislehurst.

GARDENER (HEAD WORKING) seeks Re-engagement with lady or gentleman in good establishment; life experience in all branches and stock; age 48, wages, 35/- home and fringe.—J. SHRIMPTON, 353, Notton Way, Letchworth, Herts.

GARDENER (HEAD WORKING), where several are usually kept, thoroughly experienced in all branches; life experience, age 46, one daughter. Please state wages and particulars to GARDENER, Bondy Cottage, near Kentworth, Warwickshire.

GARDENER ELECTRICIAN (HEAD WORKING); seeks situation, life experience in all branches of gardening; take charge, and do running repairs to electric installation; age 45; abstemious; married, one son; family; highest possible references. Wages, see to W. J. Box 26, 41 Wellington Street, Covent Garden, W.C.2.

GARDENER (HEAD WORKING), of good SMITH HANSON; life experience in good establishment; Inside and Out; age 50. J. HICKMAN, St. Margate, Dover Road, Faversham, Kent, S.E.

GARDENER, as SECOND or SINGLE HANDED, experienced Inside and Out. Army discharge, married, 1 girl, 4 children, 12 and 14; wage 4/-, near E. London preferred. STAVELY, The Cottage, Pinner, Bar, Middlesex.

FOREMAN (INSIDE); life experience in good establishment; age 41, single, abstemious; Army discharge; old bodied; thoroughly practical; good Propagator, Decorator, Fruit, and Plantation, can put in large distances; no object; good refs., state wages.—FOX, The Gardens, Balm Lane, East Brompton.

GARDENER (age 29, intelligible) seeks situation as FOREMAN; general experience; good references. State particulars to BORNE, West Burton Corner, Norfolk.

JOURNEYMAN GARDENER seeks Situation in large Establishment, Fruit and Vegetable Garden preferred, discharged soldier, Apply, H. FOTHERGILL, 13, Rensell Place, Gloucester Road, Edinburgh.

LADY GARDENER seeks Post; Single-handed or under Head; chiefly Vegetables, Fruit, Poultry, see to any distance of London preferable. SYRETT, Four, Cottage, Borsham, Surrey.

SITUATION required by DECORATOR, and help in Glass; experienced private and trade; please state wages. MISS B. Box 22, 41, Wellington Street, Covent Garden, W.C.

TRADE.

FOOD PRODUCTION Advertiser desires responsible position, intensive crops, Pigs, Poultry, Fruit, Tomatoes, conserves in Lard products, also valuable table commodities, unique mail order paper (house "Stratford"), Llantarnwell, Angle-y.

WORKING FOREMAN; Grapes, Tomatoes, and Cucumbers, &c., life experience, reliable timekeeper and manager of men; above military age and used to Fruit growing on a large scale. H. SMITH, 67A, Deacon Road, Willesden Green, London, N.W.

MAN (42) seeks permanent Situation; ex-Army, married, 4 sons, Tomatoes, Chrysanthemums, &c., all over country. Kindly state wages.—WINGHAM, 51, Firth Road, Leytonstone, Essex.

WOMAN GARDENER wishes Situation with Market Gardener, Fruit and Vegetables; 15 months' experience Inside and Out, is also experienced clerk, shorthand typist; would assist part time if desired. 16, Kensington Place, W.

SWEET PEA PLANTS.

Autumn Sown. Cold Grown. PLANT NOW IN THE OPEN.

Send for our New List of 90 VARIETIES INCLUDING 20 NOVELTIES.

Table listing various Sweet Pea varieties with prices per doz. per Pink, Cream, Orange, Purple, Mauve, Blue, Lavender, etc.

Important.—We cannot too strongly emphasize the fact that these plants are Autumn Sown and Cold Grown. There is a vast difference between such plants and those raised in the Spring to Heat.

TOMATOES.

Table listing various Tomato varieties with prices per doz. Ailsa Craig, Comet, Pilibasket, Supreme, etc.

Early Cauliflower Plants 6d, 4, 10. TERMS: Cash on delivery. Please send extra for postage.

BUCKS, St. John's, IPSWICH.

RYDERS SEED Catalogue FREE.

Send Postcard for Ryders 1917 Catalogue, over 100 illustrations.

All Seed Orders are dispatched by Return Post.

Now Orders over 2/6 sent Carriage Paid.

SUGAR BEET FOR JAM MAKING.

The best variety for growing in this country. 8d. Full instructions for sowing, growing and using with each packet. 4 ozs. 2/6. No Agents. Only Address.

RYDER & SON, LTD., Seed Specialists, ST. ALBANS.

Beware of Imitators.

THE HOME OF PURE SEEDS.



Interiors of a few of the twenty-one Departments of the Royal Seed Establishment, where growers are being supplied with Seeds for the National Food Supply.

SUTTON & SONS, THE KING'S SEEDSMEN, READING.

A. F. DUTTON'S

Noted Carnations.

Strong flowering plants in 5in. pots.

In 6 good Standard varieties,
15/- per doz., 96/- per 100.

In 6 good Novelties,
20/- per doz., 128/- per 100.

Packed free for cash, carr. forward.

The Nurseries,

IVER, BUCKS.

CARNATIONS, PERPETUAL FLOWERING.

FOR SALE, good clean plants, grown in thimbles and 60's, well broken ready for potting on.

Colleen, Enchantress supreme, White Enchantress, White Wonder, Beacon, Mikado, Mayday, Scarlet Seedling, Enchantress, Salmon Enchantress and other good varieties.

4/- per dozen. Cash with order.

MAYTHAM GARDENS, ROLVENDEN, KENT.

SANKEY'S FAMOUS GARDEN POTS
 THE BEST and CHEAPEST
 FOR ALL PURPOSES
 RICHARD SANKEY & SON, LTD.
 Bulwell Potteries, NOTTINGHAM.

BUNYARD'S FRUIT TREES



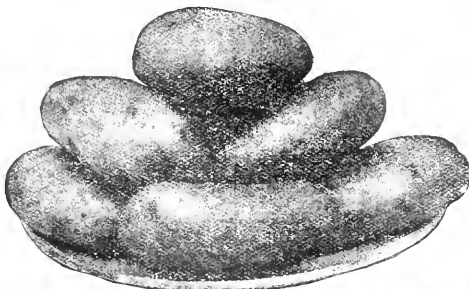
CATALOGUE
by RETURN

GEORGE BUNYARD & CO.
 Royal Nurseries, Ltd.
MAIDSTONE.

BULL'S FOOD FOR PLANTS & VEGETABLES

Increases the National Food Supply.

TREMENDOUSLY
INCREASES
THE YIELD OF
POTATOS.



Sold by all
Seedsmen and
Nurserymen.
Per cwt. 20/-
56 lbs. 12 6
28 lbs. 7 6
14 lbs. 4 6.

Manufactured
solely by

BULL'S
PLANT FOOD
Co.,

536, King's
Road,
CHELSEA,
LONDON, S.W.

They come out of their holes to die!
LIVERPOOL VIRUS
 exterminates
RATS & MICE.
 No unpleasantness and
 danger from smells. It is
 quite harmless to man
 and domestic animals.
 In this ready prepared
 with bait for Rats 2/6 & 5/-;
 for Mice 1/6. Or all chemists.
 Write for particulars to
EVANS BROS BRECHES & WEBB, Ltd., 34, Hanover St., Liverpool.

THE Gardeners' Chronicle

No. 1679.—SATURDAY, MARCH 31, 1917.

CONTENTS.

Apple rot fungi	136	R.H.S. and the purchase of books	137
Apple trees, pruning newly planted	132	Societies	137
Books, notices of	132	Royal Horticultural	137
Sanders' List of Orchid Hybrids	136	Trees and shrubs—	
Finger and toe	136	Bamboos in shade	134
Gardener, a veteran	137	Vegetable seeds	136
Holland, horticulture in	136	Vegetables—	
Huguenot, experiments with	137	A let-out in Potato culture	133
Italian nurseries, State aid for	136	How to plant Potatoes	133
Market fruit garden, the	133	Planting the Potato patch	133
Mesopotamia in January	134	Runner Beans without sticks	133
National Rose Society	136	sulphate of ammonia	133
Obituary		Week's work, the	135
Kerswell, George	138	Flower garden, the	135
Plants, new or noteworthy—		Fruits under glass	135
Stapelia Dummeri	132	Hardy fruit garden, the	134
Plant notes—		Kitchen garden, the	134
Telopea speciosissima	134	Orchid houses, the	135
Potash fertilisers	136	Plants under glass	135

ILLUSTRATIONS.

Apples, pruning newly planted	132
Jones, portrait of Mr. Henry	137
Parrotia persica	138

MESOPOTAMIA IN JANUARY.

AS you go up the Persian Gulf, the barren, sun-dried, wind-eroded mountains of the Persian coast are sometimes visible to the east, and the equally bare and inhospitable Arabian coast to the west. Once in the Shatt-al-Arab, you soon realise what a desert Lower Mesopotamia is to-day, in spite of the proximity of the Garden of Eden. Both banks of the river are thickly clothed with Date Palms, but these extend no distance inland; here and there, and through gaps in the trees, you get glimpses of the desert, just a mud-coloured plain, as bare and flat as a billiard table.

We are camped on the edge of the desert in the neighbourhood of Basrah, about a mile from the river bank. Vegetation is almost entirely confined to the Palm groves which fringe the river and its numerous creeks. From the creeks shallow ditches are dug at right angles, and crossed in turn by other ditches at right angles—in fact, there is a ditch every few yards, and no tree is more than a dozen feet from water, though there is not now surface water in every ditch.

Compared with the sterility of the desert, the plantations are by contrast full of life, though from the outside these dust-smothered groves appear to offer few attractions other than a little shade, of which full advantage is taken by various transport units, many hundreds of mules being stabled beneath the Palms. Several small trees grow on the banks of the creeks, mostly belonging to the Leguminosae. Two are now in flower—one a Mimosa-like shrub or small tree, with fragrant orange flower balls, the other with sulphur-yellow Laburnum-like flowers. Two other trees of the same order, one of which is a fine shade tree, are not yet in flower. A fifth tree, also a good shade giver, is also without flowers, and there are a few Tamarisks. Several low-growing undershrubs, one Heath-like, another (popularly known as Camel Thorn) somewhat resembling Gorse, are met with, but none of them is in flower as yet. They grow scattered over the desert, especially on the lee side of old river banks, sheltered from the wind, as well as in the Palm groves, and all are very deep-rooted. At present all these desert plants are brown and shrivelled, in spite of the rain.

Curiously enough, one house in Basrah is festooned with Bougainvillea, whose purple

bracts, visible from afar, form the one bright spot in that dust-coloured city. Grape vines are not uncommon in the Palm groves, and a few are trained over pergolas in the city, but what the fruit is like I don't know; no fruit is to be had here till the spring. There are also a few miserable-looking Plantains, but not one of them looks as if it had ever produced a Banana.

In the mud of the ditches a semi-aquatic Ranunculus is flowering; some pools are actually covered with a species of Salvinia, and every ditch is as full of Convolvae as an East Anglian lode, for, though tidal, the water in the creeks sixty miles from the sea is not appreciably salt. The same cannot be said of the soil, however, for the desert is full of salt, and when the puddles dry up after rain, a glistening layer of salt, looking like hoar-frost, crystallises out. In the Basrah district this soil is at least three parts pure clay, a blazing white impalpable powder (on the surface) when dry, a sea of liquid grey mud when wet. The only place I have ever seen comparable to it is the Loess plain of Shensi, and that, of course, is fertile; but even in Shensi a white efflorescence of salt is to be seen on the Loess cliffs. When it rains here, which it does sometimes, the water stays on the surface, and our camp is turned into a mud bath. It takes a week's sun, with the chill *shamal* blowing all the time, to dry the desert after six hours' or no means heavy rain. On the other hand, after ten days' dry weather, the air is full of dust, which smothers everything.

However, our average rainfall, all of which is precipitated in the winter months, is six inches, and the ground beneath the surface is as hard as iron, and comes up in solid lumps of clay, though water is found almost everywhere six or eight feet down. If the rain fell in the vegetative season instead of in the winter, it is possible that the desert would be fertile, and one wonders whether, during the five thousand years or so which have elapsed since Biblical times, such a change in the seasonal distribution of the rainfall may not have taken place. But undoubtedly the main reasons for the change are to be attributed to neglect of the ancient irrigation systems and changes in the river beds.

That is certainly decidedly doubtful, and at Shahr, ten miles distant, whither I rode out one day to see the tombs of Hanu and the Queen of Sheba, there is a rise of twenty or thirty feet, and the clay of the Basrah district gives place to gravel and sand, where, amongst the Turkish trenches, I found about a dozen species of desert plants. They included a member of the *Salsola* group, an Umbellifer, and one of the *Cucurbit* family with globular fruits, and were all either thorny or possessed of fleshy leaves, with deep tap roots. Most of them formed compact rosettes or straggled prostrate across the sand. There is a grove of Tamarisks also, their glaucous green leafy shoots, swept by the wind, looking extremely graceful.

One day we walked over to Gurnat Ali, where the Tigre's and Euphrates unite to form the Shatt-al-Arab. Much of the desert about there is flooded when the rivers rise, and some of it is closely carpeted with waxy grass, brown and withered now, but turning green later. On the other hand, an island at the confluence is covered with green pasture—a welcome sight amidst the brown waste—where herds of sheep and cattle graze. Later, along the river banks and in the extensive marshes which occupy so much of the valley, tall *Phragmites* grow up and are cut in the winter to be used for fuel in the numerous brick kilns, or exported to India.

Another place I rode out to, ten miles across the desert, was Zabair, one of the most ancient cities in the world. There are no creeks in these desert cities, which depend for

their water entirely on wells, consequently there is no vegetation, and in the whole dust-coloured city of Zabair I did not see a single blade of grass or one green thing. On three sides there is limitless desert all round, but on the fourth side are gardens where Melons are grown, and also Date Palms and Tamarisks.

It is very cold at night, but warm in the middle of the day, except when the prevailing north-west wind—the *shamal*—blows; then it can be very bitter, and sometimes it is only a few degrees above freezing. Out in the desert ice forms on the puddles. Occasionally we have a thick mist in the morning, but that is exceptional.

It might reasonably be expected that in such a country there would be little animal life, yet birds of certain species are plentiful. Desert larks and kites, for example, are very common, and there are flocks of starlings, sparrows, and crows; kingfishers, doves, pelicans, and finches may be seen any day in the Palm groves, while hick and snipe are found in the marshes by the river. Every ditch is full of croaking frogs, and I have also seen a weasel, a bat, and a tortoise. Insect life is at present scarce, as is natural in such a flowerless land, but I have noticed a few small butterflies. One insect which requires no seeking is the common house-fly.

In the grey-green Palm groves are patches of cultivation which shine out like emeralds. Here Lucerne and Wheat are grown, and irrigated daily from ditches and wells. The water is scooped up in a basket attached to one end of a wooden lever supported between two mud pillars, which raises it the necessary four or five feet. By constant irrigation the salt is washed out of the soil, and no doubt this could be done everywhere, as water is always reached a few feet from the surface, which would bring the whole of the desert in the Basrah district, amounting to hundreds of thousands of acres, under garden cultivation.

Here and there Turnips, Cabbages, and Potatoes are grown, but only in small quantities. Melons can be obtained in season, and with the almost perpetual hot sunshine which prevails, it ought to be possible to ripen any fruit in the world here. Three things only seem requisite—firstly, to cleanse the soil of salt; secondly, to provide irrigation; and, thirdly, a proper system of manuring.

As to the first, it could be accomplished by irrigation on an adequate scale. The flooding of the Shatt-al-Arab in the spring, when the snow water comes down from Persia, converts vast areas into swamp and lake, and it ought to be feasible to hold up some of this surplus water, and irrigate the whole of the Basrah district with it. Something of the sort has, indeed, been done further north, the work being completed in 1914 in the teeth of Turkish sapineers. Further works had been projected, but never taken in hand by the Turkish Government. The great war here is freeword. There is practically none to be had locally, though just now the Arabs are cutting the woody bases of the fallen Palm leaves, and these are used for fuel. At Zabair, ten miles away, Tamarisk branches are used, and you see donkey-loads of white brushwood being sold in the market.

At present the Arabs are digging out the ditches, breaking up the clods in the patches set aside for vegetable cultivation, digging up new patches, and irrigating the old ones. This about sums up their agricultural activities preparatory to the hot weather.

Though here and there certain aspects of Lower Mesopotamia faintly recall scenes on the plains of China, on the whole it has an individuality so vastly different from that of any other country that one may be thankful to have seen it.

But one does miss the flowers! F. Kingston Ward, Indian Expeditionary Force, D.

NEW OR NOTEWORTHY PLANTS.

STAPELIA DUMMERI, N. E. Br.*

This is an interesting and very distinct species, which was discovered in Bukola, Uganda, in the

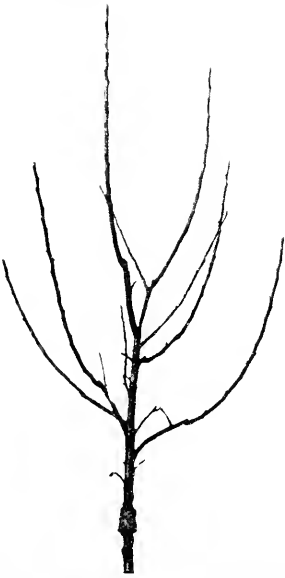


FIG. 44.—TREATMENT OF NEWLY PLANTED APPLE TREES. STANDARD TREE OF APPLE BRAMLEY'S SEEDLING, PRUNED IN FEBRUARY.

autumn of 1915 by Mr. R. A. Dummer, who sent dried material and living plants of it to me in July, 1916. Although of interest as being probably the only species from tropical Africa at present in cultivation (for tropical species of this group are but few, their headquarters being in South Africa), a further interest is added by the fact that at present its native habitat is unknown, for Mr. Dummer informs me that he has only seen it in the Plantain gardens of the natives, who have no idea of its origin, but cultivate it as a remedy for carache. Mr. Dummer writes that "The native name for it is Kaulira. The stems are broken and mixed with water, and the resultant liquid is then poured into the ear to relieve acute carache. The natives (Bacanda) affirm that it is efficacious. It is cultivated in their Plantain gardens occasionally, but is by no means common. I do not think that it is a native, as I have never seen a Stapelia growing wild here. It is very likely that it comes from the drier districts northwards, or possibly from some dry part of British East Africa."

The plant is also of interest on account of its structural peculiarities. In the habit and general appearance of its stems it is quite like the group to which the common *Stapelia variegata* belongs, and is also much like *S. Woodii* and *S. longidens*, whilst in its coronal structure it closely agrees with that of some species of *Caralluma*.

* *Stapelia Dummeri*, N. E. Brown. Caules decumbentes 6-9 cm. longi, 8-10 mm. crassi, cum dentibus acutissimis 8-14 mm. longis instructi glabri, cinereo-virescentes, papiraceo-vittati. Pedicelli 8-12 mm. longi, glabri. Sepala 4-5 mm. longa, 2 mm. lata, ovato-lanceolata, acuta, glabra. Corolla 3.5-4 cm. diametro, olivaceo-ochracea; tubus capsulariformis, 8 mm. longus; lobii patuli, 1.8-4 cm. longi, basi 4 mm. lati, dentibus attenuatis, acutis, dorso glabris, intra papillis cylindricis 1.15 mm. longis apicibus piligeris compressis. Corone lobii exte-riores papilloformis, 1 mm. longi, truncati, 4-dentati, dentibus lateribus curvato-divergentibus; lobii interiores super columnam staminum acute incumbentes, 2 mm. longi, re-ctangulares, apice 3-dentati.

and yet is not very dissimilar from that of *Stapelia longidens* and *S. Woodii*, so that it is intermediate between the two genera. The hairs on the inner surface of the corolla are quite unlike those of any *Stapelia* that I have seen, and more like those of certain species of *Uernia*, for instead of arising direct from the surface of the flower, each hair terminates a distinct cylindrical papilla that stands erect upon the surface. The following is a description of the plant:—

Stems decumbent at the base, 2½-3½ inches long and 4.5 lines thick, excluding the teeth, obscurely four-angled or subcylindric, toothed; teeth 4-7 lines long, about 1½ line thick at the base, spreading, rather slender, conical subulate, tapering to a very fine point; surface smooth, glabrous, light greyish-green, striped with purple. Flowers produced near the base of the young branches in clusters of 4-6, but developing singly. Pedicels 4-6 lines long, glabrous. Sepals 2-2½ lines long, 1 line broad, ovate-lanceolate, acute, glabrous. Corolla about 1½ inch in diameter, of an "olive-greenish-ochre colour," according to Mr. Dummer, with the united part forming a small cup about 2½ lines deep; lobes spreading, 6-7 lines long, 2 lines broad at the base, thence tapering to an acute point, smooth and glabrous on the back, studded with cylindrical papillae 1-1½ line long on the inner face, each papilla being tipped with a slender hair 1-1½ line long, producing a laxly hairy appearance, with the papillae and hairs standing erect from the surface. Outer coronal lobes arising 1-1½ line above the base of the stout staminal column, spreading, pocket-like, about ½ line long, and rectangular as viewed from above, 4-toothed at the truncate apex, with the lateral teeth diverging, curved, and the middle pair of teeth minute and contiguous, glabrous, apparently yellow. Inner coronal lobes closely bent inwards on the tops of the anthers and staminal column, with their tips crossing one another in a horizontal manner, not at all turned upwards, nearly or quite 1 line long and ¾ line broad, rectangular, 3-toothed at the apex, with the middle tooth usually much longer than the lateral teeth, acute, glabrous, apparently yellow. N. E. Brown

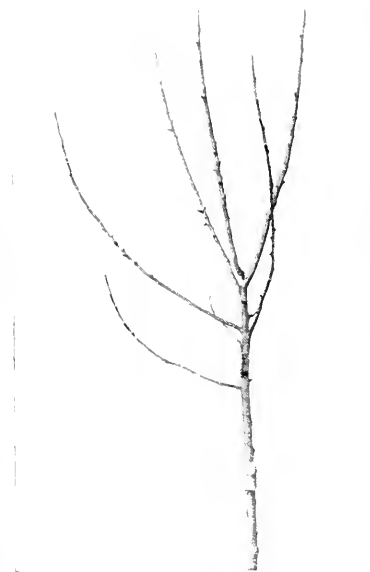


FIG. 45.—TREATMENT OF NEWLY PLANTED APPLE TREES. UNPRUNED STANDARD TREE OF APPLE BRAMLEY'S SEEDLING.

PRUNING NEWLY PLANTED APPLE TREES.

I AM distinctly in favour of pruning Apple trees the same season as planting, and for reasons which I will endeavour to show. The main consideration is how to obtain the greatest area of tree growth in the shortest time. The greater the area the better the prospect of fruit. Some argue that newly-planted trees should not receive two



FIG. 46.—TREATMENT OF NEWLY PLANTED APPLE TREES. RESULT OF PRUNING IN APRIL.

checks at the same time, and that the replanting of the tree does check the growth by interfering with its roots, while to prune the branches that season while the roots are in a crippled state is to give another check. "Let the tree alone," they continue, "until there is a balance between root and branch—that is to say, until the following year." Others suggest taking out the point of the shoots. This latter plan is, in my opinion, as bad as the first; along most of the shoots fruit buds form, and the removal of them hampers the progress of the tree.

It will be found very difficult afterwards to get them to make satisfactory growth, as many of the base eyes will have perished. Moreover, a newly-planted tree is often unable to make satisfactory progress, owing to the strain of supporting such a number of buds, extending often along the whole length of the shoot. When they are reduced in number by pruning, a much less arduous task is set before the tree.

In order to test the two methods, pruning and non-pruning, I planted in November, 1915, some standard trees of Bramley's Seedling. In February I pruned No. 1 tree as in fig. 44, cutting the seven 2-foot shoots back to within 6 inches of the base. The result in 1916 was ten long shoots and several small growths at the base of the tree, all giving promise of fruit. The shoots have been pruned to within 2 feet of their base. The diameter of the tree now is 2 feet 6 inches, a good foundation for future extension.

No. 2, fig. 45, unpruned, started with five main shoots and three smaller ones. The main shoots extended their length 9 inches with no added shoots, but many fruit buds have formed. Beyond the formation of fruit buds the tree shows no sign of progress or of extending its branch area beyond the 9-inch point at the apex.

No. 3, fig. 46, was pruned to within 6 inches of the base at the end of April. The resultant

growth consists of weakly shoots 8 inches long, showing that after the growth had started pruning was too late to be effective.

The fourth tree was unpurged. It has extended the main shoots to lengths of 5 inches and 6 inches, with no side growth whatever, but a plethora of flower buds. *E. Malpueur*

VEGETABLES.

PLANNING THE POTATO PATCH.

THE need for getting the largest possible yield from every patch is patent to all. Of course, much will depend upon the variety, but what are the most profitable distances for planting our Potatoes? For the last few years my patch has been laid out at the standard trial distances, 50 inches between rows and 18 inches between plants in the row for main crop; previously the distances were 26 inches and 15 inches respectively. Lately a correspondent has advocated these smaller distances, and claimed over 5 lb. per plant, and it seemed worth while to calculate the probable yields on a basis of a unit area. For simplicity, 100 square feet forms the basis of the following figures, which give the yield in pounds upon this area at different distances.

Yield per plant	26 in. by 15 in.	50 in. by 15 in.	50 in. by 18 in.
2 lb.	61.1		
2½ lb.	76.4		
3 lb.	91.7	79.5	
¾ lb.	110.0	92.8	76.0
4 lb.	122.5	106.1	86.9
4½ lb.	—	119.7	97.8
5 lb.	—	—	108.7

From this it appears that the shortest distances will give as much with an average of 2 lbs. per plant as the longest distances, give with an average of 3½ lbs. Mr. Curhisons in *Gard. Chron.*, March 10, 1917, p. 169, records a yield of Sharpe's Express at 15 inches per acre, and distances 76 inches x 18 inches; this works out at 4.2 lbs. per plant, and 77.1 lbs. per 100 square feet.

Last year, with crowded eulms (Early Adelaide) planted 24 inches x 9 inches, my crop was only 1.6 lb. per plant; whilst at 50 inches x 18 inches the maincrop gave an average per plant of 3.4 lbs. If the reader will compare these figures with the above table, he will see that the shorter distances are apparently more profitable up to a certain limit. But what is that limit? What is the minimum distance for any given variety at which it will yield, say, 3½ lbs. per plant?

In the past I have often endeavoured to get seedsmen to state what distances they would recommend for the planting of given varieties. It would appreciably enhance the value of a catalogue if information were given as to the smallest distances which would be profitable on given types of soil. It is always difficult to appreciate the records of Potato crops, because the results are so often given only in the yield of tons per acre, often, indeed, without any information as to the distances of planting. If the yield per plant were also given, the records would be much more intelligible and useful. In planning the planting of the Potato patch, we want to know the fair average produce per plant and the fair average number of plants per unit of area; and that unit of area should be a small one for the use of growers who have small gardens.

There would seem to be scope for trials on these lines in different parts of the country, and I rather think of having my planting done at different distances—viz., those given in the above table.

Another possibility is that alternate plants of different varieties might give a better yield than all of one sort. For instance, "calkies" might be interposed between "maincrops," when the ground would get both cultivation and clearance when the former were lifted.

Finally, I may point out the importance of actually weighing the crop, which can be done by those who do not possess a large weighing-machine or steelyard, if a series of plants are weighed separately by means of the ordinary kitchen scales. *H. E. Durham.*

Spacing trials with different vegetable crops are being carried out at Wisley. They were begun last year, and should lead to interesting results.—Eds.]

SCARLET RUNNER BEANS WITHOUT STICKS.

WHERE sticks for Runner Beans are difficult to obtain, and this is especially the case in some suburban districts, a good plan is to follow the advice given in a publication issued by the Royal Horticultural Society entitled *Economy in the Garden*. This is to grow Scarlet Runners on the field system, namely, without stakes. Thin to 18 inches apart and pinch out the top when it begins to run. Personally I prefer to put the rows 2 feet apart, with 1 foot between the plants. This system has been used by the market gardeners for years, as, when grown in quantity, the expenditure on sticks would form a considerable item even if they could be obtained. Under this field system one cannot count upon the fine, large, well-shaped pods that one sees at exhibitions, but as labour is so scarce this must be passed over, the object being to obtain good young Beans, and plenty of them. For this purpose the very large podded varieties are not the best, as they weigh down the branches, and, being thus brought so near the ground, are apt to get splashed by rains or attacked by slugs. *H. T.*

HOW TO PLANT POTATO SETS.

AN old and very wise gardener tells me that it is better to plant a Potato set not upright, but sloping to one side. He says that the shoots take longer to come through the soil and that when they do come they are sturdier and less easily broken when earthed up. Can any of your readers who have tried this method tell me if it has the advantages claimed for it? *J. N.*

SULPHATE OF AMMONIA FOR POTATOS.

THE interesting account of his experiments in manuring Potatos, on page 115 by Dr. H. E. Durham, the failure of sulphate of ammonia to give good results is probably to be ascribed to two causes—insufficiency of material used, and a wrong way of using it; 0 oz. oz. per yard is too little to be of any use. I take the writer's "yard" to be a lineal yard of the row, if it refers to a square yard, it is so much the worse. Anything less than 3 oz. per lineal yard of row would not repay the trouble of application.

Experiments made by me in 1915 showed me that it was of no use to apply sulphate of ammonia after the Potatos were covered in. It should be scattered along the top of the sets as soon as they are placed in the drill or trench, and be placed evenly throughout the whole length. Besides increasing the crop without damage to the sets, the good effects are also noticeable in the increased vigour of the seed Potatos.

Moreover, if sulphate of ammonia is used for early Potatos, and these are followed by a crop of Cabbages for autumn use, it will be seen that the Potatos have left part of the manure for the benefit of the succeeding crop. *H. H. Pierce, Westdown, Hook, Sarburyn.*

A DETAIL IN POTATO CULTURE.

AT the present time, when inexperienced people are for the first time taking up Potato cultivation, practical notes relating to unfavourable conditions may be useful. As to dates of planting, in warm light soils, placed in elevations free, or comparatively so, of late spring frosts, planting can be safely and advantageously carried out weeks earlier than it would be wise to do it in low situations. Here, for instance,

except in cases where extra precautionary measures are taken, planting is delayed as late in the season as is possible in order to escape injury from frosts. For this reason pains are taken to retard the sprouting of the "seed" by keeping it as cool throughout the winter as is consistent with safety. At the present time the "seeds" for main crops are placed on end upon shelves in a light, airy shed situated under a north wall; by these means it is possible to delay the planting season for a considerable time, but even after these precautions are taken the plants do not at all times escape damage from frost, and in order to counteract its effects they are sprayed with cold water early in the morning before the sun gains power. It is also better where the land is cold and heavy, even if the situation is not subjected to late frosts, to delay the planting season until the soil increases in warmth, as by so doing the plants at once start into vigorous growth, and by this means increase their productiveness. *Thos. Coulmer, The Hendre Gardens, Monmouth.*

THE MARKET FRUIT GARDEN.

LUCERNE ORCHARDS.

IN anticipation of shortness of labour and a great advance in wages, it is my intention to try the experiment of growing Lucerne in my mature Apple orchards, from which Currant bushes have been removed, provided that I can get the land cleared of weeds in April or May. The Lucerne would require to be cut twice in the season, and would be left to rot on the ground as manure, making another economy beside saving of wages. Further, damage to trees by horse cultivation would be avoided. Grass would grow among the Lucerne plants, no doubt; but it is hoped that the latter would preponderate. The chief doubt of success is as to whether the Lucerne will flourish under the shade of the trees. At any rate, there will be enough of it for a long time to afford a valuable mulch for the trees.

PRUNING SCABBY APPLE TREES.

IN pruning Apples showing scab on the young wood there is an important point to bear in mind. The scabby shoots must be either cut off entirely or below the diseased portions; but any young wood free from scab may with advantage be left entire if there is plenty of room for it. The reason for this suggestion is that scab attacks only wood of the first season's growth, so that a new shoot left entire will not be attacked next summer, though the leaves may show the disease. Of course, if it sends out extension growths, these may be attacked, but a shoot left entire is much less likely to branch out freely than a cut one, and often it forms fruit buds along nearly all its length, without branching at all. The work of cutting off scabby parts of shoots among my Cox's Orange Pippin trees is so tremendous, year after year, that any expedient for reducing it is important. By the way, I find that one variety of Apple other than Cox's Orange Pippin, among the sorts that are in my orchards, has scab on the wood, though it has more canker. This is Warner's King. Besides these two varieties, Mr. E. S. Salmon, in a leaflet upon the disease, names Lord Suffield, Ecklinville Seedling, Yellow Ingestre, Dumelow's Seedling, Cox's Pomona, Councillor, White Transparent, and Keswick Codling, as subject to scab on the wood; but not one of these varieties is included in my orchards. To my astonishment he also includes Mr. Gladstone, which with me is, of all varieties, the most free from scab, canker, or any other fungous disease. So far as my observation is to be trusted, scab alone never kills

a shoot; but canker spores very frequently gain access through the wounds made by scab, and then the shoots are often killed. But scabby shoots must be cut off below the infested parts nevertheless, as they would infect the leaves and the fruit if left on the trees. Where, in pruning at the present time, a shoot that was scabby a year ago, is found to have been missed, the scab marks have callused over, and the disease on this two-year-old wood seems to have died out. Mr. W. F. Emptage informs me that he has recently seen a piece of Devonshire Quarrendens, which show that they were badly attacked by scab in 1915, the diseased shoots having been left on the trees. The scab scars had healed, and, astonishing though it seems, the extension growths of 1916 are free from the disease. This, by the by, adds another to Mr. Salmon's list of varieties which he has found subject to scab on the wood. Mr. Emptage agrees with me in concluding that scab alone does not kill a shoot. It can hardly fail, however, to impair vigour.

PRUNING AGAINST BROWN ROT.

On November 25, 1916 (p. 251), the importance of cutting off every twig, spur, or blossom affected by brown rot as soon as an attack is noticed, was urged. The best time is when, or shortly before, the blossoms show. That importance is strikingly noticeable when pruning during the winter, for it is found that the malady in diseased spurs which were missed at the time named, when women were employed to cut them off the trees, has extended into the wood of the branches forming brown rot cankers. These (*Sclerotinia frutigena*) cankers are quite different in appearance from the ordinary (*Nectria ditissima*) cankers. Instead of forming bulging swellings, as the latter do, the former are depressed, the bark attacked being dead, and the wood under it brown, and at least partially dead. The rotten bark may be pared off as far as it extends, and a little of the sound bark, if any, around it, dressing the place with Stockholm tar. Such treatment does not always prevent the disease from extending all round a branch, killing all the portion above the wound; but it frequently preserves a fruiting branch for a few years. Nearly, if not quite all, the brown rot cankers are caused by the fungus extending from diseased spurs into the branches. A search for half an hour among trees particularly subject to brown rot failed to disclose one instance of a canker having been caused otherwise than by means of a diseased spur, and large numbers were examined in that time. Subsequently the question has been borne in mind while pruning, with the same result. It has occurred to me that spores of brown rot may possibly find entry into a scab scar; but no evidence to that effect has yet come to my notice. Apparently all, or nearly all, the brown rot cankers noticed in pruning recently might have been prevented by the prompt cutting off of attacked fruit spurs, mostly when in blossom. The tops of young shoots of Apples and Plums, as well as spurs, are often attacked by brown rot. These die off entirely, as far down as the disease extends. A mummified fruit pressing against a branch may produce a canker, as it softens the bark, and thus lets spores into the wood; but, as I have all such fruits removed from the trees, cankers rarely arise from that cause in my orchards.

COB NUTS

At present circumstances are favourable to the prospects of a fair crop of Cob Nuts after last year's failure. There is an abundance of catkins, and only a few female blossoms here and there were to be found at the end of February. This lateness is a safeguard, as the female blossoms so often run grave risks of injury from late frosts. *Southern Crooner*

TREES AND SHRUBS.

BAMBOOS GROWN IN SHADE.

As an ardent admirer of Bamboos for ornamental gardening, I was very interested in Mr. Levett's remarks on p. 83. I first grow Bamboos in the South-east of Ireland about twenty years since, and about eleven years ago planted a collection here (Eastwell Park, Kent), which now embraces most of the hardier varieties in cultivation. On the subject of shade, I have always had the impression that Bamboos really did best in moderate shade, and that the beauty of the plants was seen to the best advantage when associated with the relief given by the shadows of tall trees. In my visits to several very fine gardens in Ireland, famous for beautiful specimens of the Bamboo, I saw many fine clumps growing in shady places. I have not planted them myself in such dense shade as that described by Mr. Levett, but we certainly have fine groups growing in semi-shaded positions. The Queen of Arundunarias, *A. nitida*, seems to be especially suitable for damp and shady positions; also *A. spatuliflora*. Both these species show distinct signs of distress when exposed to the full glare of the mid-day sun during continued hot weather. Mr. Levett's success with *A. insignis* interested me most, as I have not ventured to plant that species outside. When Messrs. Gauntlett introduced the plant some years ago, they laid particular stress on its tenderness. Having some very tall, bare pillars in a large winter garden, and having tried several climbers without success, I procured two plants of *A. insignis* when it was first offered. These grew so well that I divided them, and have now four nice specimens, which clothe the pillars beautifully. I can fully bear out your correspondent's remarks as to its remarkably quick growth. A year or two back, a shoot had grown with extraordinary vigour, and, being curious to know its exact height, it was measured with a tape, and proved to be 27 feet 4 inches from the ground to the tip. I had not met with anyone who had grown this plant out of doors, but shall certainly give it a trial. This winter will test the hardiness of Bamboos as well as other plants, as we registered 20° and 23° of frost during February, but the Bamboos look like standing it very well. My experience proves that planting in wind-swept situations is responsible for many failures with these choice plants; shelter from strong winds is essential. *J. G. Weston, Eastwell Park Gardens, Kent*

PLANT NOTES.

TELOPEA SPECIOSISSIMA.

This Australian member of the Proteaceae flowers but rarely in this country, therefore a note of its being in bloom at Kew, as recorded in the *Gardener's Chronicle* for March 17 (see p. 119), was of especial interest, whilst the illustration of a head of blossoms well showed the character of the inflorescence. The first time it was my privilege to see it in flower under cultivation was in the gardens at Pendell Court, then in the occupation of the late Sir George MacLeay. This was in the spring of 1882, and the flower-head was exhibited at the meeting of the Royal Horticultural Society on April 11 of that year. It was then given the award of a Botanical Certificate, and was the most-talked-of exhibit at the meeting. More than 30 years afterwards, namely, at the Chelsea Show of 1914, a fine head was shown from the Cornish garden of the Rev. A. T. Boscawen. It was then by many looked upon as a novelty, the fact of its having flowered so many years previously being unknown to many of the present generation. On this, its second appearance before the Floral Committee of the Royal Horticultural Society, it was awarded a Cultural Commendation. *H. T.*



THE "HARDY" FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. F. DAVEY, Abbots Wood, Godalming, Surrey.

GRAFTING.—It is time to make a start with the grafting of fruit trees, the stocks having been previously headed back. Make an examination of the bark to see if it will lift freely, and if it does, the grafting may be commenced. Healthy old trees of worthless varieties can soon be made into profitable trees of good varieties by re-grafting. In the case of these old trees crown grafting is best, and three or four scions should be put on each branch. The branches intended to be grafted should be cut back to within 2 feet of the main stem. Make the surface smooth with a sharp knife, then make a cut through the bark downwards 2 or 3 inches long. Afterwards prepare the scion, which should be from 4 to 7 inches long, and cut it in an oblique manner, the same length as the cut in the stock. Take great care to see that the bark of the stock forms a perfect union with the bark of the scion. Tie with raffia or soft string at once, then smear the junction with the preparation of clay made as advised on p. 125. I always tie a little damp moss on the clay, to keep it from cracking in dry weather. Seedling stocks should be whip or cleft grafted, this being the most suitable method for small trees, such as cordons, bush or pyramids. Cut the stock evenly in an oblique manner, then take the scion and cut it in precisely the same way for about 1½ to 2 inches in length. Make a small tongue upwards in the scion about half an inch from the top, and make a cut in the stock to correspond with it. As soon as the graft is fixed, bind it at once, and cover the junction with the clay mixture or grafting wax. In very dry weather spray the graft with water to keep it moist.

GENERAL REMARKS.—Finish the work of cleaning, pruning and tying all kinds of fruit trees. See that all stakes supporting fruit trees are in perfect order and able to withstand the strain of gales and support heavy crops of fruit. Most trees are very backward, but promise well for good crops. Have light material in readiness to protect the blossom from frost, but do not use it unless it is absolutely necessary. If rains have washed off the specific recommended on p. 97 to protect the buds from birds spray again with the solution. Ventilate the fruit-room daily to keep the air sweet and fresh. Remove all fruits that are at all spotted to prevent the sound fruits becoming affected.

THE KITCHEN GARDEN.

By J. DUNN, Foreman Royal Gardens, Windsor.

PEAS.—Plants which are being grown under glass for planting out of doors should be ventilated freely and hardened gradually, so that they may be planted as soon as the weather is favourable. In planting, preserve the roots from injury, and, as soon as the work is accomplished, dust soil along the rows and place short sticks for support. Protection should also be afforded from winds, and plants just showing through the ground should be protected from birds. Nets may be stretched over the border at once, and a few Spruce or other evergreen branches placed in a position to obstruct the winds. Successional sowings should be made as they become necessary to maintain an unbroken supply of pods, selecting rich ground which has been trenched and manured in winter.

HOEING.—When the soil is sufficiently dry, hoe the surface freely amongst young crops. Winter Spinach, Parsley, and seedling Cabbages will be benefited by hoeing the soil and cleansing the ground.

SEAKALE.—Owing to the scarcity of green vegetables Seakale has become an important crop, and those with a good stock of roots for

forcing indoors and in the open may be able to produce this vegetable in quantity throughout the winter and spring without a break. The present is the best time to make preparation for next season's crop, selecting rich ground for planting. For forcing in the open the thongs should be planted in clumps of 5 or 6 to permit of covering the crowns with Saksale pots the following spring, for it is a distinct gain to cover as many crowns as possible with one pot without overcrowding the plants during the growing season. Sufficient space should be allowed between the clumps for the fermenting material which is necessary to produce the required warmth next spring. The very best Saksale is obtained from these outdoor plantations, and they prolong the supply. Roots lifted from the open late in the spring seldom furnish produce of first quality. As soon as the thongs are sufficiently advanced the planting of the main crop should be done. If the ground has been dug and manured in winter, fork over the surface, and when the ground is sufficiently dry, make drills 2 feet apart and set the roots with an ordinary dibber at 14 inches apart in the rows. Fill the holes by drawing the crumbling soil over them with a hoe. Nothing further will be necessary until the young growth is 2 inches high, at which stage the crowns should be thinned carefully, leaving only the strongest growth on each plant.

SEED-SOWING.—Make the final sowing of Brussels Sprouts on an open border. The best and hardiest plants may be expected from this batch, for plants raised under glass and pricked out frequently become drawn before they are ready for planting in the open. Sow the seeds thinly in shallow drills, and allow sufficient space between the rows for a free use of the Dutch hoe, and keep the bed free from weeds. Cabbage also may be sown now for supplies in July and August. Cauliflower seed should be sown in rather poor soil; plants raised in this way will be hardy, and make steady growth. Magnum Bonum, Early London, Autumn Giant, and Halloween Giant provide a good succession. Seedlings of these varieties should be planted as soon as they are of sufficient size in ground which has been prepared for them. Cauliflowers require rich soil, and the plants must never be allowed to become stunted for want of water at the roots. Net the seed-beds as soon as the seeds are sown, and guard against slugs, which are easily destroyed by hot lime.

CELERY.—As soon as Celery seedlings are large enough to handle, transplant them either in boxes or shallow frames filled with fine, rich soil. Allow plenty of space between the plants. The principal sowing of Celery should be made at once in a bed of fine, rich soil, placed within 1 foot of the roof glass. Sow the seeds thinly. The light should be kept closed until the seeds have germinated, after which air should be admitted whenever the weather is favourable. As time advances the lights may be removed entirely during mild days. Celeries may be sown now and treated in the same manner as Celery.

RHUBARB.—The present is a good time to make new plantations of Rhubarb. The soil should be trenched or dug deeply, and enriched with a heavy dressing of farmyard manure. Make the rows 5 feet apart and set the roots at least 4 feet apart in the rows. Apply a mulching of long manure to the crowns when the planting is finished. Rhubarb in the open should be protected from cold winds and frost by shaking a quantity of long litter over the bed, taking care to place the straw as lightly as possible over the plants. If the material is dry a covering of 9 inches may be applied. If the mulching material remains in position throughout the summer it will help to keep the bed free from weeds.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

SHADING AND VENTILATING.—With the lengthening days and the increased amount of sunshine, careful attention must be given to the question of shading and ventilating each division. The growths now developing are very tender, and may soon be scorched and disfigured

if unduly exposed to bright sunshine. It is advisable to be on the safe side, and not expose the plants to too much of the sun's influence. At the same time the blinds should not be allowed to remain down too long. Already the warmth from the sun has on several occasions had the effect of considerably raising the temperature of the house, but cold winds often accompany bright sunshine, and it is not advisable to admit cold air in too great quantity. On such occasions use the blinds, and when the outside temperature exceeds 45° the amount of ventilation may be increased and shade afforded with discretion. Admit the air through the ventilators under the stages, if possible on the side of the house that is most sheltered from the wind. These remarks apply more especially to the cooler houses containing such plants as *Odontoglossums*, *Masdevallias*, *Oncidiums* and the cooler *Cypripediums*. The Cattleya and intermediate houses will only require shading for an hour or so during the middle of the day. Any of the inmates of these houses that may require an extra amount of shade should be placed at one end, where they may be shaded independently. Many occupants of the East Indian or warm house, such as *Phalaenopsis*, *Bulbophyllum*, *Trichostelium*, *Angraecum* and the warmer *Cypripediums* will require protection from the sun. *Bollea*, *Pescatorea*, *Warszewiczella* and the small *Zygopetalums* should be shaded at all times.

WATERING.—Atmospheric moisture should be increased as the season advances. Each department will require damping down every morning and the operation should be repeated twice or thrice on bright days. Many plants will now require an increase of water at the roots, but in moderation, the quantity varying according to whether the plant is in active growth or dormant. On bright days *Cypripediums*, *Odontoglossums* and seedlings of all kinds will be benefited by occasional overhead sprays. The temperatures may now be slightly raised. As a guide the following table may be useful:—
East Indian House, day 70°, night 65°.
Cattleya and Intermediate House, day 65° night 60°.
Odontoglossum House, day 55° to 60°, night 52°.

Seedlings of both *Odontoglossum* and *Cattleyas* should be afforded slightly higher temperatures than those applied to established plants.

FRUITS UNDER GLASS.

By Jas. Henson, Gardener to LEOPOLD DE ROUSSILLE, Esq., C.V.O., Gunnersbury House, Acton, W.

FIGS IN POTS.—Fig trees in pots that were started in the autumn are ripening their earliest fruits. At this stage keep the atmosphere somewhat drier and discontinue syringing. Do not, however, allow the roots to suffer for want of water, as any undue stress put upon the foliage may cause root rot to spread. Shoots that show a tendency to grow too freely should be stunted rather than allowed to grow. The earliest trees may yield satisfactory crops, as a rule greater fertility may be expected from trees that were not started until the new year, and these should be growing freely. Possibly they may be developing an undue number of fruits, in which case they should be thinned in good time, removing those that are badly placed, crowded, or deformed. These later plants should now be top-dressed as advised on p. 96 for the early batch. Brown Turkey is a splendid variety for this second crop. The later batch of pot trees will soon start into growth, even if kept moderately cool. Negro Large and Bonjassette Grises are two of the best varieties for late cropping. It is not necessary when growth has started to hasten its development by the use of fire-heat. I noticed to-day that our late plants are breaking slowly, and, as room is limited, they will not be hastened. Give every possible attention to young trees in pots, including those struck from eyes this spring.

TRAINED FIG TREES.—The earliest trained Fig trees are in free growth, and showing fruits. Stop the side shoots at five or six leaves, but not the leaders. As soon as the fruits commence to swell stopping the shoots will assist

their development. Crowding of the new growth, a common error with some growers, must not be permitted. Where the leaves are too numerous for their proper development the removal of a long, straggling unfruitful shoot will help to correct matters. Ventilate the house somewhat freely, and see that the atmosphere is not excessively moist. Syringing once a day should suffice to keep down insect pests. Fig trees in cold houses will soon commence to grow, and should be syringed at least once a day. If there are no other plants in the house that will be affected, reduce the amount of ventilation. Guard against overcrowding of the shoots, removing surplus growths at once.

THE FLOWER GARDEN.

By W. J. CRISP, Gardener to Mrs DEMPSTER, Keele Hall, Staffordshire.

PRUNING ROSES.—The pruning of Hybrid Perpetual Roses should be commenced. Young plants should be cut hard back to obtain strong growths from the base. In the case of older, established plants, cut out all the old wood, weak growths, and superfluous shoots from the middle of the trees. In low-lying districts subject to late frosts delay the pruning for a week or two. The beginning of April will be soon enough to commence pruning Tea and Hybrid Tea Roses. These should be cut back to about 6 inches of the base, according to the strength of the shoots.

VIOLETS.—Select the strongest Violet runners from the old plants, with roots adhering if possible. Insert them in sandy soil in a close frame at 6 inches apart. Light sprays with tepid water will be beneficial. Directly the plants are rooted the amount of ventilation should be increased, gradually hardening them, preparatory to planting them in the open. Prepare beds in readiness for planting the runners outside next month.

GLADIOLUS.—In light, warm soil, it is not too early to plant autumn-flowering Gladioli where they are intended to flower. A liberal dressing of decayed manure or leaf-mould well worked into the soil will be beneficial. In the case of cold, heavy soils, it is better to place the corms in pots or boxes filled with a rich compost, and start them in a close frame for planting out of doors early in May. Halley, light salmon; Baron Hubot, deep blue; Albion, white; Princeps, scarlet; Golden West, orange-salmon; Debonair and Panama, pink, are all good varieties.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHWOT, Eastwell Park, Kent.

ASPARAGUS MEDIOLOIDES (MEOEOLA ASPARAGOIDES).—Plants of *Asparagus mediooides* raised from seed sown early in the year should be potted into 60 sized pots before they are far advanced. Grow the plants on a shelf in the propagating house or plant stove, and shift them into larger pots before they become potted, or they may be planted out if under a board, or they may be planted out of the back wall of a Vinery. A border at the foot of the back wall of a Vinery is a good place in which to grow this *Smilax*. Guard against the young shoots becoming antailed by training them singly on the special green thread sold for the purpose. Grow in this manner the long, graceful trails may be easily cut as required. When established and in full growth the plant requires an abundance of water, and should be syringed two or three times daily. Stimulants also are needed, soft water alternated with artificial being suitable. Fumigate the house to keep down green fly. Dense shade and plenty of heat and moisture are needed to develop the delicate shade of pale green which is so much admired in this delightful foliage plant.

BLINDS.—All kinds of blinds used for shading plant houses should be overhauled, and any that need repairing attended to. Roller blinds may be placed in position to be ready for use whenever required. The danger from insufficient ventilation is not so great when a moderate amount of shading is employed.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication.—As well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR APRIL.

THURSDAY, APRIL 5—
Manchester and N. of England Orchid Soc. meets.
MONDAY, APRIL 9—
B.G.A. Conference at Birmingham.
WEDNESDAY, APRIL 11—
Roy. Hort. Soc.'s Coms. meet.
THURSDAY, APRIL 12—
Roy. Hort. Soc.'s Daffodil Show (2 days)
THURSDAY, APRIL 19—
Manchester and N. of England Orchid Soc. meets.
THURSDAY, APRIL 26—
Roy. Hort. Soc.'s Coms. meet. Nat. Arctiella and Primula Soc.'s (Southern Section) Show with R.H.S.
THURSDAY, APRIL 26—
Midland Daffodil Soc.'s Show, Birmingham Bot. Gdns. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 45.6°.

ACTUAL TEMPERATURE—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, March 29 (10 a.m.): Bar, 29.0; temp, 47.5°. Weather, Cloudy.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Sale of Fruit Trees, Roses, Lilacs, Herbaceous Plants, &c. at 67, Chesham, by Protheroe and Morris, at 12 and 3 o'clock.

Vegetable Seeds.

It is important that gardeners should exercise every economy possible with respect to vegetable seeds. The need for this economy will be manifest to everybody. On the one hand, the disturbance and delay of transport make it more difficult than in normal times to obtain the supplies which come to us from different parts of the world; on the other hand, vegetable seeds are being sown on a vast scale, and many of those who are sowing them have no great experience of gardening. Many gardeners even are apt to sow more thickly than is necessary, and amateurs, though they may have learned from books the proper distance at which seeds should be sown, are apt to find that the operation of seed-sowing is not so simple as it might seem, and fail to put precepts as to thin sowing into practice. We advise all gardeners to use the remains of last year's seed packets before opening those of this year. In the case of many seeds the fact that the seed is a year older makes very little difference to its germinative power. The garden legumes,

for example, Peas and Beans of various sorts, lose their power of germination only very slowly, and seed of the 1916 or even 1915 harvest, if it has been kept under moderately fair conditions, will be found to germinate quite well.

Everyone who has old seed should test its germinating power, comparing it with that of this year's seed. Provided that the percentage of germination is not too low, the seed with the lower germinating power should be used, and that with the greater power of germination should be reserved for next year, when it is highly probable certain kinds of seed will be very scarce. For example, if anyone has the good fortune to find that Parsnip seed of this year gives a percentage of germination well over 40 per cent., and if the seed remaining from last year still germinate to the extent of 40 per cent.—which, we fear, is not very likely—last year's seed, fortified with some of this year's seed, should be used. It is true that Parsnip seed does not retain its power of germination very long, and that seed bought this year will be found by next year to have lost a considerable part of its power of germination; nevertheless, by adopting the course suggested the gardener will be making the best of a rather bad job.

He should, moreover, regulate the thickness or thinness of his sowing according to the results of his germination tests. As everyone knows, it is quite easy for anyone to ascertain the percentage of germination of a sample of any ordinary seed. Two saucers lined with moistened flannel or blotting-paper, one containing fifty or twenty-five seeds (according to size) the other inverted over it, serve perfectly as a germinator. If kept in a warm place and prevented from becoming dry, the seeds in the germinator push out their roots. As they do so they are counted and removed. The time which seeds of different kinds take to germinate varies very considerably; but the time is shortened if the seeds are first soaked in water.

Another way in which economy in seeds may be practised in the case of seedlings which stand transplanting is by sowing only a part of the quarter devoted to the crop and pricking out the thinnings over the rest of the quarter. Given care, and, above all, immediate transplanting, many seedlings may be treated in this manner. We would urge our readers to adopt every economy in the use of vegetable seeds consistent with cultivating all the land they can.

Furthermore, we advise those who have roots—Beet, Carrot, Parsnip—of last year's sowing, or plants of Leeks or Celeriac, still in the ground, to try the experiment of growing all of them that they can spare for seed purposes. It is true that some vegetables ripen their seeds only somewhat indifferently in this country, but, given a good season, a certain amount of seed may be obtained in this way. Lastly, we suggest that everyone should save a fair amount of seed of Peas, Broad Beans, Runner Beans, French Beans and Haricot Beans, for next year's planting.

HORTICULTURE IN HOLLAND.—Most of the Dutch market-garden produce has, until lately, sold at remunerative prices, but growers complain of the Government restrictions on their holdings. A part only of the vegetable crop may be sold in the open market for export (to Germany), the remaining produce has to be retained for home consumption, and sold at low prices. The production of luxuries and the less necessary vegetables is compulsorily curtailed, and only permitted to those growers who have always devoted part of their land to such cultures. Although, on the whole, Dutch market-gardeners have reason to be satisfied with their present situation, they foresee a crisis after the war. They fear a general economic war in which neutrals—and especially the Dutch, whose agriculture and horticulture are dependent on foreign markets—will be severely affected. They do believe that the belligerent nations will be so exhausted that it will be almost impossible for them to buy the horticultural produce in which Holland has specialised.

SUMMER ROSE SHOW ABANDONED.—The National Rose Society has decided not to hold its Metropolitan Show at the Royal Botanic Society's Gardens this year mainly owing to the difficulties attending railway transport. The question of the autumn show will be considered later.

STATE AID FOR ITALIAN NURSERIES.—The Board of Trade Journal reports that the Italian Minister of Agriculture has announced his intention of establishing in the chief cities of Italy large model nurseries for the production of herbaceous plants. The Ministry will grant subsidies to cover the expenses of these establishments.

"SANDERS' LIST OF ORCHID HYBRIDS."—A supplement to this useful work has now been issued, bringing up the entries of novelties to the beginning of the present year on the same lines as the original publication, which included all up to midsummer, 1915. The large number of new records, as disclosed in the supplement, speak well for the diligence of the raisers of Hybrid Orchids.

POTASH FERTILISERS.—It is satisfactory to learn from the report issued by the Board of Agriculture that a process has been discovered whereby the extraction of potash in soluble form from felspar may be carried out profitably. In order for this to be done it was necessary to produce from the felspar a second product of market value. The process, invented by Mr. J. RIBOX and investigated by the Board, admits of the production of a potash fertiliser and a white cement.

FINGER AND TOE.—A leaflet issued for the benefit of farmers and gardeners in the Eastern Counties gives a brief account of club root, or finger-and-toe. It insists on the importance of liming as a means of getting rid of the pest, and advises the use of bone-meal, steamed bone flour, or basic slag in preference to superphosphate, and nitrate of soda in preference to sulphate of ammonia. Gardeners who are troubled with this pest will do well to dig in in autumn a heavy dressing of quick-lime (2-1 lb. per square yard) rather than to rely on the use of slaked lime or chalk.

THE GROWTH OF APPLE ROT FUNGI AT DIFFERENT TEMPERATURES.—An interesting account of the effect of temperature on the growth of different fungi affecting the fruit of the Apple is given by Messrs. BROOKS AND COLLIER. The important conclusion to be drawn from their investigations is that the initial

Journal of the Board of Agric., Feb., 1917.

J. Leadet No. 2, Eastern Counties School of Agriculture, Cambridge.

Temperature Relations of Apple Rot Fungi," Jour. of Agric. Research, VIII, 4, Washington.

stages of growth of these fungi are more checked by low temperatures than are the later stages, and therefore immediate storage in low temperature is the best means of checking the development of Apple rot fungi.

A VETERAN GARDENER.—MR. HENRY JONES celebrated his jubilee of service at Carrow House, Norwich, a couple of years ago. Forty-four of the fifty years had been spent as gardener to the Colman family, one of the most distinguished members of which is Sir JEREMIAH COLMAN, Bt., so well known to our readers for his successful Orchid cultivation at Gattin Park, Reigate. Mr. Jones is a native of Surrey, and in his early years he was employed in Messrs. ROLLISON'S nursery at Tooting, and in the nursery of Messrs. B. S. WILLIAMS AND SON, Holloway, from which place he went to Carrow in 1865.

Publications Received.—*Artificial Manures for Allotments and Gardens.* By George A. Cowie. (London: Henry Munro, Ltd.) Price 3d.—*British Wild Flowers: Their Haunts and Associations.* By William Gravenor. (London: Headley Bros.) Price 7s. 6d. net.—*Labour and the State.* By George Radford. No. V, of "Our Land" supplements. (London: Adelphi.)—*Journal of the Board of Agriculture,* March, 1917. Vol. XXIII., No. 12. (London: Board of Agriculture and Fisheries, Whitehall Place.) Price 4d.—*Addenda to Sanders' List of Orchid Hybrids, 1915-1916.* (St. Albans Sander & Sons.) Price 2s. 6d.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

EXPERIMENTS WITH HUMOGEN (see p. 113).—I read with interest Dr. H. E. Durham's remarks on the effect of humogen. The use of lime in conjunction with bacterized peat in the Wisley experiments sometimes raised, sometimes depressed, the yield according to the sample of peat used. In no case was quite fresh slaked lime used—it had always been exposed to the air before use, and had therefore become more or less "mellow," to use Dr. Durham's term; indeed, in the 1916 series, lime had been added to the soil many months before, and had certainly become wholly converted into carbonate. (Lime was never added "during growth," as Dr. Durham says.) Here the results were worse than in any other series. But my main reason for drawing further attention to the Wisley trials is that Dr. Durham, in saying that the use of humogen has overlooked what is perhaps the most important point of all, the experiments in Series I. (1914) gave extraordinary results, equal to anything that has been secured elsewhere (see *Journal R.H.S.*, XLI., p. 320); Series II. and III. (1914) fell far short; Series IV. (1915) was somewhat inconclusive taken by itself; and in Series V. (1915) practically no effect was produced; while in Series VI. (1916) the effect was positively harmful! The evidence goes to show that humogen is not of even approximately constant composition; either variations have occurred in the initial peat substratum, in the cultures and materials added subsequently, or in the mode of manufacture, and the result is that at present humogen is not a standardised article, and can be used with profit only on an experimental scale. Assuming, as the results obtained suggest, that nitrogen is the active principle in the humogen, published analyses from various sources confirm the view which experiments in the garden have led us to adopt. Dr. Durham gives hardly sufficient particulars to enable one to gauge the meaning of the results he gives. If the experiment which he quotes with Plate 6, for instance, was the result of comparing one peat-dressed plot with one control plot, the 12 per cent. increase on the ridged land would probably mean nothing, for it would not be outside the probable bounds of differences due to uncontrollable causes. This seems the more likely in that on the "ridge-trenched" land the same dressing of humogen caused a depression in the yield of the same

variety of 12 per cent. Did the humogen (even though used at the high rate of two tons to the acre) really have any effect whatever? T. J. Chittenden.

R.H.S. AND THE PURCHASE OF BOOKS (see p. 127).—The majority of the Fellows of the Royal Horticultural Society will, I should say, uphold the action of the council in refusing to purchase expensive books at the present time, however rare they may be. Before condemning the Council, it should be borne in mind that horticulture is now passing through a very severe crisis. Perhaps, as the Rev. Joseph Jacob says, "the Council's ways want mending"; but this is not the time for it to commit itself to further outlay. It would be better in present conditions to reserve the money for any unexpected call upon the society's funds. As old books are the hobby of your correspondent, one can understand his looking upon the matter as of the first importance, but the Council has to consider the matter from a business point of view. *Cautious.*



MR. HENRY JONES, GARDENER FOR FIFTY YEARS AT CARROW HOUSE, NORWICH.

SOCIETIES.

ROYAL HORTICULTURAL

MARCH 27. As is to be expected, on the adjourned section, the fortnightly meetings of the above society at the London Scottish Drill Hall, Buckingham Gate, are assuming greater importance, both the number of exhibits and the number of visitors being on the increase. The Perpetual-flowering Carnation Society held its spring show in connection with the R.H.S. meeting, but the response was small, only four exhibits being forthcoming in eight classes. In the floral section of the R.H.S. exhibition, a fine feature was a group of Alpines, chiefly Saxifragas, from the Society's Gardens at Wisley. It is only on rare occasions that such superb pans of these beautiful spring flowers have been seen at the London shows; indeed, we doubt if the variety Gloria has ever before been shown so well. The flowers were as large as those of Primroses, and formed an unbroken sheet the width of the large pan. Very charming, too, were *S. ilacina*, *S. Irvingii*, *S. oppositifolia* and *S. o. splendens*, for which latter the Committee awarded a Cultural Commendation. Besides the plants in pans there were some delightful little specimens in pots, including *S. Bursiana* number 8, *Ilacina* and others. Perpetual-flowering Carnations, Cyclamens, Ferns, forced shrubs, and Boscs, comprised the remaining subjects. Four Boses were shown by Mr. ELSAETH HIRKS, who was exhibiting a new H.T. variety named Mrs. Elisha Hirks, flush pink in colour, deepening at the base of the petals to shell-pink. The bloom is long and pointed, of good shape, and has exceptional fragrance; it is borne on a stout stem, and the foliage is robust—altogether a Rose of great promise. From the Society's Gardens at Wisley there was a plant in bloom of Parrotia persica

(see fig. 47), which is very seldom seen in flower in this country, and aroused a good deal of interest. The inflorescence consists of a group of stems in stamens enclosed in brownish scales.

The largest group before the Narcissus Committee, which was also, incidentally, the largest and most prominent individual group in the hall, was exhibited by Messrs. R. H. BARN, LTD., and consisted of Tulips, Daffodils and Crocuses in bowls of fibre. The same firm also exhibited some excellent Daffodils in a separate group, and Daffodils were also shown by Messrs. J. R. PEARSON AND SONS. Both collections of Daffodils were remarkably good, of bright, clear colour and excellent form. In Messrs. BARN'S collection, the golden Trumpet variety King Alfred was represented by model blooms, with perfectly formed perianth of pale yellow, and short, wide, frilled trumpet of a deeper tone. Silver Dawn, Great Warley, Flame, and Lowtham Beauty were also well shown. The finest of Messrs. PEARSON'S varieties were Florence Pearson, Mme. de Graaff, Louise L. Linton, and Mrs. B. Farmer.

The Narcissus Committee recommended an Award of Merit to Narcissus Bonaparte for its value for pot cultivation.

As in the floral section, the Society's Gardens contributed the most interesting exhibit before the Fruit and Vegetable Committee. It consisted of Carrots and Beets which were lifted on the 26th inst. from sowings made on July 19 last. Notwithstanding that 36° of frost had been registered in the gardens, the roots were perfectly sound, and excellent in every respect. There were also from Wisley some Cabbages raised from seed sown on July 21 last, the varieties being First and Best and Harbinger.

At the 3 o'clock meeting of the Fellows, Mr. JAMES C. HOUSTON gave an address on "Violets and Violet growing."

Floral Committee.

President: Messrs. H. B. MAY (chairman), W. J. BISH, J. HADSON, R. C. NOTCUTT, J. GREEN, W. B. CUMMIFORD, G. ROUTH, J. HEAL, E. F. HAZELTON, W. HOWE, T. STEVENSON, C. E. PEARSON, J. F. M. LEED, J. DICKSON, C. E. SHEA, C. DIXON, A. TURNER, R. HOOPER PEARSON, C. ELLIOTT, W. P. THOMSON, E. H. JENKINS and W. G. BAKER.

Groups.

The following medals were awarded by the Floral Committee for collections:—*Silver Flora Medal* to Mr. J. C. JENNER, Rayleigh, Essex, for Perpetual-flowering Carnations; Messrs. SMART LOW AND CO., Bush Hill Park, Enfield, for Perpetual-flowering Carnations and Cyclamens; and Messrs. H. B. MAY AND SONS, Edmon-ton, for Ferns. *Bronze Flora Medal* to Messrs. R. TURNER AND SONS, Oxford, for Saxifragas. *Bronze Bursiana Medals* to Messrs. BARR AND SONS, King Street, Covent Garden, for Alpines and bulbous plants; Messrs. J. CHEAL AND SONS, Crawley, for Alpines and shrubs; Messrs. W. CUMMIFORD AND SON, Hitchgate, for Alpines and forced shrubs; Mr. ELSAETH HIRKS, Twyford, for Boses; Mr. G. W. MILLER, Wisbech, for spring flowers; and Mr. G. REITHE, Keston, Kent, for Alpines.

Orchid Committee.

President: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Veitch, and Messrs. Jas. O'Brien (hon. secretary), R. A. Rolfe, R. H. Thwaites, E. R. Ashton, T. Armstrong, A. McBean, J. Cypher, J. Charlesworth, J. E. Shill, H. G. Alexander, Walter Cobb, S. W. Floy, W. Bolton, C. H. Curtis, C. J. Lucas, R. Freeman White, and W. H. Hatcher.

AWARDS.

FIRST CLASS CERTIFICATE.

Cypripedium Erythrales The Baron (Hera Erythraea × Alabaudes), from Mr. J. E. SHILL, The Dell Gardens, Englefield Green. A noble flower, of large size, the markings and colour following *C. Hera Erythraea*. The dorsal sepal is white with an emerald-green base and heavy blotching of dark purple. The petals and lip are yellow-tinted and spotted with dark mahogany-red.

AWARDS OF MERIT.

Brassica Cateleya Lady de Rivers (B. C. Digbyana × S. arvensis × C. G. Colliana albens), from

Messrs ARMSTRONG AND BROWN, Tunbridge Wells. A white flower of perfect form, the sepals having a faint tinge of rose colour, and the broad fringed lip a yellow disc with a thin line of purple in front.

Sapbro-Laelia-Cattleya Mense var. General Nivelle (S.-L.-C. *Marathon* × *L.-C. callistoglossa*), from Messrs. CHARLESWORTH AND Co., Haywards Heath. A richly-coloured flower, of good size and shape, and by far the best of the three already shown. The broad sepals and petals are reddish rose colour, with a slight gold shade. The lip is crimson with yellow lines at the base.

Cattleya Enid var. Silver Queen (*Mossian Reineckiana* × *Warszewiczii* FROM M. *Boyardt*). Nearest to the fine *C. Enid* × *Lambeau*. The large flowers are pure white with yellow in the centre of the lip and purple lines in front. From Messrs. CHARLESWORTH AND Co.

Odontioda St. Quentin (*Oda Zephyr* × *Odm. Wiganianum*), from Messrs. FLOEY AND BLACK, Orchid Nursery, Slough. A distinct novelty, with large, pale-yellow flowers blotched with dark reddish-purple. The lip is bluish-white with a band of dark red in front of the yellow crest. The colour and disposal of the markings resemble *Odm. Wiganianum*.

GROUPS.

Mrs. BISCHOFFSHEIM, The Warren House, Stanmore (Orchid grower Mr. H. Haddon), showed *Brasso-Laelia-Cattleya Queen* of the Belgians, Warren House variety (B.-L. *Digbyana*-*purpurata* × *C. Mendelii* H. A. Tracy), bearing on a seedling plant a flower of fine shape and substance, of a deep rosy-mauve colour, with yellow disc to the lip.

C. J. LUCAS, Esq., Warnham Court, Horsham (gr. Mr. Duncan) sent three seedlings, viz., *Odontoglossum Delta* (*Rolfsee* × *Othello*), a very dark flower of the *O. Harryanum* class; *Odm. ardentisiper* (*ardentissimum* × *Jasper*), a fine flower handsomely blotched; and *Odontioda warnhamensis* (*Oda Cecilia* × *Odm. ardentissimum*), a good flower, dark bronzy-red, with white front and margin to the lip.

MESSRS. CHARLESWORTH AND Co., Haywards Heath, were awarded a Silver Flora Medal for a group containing a noble form of *Brasso-Cattleya Cliftonii*, with rich purple front to the fringed lip, the sepals and petals being bluish-white.

MESSRS. J. AND A. McBEAN, Cooksbridge, were awarded a Silver Banksian Medal for a group in which their specialities, hybrid *Cymbidiums*, were well represented by forms of *C. Gottianum*, *C. Alexandri*, etc., the latter being specially handsome, and varying in colour from pale yellow to rosy-lilac.

MESSRS. J. CYPIER AND SONS, Cheltenham, were awarded a Silver Banksian Medal for a group of spring-flowering *Dendrobiums*, in which the forms of *D. nobile* and hybrids of the *D. Cyclo* and *D. Apollo* class were profusely flowered.

MESSRS. ARMSTRONG AND BROWN, Tunbridge Wells, staged handsome *Odontoglossums* and *Odontiodas* flowering for the first time, including *Odontioda Cerens* Orchidhurst variety (*Odm. excellens* × *Oda Charlesworthii*), large, and of fine shape, Indian-red, with the tips of the segments clear light yellow; two plants of *Odm. Corona* (*Doris* × *ardentissimum*), the one white, blotched with purple, the other pink with more profuse purple spotting, and both very attractive.

MESSRS. FLOEY AND BLACK, Orchid Nursery, Slough, showed the original *Laelio-Cattleya Invincible Orama* which secured an Award of Merit in 1912, and which is still one of the best of its class.

MESSRS. SANDER AND SONS, St. Albans, exhibited a group of good *Laelio-Cattleyas*; *Cymbidiums*, including *C. grandiflorum* and other showy Orchids. The two best were *Brasso-Laelio-Cattleya Wotan var. callistoglossa* (B.-C. Mrs. J. Leemann × *L.-C. callistoglossa*), one of the largest of the *B. Digbyana* crosses, rosy-lilac, with effectively raved yellow lines from the base to the centre of the lip; and *Miltonia Beuana* General Joffre, a very large bluish-white flower with purple fleure on the bases of the petals and lip.

Narcissus Committee.

AWARD OF MERIT.

Narcissus Bonaparte.—A variety of the *Incomparabilis* type, recommended for award on account of its suitability for forcing in pots. The flower has a flatish perianth of sulphur-yellow, and a broad, short-frilled trumpet of a richer shade. There were about 12 good blooms in each pot, carried well above the foliage, which was stout in substance and not inclined to droop.

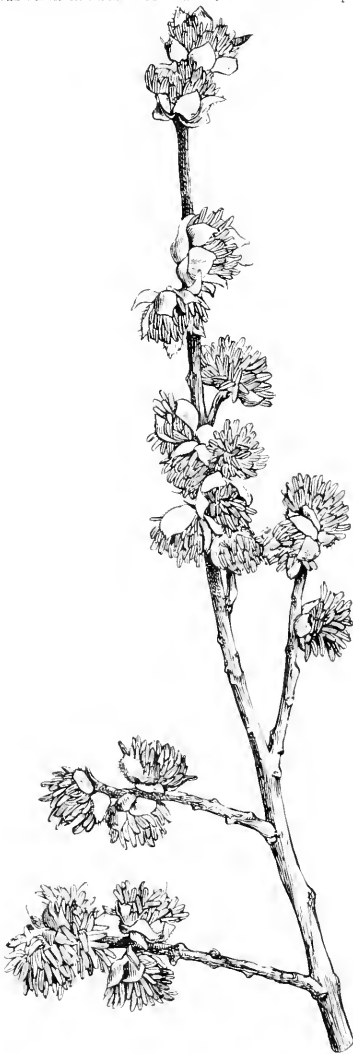


FIG. 47.—FLOWERING BRANCH OF *PARROTIA PERSICA*. (See p. 137, col. 2.)

GROUPS.

The Narcissus Committee made the following awards:—*Silver-gilt Flora Medal* and *Silver-gilt Banksian Medal* to Messrs. R. H. BATH, LTD., Wisbech, for Tulips and Daffodils, respectively. *Silver-gilt Banksian Medal* to Messrs. J. R. PEARSON AND SONS, Loddham, for Narcissus.

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (chairman), Rev. W. Wilks, Messrs. E. A. Bunyard, W. H. Divers, P. D. Tuckett, J. C. Allgrove, P. Veitch, J. Harrison, E. Beckett, O. Thomas, W. Bates, W. Poupart, E. R. Allan, F. Jordan and A. Bullock.

Obituary.

GEORGE KERSWELL. We regret to learn that Mr. George Howe Kerswell, nurseryman and fruit grower, of St. Thomas, Exeter, died of apoplexy on the 17th inst., at the age of 75. Mr. Kerswell was a successful grower of *Gentians*, and was in the habit of showing them at the fortnightly meetings of the Royal Horticultural Society.

ANSWERS TO CORRESPONDENTS.

BERBERIS LEAVES EATEN BY MARE: *G. H. N. II.* As we presume, the leaf sent is that of *Berberis Aquifolium*, it is not known to be poisonous to animals. The root is used in the United States, and to some small extent in this country, as a tonic. As regards the action of the active principle, *Berberin*, upon animals, when administered in large doses, poisonous symptoms have been produced. It is possible that the prickles may have set up intestinal inflammation.

EUCALYPTUS UNHEALTHY: *T. J. II.* There is no fungus or insect pest present in the leaf of *Eucalyptus*. The colour changes are probably preliminary to the gradual death of the leaf, which is resulting apparently from some cultural fault.

GARDENING ENGAGEMENTS: *F. C. K.* and *E. R.* See reply to *M. S.* on p. 130 in the last issue.

VINES FAILING: *J. A.* Unless the roots of the four-year-old Vines had been restricted and special cultivation had been provided so as to cause them to ripen early, 65° was 10° too high for the night temperature during such weather as has lately prevailed. That the heat has been too much for the amount of daylight received is proved by the fact that the internodes immediately above and below the abortive bunches measure 4, and even 5 inches in length, whereas they only ought to be 3 inches at the present time, and those lower down the laterals should be much shorter. The stems are also lacking, not merely in size, but in substance, from the same cause.

NAME OF FRUIT: *Count. Gosset* Apple.

NAMES OF PLANTS: *J. H. L.* 1. *Odontoglossum crispum Lehmannii*, a local form almost intermediate between *O. crispum* and *O. Pescatorei* and very variable in the shape and markings of the flowers; 2. *Odontoglossum luteo-purpureum*; 3 and 4. *Cyrtopidium Lucie* (*ciolare* × *Lawrenceanum*); 5. *Cyrtopidium Calypso* (*Boxallii* × *Spicerianum*); 6. 7. and 8. *Cyrtopidium Lathamianum* (*Spicerianum* × *villosum*); 9. *Cyrtopidium pavoninum* (*venustum* × *Boxallii*).—*Somerset*. 1. *Saxifraga granulata flore pleno*; 2. *Eupatorium* species; 3. *Neprolepis exaltata elegantissima*; 4. *Eranthemum pul-hellum*; 5. *Asplenium Trichomanes* (*Maidenhair Spleenwort*, British); 6. *Ceterach officinarum* (*Scaly Spleenwort*, British).

ONIONS NOT KEEPING: *H. B.* The Onions are attacked by *Onion Sclerotinia* (*S. bulborum*). The black growths (like little seeds or warts) on the top of the bulb are masses of the spawn of the fungus in a resting stage. The land where the crop was grown will be infected, and should not be planted with Onions for at least three years.

PEACH SHOOTS DISEASED: *West Argyllshire.* The Peach shoots are attacked by *Botrytis*, see reply to *A. L. Henley*, in the issue for March 17, p. 120.

POTATOS: *East Kent.* The tubers are severely affected with winter rot (dry rot), caused by the fungus *Fusarium*.

POTATOS FROM A TWELVE-ROD PLOT: *S. P.* Seeing that your plot is approximately 12 rods, your estimate of a crop of one ton of Potatoes is a liberal one, but not excessive. In rich soils, with suitable manures and good cultivation, a crop of over 2 cwt. per rod is sometimes possible.

ONLY MEDAL
INTERNATIONAL EXHIBITION EDINBURGH-1886
ONLY GOLD MEDAL EDINBURGH-1891

THOMSON'S CELEBRATED MANURES

PERFECT PLANT FOODS.
Dwarfed for all garden crops. Price: Vine Plant and Vegetable Manure, 1 cwt. 2s.; 56 lbs. 12s. 6d.; 14 lbs. 4s. 7d. 2s. 9d. Tins 2s. 1/2 and 6d. Carriage paid anywhere on 56 lbs. and up. Special Chrysanthemum and Top Dressing Manure: 56 lbs. 2s.; 14 lbs. 4s. 7d. 2s. 9d. Tins 1/2. Carriage paid anywhere on 56 lbs. and up. Sold by all Seedsmen, Sole makers, Wm. Thomson & Sons, Ltd., Gloucestershire, U.S.A.

✓ SLUGS SLUGS

"SANITAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as **Worms, Rats, Mice, Sparrows, Cats, &c.**

Leaflet and Free Sample with instructions Free.

6d. & 1/2 Tins & 15/- per Cwt. (i.e., London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
Limehouse, London, E.
Awarded Medal at Royal Horticultural Exhibition, 1911.

Write for FREE "CRET" BOOKLET

if you wish to avoid mildew or drainage troubles with pot plants. It also shows other CRET advantages of Porosity, Drainage, Ventilation, and Reliability.

Specimen CRET Prices: 2 1/2 ins. 4/- per 100; 1 1/2 ins. 75/-. All CRETS are per 100. Carriage Paid on orders over 20/-. Sale Delivery Guaranteed.

FREE SAMPLE "CRET" POT on request, with the booklet giving prices and special assortments. Write to-day.

PETER BAILEY & SONS, LTD.,
2, Heaton Mersey Pottery, near Manchester.

Cambridge University Press

- Algæ.** Volume I. Myxophyceæ, Peridinieæ, Bacillarieæ, Chlorophyceæ, together with a brief summary of the Occurrence and Distribution of Freshwater Algæ. By G. S. WEST, M.A., D.Sc., A.R.C.S., F.L.S., Mason Professor of Botany in the University of Birmingham. With 271 illustrations. Large royal 8vo. 25s net. Cambridge Botanical Handbooks.
- The Anthocyanin Pigments of Plants.** By MURIEL WHELDALE, Fellow of Newnham College, Cambridge, and formerly Research Student at the John Innes Horticultural Institution, Merton, Surrey. Royal 8vo. 15s net.
- Nature Study Lessons.** Seasonally arranged. By J. B. PHILIP, M.A. With 23 illustrations. Large crown 8vo. 2s 6d net. Cambridge Nature Study Series.
- Manuring for Higher Crop Production.** By E. J. RUSSELL, D.Sc., Director of the Rothamsted Experimental Station. With 16 illustrations. Demy 8vo. 3s net.
- Fungoid and Insect Pests of the Farm.** By F. R. PETHERBRIDGE, M.A., Biological Adviser, School of Agriculture, Cambridge. With 54 illustrations. Large crown 8vo. 4s net. Cambridge Farm Institute Series.
- Plants Poisonous to Live Stock.** By HAROLD C. LONG, B.Sc., (Edin.), of the Board of Agriculture and Fisheries. With frontispiece. Royal 8vo. 6s net. Cambridge Agricultural Monographs.
- Complete catalogues and prospectuses of particular volumes will be sent on request*

Fetter Lane, London Cambridge University Press C. F. Clay, Manager

Ammanford and Pontyberem Collieries.
SOLE AGENT:
T. T. PASCOE,
York Chambers,
SWANSEA.

Tele. phone : : : 1048 Central.
grams : : : Pascoe, Swansea.

Best Anthracite Large Coal for Horticultural purposes and Cobbles for House Furnaces.

Quick Despatch. Best Quality.
Lowest Prices.

FORBES' ILLUSTRATED CATALOGUE.

Florist's Flowers, Hardy Plants, Vegetable and Flower Seeds.
Free on Application.
JOHN FORBES (Hawick), LIMITED,
The King's Nurserymen,
HAWICK, SCOTLAND.

ORCHIDS,
Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

BOILERS
For House and Greenhouse.

Sectional, Tubular & Saddles.
R.H.S. Gold Medal
C. P. KINNELL & Co., Ltd.
SOUTHWARK ST., LONDON, S.E.

RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges,
AND
Orchard House Trees.

A LARGE AND SELECT STOCK
ALWAYS ON VIEW.

ILLUSTRATED AND
DESCRIPTIVE CATALOGUE
POST FREE.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.

NOW READY THE HORTICULTURAL DIRECTORY AND YEAR BOOK FOR 1917.

Owing to the paper shortage, an unlimited number of copies of this work cannot be guaranteed, and purchasers are advised to order AT ONCE to avoid disappointment.

Orders will be dealt with in strict rotation.

The 1917 edition contains no name or address which has not been verified. The information given is, therefore, absolutely trustworthy.

Apply, enclosing 1/4 for each copy required, to :-

GARDENERS' CHRONICLE,
LTD.,

41, WELLINGTON ST., COVENT GARDEN,
LONDON, W.C. 2.

LETHORION :: VAPOUR CONE Fumigator



Registered Trade Mark 14,020/7

Introduced 1885.
The marvellous effect of this simple and cheap method of Fumigating Greenhouses is fully borne out by the enormous increase of sales year by year.

Only a match required for starting the Cone. Full directions for use on each Cone.

Thousands of testimonials received from all parts.

Prices. No. 1, 50¢ to 1,000 cubic ft., 6d.; No. 2, 1,500 cubic ft., 8d.; No. 3, for 2,000 to 2,500 cubic ft., 1/1.

“TENAX” THE NEW AND MOST SUCCESSFUL Grafting Wax

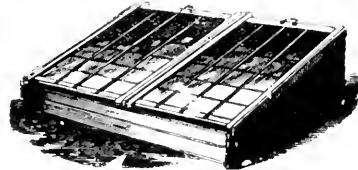
It is a much required “HOME-MADE” article to meet the requirements of all Nurserymen and Gardeners.

It is rapidly taking the place of all Foreign and other preparations for all Grafting and Budding Purposes.

In Tins, each 6d., 1-, 2-, 4-, 6-. Also in bulk at reduced rates.
To be obtained through the Nursery and Seed Trade generally.

CORRY & Co., Ltd.,
Bonded Chemical Works, Shad Thames,
LONDON, S.E.

FOOD SUPPLY.
PORTABLE PLANT FRAMES
Supplied from Stock,
Suitable for Allotments and Gardens at Reasonable Prices.



These Frames are made of the best materials, and can be put together and taken apart in a few minutes by any handy man.

Catalogues of Prices sent free on Application
R. HALLIDAY & Co.,
Royal Horticultural Works, MIDDLETON, MANCHESTER



BENTLEY'S WEED DESTROYERS :

Liquid : Concentrated Strength 1 to 80.
Double Strength 1 to 50.
Patent Powder : 1 to 25.

BENTLEY'S DAISY KILLER
(LAWN SAND).

BENTLEY'S INSECTICIDES.

BENTLEY'S FUNGICIDES.

BENTLEY'S FUMIGANTS.

BENTLEY'S MANURES.

Catalogue on application.

JOSEPH BENTLEY, Ltd.,
Chemical Works,
Barrow-on-Humber, HULL.



BY APPOINTMENT

PAULS' ROYAL NURSERIES. Waltham Cross, HERTS.

Large stocks of the following in excellent condition for Spring Planting, at very moderate prices :-

- ROSES, in all forms, new and old varieties.
- FRUIT TREES, for the orchard and garden.
- HARDY TREES and SHRUBS.
- HARDY CLIMBING PLANTS.
- RHODODENDRONS and CAMELLIAS.
- HERBACEOUS PLANTS.
- SEEDS and Garden Sundries.

Free Lists on application stating articles required.

Wm. PAUL & SON,
WALTHAM CROSS, LTD.

ROYAL GARDENERS' ORPHAN FUND

B. WYNNE, Sec.,

10, Bedford Chambers, Covent Garden,
London, W.C.



Food Production on Farms & in Gardens.

To obtain the best results sow
Dicksons Seeds
which are all carefully selected from
the finest and most productive strains,
and are always reliable.

Prices moderate. Catalogues free.

**Dicksons Seed
Showers Chester.**

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Primula, Handbook of the Hardy.** By H. M. Paul. An Illustrated Work on the Culture, Mode of Growth and Utility of Primulas. 1s. 1jd.
- Pruning.** A Compendium of Outdoor Work, with special chapter for Small Holders. Reprinted from the "Fruit Trades' Journal." Illustrated. 1s. 1d.
- Pruning, The Handy Book of.** With Chapters on Grafting and Budding. By James Udale, with introduction by the Right Hon. Viscount Cobham. New Edition. Illustrated. 1s. 9d.
- Rock and Alpine Gardening.** By H. Hemsley, rockwork expert. A practical guide to the making of Rock, Alpine, Wall and Water Gardens. Profusely Illustrated. 1s. 3d.
- Rock Garden, The English.** By Reginald Farrer. A complete dictionary of Hardy Plants suitable for Rock Garden Culture. Contains 500,000 words and 300 Illustrations. In 2 Vols. Price, £2 2s. 10d. post free (in the press).
- Rose, The Book of the.** By Rev. A. Foster-Mellier, M.A. Illustrated. New Edition. 5s. 5d.
- Roses for the Garden and Greenhouse.** By John Weathers. Description, Culture, Propagation, Manures, etc. Coloured Illustrations. 5s. 4d.
- Roses in Pots.** By Wm. Paul. Ninth Edition. An invaluable Guide to the Cultivation of Roses in Pots, whether for forcing or otherwise. 2s. 2d.
- Salads and their Cultivation.** By T. W. Sanders. How to grow them in the Open, on Hot Beds, and under Glass, etc. Freely Illustrated. Paper, 1s. 2d.; cloth, 1s. 9d.
- Saxifrages or Rockfoils.** By W. Irving and R. A. Malby. A practical work on the Culture of Saxifrages. Well Illustrated in Colour and Half-tones. 2s. 10d.
- Soil, The.** By A. D. Hall, F.R.S. An introduction to the Scientific Study of the Growth of Crops. New Edition. 5s. 5d.
- Species and Varieties, their Origin by Mutation.** By Prof. Hugo De Vries. Second Edition. 21s. 6d.
- Strawberry Culturist, The Illustrated.** A Book worthy of the attention of Raisers of New Varieties, as of the General Cultivator 1s. 7d.
- Strawberry, The Book of the.** With Chapters on the Raspberry, Blackberry, Loganberry, Japanese Wineberry, and Allied Fruits. By Edwin Beckett. Illustrated. 2s. 9d.
- Sweet Peas.** (Second and Revised Edition.) By Horace J. Wright. Contains 8 Coloured full-page Plates. With Chapter on Sweet Peas for Exhibition by T. Stevenson. 1s. 10d.
- Sweet Peas and Antirrhinums.** By William Cuthbertson. 1s. 3d.
- Teratology, The Principles of Plant.** By W. C. Worsdell, F.L.S. Containing a large amount of new and interesting information. Illustrated. Price 25s. 8d.
- Tomato Culture for Amateurs.** By B. C. Ravenscroft. Illustrated. New Edition. In paper, 1s. 3d.
- Tomato Culture for Market.** By J. Stoddart. 1s. 1d.
- Topiary, The Book of.** By C. H. Curtis and W. Gibson, of Levens Hall. 2s. 10d.
- Trapping of Vermin and Birds, Practical.** By W. Carnegie. 1s. 3d.
- Trees: A Woodland Notebook.** By the Rt. Hon. Sir Herbert Maxwell, Bart., F.R.S., LL.D. 22s.
- Trees and Shrubs, Beautiful Flowering, for British and Irish Gardens.** By John Weathers. Description, Culture, Planting, Pruning, Propagation, etc. Coloured Illustrations. 3s. 10d.
- Trees and Shrubs Hardy in the British Isles.** By W. J. Beau, Asst. Curator of Kew Botanic Gardens. In two volumes, with Illustrations and Index. 43s.
- Tropical Gardening and Planting.** By H. F. MacMillan. Second Edition. Revised and Enlarged, with many new features added. 14s. 11d.
- Variation, Heredity and Evolution.** By R. H. Lock. 5s. 4d.
- Vegetable Culture for Amateurs.** By Trevor Monmouth, arranged alphabetically with a calendar of operations for the year. New Edition. Illustrated. 1s. 3d.
- Vegetable Garden, The.** By Henry de Vilmorin and W. Robinson. New Edition. 15s. 7d.
- Vegetable Gardening, The Principles of.** By Prof. L. H. Bailey. 6s. 11d.
- Vegetables and Flowers, the Culture of, from Seeds in Tropical, Semi-Tropical, and Temperate Climates.** By Sutton & Sons, Reading. 320 pages. With numerous Illustrations. 5s. 6d. England; 5s. 9d. Abroad.
- Vegetables, The Book of.** By George Wythes, V.M.H. 2s. 9d.
- Villa Garden, My.** By S. Graveson. Illustrated. 2s. 10d.
- Vines and Vine Culture.** By the late Archibald F. Barran, V.M.H. New Edition. Revised and Enlarged. Illustrated. 5s. 5d.
- Alpine Flora: for Tourists and Amateur Botanists.** By Dr. Julius Hoffmann. Translated by F. S. Barton (Mrs. A. Gepp). 7s. 11d.
- Alpine Flowers for Gardens.** By W. Robinson. Revised Edition. With Illustrations. 11s.
- Alpine Plants, Dictionary of** (see "The English Rock Garden"). By Reginald Farrer.
- Alpine Plants of Europe.** By H. Stuart Thompson. With Cultural Notes. 64 Coloured Plates. 7s. 10d.
- Alpine Plants, Sub.** By H. Stuart Thompson. Including Coloured Plates by G. Flemwell. Price 8s.
- Asparagus, The Book of.** By Chas. Hott. With sections on Celery, Salsify, Scorzoneria, and Sea-kale. Illustrated. 2s. 10d.
- Bacteriology, Agricultural.** By J. Percival, M.A. 7s. 11d.
- Banana, The; Its Cultivation, Distribution, and Commercial Uses.** By W. Fawcett. With Preface by Sir Daniel Morris. 7s. 11d.
- Bee Keeping, Book of.** A Practical Manual on the Proper Management of Bees, especially written for Beginners. By W. B. Webster. Illustrated. 1s. 3d.
- Bees, for Pleasure and Profit.** By G. Gordon Samson. With chapter on "Bee-keeping in Hot Climates." Illustrated. 1s. 2d.
- Botanic Terms, Glossary of.** By B. D. Jackson. 7s. 11d.
- Botanic Names, Dictionary of, and their English Equivalents.** By G. F. Zimmer. 2s. 9d.
- Botanist, the Young.** By W. Percival Weston and C. S. Cooper. Excellent for young people commencing to botanise. 3s. 10d.
- Botany, Agricultural.** By J. Percival, M.A. 7s. 11d.
- Botany, A Practical Introduction to the Study of (Flowering Plants).** By J. Breland Farmer, F.R.S. 121 Illustrations. 2s. 10d.
- Botany, A Primer of.** By Sir J. D. Hooker, F.R.S. 1s. 2d.
- Botany, A Text-book of.** By Dr. E. Strasburger. Translated by H. C. Porter, Ph.D. Revised. Fifth Edition. 779 Illustrations. 18s. 6d.
- Botany, A Year's.** Adapted to Home and School Use. By Francis A. Kitchener. With 195 Illustrations. 5s. 4d.
- Botany, Elementary.** By Dr. E. Drabble. 2s. 10d.
- Botany, First Course of Practical.** By G. F. Scott Elliott. Illustrated. 3s. 10d.
- Botany, Lectures on Plant Physiology.** By Dr. Ludwig Jost. Translated by J. Harvey Gibson. Morocco back, gilt top, 24s. 6d.; cloth, 21s. 6d.
- Botany, Practical Plant Physiology.** By Frederick Keeble, Sc.D., F.R.S. Recommended for use in colleges and schools. 3s. 10d.
- Botany, Structural.** By D. H. Scott, M.A. 2 Vols.
PART I—FLOWERING PLANTS. 3s. 11d.
PART II—FLOWERLESS PLANTS. 3s. 11d.
An excellent introduction to the Anatomy and Life Histories of Plants.
- British Plants, List of.** By G. C. Druce, M.A. A detailed list of Species and Varieties 2s. 9d.
- British Plants, The Uses of.** By Prof. Henslow. 4s. 9d.
- Cambridge Manuals of Science.** Cloth Edition. 1s. 5d., post free.
- Bees and Wasps.** By O. H. Latter, M.A.
- Earthworms and their Allies.** By F. E. Bedford, F.R.S.
- Insects, The Life Story of.** By Prof. G. H. Carpenter.
- Plant Animals: A Study in Symbiosis.** By Frederick Keeble, Sc.D., F.R.S.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841 No 3980

No. 1580. Vol. LXL.

{TRID SERIES}

SATURDAY, APRIL 7, 1917.

{Registered as a Newspaper.} PRICE 3d. POST-FREE, 3d.

SUBSCRIPTION—Inland, 15.-; Foreign, 17/6 (22fr. 10s.) {4 26s.} per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2.

Telegraphic Address—"Gardchron, Rand, London."

Telephone—Gerrard 1843.

For CONTENTS see page 139.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also Dickson's Improved Manure-Spans, Fringed crochets free on application to **DICKSON'S, Royal Seed Warehouse and Nurseries, Chester**

WM. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham Conservatories, Winter Gardens, Vineries, Peach-houses, Portable Buildings, &c. Catalogues gratis.

BLACKMORE & LANGDON, Bath, will have pleasure in sending a copy of their 1917 Catalogue of Begonias and Delphiniums, &c., &c., free, if this paper is mentioned. Magnificent strong roots of our unequalled Delphiniums in superb variety.

GREENHOUSE PAINTING & GLAZING—"Vitrolite," superior to White Lead Paint, "Plastine" supercedes putty. Full particulars from **W. OARSON & SONS, Grove Works, Battersea**. Agents throughout the country.

BATH'S CARNATIONS, PANSIES, DAHLIAS, CHRYSANTHEMUMS, and other Flowers. New Illustrated Catalogue of the best new and standard varieties is ready, and will be sent post free on application. — (Dept. A) **R. H. BATH, LTD., The Floral Farms, Wisbech**.

BATH'S SELECT SEEDS.—New illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application. — (Dept. A) **R. H. BATH, LTD., The Floral Farms, Wisbech**.

ROSES.—Wm. Paul and Son, Waltham Cross, Ltd., beg to offer a fine stock of all the best varieties, new and old, for present planting. Fringed catalogue on application. — **PAUL'S ROYAL NURSERIES, Waltham Cross, Herts**

JAMES GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineer, Danvers Street, Chelsea, London, S.W.3. Wire, 201, Western London. Telephone: 201 Western.

BUNYARD'S ASPARAGUS. — Orders are now being booked for these plants for delivery in March. List, with full directions and prices, on application.—**GEO. BUNYARD & CO., LTD., Royal Nurseries, Maidstone**.

VIOLAS, finest Scotch, 12 Bushing Varieties, correctly named, 2s. 3d., post free. Early Chrysantheums, 12 very fine varieties, 3s. 9d., post free. Strong plants.—**DOBIE & CO., Florists, Edinburgh**.

WATERER'S ALPINES, HERBACEOUS PLANTS, and WATER LILIES. Large stocks of the best and most popular varieties. Descriptive Catalogue free. — **JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Twyford, Berks**.

SUTTON'S VEGETABLE SEEDS.

SUTTON'S FLOWER SEEDS. The Best.

SUTTON & SONS, The King's Seedsmen, READING.

SANDERS, Orchid Growers, St. Albans.

BARR'S Beautiful LILIES, GLADIOLI, CANNAS, MONTEBRATIAS, TIGRIDIAS, &c., for spring planting. Descriptive Catalogue free on application. **BARR & SONS, King Street, Covent Garden, London.**

BARR'S VEGETABLE AND FLOWER SEEDS of finest selected strains and tested growth. Catalogue free on application.

BARR'S Hardy PERENNIALS, ALPINES, ROCK PLANTS, Aquatics, Climbers, &c., for Spring planting. Catalogue free on application.

KELWAY'S graceful and beautiful "LANGRIM" HYBRID GLADIOLI. These new Gladioli are most graceful, and provide Yellow, Amber, and Apricot shades not to be found in our other large-flowered hybrid Gladioli. They are quite hardy and flower in July and August. They flourish in towns, and are invaluable for decorating hospitals, churches, and the home. Send for reduced War Price Lists of our new varieties.

KELWAY & SON, Retail Plant Dept., LANGPORT, SOMERSET.

100,000 LARGE GARDEN FERNS, 20s. 100; Palms, Begonias, Crotons, Braucenas, Roses, Ferns, Gloxinias, Labras, Hydrangeas, &c.; catalogues free.—**J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.**

"ROCK GARDEN PLANTS, Where and In What Soils to Plant Them," with Catalogue, free on application. Special selections, 12, 3s. 6d.; 25, 6s. 6d.; 50, 12s. 6d.; 100, 25s. All different named, strong stocks, please state position and soil.—**G. R. PHIPPS, Alpine Nursery, Barnham, Bognor.**

CAUCALARIAS (GOLDEN GEM)—strong, cold-growing, 2s. 6d. 100, carriage paid.—**ENGLAND & FERNES, Finsland, Road Nurseries, Bromley, Kent.**

PERNS' FERNS!—Tree Ferns, Climbing Ferns, Basket Ferns, Stone and Greenhouse Ferns, Hardy Garden Ferns; catalogue free.—**J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

YOUNG ORCHARD, eight years old. Fruit Trees, must be cleared to plant Potatoes. Apples, Pears, Plums, 1s. 5d. each, 12s. per dozen. Specimen Trees in Standard or Bush, 1s. 6d. to 3s. 6d. each. Varieties include Newtowns, Bramleys, Christmas Pears, Williams, Victoria, and all leading varieties. Large Batches in Gooseberries and Red, Black, and White Currants, 6d. each, 6s. per dozen. All in full fruit. No waiting years for fruit.—**FRED PARKES, Vine Gardens, Wyberton, Boston.**

For Advertisement Charges see page 111.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes about 1lb., 3s. per, and 12lb., by Dealers in Garden Sundries. Wholesale: **PRICES' PATENT CANDLE CO., LTD., Battersea, London, S.W.**

OMISSIONS and Failures made good by purchasing Storrie's Seedlings, just ready for picking out or putting on at correct dates for best possible results, all popular Greenhouse plants, Summer Bedding, and Hardy Border Flowers, &c. Grand lot of Cyclamen now ready. Write for catalogue.—**STORRIE & STORRIE, Flower Seeds Specialists, Gloucester, Perthshire.**

PEACH LEAF BLISTER.—Bunyard's Moleca has been proved by hundreds of practical gardeners a certain cure for this trouble; to be applied in March and April; 2s. per quart, 5s. 6d. per gallon, in cans.—**GEO. BUNYARD & CO., LTD., Royal Nurseries, Maidstone.**

LAXTON'S SEEDS AND FRUIT TREES.—New Catalogues of the above now issued gratis. Grand New Early Pea, Laxton's Superb, &c., Fruit Trees. A fine stock to offer—may still be safely planted in California on receipt of stamped envelope.—**LAXTON BROTHERS, Nurserymen, Bedford.**

AMERICAN GROWN GLADIOLI, direct from Chibbs, New York—America, 17s. 6d.; Hutton Joe Hulot, 17s. 6d.; Bronchoceras, 12s. 6d.; Bayley 20s.; Niagara, 35s.; Panama, 35s.; Prometheus, 35s.; Chibbs New Grant Mixed, 17s. 6d.; Groll's Hybrids, Mixed, 17s. 6d. per 100. Packed free and carriage paid. **J. M. STEWART, 16, Market Street, Nottingham.**

PERPETUAL FLOWERING CARNA THINS, strong, healthy plants, now ready, amongst which are the following varieties: 4s. 6d. per doz. out of sand, 5s. 6d. per doz. in pots.—**Enchantress, Snowstorm, May Day, Lady Northcliffe, Mikado, Rose Pink Enchantress, 6s. per doz. out of sand, 7s. per doz. in pots. Enchantress Supreme, Salmon King, Georgina, White Enchantress, Champion, Triumph.** Price List of Latest Novelties on application.—**J. C. JENNER, Lynnwood Nurseries, Rayleigh, Essex.**

ORCHID PEAT, 6s. and 7s. 6d. per sack: Brown Peat, 10s. 6d. per sack; 20s. per sack; 40s. per sack; 2s. 6d. each, 30s. dozen; Oak and Beech Leaf Mould, Yellow Loam, Stacked and Fresh Out, Silver Sand, 4 ton lots for 45s.; C.N. Fibre, 24s. dozen bags; list free.—**J. HANDSCOMBE, F.R.H.S., Feltham, Middlesex.**

SPORTSMEN, Farmers, Horsemen.—Try our splendid Yorkshire Whips (Twist), wears like leather; showproof; 7 yards for 17s. 6d., Patterns free.—**BRADFORD WOOLLEN CO. (7), Bradford.**

CABBAGE ROOT MAGGOT.—A sure remedy against this pest; cheap, practical, effective; tarred fish dross will protect your Cabbages and Cauliflowers from maggot attacks; 6s. per 1000, 1s. per 100 (postage extra, 9d. for 1000, 4d. per 100); full instructions supplied; cash with order.—**FRED ROBINSON, 13, Langdale Road, Victoria Park, Manchester.**

STEEL HAND PLOUGH and TRENCH HOE.—A Wonderful Little Tool. A woman can do more with it than two men with spades. Price 3s., carriage paid **LAND TOOL CO., 18, Aldsp Street, Baker Street, London, W.**

SALES BY AUCTION.

**WEDNESDAY NEXT, at 12 o'clock,
FRUIT TREES,**

Herbaceous Plants, Rhododendrons.

1,500 ROSES

in variety, Clematis, Carnations, Lilies, Gladioli and other Bulbs, cases of Japanese Lilies, &c.

MESSRS. PROTHEROE & MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C. On view morning of sale and catalogues had.

**WALTON GRANGE, STONE,
STAFFORDSHIRE.**

SALE OF THE COLLECTION OF RARE AND VALUABLE ORCHIDS FORMED BY THE LATE W. THOMPSON, ESQ.

MESSRS. PROTHEROE & MORRIS have received instructions from the Executors to SELL by AUCTION on the premises as above, on Tuesday, April 24th, and two following days, at 11.30 o'clock each day precisely.

A list of the principal plants will be found in the advertisement in this paper on March 31d. The Collection may be viewed by appointment with the Head Gardener, Mr. J. Hovos. Catalogues are now ready, and may be had on application to the Auctioneers, 67 and 68, Cheapside, London, E.C.2.

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORISTS' AND SEED BUSINESSES to be Let or Sold, Published by

MESSRS. PROTHEROE & MORRIS every month. Copies may be obtained post free on application.—Estate Offices, 67 and 68, Cheapside, London, E.C.

FOR immediate disposal, old-fashioned Frechold Nursery, about 3 acres, well planted with Fruit, &c.; 10 Greenhouses; about 400ft. run, mostly heated; dwelling house, stabling, seed offices, &c.; artesian well; extensive frontage on main road; had health only reason for selling.—For terms, write E. D. Box 16, 41, Wellington Street, Covent Garden, W. C. 2

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS old plants suitable for stock, cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

MISCELLANEOUS.

**OILSKINS THAT DO NOT
STICK.**

Oilskins that will give you good service and stand hard wear. Oilskins that never fail to keep out the hardest rain or sleet—BEACON OILSKINS. Men's Coats from 9s., Leggings from 2/9. Soft-westers 1/6. Children's Coats 8/6 upwards. Ladies' Smart Oilskins 18/6. Deal direct with us and save money. Send a postcard today for our Free Booklet of "Weather Comfort," describing money-back guarantee.—Send now before you forget—to BARBOUR'S, LTD., 66, BEACON BUILDINGS, SOUTH SHIELDS.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

PRIVATE.

BAILIFF or HEAD GARDENER; capable, wide business and trade nursery experience, with special knowledge of Hardy Plants and Rock Gardens, age 33; single; exempt; South preferred, good salary.—P. Box 4, 41, Wellington Street, Covent Garden, W.C.2.

WANTED, HEAD GARDENER with wife as good landlady, without children, or grown-up family; another Gardener kept; cottage found, Churchpeople.—Address, stating ages, length of character in last place, and wages required, to G. B. D. King's Library, Dorking.

WANTED, HEAD WORKING GARDENER; careful manager, having first-class experience, where 3 or 4 sizes kept, (reasonable reference required); intelligible; good wages, cottage, and garden.—Full particulars to G. HAMPTON, Norton Manor, Sutton Scotney, Hants.

WANTED, HEAD WORKING GARDENER; intelligible; married; cottage provided; good wages.—Apply, MRS. DODD, Church Mead, Pirbright, Surrey.

WANTED, capable SINGLE-HANDED GARDENER; help given, for country house, no Greenhouses, cottage with garden.—ADAMSON, G. R., c/o Vinton's, 8, Bevan's Buildings, London, E.C.4.

WANTED, a good SINGLE-HANDED GARDENER; timber kept; cottage and garden.—Apply, MRS. WITHAM, Whitnour House, near Guildford, Surrey.

WANTED, SECOND GARDENER, for inside and out, cottage or comfortable Bothy provided, also fine, light, and vegetables, good wages for suitable man.—A. BRADBURY, Baysulphs, Llandudno.

WANTED, SECOND GARDENER; good all-round experience, take turn with duty, wages 40s. per week, 5s. kept.—E. CHAMBERS, The Gardens, Leigh-Booth, Streatham, S.W.16.

UNIVERSITY COLLEGE OF NORTH WALES, DEPARTMENT OF AGRICULTURE.

In connection with the Two Years' course of practical instruction in Horticulture for women and girls arranged in cooperation with the markets of Angelys and Toloni the Hon. Mr. Stapleton Cotton, there are two vacancies to be filled up at once. Pupils take a full share in the work of the garden and are paid for their services. Terms of application may be obtained from R. G. WHITE, University College (Old Building), Bangor, March 31, 1917.

THE Lameth Metropolitan Borough Council requires the services of a **GARDENER** (ineligible for military service); wages, 40s. weekly, plus 8s. war bonus.—Write, stating age and experience, to the **BOROUGH ENGINEER**, Lameth Town Hall, Buxton Hill, S.W.2.

WANTED, GARDENER; intelligible; good cottage, rent, taxes, rates free; large Wild and Kitchen Garden, Herbaceous Borders, small Greenhouse, Fowls, state wages.—MRS. WOLDELL, Arniside, Westnorland.

WANTED, UNDER GARDENER or discharged soldier would do, wages, 36s.—Apply, LEWRY, Heathfield House Cottage, Eilat Vale, Blackheath, S.E.3.

WANTED, from April 16 to September 30 good Practical Woman **GARDENER**, to look after Rock and Rose Garden and Herbaceous Borders, could live in with other servants, or have lodgings near, good wages given.—Write full particulars, REV. MALLINSON, Westlands, Leobury, Herefordshire.

LADY GARDENER WANTED, MAY thoroughly experienced, live in.—MISS CRAIGIE HARKETT, Lahil, Exeter.

WANTED, TWO WOMEN GARDENERS, experienced inside, good wages.—Apply, HEAD GARDENER, Forest Park, Windsor.

LADY GARDENERS WANTED, for (a) Aberdeen, HEAD of 4; nice Garden, large tables, very little glass, interview in town, (b) Croydon, SINGLE-HANDED, 3 good rooms supplied; 1 acre, Vegetables, Conservatory, (c) Gloucester, SINGLE-HANDED, 28-week vegetables, milk, and furnished cottage, supplied, Vegetables, Fruit, and Flowers, also FARM WORKER wanted, live together, 22s., vegetables, milk, &c., small town; (d) Slough, SINGLE-HANDED, man kept for rough and hard work, Kitchen Garden, few Beds, 4/2 working, and many other posts.—MRS. HUNT, LTD. 86, High Street, Marylebone, W.1. No engagement, no fee.

WANTED, TWO WOMEN UNDER GARDENERS, experienced Inside and Out; Rose and Flower Gardens, Rockery, Herbaceous Borders, &c.; accommodation provided, no board.—State qualifications and wages expected, send reference to MR. BODWELL, The Lodge, Butlers Court, Beacons field.

WANTED, IMPROVER (INSIDE and OUT); able to take duty; wages, £1 per week and Bothy; duty and overtime paid.—Apply, with particulars, to R. A. PAGE, The Gardens, Belize Court, Haverstock Hill, N.W.3.

WANTED, IMPROVER; Inside Houses and Out; age 18; wages, 18s., Bothy, vegetables and milk.—E. MORGAN, Wasand Hall Gardens, Hull.

WANTED, TWO SMART YOUTHS; chiefly Out-side; wages, £1 with Bothy, milk and vegetables.—Apply, H. PRINCE, The Gardens, Polesden Lacey, Dorking.

WANTED, CLERK (LADY); quick at shorthand, Typing, also Figures; comfortable office; state salary, experience.—E. W. KING, Seed Merchant, Coggeshall, Essex

TRADE.

WANTED, HEAD WORKING FOREMAN; thoroughly experienced in Grape, Peach, and Tomato growing.—Apply, giving full particulars, wages, &c., to E. BOURGAIZE & CO., Leigh Vineeries, Windoane, Dorset.

WANTED, WORKING FOREMAN; Clematis and Tomatos; market nursery, Chesham district; wages 40s. weekly and bonus.—Apply, stating age, experience, when disengaged, and send reference to B. W. Box 5, 41, Wellington Street, Covent Garden, W.C.2.

WANTED, ONE or TWO MEN, experienced in Rockery, Building and General Landscap work.—Apply, stating wages, experience, with copies of references, to BROADHEAD, Wooddale Nurseries, Thongbridge, Huddersfield.

WANTED at once, a practical WORKING MAN for the general work of a small Nursery, one House only, for working Roses and Clematis; must be successful Building and Drafting, and good Hand Pruning and Transplanting all Outside Nursery Stock, and good at Violas; must be intelligible, or beyond any military call, cottage found close to the Nursery.—Apply, with references, stating age and wages required, to JAS. HOLDER & SON, Crown Nurseries, Reading.

WANTED, a superior well-educated man for take charge of the Packing Shed; able to do simple Book-keeping, and good at making up Weeds, Crosses, Bonnets, &c., under supervision; hours, 7 a.m. to 5.30 p.m., with hour for breakfast and dinner, 1 o'clock Saturdays.—Apply, with references, stating wages expected, to the **OUTDOOR SUPERINTENDENT**, The Horticultural College, Swanley, Kent.

WANTED, young LADY FLORIST, for Croydon, First Band; capable, energetic person required.—Apply, to THOMAS BUCKER, The Nurseries, Station Road, South Norwood, S.E.25.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d. for each succeeding Eight words or less.

PRIVATE.

GARDENER (HEAD) and MANAGER; small Farm it required; 30 years' experience; 12 years as Head here; holder of Botanical, Agricultural and Horticultural certificates; excellent recommendation, G. GRIMMER, Norton Manor Gardens, Sutton Scotney, Hants.

G. ABBEY open Re-engagement; first-class business experience in all branches of Horticulture; recommended by present employer.—Aston Rowant Gardens, Oxon, Wallingford.

GARDENER (HEAD); Scotch; age 45; in large establishment; thoroughly experienced in all branches, active, good Manager; for 12 years Head at Osberton, leaving through death of the Right Hon. F. J. S. FOULMER, would undertake management of small estate, excellent references, used to producing Vegetables and Fruit in large quantities.—Apply to JAMES B. ALDAN, Osberton Gardens, Worksop, Notts.

GARDENER (HEAD); life experience, gained in large establishments; excellent references, married when suited; intelligible.—SAUNDERS, Park Place Gardens, Henley-on-Thames.

GARDENER (HEAD), or good SINGLE-HANDED; also able to do floristry in every way; life experience; aged 44, good references, would accept post for duration of war.—A. BROWN, The Lodge, Portley Wood, Whitechate.

GARDENER (HEAD, or good SINGLE-HANDED); experience Inside and Out; good references.—HEATHER, c/o Mrs. Colyers, Hampton Cottage, St. John's, Working, Surrey.

MRS. LEOPOLD SALOMONS recommends her **HEAD WORKING GARDENER;** age 36; 20 years Norbury Park; left through death; experienced all branches.—Apply, GEO. KENT, Pixham Lane, Dorking.

GARDENER (HEAD WORKING); where 2 or 3 Undermen are kept; life experience in good all-round Gardening, can be highly recommended, age 38, married, no family.—P. E., Box 6, 41, Wellington Street, Covent Garden, W.C.2.

GARDENER (HEAD WORKING); life experience in all branches, Inside and Out; intelligible; married; one boy, 14 years; good references; leaving on account of employer giving up the place.—CHARLES DICKER, Pudding Hall, Neston, Cheshire.

GARDENER (HEAD WORKING) seeks re-engagement with lady or gentleman in good establishment; life experience in all branches and stock; age 48; wages, 35s., house and firing.—J. SHRIMPTON, 353, Norton Way, Letchworth, Herts.

GARDENER-ELECTRICIAN (HEAD WORKING) seeks situation; life experience in all branches of gardening; take charge and do running repairs to electric installation; age 45; abstemious; married; one in family; highest possible references.—Wage, acc. to M. J., Box 26, 41, Wellington Street, Covent Garden, W.C.2.

GARDENER—Good **KITCHEN GARDENER**, well up in Vegetables and Fruit; under take 2 cows; Pigs; Poultry; age 50; wages, 36s.; house and fringe, or could manage mixed farm.—C/o T. Grove 47, Chase Side, Old Southgate, N.

LADY GARDENER fully certificate 1, 6 years' experience, desires post as **HEAD WORKING**; could bring Assistant, South of England preferred—Elder Lodge, Fox Court, Corstophine, Midlothian.

LADY GARDENER seeks Post; Single-handed or with others; open Garden; near London preferred.—M. c/o MR. TAYLOR, Chapel Place, Tunbridge Wells.

LADY GARDENER seeks Re-engage-ment, 2 years' experience in large private place under Glass; previous trade; please state wages.—E. 44, Box 7, 41, Wellington Street, Covent Garden, W.C.2.

SOLDIER'S WIFE (son, 12 years), Husband late Gardener, would clean and attend to Bath, or help in house, in return for cottage, coal, &c.; good references; age 42.—MRS. CUMMERS, 164 Crystal Palace Road, East Dulwich, S.E.22.

TRADE.

FOOD PRODUCTION.—Advertiser desires responsible position, Intensive Crops, Pigs, Poultry, Fruit, Tomatoes; conversion raw produce into valuable table commodities; in the mail order propositions.—"Strathmore," Llanfairpwll, Anglesey.

ADVERTISER desires Situation, Market Garden or Fruit Farm; some knowledge; Vegetable Growing; Poultry; Drive, wife would assist, abstemious, intelligible.—KENNETT, 12, Southfields Road, Eastbourne.

GENTLEMAN (retired), with some experience of Fruit Growing, seeks employment on Fruit Farm; good references; salary expected; single; invest small sum later.—W. J. A. R., Box 6, 41, Wellington Street, Covent Garden, W.C.2.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue **MUST** reach **THE PUBLISHER** not later than **WEDNESDAY, 5 p.m.**

	s.	d.
Ordinary Positions per page	10	0
Facing matter and Back Page	12	0
Half and quarter pages, column and half-column spaces, pro rata.		
4 line space not exceeding 20 words	3	0
Per inch, single column	7	0
Per inch, across 2 columns	14	0
Per inch, across 3 columns	1	0

Foot space (no display allowed) 1/2 per line space, (Headline counted as two lines)

For discounts apply to address below.

SITUATIONS WANTED.

26 words, 1s. 6d., and 6d. for every additional 6 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM	15	per annum.
ABROAD	17	6

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telegrams: 1643 "GARDICHRON, RAND, LONDON"

Telephone: 1648 GERRARD.

PERPETUAL CARNATIONS

Flowering plants in 5in. pots.

Standard varieties, 18s. per dozen, 110/- per 100. Novelties, 22s.6 per dozen, 150/- per 100.

BORDER CARNATIONS

Strong plants in 3in. pots, 7s.6 per dozen, 50/- per 100.

All plants **CARE, PAID** and packed free for cash.

A. F. DUTTON'S NOTED CARNATIONS. IVER, BUCKS.

RIVERS'

Fruit Trees, Roses, Vines, Figs, Oranges, AND Orchard House Trees.

A LARGE AND SELECT STOCK ALWAYS ON VIEW.

ILLUSTRATED AND DESCRIPTIVE CATALOGUE POST FREE.

THOMAS RIVERS & SON Sawbridgeworth, Herts. STATION: HARLOW, G.E.R.

ORCHIDS! ORCHIDS!!

Catalogue of

COWAN'S LARGE and FINE COLLECTION of ORCHIDS,

and particulars of

COWAN'S NEW ORCHID POTTING MATERIAL.

POST FREE ON APPLICATION.

It is now a statutory offence to post a catalogue unless a written application is made for it.

JOHN COWAN & CO., Gateacre Nurseries, Gateacre, LIVERPOOL.

TURF LOAM.

Very Fibrous Yellow Turf Loam

FOR VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.

Quotations Currence Paid or Delivered.

A. B. JOHNSTON, New Park, Cranleigh, SURREY.

FORBES' ILLUSTRATED CATALOGUE.

Florist's Flowers, Hardy Plants, Vegetable and Flower Seeds.

Free on Application.

JOHN FORBES (Hawick), LIMITED, The King's Nurserymen, **HAWICK, SCOTLAND.**

ORCHIDS,

Clean, well-grown and cheap; also

Many Rare and Choice Varieties.

STOVE and GREENHOUSE PLANTS of ALL KINDS. Kindly send for Catalogue.

JAMES CYPHER & SONS, Exotic Nurseries, CHELTENHAM.

CLIMBING PLANTS

(Present-Day Gardening Series)

By **WILLIAM WATSON.**

(Introduction by William Robinson.)

A Practical Handbook on the Treatment of Climbing Plants, both hardy and tender species. Illustrated with 24 full page plates, 8 of which are reproduced in colour.

Price 2/10 post free from:

The PUBLISHING DEPT.,

"GARDENERS' CHRONICLE" OFFICES, 41, Wellington Street, Covent Garden, W.C. 2

THE ROCK GARDEN

A practical work on the cultivation and management of Rock Gardens, written by Reginald Farrer. One of the best and most popular works on the subject.

Contains 5 plates in colour. Price 1/10 post free.

THE PUBLISHER,

The Gardeners' Chronicle, Ltd., 41, Wellington Street, Covent Garden, London, W.C. 2.

ONLY OBTAINED TO ORDER.

IN consequence of an Order of the Board of Trade prohibiting publishers from taking back from retailers unsold copies of any newspaper or journal the **GARDENERS' CHRONICLE** will only be obtained to order in future. Fill in and despatch to your newsagent **AT ONCE** the form given below, as you will now find it impossible to obtain a copy at short notice by any other means.

To Newsagent.

Address

Please deliver to me each week, at the address below, a copy of the **GARDENERS' CHRONICLE** until further notice.

Signed

Address

Date.....



THE
Gardeners' Chronicle

No. 1880.—SATURDAY, APRIL 7, 1917.

CONTENTS.

Books, notices of—	Roses, select varieties of 145
Genus Eucalyptus .. 145	Manchester and North .. 147
Johnson's Gardener's .. 140	Nursery and Seed .. 147
Dictionary .. 140	Trade .. 147
Plantae Wilsonianae .. 144	Royal Horticultural .. 147
Brussels, allotments in .. 145	Societies, local .. 145
Eschscholzia Cambridge .. 145	Strawberries, substitute .. 149
Cream .. 145	For littering .. 149
Cotoneaster humifusa .. 149	Sulphate of ammonia for .. 146
Farm, crops and stock .. 147	Potatoes .. 146
Forestry .. 147	Vegetables .. 142
Spring in the woodland 140	Bean Masterpiece .. 142
Fruit planting, problems .. 145	Bean Mont d'or .. 142
of .. 145	Best, the value of the 142
Gardener and National .. 144	Mancrop Potatoes .. 141
Service .. 144	Maximum yield, the 142
Humorous, experiments .. 146	Parsnips .. 141
with .. 146	Systems of cropping .. 141
Insecticides .. 139	Week's work, the—
Nitrogen-fixing bacteria 144	Flower garden, the .. 143
Obituary .. 149	Fruit under glass .. 142
Van Hoveot, H. .. 147	Hardy fruit garden, the 143
orchid notes and glean- .. 142	Kitchen garden, the .. 143
ings— .. 142	Orchid houses, the .. 142
New Odontodas .. 149	Plants under glass .. 143
Parrotia persica .. 146	

ILLUSTRATIONS.

Allotment, system of cropping an .. 141
Cockshafers .. 148
Cotoneaster humifusa .. 149
Eschscholzia Cambridge Cream .. 145

INSECTICIDES.

It seems probable that there will be a demand for British-grown fruit this year at prices far in advance of those ruling hitherto, and it will pay well to get the utmost yield possible from every acre of orchard and fruit cultivation. One reason why Canadian and Tasmanian fruit is appreciated so much in this country is the perfect condition of each individual fruit, a result partly due to the very thorough methods taken to prevent damage by insects. These methods are in some districts compulsory. Whilst fruit grown here is rarely perfect, that which is imported is so to an extent wholly unknown in this country.

The use of insecticides is a practice that contributes to perfect fruit to an extent only realised when one compares properly sprayed fruit with fruit from trees not sprayed. I propose to discuss the matter from the point of view of the man who has a sprayer and wants to make what spray-fluids he needs himself. Some years ago I helped to spray on a plantation with a mixture of nicotine, quassia and soap, costing 10s. a hundred gallons; it was found to kill about 40 per cent. of the Apple suckers. A mixture described below was substituted, costing 4s. to make, and it killed 90 per cent. every time.

In all insecticides there are two things to think of, whether the liquid will wet the plant or insect, and whether it will then poison or kill the insect. For instance, for a caterpillar you must first have a liquid that will wet the leaves, and then add the poison that is to remain there and kill the caterpillar when it feeds; for some insects you have to think of another point, whether the liquid will dissolve the waxy covering after it has wet it. Thus, for woolly aphid of the Apple, you want a wetting ingredient, a wax-dissolving ingredient and a poisoning ingredient. For wholesale use it may pay to use an insecti-

cide made to kill a special insect, but in general the best plan is to have a standard wetting mixture, and to add to it ingredients to poison or dissolve wax of the various pests.

STANDARD WETTING MIXTURES.—Three formulæ are given, of which the second may be impossible in the present scarcity of potash (soft) soaps. All the more valuable will be the resin-soap formula.

1. Resin, block or lump, 8 lb.
- Washing or crystal soda, 8 lb.

Dissolve the soda in 3 gallons of water, in a vessel capable of holding at least 10 gallons; boil it, and add the resin roughly powdered, a little at a time, while it boils. When all is dissolved add water slowly till it makes 10 gallons. This is resin stock solution, and should be diluted with nine times its quantity of water.

2. Soft soap, 10 lb.
- Water, 100 gallons.

Dissolve the soap in 10 gallons of water and dilute 1 in 10. Use rain or soft water.

3. Bar or hard soap, 7 lb.
- Water, 100 gallons.

WINTER WASHES.—In view of the R.H.S. trial made in 1914-1915, it is only necessary to give an excellent formula.

4. Make formula 1 and add 1 quart "creosote oil" to the stock solution. Dilute at 1 gallon to 7 with water. Spray tree-trunks before the buds open. "Creosote oil" is usually obtainable from ironmongers; it is a black oil smelling like tar. In some places you can get crude disinfectant fluids that make a milky mixture with water; these will do just as well if used at 1 quart to 4 gallons of water, but are usually more expensive. The object of a winter wash is to clean trunks and branches of moss and of wintering insects. The best winter washes under proprietary names were tested by the R.H.S. in 1914-1915.

CATERPILLAR WASH.—Lead arseniate is the safest substance in use for killing caterpillars and such insects as weevils; it is put on with a wetting solution, and poisons the insects when they feed. It is also used against Codlin Moth, spraying the flower trusses just after the petals fall. As in some years we lose over 60 per cent. of the fruit from this pest, a little arseniate put on at the right moment is a useful help. Lead arseniate is sold by firms in paste form; the only question, then, is, how much water is in the paste and whether the grower is buying too much water. It is easily made with a lead salt such as lead acetate or nitrate and sodium arseniate.

5. Sodium arseniate, 1½ lb.
- Lead acetate or nitrate, 3½ lb.

Dissolve each separately in water; mix in a barrel to, say, 30 gallons with cold water. Take 1 gallon of this and 1 gallon of Formula 1—resin stock solution or Formulæ 2 or 3, and make up to 5 gallons; spray at once. The lead arseniate-liquid in the barrel must be well stirred up before mixing with the wetting solution, as it settles down.

An alternative, and one that is particularly valuable as a general protector of all fruit trees and plants against biting insects, is lead chromate, which I personally hold is the most valuable insecticide we have. It is made like the last, substituting

6. Potassium bichromate, 2½ lb.
- Lead acetate or nitrate, 5 lbs.

It forms a brilliant yellow liquid that is mixed and used in exactly the same way as described in the previous formula. The yellow chromate will remain on the foliage for months. If made as above it is entirely harmless to plants, and it is an excellent protector.

7. APPLE SUCKER WASH.—It is against sucker that growers waste much money on nicotine and the like. If only, after spraying, they would pluck a truss and count the live and dead suckers in it, they could test the effectiveness of their spraying. The best results obtained in a series

of trials in Middlesex were got by adding 1 quart of creosote oil to any of the three wetting mixtures 1, 2 or 3, described above, and spraying with a coarse driving spray at the trusses.

WOOLLY APHIS.—This is a pest that needs a wax solvent ingredient as well as a killing one. The best is carbon tetrachloride, obtainable at any chemist's, but methylated spirits or petrol will do at a pinch. To 3 gallons of the Formula 1 stock solution, or Formula 2 or 3 strong solution, add 1 pint of carbon tetrachloride and 1 oz. of "creosote oil." Dilute 1 to 7 with water and use as spray.

The grower will find here a new insecticide in carbon tetrachloride. There are a number of such not yet obtainable, but any competent chemist can get this liquid. It has the advantage of being non-inflammable.

Woolly aphid is easy to dispose of if one can get at the colonies quite early. One can do a great deal with a paint brush or a small sprayer then, and avoid extensive damage later on.

8. RED SPIDER ON GOOSEBERRY.—The one essential thing for this pest on Gooseberry is sulphur and a wetting wash. The best plan is to take 3 lb. flowers of sulphur for every 10 gallons of Formula 1 resin stock solution and stir it well in the stock solution while it is hot, then dilute 1 to 8 and spray lightly over the bushes.

APHIS OR GREEN FLY.—For all forms of green fly and black fly the safest thing is a plain wetting wash such as either of our first three, with nothing added. The ideal wash for black fly on Beans is yet to be found, in my opinion, and it is not at all easy to do anything with it once it has got a hold. The same applies to Plum green fly. Any spraying to be done must be early, when the first colonies start.

OTHER PESTS.—It is an advantage to know just when to spray so as to get a pest in an easy stage. I once got, I believe, every single one of hundreds of brown scale on Currant by spraying just as the young insects that winter on the shoots and buds had begun to stir on the first spring day. I was trying "miscible oil" sprays at the time, and out of hundreds of scales on shoots I examined, not one was found alive. Mussed scale is a very easy pest to kill, if one sprays almost any wash on the bark and branches in June, just when the young insects are out.

Growers accustomed to spraying may wonder why I have made no mention of nicotine, quassia or paraffin. The first cannot be got except in the form of some proprietary wash, and it is obviously impossible to refer to these; the second can be extracted from quassia chips, but I have never personally understood how it worked or what it did; the third is excellent if you can get the right oil and emulsify it, but as this is impossible now I omit reference to it. Growers will find this year that the supplies of many insecticides may be precarious, or that they have been varied in composition. A miscible form of the proper grade of mineral oil is an excellent insecticide, but such cannot be generally obtained at present except as proprietary washes.

It is worth considering whether in every garden, orchard and plantation the principle of having on tap, so to speak, a harmless wetting liquid, to which can be added lead chromate, or sulphur, or creosote oil, will not make washing and the treatment of all pests very easy. In all round gardening the "wetting liquid" serves for dipping pot plants, for washing Rose trees, for touching mealy bug or scale, for washing white fly or root mealy bug, for spraying orchards, and by having one basis for all outdoor mixtures, the proper wash for every pest is very readily and easily made. It is also an economy, and this year the economical production of the maximum of saleable produce is a duty, as well as a source of profit. H. M. Lefroy.

ORCHID NOTES AND CLEANINGS.

NEW ODONTIODAS.

ODONTIODA BRASINATOR (Oda. Bradshawiae × Odm. Fasciator).—Mr. Jas. Smith, Orchid grower to the Duke of Marlborough, sends flowers of two forms of the above cross. One is small, with dark red flowers. There are whitish markings on the petals; the lip is cream-white at the base and rose-coloured in front, with a large chestnut-red blotch in the centre. The larger form has broad sepals and petals of a deep reddish scarlet colour and a lighter red lip with yellow crest.

ODONTIODA BIX (Oda. Vuylstekeae × Odm. Rolfeae), from C. J. Phillips, Esq., The Glebe, Sevenoaks, is, in its present stage, a small but pretty flower. In colour and markings it is nearest to Odm. Rolfeae, but has a decided tinge of violet-purple on the sepals and petals. The lip is broad and finely formed, showing the influence of Odm. Prescotti which took part in the production of both parents.

ODONTIODA BORHAM (Oda. Charlesworthii × Odm. Vulcan) has flowered with Mr. Phillips for the first time.

COTONEASTER HUMIFUSA.

Grows naturally from seed or cuttings. *Cotoneaster humifusa* (syn. *C. Dummeri*) is a perfectly prostrate plant, which roots freely wherever the branches come in contact with the soil. It is invaluable for covering a sloping bank or overhanging rockwork.

This *Cotoneaster* is covered in autumn and winter with bright scarlet, almost spherical berries, but these can only be seen to advantage on a grafted plant. A good strong stock should be selected of one of the common species like *C. frigida*, and the grafts inserted four to six feet from the ground.

In the case of the plant illustrated, which is growing at Aldenham, the stock is forked and the prostrate form grafted on each of the branches. In this way the best effect is obtained from the cascades of blossom in early summer, and brilliantly coloured berries in autumn and winter.

NOTICES OF BOOKS.

A NEW GARDENERS' DICTIONARY.*

As stated on the title page, this dictionary is based on the original edition of 1846 of *Johnson's Cottage Garden Dictionary*, but some of the features of that classical work might well have been left out or modified, especially some of those relating to classification and geography. Few of us could now classify a collection of plants according to the Linnean Sexual System, and many of us have never learned it; yet it is retained for the older portion of the enumerations, together with the Natural System of Lindley. Additional genera are not thus classified, the sexual system being omitted, and some variations in natural methods introduced. Geographical terms have undergone little or no revision; some of those employed seventy years ago are now obsolete, and almost unknown. Taking the genus *Acacia*, we find some species recorded from New Holland, others from Australia, others from Van Diemen's Land, others from Tasmania, others from Swan River, King George's Sound and Western Australia respectively. Abbreviations are used throughout the volume, but they are not explained, either at the beginning or at the end. Specialists may understand what is meant by G.C., W.G., B.M., B.R., M.D.G., L., and the rest; but the majority of purchasers would not. The figures denoting

stature are more easily understood, once a clue has been obtained. As to the claim on the title page that the work has been brought down to 1917, it would have been better to let it rest at 1910, as in the preface. There are names enough; a rough approximation giving some 35,000, including synonyms. Each generic name stands in black type, followed by its etymology, family, and other particulars, including cultivation. Species are classified according to duration and alphabetically, with English equivalents of the names, height, flowering period, colour, native country, date of introduction and place of publication of many of the additions. Although the book cannot be called a critical compilation, it will be very useful to the gardener who cannot afford a more expensive work. From the foregoing description he can form an idea of the nature and scope of the work and the kind of information it contains. "Critical species or forms of minor importance, having no

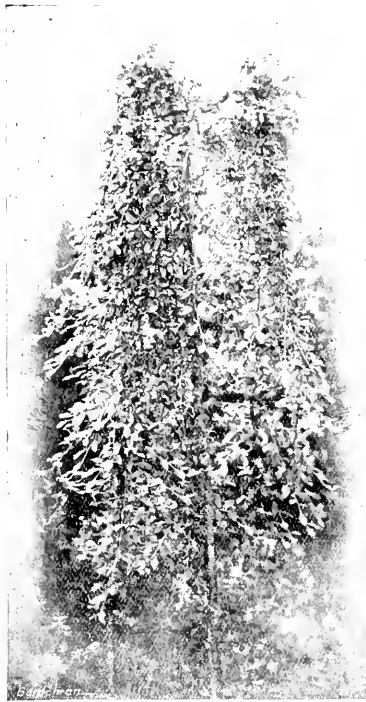


FIG. 48. COTONEASTER HUMIFUSA AS A GRAFTED PLANT ON STANDARD.

horticultural value, have been omitted; also most of the hybrids, which are not likely to have any permanent value." This unfortunately excludes the results of one of the most attractive branches of gardening, claiming now an equal right with any other for recognition. Yet two columns of text are devoted to "Hybridising and Crossing." Returning to names. Of many genera they are overwhelmingly numerous, mostly without any aid to selection for small or moderately large establishments. Reckoning the columns of names at 50 each, there are at least, of *Pelargonium*, 750 species; of *Acacia*, 250; of *Rosa*, 500; of *Mosses*, 300; of *Erica*, 550; of *Rhododendron*, 250; and of *Dendrobium*, 450. With the exception of *Acacia*, no guide is given to the selection of the best species for various purposes. Though falling short of what it might have been under more drastic revision, this new edition of an old companion is well worth the young gardener's

attention and money. Apart from the defects pointed out, it is exceedingly well edited. The typography is good; the paper is good; the volume bound in cloth boards, weighing only 2½ lbs.—a consideration in these days of over-mineralised papers. W.

FORESTRY.

SPRING IN THE WOODLAND.

THE present month will be a busy one with the forester who is anxious to be abreast of his work and determined to carry it through in the most efficient manner. Not only will there be the felling and haulage of timber, but fencing and drainage of woodlands, nursery work, and preparation for bark stripping will all require a fair share of attention.

Never before in the history of our country has so large a quantity of home-grown timber been felled and converted as during the past two years, and the energies of our woodmen are being taxed to the utmost. Sales of trees have been numerous. The dry, frosty weather of early spring was suitable for the removal of heavy timber from woods and plantations, and vast quantities have found their way to our collieries and for war purposes to France and Flanders.

The fencing of woodlands from which timber has been removed should receive attention before farm stock is turned out; while the removal of debris from open ditches is imperative for the health of the crop of trees. Equities are being already made for Oak and Larch bark, and with every probability of a substantial advance in price, the revival of an almost obsolete industry of our woodlands is much to be desired.

Before the war the best class of Oak bark did not realise more than £2 12s. per ton, but last season fully £7 was the selling price, and there is every probability that £10 will be reached for well-harvested Oak bark during the coming summer.

As the season of bark-stripping is of short duration every preparation should be made beforehand, trees marked and numbered, tools in readiness and spades arranged so that an early start may be made, as by deferring the work beyond the proper time there is not only a perceptible loss in weight, but considerable deterioration in the quality of bark as well. In most cases the time when the land is just expanding into leaf is that which gives the greatest weight of bark of the best quality and with the smallest amount of labour.

In the home nursery all vacant ground should be trenched or dug over, and where the soil has become exhausted by frequent croppings the application of some thoroughly decomposed manure or leaf soil will greatly assist in the production of healthy stock. By April seed beds should be formed and seeds of the various forest trees that it is considered advisable to propagate in that way may be sown in thoroughly pulverised soil. Turn heaps of rotting weeds, and add a small quantity of fresh lime.

Ground work of all kinds should be pushed forward, hedges planted and shrubberies dug over and pruning resorted to where necessary. Though a dry March is a nurseryman's season for the preparation of his seed beds, and the sowing of a great part of his seeds, yet no attempt should be made to get upon the land intended for this purpose as long as the soil adheres to the feet, as the result is generally an unkindly and unfavourable seed bed.

Coppice felling should proceed rapidly, as with favourable weather an early shoot from the stools may be looked for. Firewood should be stacked or lotted for disposal, branches made into faggots for firelighting, and the manufacture of charcoal, for which demand is good, carried out wherever surplus rough timber is available. A. D. W.

* *Johnson's Gardeners' Dictionary and Cultural Instructor*, Edited by J. Fraser and A. Hensley 8vo, pp. 923. A new edition, based on the original edition of 1846, revised and brought down to the year 1917. (London: George Routledge & Sons.) Price 12s. net.

VEGETABLES.

A METHOD OF CROPPING.

The plan illustrated in fig. 49 shows a method of cropping a ten-rod plot suitable for Scottish growers. It will be seen that half the area is devoted to Potatoes, and the remainder to other useful vegetables, including Onions, Leeks, Carrots, Beet, Turnips, Beans, and green vegetables. The Parsnip, a very useful winter food crop, is represented by one short row, whereas Turnips, which possess much less food value, are allotted five rows. The reason for this may be that Parsnips occupy the ground for the whole of the year, whilst Turnips, Beet and Carrots can be succeeded in the same season by other crops, such as Celery and winter greens. It will be noticed that the practice of intercropping Cabbages with Broad Beans is recommended, but the plan makes no provision for intercropping Potatoes with Brussels Sprouts or Kales, which is often done by amateurs, but not always with success.

MAINCROP POTATOS.

THE notes on pp. 114 and 125 on the planting of maincrop Potatoes particularly interested me. In this neighbourhood the belief exists that, unless Potatoes are allowed to remain in the ground for a considerable length of time after maturing, their table qualities are not brought out to the full. Last season the farmers and small-holders in this district were digging well into, and even at the end of, November, which seems to me to be nothing short of courting disease. I know that it is impossible for many men to dig their tubers earlier when other crops, such as Corn, have to be attended to, threshed, and marketed. Last season I lifted two patches of Potatoes, one of the Factor and the other Up-to-Date, on August 5 and 4 respectively, which were planted on March 21 and 27, sprouted seed, and I was looked upon as being more or less mad for turning them out so early. Both varieties showed signs of having completed their growth and ripening, and yielded splendid crops, and the skins rubbed a little. The tubers were stored in a cool shed on an earth bottom and kept remarkably well, and we used them up to Christmas. Those of Up-to-Date were of good table quality, and my only regret is that I did not reserve some for cooking now. The Factor is of inferior quality here. When I first came here a gardening friend told me that, unless I sprayed, I should not have a crop to keep. I made enquiries, and found that Potatoes in these gardens were never sprayed. A short time ago I was in conversation with a farmer who, on the whole, grows Potatoes very well, but whose crop was badly blackened with disease last season. I asked him if he sprayed, and he said, "No." He sprayed once, and could see no benefit; so he has come to the conclusion that he fares as well as other people with his crop.

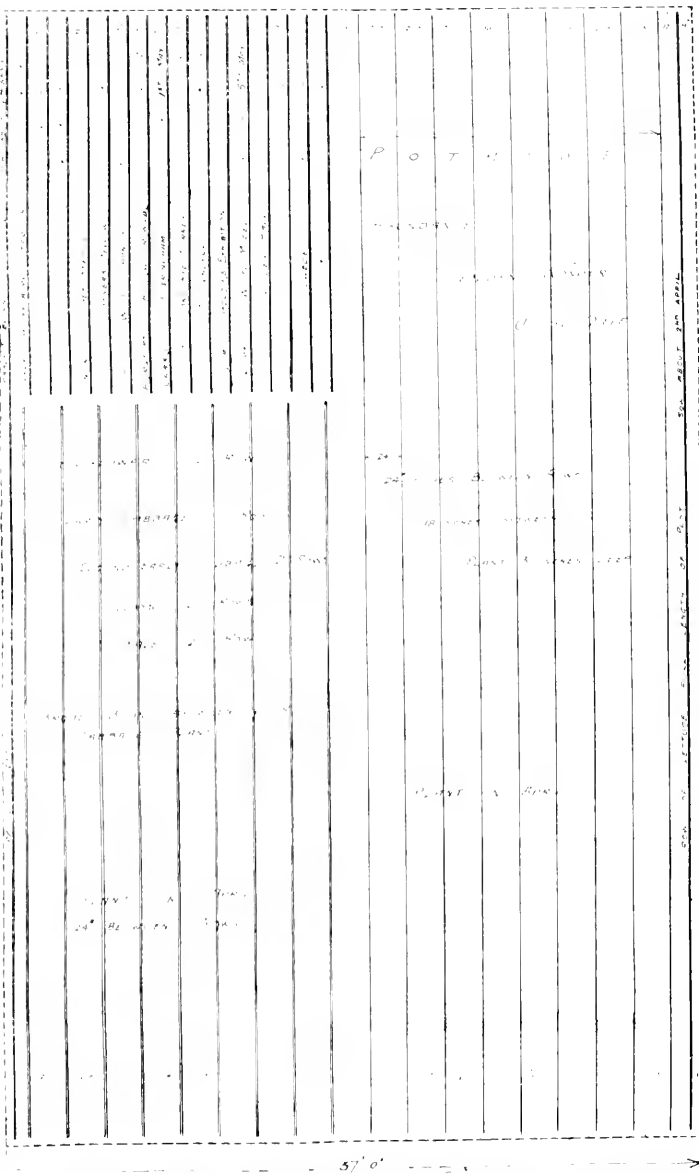
The farmer in question also told me that he saved his own seed every year, but rigorously selected it, which he cuts and plants in a perfectly dormant state, the seed being not more than 15 inches apart. He also stores his tubers under cover, a system which has much to commend it, inasmuch that they may be examined during inclement weather, and certainly they keep well, for I had the pleasure of eating some which were veritable balls of flour. He also guarantees that a sack of Potatoes, lifted and weighed in October will weigh the same the following July. *E. B., Fota Gardens, Queenstown*

PARSNIPS

In his search for a "stable basis" of comparison between one food crop and another, Mr. Simmons (p. 125) rightly insists upon taking into consideration the time a crop requires to grow, and in doing this he gives figures that place the Parsnip very low down in the list of

food-yields per unit area. Are not his figures somewhat misleading? A crop of 12 tons from an acre of Potatoes ready to lift in time to sow Beet, etc., as a following crop is rarely secured, though it is not impossible, as the records of the Wisley trials (*q. R.H.S. Journal*, XL1, p. 290) show, but surely a yield of 8 tons of Parsnips

the only factor in the production of high yields of Potatoes. Now the calorie-yield of Potatoes per pound is about 440, of Parsnips 240, or in the proportion of 11 to 6. The gross yield, on the assumption of a 12-ton Potato crop and a 16-ton Parsnip crop, will be as 152 to 96, nearly enough the proportion of 1 to $\frac{2}{3}$, given in



§ suggests, for we ought to take into consideration the energy expended in obtaining the crop, and place that on the debit side of our account.

Since the area cultivated (say 1 square rod) is the same under both crops, we may ignore interest (that is, rent, rates and taxes) on the capital represented by the land, and state our expenditure in energy rather than in money. It would be interesting to put the facts into figures, but they would vary so much in different cases that little purpose would be served.

To secure the Parsnip crop cost the energy expended in digging the ground after the previous crop, raking down, drawing drills, sowing, thinning, occasional hoeing, lifting when required, and the food value represented by 1 oz. of Parsnip seed, which meant the energy contained in (say) $\frac{1}{4}$ lb. Parsnips and expended in harvesting, cleansing, and distributing the 1 oz. of seed. What energy must we debit for the Potato crop? Its cost was the energy expended in digging the ground, raking down, making drills or furrows, setting, hoeing, earthing-up, lifting and storing; in making and carrying the manures, both natural and artificial, and their application; in lifting, grading and selecting the (say) 10 lb. of seed, its carriage from Scotland, and its sprouting, preparation, and carriage to the planting place, and possibly in securing, making, and applying sprays against disease; heavy items these, though probably not enough where an acre-crop of 12 tons of early Potatoes can be obtained to offset the Potato from its position as the premier food-yielder. Put also in the balance the greater certainty of the Parsnip as a crop, and the margin is but small.

Beet, if people will but eat it as a vegetable, will run the Potato even closer, and the Jerusalem Artichoke will not be far behind it, and probably ahead of the Parsnip. These four crops seem to give the greatest net returns of any of our garden crops. They are available over a long period and provide variety both in flavour, in mode of presentation, and in the kind of foodstuff contained—in the Potato, starch; in the Beet, cane sugar; in the Jerusalem Artichoke, inulin—a kind of soluble starch; in the Parsnip, both starch and sugar. *F. J. Chittenden.*

TO OBTAIN THE MAXIMUM YIELD.

MANY growers who have only a small area of ground do not realise the fact that the depth and height belong to them, and that by deep tillage of the soil and a proper method of training, much more produce can be obtained than is generally imagined. Take the case of the Runner Bean, which is a deep-rooting plant, and much appreciates a deep, well-enriched soil. By training the shoots to a good height and allowing the plants plenty of room, the produce may be doubled or trebled. They should be allowed to grow 10 to 14 feet high, which means that a much less quantity need be grown than when they are given shorter supports. This is a great gain, as it enables one to use the ground thus set free for other crops. The same applies to many varieties of Peas. Many root crops, such as Parsnips, Carrots, and Beetroot, give a much greater weight of produce when the plants have a deep and inviting rooting medium. *Edwin Beckett*

THE VALUE OF THE LEEK

COTTAGERS and other owners of small gardens in the South do not cultivate the Leek or recognise its great value as a vegetable. When well cultivated after the manner advocated by Mr. Beckett, carefully cooked and served, its best qualities are fully developed, and once these are realised they can scarcely fail to be highly appreciated. The hardy nature of the plant increases its value, as the most severe frosts in no way injuriously affect it. During the first week of February, on three consecutive nights 29°,

32°, and 28° of frost were registered in these gardens, and only the points of the leaves were affected, whilst all other exposed green vegetables, including hardy Kales, with the exception of Spanish Beet, were spoiled to such a degree as to be past recovery.

From the commencement of the war vegetables have been sent to the Navy from these gardens, and the Leek, in its season, has helped much in furnishing a supply. In most large gardens there is usually a surplus of Leek plants at the time of planting the main crops, and the distribution of these amongst the occupiers of small gardens who may be in need of them would ultimately make an agreeable addition to the supplies of the kitchen, and undoubtedly, if made good use of, educate inexperienced receivers as to the utility of cultivating this estimable vegetable. *Thos. Coomber, The Hendre Gardens, Monmouth.*

DWARF BEAN MASTERPIECE.

I AM growing this excellent Bean somewhat extensively this year, both under glass and in open borders. The individual pods are of a beautiful green colour, abundantly produced, and extremely fleshy. The Beans keep tender for several days after certain other varieties become stringy and unusable. I have not attempted to force this variety very early, but with moderate forcing and making use of the sun heat by closing the house early and promoting plenty of atmospheric moisture, its behaviour has been very satisfactory. I grew Masterpiece in the open last year by the side of several other varieties, and was well pleased with it.

WAXPOD BEAN MONT D'OR.

I HAVE grown this variety for many years for its tender, golden pods, and in the majority of seasons with good results. For a change from the ordinary varieties, when gathered quite young, the pods are much appreciated. The plants should be allowed ample room and a good position, as they are not so hardy as the green podded varieties. By sowing at intervals, a constant supply of tender pods may be had for several weeks during the summer. *H. Markham, Wrotham Park Gardens, Barnet.*



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

CUCUMBERS.—Plants which were raised early in the season will now be producing fruit, and should receive careful treatment with regard to thinning and stopping the young shoots. Side shoots may be stopped at the first or second joint beyond the fruit, according to available space, and all worthless growth removed while quite young. Old, rough leaves should also be removed, as these harbour Red Spider and other pests. Top-dress the bed with small quantities of fresh soil as often as the young roots appear through the surface. Syringe the foliage twice daily during sunny weather, and maintain a temperature of 70° by night, rising to 85° by day in sunshine. Very little ventilation will be necessary, provided the fire heat is stopped early in the day.

HERBS.—The present is a good time to make new beds of Tarragon and Mint. Tarragon roots may be split into small pieces with three or four eyes and planted 2 feet apart on good rich soil. The best way to make a Mint bed is to plant green shoots when a few inches long on ground which has been prepared some time before. The soil should be light and rich. The cuttings may be planted one foot apart with an ordinary dibber. By this method, good strong roots will be available for forcing next winter, as well as

a full supply throughout the summer and autumn. New plantations of Thyme may also be made now. If seedling plants are available, they should be planted 18 inches apart each way on good rich soil. Sage may easily be increased by inserting cuttings 18 inches apart about the middle of April. The cuttings should be removed from the old plants before much young growth has been made. Sweet Basil and Marjoram should be sown in a temperature of 60°, and the seedlings pricked into boxes of rich soil as soon as large enough to handle. If planted on a warm border in June, they will produce large quantities of green leaves throughout the summer and autumn. The Marjoram may be lifted and potted in September for winter use. Chervil should be sown frequently throughout the summer in order to maintain a continual supply of green leaves.

SPINACH.—Make frequent sowings of Spinach throughout the season, and select a cool position for the crop. At Frogmore we sow weekly in pits throughout the summer months, and give a free supply of water at the roots. New Zealand Spinach makes a good substitute for ordinary summer Spinach in hot, dry seasons. If sown about the end of April in drills four feet apart, it will soon cover the ground and produce a large quantity of green leaves. Winter Spinach has suffered seriously from the recent cold winds, and should be encouraged to make fresh growth by stirring the soil between the rows with a hoe. Spring-sown Spinach which is just showing through the surface may be encouraged in the same way. If slugs are present amongst the seedlings, they should be destroyed by frequent dustings of soot.

MATIF.—Plants raised from seed in the beginning of March should be potted into small pots before they become drawn. Grow them in a temperature of 60°, and not them into six-inch pots as soon as ready. These plants should be kept as near the roof glass as possible.

TURNIPS.—A sowing of Early Milan and Snowball Turnips should be made at once. Snowball will become fit for use by the time Milan is finished. If fortnightly sowings of Snowball and White Model are made, there should be no scarcity of young roots throughout the season. As the season advances, a cooler situation may be selected for them. Allow 18 inches between the rows, and thin to 9 inches in the rows as soon as the seedlings are large enough. Dust the crop with sifted wood ashes, and protect it from birds as soon as the young plants show through the surface.

WINTER GREENS.—Sowings of Kales, Early Broccoli, and Hollow-leaf Giant Cauliflower should be made at once. A small sowing of Savoy may also be made. Endive for summer use may be sown now in drills 15 inches apart, thinned, and afterwards transplanted as soon as the seedlings are fit to handle.

RADISHES AND MUSTARD AND CRESS.—Make a sowing of Radishes in a slightly heated pit and keep the pit quite close until the seeds have germinated. Water the plants freely with clear, soft water, in order that they may grow quickly. Mustard and Cress should be sown each week in a warm pit.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatten Park, Reigate.

AERIDES AND ITS ALLIES.—Such Orchids as *Aerides*, *Saccolabium* and *Angraecum* are showing signs of root activity. The plants should be cleared of all traces of scale insects. Specimens that have lost a number of their bottom leaves, so that a part of their stem has become bare, should be treated as follows: If a few aerial roots can be retained, the stem may be shortened and the plants potted afresh, with the leaves on a level with the top of the pot. Plants that are well furnished with leaves need not be disturbed by repotting, but should have the old material removed from their roots, replacing it with fresh compost. *Aerides*, including *A. odoratum*, *A. Lo Lobbii*, *A. Fieldingii*, *A. Sanderae* and *Angraecum sesquipedale*, are best grown in pots on the stage, whilst such *Saccolabiums* as *S. violaceum*

and *S. retusum*, together with *Angraecum fastuosum*, *A. holooides*, *A. citratum*, and *A. Kotschyi*, grow best in shallow pans or Teak-wood baskets suspended from the roof-rattens. In repotting these plants, place a quantity of crocks in the bottom of the receptacles as drainage material. Employ clean Sphagnum-moss as a rooting medium, mixing portions of broken pots among it to allow the water to pass through freely. Fill the receptacles to their rims, the material to be highest in the middle, and finish with a layer of living Sphagnum on the surface. Water the roots copiously, place the plants in the warmest house, and keep the moss moist by frequent sprayings until growth is again active. At that stage water may be supplied freely. Such species of *Ardisia* as *A. Lindleyanum*, *A. crassifolium*, *A. crispum* and *A. Warneri* are best grown in an airy position in the Intermediate House.

CATASETUM, CYCNOCHES, AND MORMODES.—As soon as young growths develop from the base of the pseudo-bulbs of *Catasetum*, *Cycnoches* or *Mormodes*, the plants should receive attention for repotting. Shake the old compost from the roots, cut away all decayed portions and pot the plant each season in a receptacle of moderate size only, for over-potting is injurious to these plants. Put plenty of drainage material in the pots, and press the compost firmly round the base of the rhizomes. Long, heavy pseudo-bulbs should be neatly tied to stakes. A suitable compost for these plants consists of a mixture of *Osmunda* fibre cut into rather short portions, chopped Sphagnum moss, and sufficient crushed crocks to keep the soil porous. The plants should be grown near the roof glass in the warmest house. Give them similar treatment in watering to that recommended for deciduous *Calanthes*.

FRUITS UNDER GLASS.

By JAS. HIBSON, Gardener to IROBORN RE KORTSCHMID, Esq., C.A.O., Gunnersbury House, Acton, W.

TREES IN FLOWER.—With the increased length of days and occasional sunshine there should be no difficulty in getting the flowers to set well. The bees are busy amongst the trees, and they do not attempt to escape from the house even when the ventilators are opened to render the atmosphere more buoyant. In damp, dull weather use a little extra warmth in the pipes to assist in keeping the pollen dry. When reducing the amount of ventilation in the afternoons we give a general damping of the bare surfaces.

PINES.—Plants of Queen Pines that are showing their fruits should be watered a little more freely than hitherto. I have grown this variety both in pots and planted out, but I prefer pots, as the watering is more readily under control. Use warm water for Pines at all times, but more particularly at this stage of fruiting. Do not permit an undue number of suckers to develop, but leave only sufficient to keep in the required stock. Younger plants that are intended for fruiting next year should soon be potted into their fruiting pots. The temperatures of the Pine pits should be 65° min by night, and 80° to 90° by day with sun heat.

PLANTING VINES.—The first fortnight of April is a good time for planting vines. If the soil has been duly prepared, as advised during March, and protected from both rain and snow, it should now be in a good condition for making up. During a dry spell it should have been uncovered, and, if possible, turned over. In making our present Vine borders, I formed a concrete base of ground-lime and gravel. On this I laid four-inch agricultural land pipes close together up and down the border, and on that the rough rubble drainage; it was finished off with mortar rubble. On this the roughest pieces of the turves were laid out, and the border was built up as solidly as possible until the height for planting was reached. The soil was made slightly to slope outwards. The depth of the border was about 5 feet 6 inches, and the width for planting was under 4 feet. This is ample both in depth and in width for at least two years. It is better to get the border near the house well permeated with roots at the start. The Vines should be distinctly on the move by the time of planting,

but not sufficiently so as to cause any check to the growths. It is well to disbud up to the roof. If three young shoots are left it will be ample, one being ultimately chosen to form the rod. The roots should be completely shaken out, and if they are much intruded it will be well to wash the soil completely off them. See that some of the roots radiate away both to the right and to the left, as well as in other directions. If any roots appear to be at all damaged, they had better be cut off above the injury, otherwise it is better to lay them all out. Cover lightly with soil as each Vine is being attended to. Then, when all are planted, place more soil to the depth of between three and four inches over the roots. Press this down firmly with the hands, and afterwards give a fair soaking of lukewarm water to settle the soil. A light shaking of litter from the stables will make a good covering if the borders are outside, but inside it is immaterial. Permanent Vines should be planted four feet apart. The after-treatment for a few weeks as regards temperature should be moderate. Do not attempt to excite growth too soon, but rather wait for signs of root action. As a night temperature, 55° should suffice for the first few weeks. Take advantage of the sun heat, however, in sunny weather by being the house early in the afternoon. Do not on any account overcover the newly-planted Vines with plants in pots.

THE FLOWER GARDEN.

By W. J. CUTLER, Gardener to Mrs. DUMPERTER Keble Hill, Staffordshire.

ANNUALS FOR SUPPLYING CUT BLOOMS.

Annals suitable for supplying flowers for cutting are: *Stibidius*, *Conopsis*, *Gallardia*, *Conia leucantha*, *Phlox Drummondii*, *Clarkia*, *Larkspur*, *Sunflowers*, *Hibbysium*, *Alonsoa*, *Mirabilis*, *Nemesia*, *Statice*, *Dianthus*, *Aster* and *Stock*. The seed of the majority needs to be sown very freely in boxes, raised with a minimum of heat, and the seedlings transplanted in cold frames 4 inches apart. The frames should be sprayed and shaded daily, and kept close for a week or ten days, when air may be admitted in gradually increasing quantities. Certain kinds, including *Nigella*, *Poppy*, *Lupin*, *Eschscholzia*, *Gypsophila elegans* and *Mignonette* are best sown when they are intended to flower. Most of the plants will need a space of 12 inches or more.

CALCEOLARIA.—If the plants of bedding *Calceolarias* are allowed to remain in the frames for too long they become drawn and crowded. We lift our plants of *Calceolaria*, *Pentstemon* and *Marguerite* with good balls of soil and transplant them temporarily in beds on a warm border. Protection is afforded for a few weeks by placing some lights over the plants.

PANSIES AND VIOLAS.—Young plants of *Pansies* and *Violas* in frames are in an excellent condition for removal to their permanent quarters out of doors. Continue to pick off all flowers for a present.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHWICH, Eastwell Park, Kent.

CALADIUM. If the old corns of *Caladium* have not been shaken free from soil, potted afresh, and placed in a hot, moist house for an early start, this work should be done now. The plants may either be potted direct into small pots, or, what is perhaps a better plan, and a saving of labour, placed thickly in boxes on a layer of leaf-mould, to be transferred later to pots of a large size. Be careful not to damage the brittle roots, and use a light, open compost consisting of equal parts fibrous loam, peat and flaky leaf-mould, to which crushed charcoal and sharp sand are added. *Caladium* require plenty of heat and light when in active growth, and may be grown in a Cucumber or Melon pit. Take care that the corns do not receive an excess of water before they have produced leaves.

CYPERUS ALTERNIFOLIUS.—All the *Cyperus alternifolius* succeed in spite of ordinary conditions, and are graceful and ornamental plants for the amateur's greenhouse. *C. alternifolius* can be propagated with ease, so that young stock can

be grown each season. A pinch of seed will provide a good batch; or, failing this, a simple method is to take some healthy leaves, cut off the stalk an inch from the head, and the ends of the leaves to within 2 inches of the centre. Place them in a pan of sand and water, and place near the hot-water pipes. After a short time both roots and new growths will be emitted, and the little plantlets can be potted up. Young plants quickly grow into decorative specimens, and are much to be preferred to old divided plants. Two other species equally valuable are *C. natalense* and *C. laxus*.

OPHISMENUS BURMANNI VARIEGATA.—This pretty grass, better known in gardens as *Panicum variegatum*, should be propagated at this season. After the cuttings have been taken off the old plants the latter may be discarded. It is best to strike the cuttings direct in the pots they will occupy throughout the season. Do not fill the receptacle more than three-parts with the soil in order to allow plenty of room for top-dressings. The cuttings root freely in a warm propagating frame or shaded corner of a hot house. The plant thrives best in partial shade; it is liable to be dried up in the full glare of the sun and lose its freshness.

GARDENIA. Well-established *Gardenias* in pots with plenty of active roots require copious supplies of water, and stimulants at regular intervals at this season, for drought might cause a check to growth, resulting in the flower-buds dropping. *Gardenias* planted out in warm pits or low houses thrive exceedingly, but are usually somewhat later coming into bloom than pot specimens, to which they make an excellent succession, and the quality of the bloom is of the best when the cultivation is good. Examine the plants regularly for mealy bug, which is a great pest of *Gardenias*, and spray or sponge them with an insecticide before they come into bloom, paraffin emulsion being a suitable specific.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. F. DRYER, Abbotts Wood, Godalming, Surrey.

GOOSEBERRIES.—Bushes and cordons should be sprayed as the leaves are appearing, using a strong solution of quassia extract. This may with advantage be done several times. If mildew is feared, apply a dressing of sulphide of potassium at the rate of 4 oz. to 10 gallons of water. This should be used before the fruit appears. Another sprinkling of lime will be beneficial to the trees and ground.

APRICOTS AND PEACHES. These in flower should have the blinds or protecting material placed over them each night, but taken off in the daytime.

THE FRUIT BORDERS.—The work of pruning and training should be finished by now, as the blossoms will soon expand. Make a careful examination of all trees to see that nothing has been overlooked. Rake and make the fruit borders tidy, burning the rubbish. An inch or so of cold ashes mixed with a little lime will give the border a tidy appearance, is good for the trees, pleasant to walk on, and easy to keep free from weeds, besides acting as a deterrent to slugs and insects.

PROTECTION OF FRUIT BLOSSOM.—Whenever practicable, it is a good plan to give slight protection to trees in bloom, especially in a season like the present. Early Cherries, for instance, should be protected at night. A piece of straw should be hung over the trees, or, failing this, some long strips of bracken or Heather can be tucked in between the branches and removed in the morning.

ARREARS.—Take advantage of the better weather and longer evenings to do any work that has been left undone through stress of weather or lack of labour. See that the Strawberry plots are clean and free from weeds. Hand weeding is tedious, but it is best at this season, as weeds do not grow again if conveyed to the fire and burnt. See that the newly-planted Raspberries have been cut back, as it is a great mistake to allow them to fruit the first year.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHERS; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication. as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

SUNDAY, APRIL 8.

Summer Time commences. Clock to be put forward one hour at 2 a.m.

MONDAY, APRIL 9.

R.G.A. Conference at Birmingham.

WEDNESDAY, APRIL 11.

Rev. Hort. Soc's Com. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 46.0.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Wednesday, April 4 (10 a.m.) Bar, 29.5; temp, 41.5°. Weather—Cloudy.

SALES FOR THE ENSUING WEEK.

WEDNESDAY.—

Sale of Fruit Trees, Rose, Herbaceous Plants, Lilies, Gladioli, &c., at 67 and 68, Chesham, F.R.C., by Protheroe and Morris, at 12 o'clock.

We congratulate the Gardeners and Horticultural Section of the National Service, the Department of Food

Production on its successful efforts to help the gardener out of the difficulties which have lately threatened him.

During the past few weeks letters have reached us from readers who have felt uncertain as to their exact position in regard to the appeals made by the Director-General of National Service. Most of our correspondents have asked in effect whether they, as head gardeners in charge of establishments where vegetable production forms a considerable proportion of the work done, and the care of valuable stocks enters largely into the management, might consider themselves as already doing work of national importance; or whether they should give up their appointments and offer themselves for fresh service. Points of difficulty have also arisen in connection with the regulations issued for restricted occupations, especially in respect to the filling of vacant places in mixed gardening establishments. These doubts are now cleared up, for the Director-General of National Service has issued an explanatory memorandum on the subject. It runs as follows:—

The Director-General of National Ser-

vice, recognising the great importance of food production by small cultivators, has agreed to the following recommendations, made by the Department of Food Production, on the subject of gardeners and national service: A gardener exempt from military service, who is cultivating not less than 1 acre of ground devoted exclusively to vegetables, will be recognised as doing work of national importance, and instructions will be issued by the authorities that gardeners who fulfil this condition should be left to continue their work. The acre may be wholly in a private garden, or part in a private garden and part in another private garden or allotment. Similar considerations will be extended to a gardener who, though cultivating less than 1 acre of vegetable garden, places his spare time services for the purpose of advice and instruction at the disposal of the local food production society or other organisation formed for the purpose of increasing the vegetable food supply. Vacant situations which admit of the carrying out of these conditions may be filled by men who have enrolled as National Service Volunteers, and may be retained until such time as the men are required for national service. Except in the case of luxury fruits and crops, provision will be made for the similar retention of the minimum number of skilled men necessary to maintain cultivation in fruit gardens, fruit plantations, market gardens, and fruit and forest tree nurseries, and also glasshouses put to the use of essential food production. On the other hand, luxury gardening, hedging-out, lawn-tending, path-sweeping, path-rolling, etc., will enjoy no consideration whatever; on the contrary, in the event of places where gardeners are engaged in such work becoming vacant, they will not be allowed to be filled by men within the specified ages. It is not intended, however, to discourage more than circumstances necessitate the upkeep of collections of plants of great rarity or value the possession of which in this country is a great asset to the horticultural industry.

Nitrogen-Fixing Bacteria in Non-Leguminous Plants.

The existence of nitrogen-fixing bacteria in the root nodules of leguminous plants is now a fact of common-place knowledge, and the part which the bacteria play in forming nitrogen compounds from the free nitrogen of the air is recognised, although the details of the process are not thoroughly understood.

The German botanist, Frank, maintained when the discovery of the nodule organisms and their rôle was made, that nitrogen fixation is a power widely spread among plants. His contention has been in part verified, and it is known that the power of fixing and combining nitrogen is by no means confined to members of the natural order Leguminosae. Among the latest of the discoveries bearing on this important subject are those concerning the occurrence of nitrogen-fixing bacteria in the leaves of various members of the

Rubiaceae. The discovery was made by Zimmermann and Faber,* who have described the occurrence of colonies of nitrogen-fixing bacteria in the leaves of *Pavetta Zimmermanniana* a small Rubiaceous tropical tree or shrub with opposite, nearly elliptic, leaves. The leaves of this species, and also of several other species of the genus and of the genus *Psychotria*, contain colonies of a nitrogen-fixing bacterium (*Mycobacterium rubiacearum*). The bacterium is found in the micropyle of the seed, and when the latter germinates, colonies of the bacterium grow through the stomata of the young leaves into the intercellular spaces, where they become enclosed by the growth of the epidermal cells, and as a result bacterial knots—so many as several dozen in a leaf—are formed.

If the bacteria are present the seedlings grow and flourish in soil containing no nitrogen, but if the bacteria are destroyed by treating the seeds with hot water and corrosive sublimate, the lack of combined nitrogen in the soil, and the inability of the plant in the absence of the bacteria to fix atmospheric nitrogen, result in the yellowing and dying of the seedlings in a few weeks.

It is noteworthy that Indian agriculturists have long recognised the manurial value of the leaves of various Rubiaceous plants.

PLANTAE WILSONIANAE.—Since the completion of FORBES and HEMSLEY'S *Enumeration of Chinese Plants* (1896-1905), there has been an almost continuous flow of literature on the Flora of North-Eastern Asia—that is, of China, Japan, and Formosa—the last mainly by Dr. HAYATA and other Japanese botanists. The appearance of a third part of the third volume of the *Plantae Wilsonianae* brings to a finish the record of some of the results of the fruitful journeys of the most successful of all botanical travellers in Central and Western China, not forgetting DAVID, HENRY, FORBES, and others. The measure of E. H. WILSON'S success is known throughout the whole botanical and horticultural world, and this part of the *Plantae Wilsonianae* summarises the woody element of his vast collections of dried specimens, seeds, and plants, which are supplemented by 850 excellent photographs of the vegetation, and of fine examples of individual trees and shrubs. The parts of this useful work have been more or less fully noticed in the *Gardeners' Chronicle* as they appeared; the first in the issue of February 3, 1912. Professor C. S. SARGENT, the Editor, contributes a Note to this final part, from which we learn that the entire work comprises 2,716 species of woody plants belonging to 429 genera and 100 families. Of these, four genera and 382 species were previously undescribed. These totals do not include species previously described in other publications. WILSON'S four journeys in China have added to the ligneous flora 521 species and 356 varieties and forms in novelties, embracing numerous valuable ornamental and useful kinds of hardy plants. There are about 100 pages of numerical lists of names, including numbered specimens of all other collections examined in connection with the elaboration of WILSON'S four collections. These will be exceedingly useful to individuals and institutions possessing unnamed sets of any of the plants in question.

**Jahrbuch f. Wissensch. Bot.*, 51, p. 285, 1912, and 54 p. 243, 1914; see also *Plant Immigrants*, Nos. 121-129, 1916.

ESCHSCHOLZIA CAMBRIDGE CREAM.—

This is a new and beautiful colour form of *E. californica* which not long since originated in the Cambridge Botanic Garden. It was noticed by Mr. F. G. PRESTON, foreman of the outdoor department. It is an annual in practice as to sowing, and also as to its existence in most gardens, but Messrs. SUTTON AND SONS remark in their catalogue that *Eschscholzia* are really perennials. It is better, perhaps, to have them as annuals, for it is difficult to imagine that as perennials they would be so fresh and perfect as they are, and, moreover, they have a length of season that nothing can surpass. They are all beautiful, and among flowers of the border in bud there is nothing more clamring than the variety *Rose Cardinal*. There are pinks and orange, yellow and rose, and this addition is pale cream. Twigs of the foliage of *Eschscholzia* are most useful for floral decorations. The accompanying illustration is from a photograph by Mr. PRESTON.

ALLOTMENTS IN BRUSSELS.—Much attention has been given lately to the work of the Commission for Relief in Belgium. An idea of what is required to keep the population alive may be drawn from the fact that, in spite of the intensive cultivation all over the country, only one-fifth of the required breadstuffs can be grown in normal times. In Brussels 80,000 food rations for adults were distributed on January 1, 1915; on January 1, 1916, this figure had grown to 375,000 a day, or nearly one for every two inhabitants of the town. Every bit of land is under cultivation. An organisation existing before the war, "The Corner of Land," has done much in this respect. With the help of the local Comm. a subsidy of 1 franc an acre (94. per 100 square yards) is paid to those who break up waste plots, and technical advice is given all over the town, where, last year, not less than 500 acres, formerly uncultivated, were producing vegetables.

THE GENUS EUCALYPTUS.—The twenty eighth part of Mr. J. H. MATTHEW'S *Critical Revision of the genus Eucalyptus*, deals with a small group of peculiar species, or forms, namely:—*E. verrucosa*, *E. Muelleri*, *E. Kitchiana*, and *E. viminalis*. *E. verrucosa* is usually a shrub, 4-6 feet high, though occasionally it assumes the form of a tree, 12-20 feet. It is restricted to the mountains of Tasmania, at elevations of 2,000-4,000 feet, and has apparently never been introduced into this country. This is, perhaps, the smallest species of the genus, and it is one of the few species known to produce flowers in the opposite-leaved stage. *E. Muelleri* is also confined to the mountains of Tasmania, where it attains large dimensions, often reaching a height of 200 feet. Nicholson's *Dictionary* records it as having been in cultivation in this country. *E. Kitchiana* is a little known species, apparently local in Victoria. *E. viminalis* is an elegant species, of wide range in Eastern Australia, from Tasmania, South Australia, and Victoria, northward to Southern Queensland, presenting considerable variation in different localities, especially in the size and shape of the leaves. The synonymy, too, is intricate. Some particulars of this species may be found in the *Gardener's Chronicle* for November 24, 1888. According to MATTHEW, the foliage has a dainty fragrance not easily described. The figures leaves of the adult stage 9 or 10 inches long, and half an inch wide in the widest part, and he describes leaves of the juvenile stage as a foot long.

INCREASED PRICE OF SEED POTATOS.—Under a new Order issued by the Food Controller yesterday the Seed Potatoes (Prices) Order (No. 2), 1917, the existing provisions relating to seed Potatoes have been extended until the end of April. The prices chargeable for seed Potatoes are also raised by £2 per ton all round, and seed Potatoes are now defined as meaning any Potatoes which will not pass through a riddle

having a 1-inch mesh, and will pass through a riddle having a 2-inch mesh. The Order further continues until the end of April, the existing Orders being also applicable to seed Potatoes in Ireland.

THE WEATHER.—The response of the people of this country to the appeals made to them to assist in the production of increased quantities of food has been satisfactory, and thousands of men, women, and children are now spending their leisure moments digging, preparing, and planting the plots of ground assigned to them. The weather, however, instead of being helpful, has, on the contrary, hindered in every way the progress of work on the land. Spring is scarcely yet in sight, the Almond has yet to blossom, and March has been, on the whole, colder than many a December or January of late years. With the beginning of April, it was hoped that an improvement would take place, but such hopes were doomed to disappointment, for during the first

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

PROBLEMS OF FRUIT-PLANTING.—My attention has been directed to some remarks on this subject by *Southern Grower* in your issue of March 10. These remarks are so fully in accordance with our own convictions on the subject that I am tempted to point out two minor details wherein our opinions differ. The writer concludes that ramming the soil on planting may be beneficial in very light soils, but is not advisable in heavy ones. The evidence, so far as it is known to me, is, however, in the opposite direction. The great majority of our experiments were made in heavy soils—indeed, the Wolfram Farm itself is on the Oxford clay—and it was in such soils that the best results were obtained. In a case where the soil was very light the results of ramming were nil, as, I think, might naturally have been expected, for ramming sand is likely to be as futile as the

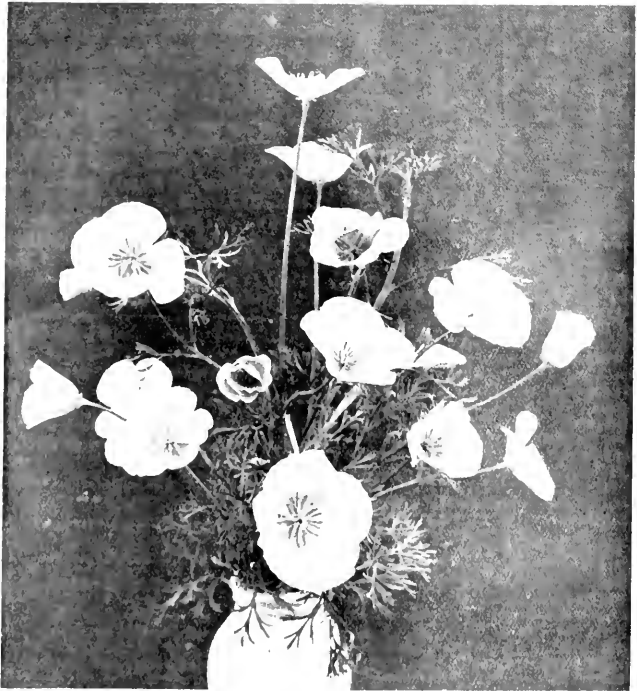


FIG. 50.—ESCHSCHOLZIA CAMBRIDGE CREAM.

three days of the month the ground was white with snow, and a keen north east wind prevailed. The thermometer sank each night below freezing point, and especially in the North very low thermometer readings were recorded, notably 29° from Berwick, which constitutes a record for the present month.

LOCAL SOCIETIES.—At a meeting at Liddington, Bedfordshire, held on the 30th ult., under the presidency of Mr. FRANK HUMPHREYS, chairman of the Parish Council, it was resolved to establish a society, to be known as the Liddington Food Production Society, whose energies will be directed toward the encouragement of increased and improved crops in the cottage gardens, allotments, small holdings, and farms of the parish. Mr. HERVEY J. WRIGHT, by whom the meeting was called, was appointed honorary secretary. Mr. WRIGHT will be glad to hear from secretaries of similar organisations. His address is White Lodge, Liddington, Aunthill.

proverbial ploughing of sand. The other point on which we must differ from *Southern Grower* is that planting with ramming entails greater expense. Of course, if we plant in the usual way, and then ram, that means so much additional labour; but when the planting is carried out according to our method of just covering the roots with soil *anyhow*, and then ramming, the operation is certainly quicker and more economical than ordinary planting. One great advantage presented by the ramming method is, in our opinion, that it can be carried out whatever may be the condition of the soil at the time, short of its being frozen. Our immediate object in planting is to secure contact between the roots and the soil; this in the ordinary way is effected by shaking the soil in between the roots, and pressing down; but if the soil is lumpy and sticky, the contact thus obtained is very imperfect, and the results are disastrous. On the other hand, a good ramming infallibly ensures contact, and the more easily so the worse the condition of the soil at the time. We have planted many hundreds of

trees in soil which was in a state which would have rendered ordinary planting out of the question, and so, far as I can remember, without a single failure. It is well, however, to draw attention to one instance quoted in our last report on the subject, where ramming proved disastrous. This was in a clay soil the London clay which contained much sulphur, and the temporary absence of aeration induced by the ramming resulted in the formation of sulphuretted hydrogen, which killed the trees. Luckily, fruit growers are not likely to have many dealings with such soil. *Southern Grower* mentions two rows of trees which he rammed in his plantations, without producing any recognisable effect. Of course, this absence of effect may well have been a reality, and we obtained such negative results in some of our own experiments. But if the absence of results was assumed merely from an inspection of the trees, the conclusion must be of very doubtful value. Personal observation and impression is an altogether fallacious guide in such matters, and if results are to be of any value, they must be based on definite measurements of some sort. Doubtless, a busy grower has no time for such measurements, but if any grower takes sufficient interest in the matter to carry out planting trials of this sort, we might in some cases arrange to take the measurements for him, and thus place his results on a firm basis. *Southern Grower's* remarks on the subject of the effects of grass on trees appear to us to be very much to the point. It is a subject on which we have still much interesting work waiting publication, as soon as the national strain on our supplies of paper shall have become less exhausting. But it is only a special instance of a general problem—the effect of one growing plant on another. *Spencer Pickering.*

SELECT VARIETIES OF ROSES (see p. 121).—The slaughter of the innocents, so far as Gold Medal Roses of recent years are concerned, is surely proof—if proof were needed—of the unsatisfactory method adopted by the National Rose Society of judging the merits of new varieties. Such relatively new varieties as Iona Herdman, Queen Mary, Countess Clavilliam, Mrs. Forde, Edward Bohane, Mrs. James Lynas, Muriel Dickson, Majestic, Annie Crawford, Mrs. Andrew Carnegie, Lady Mary Ward, and Queen of the Belgians, all of which have been awarded Gold Medals, have disappeared from the "Select List." I agree that Rose lists require curtailing; most of them are far too long. Some of the older varieties, however, will hold their places in commerce for long against many of the newcomers. I have always strongly deprecated the use of the word "Pernetiana." Apart altogether from technical correctness, the word is unfair. Persian Yellow has long been used as a parent by certain British raisers. Many fine Roses that are certainly not "Pernetianas" are descended from the Persian Rose. May I suggest that the title of the section should from henceforth be "Persian Roses"? The attempt at classification in the new *Handbook* is lamentable, and is only making the confusion that at present exists worse than ever. Your reviewer draws attention to this fact. I turn, for example, to the heading "Hybrid Wichuraiana," and find only one name. It is Paul's Scarlet Climber. Then under the heading "Wichuraiana Ramblers" are the names of several Roses that I always imagined were "Hybrid Wichuraiana," what is it? Pemberton's White Rambler is described as the finest White Rambler. What about Sanders' White Rambler? It is the finest, purest, sweetest, and most mildew-proof White Rambler in commerce, and is superior to White Dorothy in every respect, yet it is omitted from the "Select List," whilst White Dorothy is included. Petit Louis and Châillon Rambler, both of which are finer in every respect than Dorothy Perkins, are also omitted. *George M. Taylor, Midlothian.*

STRAWBERRIES: SUBSTITUTE FOR LITTER (see p. 150).—If the soil is moderately heavy, as a good Strawberry soil should be, or the season is not exceptionally dry, it will be better to do without the litter. In place of it procure galvanised sheep netting, which is three feet wide,

with a four inch mesh, and this will cover two rows. Lay the netting over the rows before growth commences. Place upright sticks in the ground at intervals on each side, and bamboo canes across the rows, fastened to these sticks and under the netting. The netting should be close to the crowns of the plants at first, and gradually raised as growth proceeds by pulling the sticks up a little, continuing this till the netting nearly reaches the tops of the stems, when the flowers are expanding. The fruit will be earlier, owing to the ground being warmed by the sun, it will be coloured all round, free from dirt and slugs, sweeter and more luscious, owing to thorough development and perfect ripening, and will not be harmed by millipedes or slugs. Should one of the latter crawl up a stem and come in contact with the fresh zinc coating of the wire, it will make a hasty descent. Also, the fruit will not be trampled on by a careless gatherer. When this plan is intended to be followed, every second space between the rows should be three feet instead of two. The number of plants per perch will be lessened, but the weight of fruit will be greater, because there will be no waste. *Wm. Taylor.*

ONLY TO ORDER.

In consequence of the decision of the Board of Trade, which will come into force on May 1st, to prohibit the return to publishers of unsold copies of any journal, the GARDENERS' CHRONICLE will be obtainable after that date only if ordered beforehand. We ask, therefore, all readers who desire a copy each week (and are not already receiving it direct from this office) to give their local newsagent a definite order to this effect.

ORDER FOR NEWSAGENTS.

To Mr.....Newsagent.
 Address.....
 Please deliver the GARDENERS' CHRONICLE to me each week at the address given below.
 Name.....
 Address.....

PARROTIA PERSICA (see pp. 137, 138).—The various plants of *Parrotia persica* at Aldenham have flowered very regularly for many years past, and I have often used the branches for cases with good effect. In respect of its claret colour, it is superior to its less well-known but also attractive relative *P. Jacquemontiana*, which bears yellowish-green flowers, and of which the finest specimen with which I am acquainted is at Lord Ducie's, at Tortworth. *Victory Gibbs.*

EXPERIMENTS WITH HUMOGEN (see pp. 113, 137).—In reply to Mr. Diver's remarks, the 0.602 ammon. sulphate per lineal yard was applied as an equivalent in nitrogen content to that of the Humogen (if memory serves me it was rather in excess of that amount); it was applied when the shoots were up, but before earthing. In regard to Mr. Chittenden's remarks, seriatim, I used the term "mellow" to express not only that the lime had been well incorporated with the soil mechanically and by the lapse of time, but also that it had been there an adequate period for the establishment of a bacterial balance under the new conditions; by "raw" lime, that these conditions had not been established. My reference to a particular portion of Mr. Chittenden's work (as given) was selected from the direct contrasting of limed and unlimed patches; if from careless reading and noting before leaving home I have given a false impression of that record,

I freely express regret; not being able to refer to the paper here, my impression is that I read in vain to get any definite information as to when the lime was applied and as to the resulting carbonate (or any other) analysis of the soil. The note in this Journal (my second reference) contains no information concerning lime or carbonate, as it lies before me. (The reference that "the material is not standardised" in that reference, and also in his letter (*Gard. Chron.*, March 31, 1917, p. 137), raises the question as to what is the criterion for standardisation? Until knowledge is forthcoming as to the nature of the effective agent, the existence of which many trials seem to indicate, it seems hopeless to call for a standardised article. Cannot Mr. Chittenden tell us what is the elusive constituent? In the trials, in which the substance was placed individually to the plants, actual rows are contrasted, those taken as controls being placed proximally to the trial rows. The variety that was used is named in my article. To what agency are we to refer the occasional benefit of Humogen; the evidence of my trials last year seemed to point to CaCO₃ as a factor; the "old" Humogen had given largely increased yield the year before. Had its goodness wasted in storage in a dry condition? *H. E. Durham.*

ALTERNATIVE VEGETABLES.—I have addressed to Sir Arthur Lee, Director-General of Food Production, the following letter:—"Potatoes are scarce, and will very probably be altogether lacking until the new crop is gathered. It seems to me that it would be a sensible plan to try to substitute for them some new vegetables, of which there are many, and to enrich the culinary art by new products. For instance, the leaves of certain trees, well cooked, might form substitutes for Cabbage and Spinach. The young leaves of the Chestnut, of the Plane, and of many other trees, previously decorticated, might form in time of war, and also in time of peace, acceptable vegetables. I have always heard that in the Jardin des Plantes in Paris, there were composed in 1871 excellent salads of Begonia leaves. Are not salads of the highest quality made of *Chrysanthemum* flowers? The young leaves of Rindbarb, which are thrown away when the stems are used; those of Clover, and even those of tender Ferns, could probably be used in this way or as purees—and how many others? Of course, one would have to begin by testing these new vegetables (?) and only use those which were found to be wholesome and palatable after being well prepared." *Lucien Linden.*

SULPHATE OF AMMONIA FOR POTATOS (see pp. 115, 135). From a practical standpoint Dr. H. E. Durham, in his trials, did not use sulphate of ammonia to the best advantage. My experience on various soils prove that for full benefit it is useless to sow sulphate of ammonia for Potatos when the tops are through the soil. The experiment made by Mr. Divers, although best in his particular case, may not be taken as a general rule for applying sulphate of ammonia. The texture of soil will influence moisture and temperature, and these latter play a most important part with lime usually found in garden soil in rendering sulphate of ammonia available for plant roots. Therefore the texture of the soil should be a ruling factor for the proper application of sulphate of ammonia for a Potato crop. Here the soil is very gravelly, and I find the best results are obtained by broadcasting about 1 lb. of sulphate of ammonia per rod as soon as the soil is sufficiently dry for walking on after planting. This is worked into the soil by the rain and hoeing, and becomes available as plant food to the spreading roots when a stimulant is most desirable to the growing plant. Last season, although Potatos were generally considered a bad crop, from disease; here disease was almost absent. I do not say that sulphate of ammonia will stop disease, nor contend that Mr. Divers was wrong in his experiment, but I do maintain that the method of applying sulphate of ammonia in one district may not be good for a neighbouring district owing to different soil texture. Like Mr. Divers, I have noticed an extra vigour in seed Potatos on land that has been treated by sulphate of ammonia. *G. H. H. W.*

SOCIETIES.

**ROYAL HORTICULTURAL
Scientific Committee.**

MARCH 27.—*Present:* Mr. E. A. Bowles, M.A. (in the chair), Sir Everard in Thurn, Dr. Voelcker, W. Hales, J. Fraser, W. C. Woisdell, and F. J. Chittenden (hon. sec.).

Two-flowered Snowdrop.—Mr. Bowles showed, on behalf of Mr. Elwes, a two-flowered plant of a seedling of *Galanthus Elwesii*. It had the usual two foliage leaves from the soil, but the flowering stem bore a third leaf, about three inches above the soil level, with a slight swelling at the base, and having in its axil a second flower. The axis of the bulb had apparently elongated and carried the flowering stem up above ground.

Alnus glutinosa.—Mr. J. Fraser showed a series of seedlings of the common Alder (*Alnus glutinosa*), which he had found growing near the Thames and in other places. He drew attention to the nodules on their roots, which, he pointed out, were inhabited by organisms, according to Hillier, which enabled the Alder to obtain nitrogen from the air much in the same way as does *Pseudomonas radicecola* in the case of *Leguminosae* plants.

Crocus.—Mr. Bowles showed a series of *Crocus* flowers, including various forms of *C. chrysanthus* of different shades of sulphur and yellow, forms apparently of *C. biflorus*, some of which were of blue shades and intergrading in chrysanths; *C. Balansae* with mahogany-coloured outer segments; a seedling of *C. minimus*, with much larger flowers than usual, and with more substance; very small forms apparently of *C. venus* collected in Montenegro, and perhaps connected with Maw's curious plant from that district; seedlings of *C. Sieberi* variegated and crosses between that and the type *C. veluchensis* from Greece; a curious form between *C. Tommassianus* and *C. banaticus* and others.

Double-spotted Richardia.—Mr. H. W. Hatchell sent a double-spotted *Richardia africana*, with slight green markings on the second, lower spathe. This development is very common in this and other species of *Richardia*.

Gall-like growths in Prunus Pseudo-cerasus.—Mr. R. I. Lynch sent shoots of this rare tree from Cambridge Botanic Garden, showing groups of adventitious buds on swollen places on the shoots; the tree was otherwise healthy, and it was suggested that the probable cause of the growth was damage by sparrows to the bud at the end of a shoot and the subsequent development of buds present in the axils of the scale leaves.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

MARCH 15. *Committee present:* The Rev. J. Crumpleholme (in the chair), Messrs. R. Ash worth, D. A. Cowan, J. C. Cowan, J. Cypher, A. G. Ellwood, J. Evans, P. Foster, A. R. Handley, A. Hamner, D. MeLeod, W. Shackleton, S. Swift, H. Thorp, and H. Arthur (secretary).

A large Silver Medal was awarded to R. ASHWORTH, Esq., Newchurch (gr. Mr. Davonport), and a Silver Medal to Messrs. CYpher & Sons, Cheltenham, for groups.

AWARDS

FIRST CLASS CERTIFICATES

Odontonia Magdi Sander alba Ashworth var., flowers with white ground beautifully marked with lemon yellow; *Lactia Cattleya Beatrix* var. *Ashworthiae* (C. Schroderus = *L. C. callistoglossa*), a large flower of even colour, with round lip of intense crimson, from R. ASHWORTH, Esq.

Cattleya Cowanne alba var. Princess (C. *Mossiae Wogeneri* × *Intermixta Juliette*), a well-shaped flower with white lip and orange-yellow markings in the throat; *C. End alba* var. *Fairy Queen* (*Mossiae Bevaniana* × *gigas Fina Melaine Begardt*), flower over 7 inches across, with petals 3 inches wide. The lip is broad, throat lemon-yellow with heliotrope-coloured lines at the base, from P. SMITH, Esq.

AWARDS OF MERIT.

Odontonia Red Cross var. *Scarlet Pimpernel*, *O. Kiehlgenis* var. *magifica*, and *Odontoglossum Louisa* var. *splendens* (*Ossulstoni* × *psuttoni*) *Charlesworthii*, from P. SMITH, Esq. *Dendrobium Cybele West Point* var., and *D. Atherton* (*rubens grandiflorum* × *Cybele*), from S. GRATRIX, Esq.

Cypripedium Percius (*Lady Dillon* × *delicoides illustris*), from W. R. LEE, Esq.

AWARDS OF APPRECIATION.

Odontoglossum Bayard (*Empress of India* × *Jasper*), 1st class; and *O. crinum* var. *rotundiflorum*, 2nd class, from R. ASHWORTH, Esq.

O. General Maude, 1st class, from S. GRATRIX, Esq.

BRITISH WHOLESALE FLORISTS.

MARCH 26.—At a meeting of the committee of this Society, held on the 26th ult., the president gave a report of the meeting of railway officials and representatives of trade associations he had attended (as the representative of the B.W.F.F.) at the Clearing House, and stated that the Railway Executive Committee would not give way in regard to the order for prepayment, but the railway companies did not desire to relieve themselves under prepayment of responsibilities liabilities accepted on goods carriage forward. The railway companies were prepared to open approved ledger accounts for consignors at the point of consignment. He also pointed out that market customers could arrange for deposit accounts, against prepayment of carriage, at the place of consignment. The letter originally drafted by the Market Sub-Committee for the use of salesmen, etc., had been submitted to various Market Associations and to the Federation's solicitor, and was generally accepted as suitable. This letter, with the addition of a fly leaf containing a printed acceptance of the new conditions for its signature and return, was accepted by the committee, and the secretary was instructed to send a copy to each member for their use if they so desired.

NURSERY AND SEED TRADE.

MARCH 26. The annual general meeting of the Nursery and Seed Trade Association was held on the 26th ult. Mr. J. B. Shole (Messrs. Protheroe and Morris) was appointed chairman.

The committee's report and balance sheet from July 1, 1915, to December 31, 1916, were submitted. The report showed that the association had made 542 inquiries relative to the solvency and otherwise of traders throughout the United Kingdom, and made 441 special local inquiries. The report also showed that the association and its solicitor had collected during the above-mentioned period £4,528 10s. 10d., principally by small payments through the Courts. The question of a General Commercial Import Tariff was raised in consequence of a letter from one of the members, and the following resolution, proposed by Mr. Low, was passed:—

"That it is advisable to consider the steps to be taken to protect the interests of the nursery and seed traders after the war, and that the other trade associations be approached with a view to some united action being taken."

Mr. J. E. N. Sherwood (Messrs. Hurst and Son) was appointed president, and one of the trustees of the association in the place of his father who had acted as president since January, 1885.

Obituary.

H. VAN DIEVOET.—News has reached London of the death of M. H. Van Dievoet, nurseryman at Meysse, near Brussels. For years M. Van Dievoet, who died at the age of 77, had been burgomaster of his commune and president of the Horticultural Society of Laeken, the Royal residence. M. Van Dievoet was one of the last representatives of the old school of Belgian horticulturists.

CROPS AND STOCK ON THE HOME FARM.

MANGOLDS. The Mangold is one of the most useful of all roots on the farm, and one that is capable of giving the heaviest yield of cattle food. With ordinary cultivation, 30 tons of roots per acre is a reasonable crop, and doubly this amount is obtained by some with suitable soil and locality and high cultivation of superior varieties. For cows from November to May, Mangold is the principal root food. Some may, in the autumn, prefer Turnips or Swedes, but Mangold is not so liable to taint the milk. For sheep, Mangolds are invaluable when the Turnip crop fails. With Rye, Winter Barley, grass and Vetches during April and the succeeding four months, Mangold is excellent food, and when well stored the roots improve, for the sugar which they contain becomes matured. Horses and pigs appreciate the roots from January onward. For poultry, too, in small quantities, either cooked or raw, Mangolds are useful, though too many in a raw state tend to produce diarrhoea in the birds. No time should be lost in finally ploughing the land that was manured and ploughed in the autumn, a fine-till being necessary to ensure a good "plant." Soil light in character and free from weeds need not be again ploughed if cultivated during dry weather; a good till is all that is required in this case. The middle of April is a good time to sow the seed, at the rate of 3 lb. per acre for the Tankard form for the dairy, and a Globe variety for the greater bulk, for sheep.

TREATMENT OF COWS BEFORE CALVING.—Persons of inexperience are liable to have cows down with milk fever within a day or two after calving, which may mean a serious loss. The chief cause of milk fever in cows is their being in too fleshy a condition at the period when they are approaching parturition. Within six weeks of this stage they should be most carefully fed on good hay and straw, with water at all times available in an open yard with shed accommodation, so that the animals can get abundant exercise. When cows are thus treated milk fever is almost unknown, and the cows produce larger and more healthy calves than where they are kept more in the house. The animals must not be allowed to get too low in condition, or the calves will suffer. In the case of a cow in this condition, where only poor quality hay is available for food, 2 lb. of Linseed cake per day may be given with advantage. A moderate sized cow will consume 10 lbs. of hay daily.

SULPHATE OF AMMONIA FOR WHEAT.

Farmers who applied sulphate of ammonia in late autumn to Wheat, are recommended by the Board of Agriculture to give an additional $\frac{1}{2}$ cwt. to $\frac{3}{4}$ cwt. per acre to backward crops on poor land. Where there was no autumn dressing $\frac{1}{4}$ to $1\frac{1}{2}$ cwt. per acre should be given. On poor land the Oat crop should get $\frac{3}{4}$ to 1 cwt. sulphate of ammonia; on land in fair condition $\frac{1}{2}$ cwt. to $\frac{3}{4}$ cwt. will suffice. Orders for sulphate of ammonia should be placed with manure merchants at once. The price for the standard grade has been fixed at £16 per ton delivered at the purchaser's railway station in maker's bags.

WIREWORM

One of the worst pests the farmer has to contend with is wireworm. This pest eats the stem of Oats and Barley immediately above the seed in the spring, and also devours the young growths of Swedes and Turnips directly they show through the soil. Oats are generally sown on a grass plot intended to be broken up, or an old Sandton ley, and the grass and couch roots form a happy hunting ground for wireworms. Clean cultivation and frequent moving of the soil, with liberal manuring, are good preventives. A fillip to the growth of the corn is required directly it shows through the soil, in order to hasten the formation of the second and third leaf, and after that stage of growth wireworm does no harm. Three quarters of a cwt. of nitrate of soda, or 1 cwt. sulphate of ammonia per acre, sown evenly over the part of the field likely to be attacked, is a good preventive. *E. Molyneux, Swanmore Farm, Bishop's Cleeve, Hants.*

MARKETS.

COVENT GARDEN, April 5

Vegetables: Average Wholesale Prices.

Artichokes, Globe	s.d. s.d.	Horseshoe	per s.d. s.d.
per doz.	5 6 6 0	doz.	66 0 72 0
- Jerusalem	16 0 20 0	Kale	per bag
- per cwt.	16 0 20 0	doz.	12 0
Asparagus, Paris	Green, per bun	10 0	doz.
per doz.	4 6 5 0	doz.	2 6 4 6
Beetroot, per bag	10 0	Lettuce, Cabbage	and Cos, per doz.
Beans, English	per lb.	1 6 2 0	2 0 6 0
Broccoli, purple	per lb.	1 6 2 0	Mushrooms, per lb.
sprouting, per	15 0	1 6 2 0	19 2 0
bag	15 0	Mustard and	Cress, per doz.
Brood Beans	French, per	pad	10 1 6
doz.	5 6 6 0	doz.	25 0 35 0
Brussels Sprouts,	per 24 lb.	10 0	- spring, per
doz.	10 0	10 0	doz. bun.
Cabbage, per	tally	5 0 9 0	doz.
doz.	5 0 9 0	Carrots, washed,	per doz. bun.
Carrots, washed,	per bag	12 15 0 0	11 0 0
doz.	12 15 0 0	- New, per doz.	4 0 6 0
- New, per doz.	4 0 6 0	Cauliflowers, per	doz.
Celeriac, per doz.	6 0	doz.	4 0
Celery, per doz.	bunches	36 0 40 0	Celery, per doz.
doz.	36 0 40 0	Cucumbers, per	doz.
Cucumbers, per	doz.	10 1 0 0	doz.
doz.	10 1 0 0	Endive, per doz.	18 0 20 0
Green peas, per	bag	18 0 20 0	Garlic, per lb.
doz.	18 0 20 0	Herbs, per doz.	4 0 8 0
Green peas, per	bag	18 0 20 0	
doz.	18 0 20 0		
Herbs, per doz.	bun.	4 0 8 0	
doz.	4 0 8 0		

Fruit: Average Wholesale Prices.

Almonds, per	s.d. s.d.	Grapes, con.	s.d. s.d.
cwt.	80 0 0	- Cape, per box	8 0 2 0 0
Apples	- Californian	- Gros Colman	per lb.
- New Towns	per case	16 6 0	16 6 0
per case	15 0 16 0	Grape Fruit, per	case
English	per case	34 0 35 0	doz.
Cooking, per	doz.	2 0	Kent Cobs, per
doz.	17 6 20 0	doz.	22 0 40 0
Main States,	barrels	44 0 66 0	Nuts, Brazil,
per case	18 6 22 0	new, per cwt.	100 0 120 0
Bananas, Red, per	ton	225	Coconuts, per
doz.	225	doz.	31 0 32 0
Jamaica, per	ton	222	Oranges, per case
doz.	222	100	21 0 30 0
Chestnuts, per	bag	40 42 0	- Palermo Bit-
doz.	40 42 0	ters, per case	18 0 22 0
Cranberries, per	doz.	12 0	Pears
doz.	12 0	- Californian	15 0 18 0
Dates, per doz.	boxes	7 6 8 6	- Cape, per box
doz.	7 6 8 6	6 0 10 0	6 0 8 0
Grapes, Almeria,	per bri.	30 0 35 0	Plums, per box
per bri.	30 0 35 0	doz.	6 0 10 0
			Strawberries,
			forward,
			6 0 12 0
			Tomatoes, English,
			per lb.
			2 6
			Walnuts, per
			cwt.
			75 0 90 0

Potatoes.

REMARKS.—The price is now £12 per ton, as fixed by the Food Controller, yet very few tubers are available. Edward J. Newbourn, Covent Garden and St. Pancras, April 5, 1917.

GARDENING APPOINTMENT.

Mr John R. CART, recently for 6 years Gardener to E. J. CHATWIN, Bromsgrove, Worcestershire, as Horticultural Instructor and Demonstrator for the county of Glamorganshire.

ANSWERS TO CORRESPONDENTS.

CHICORY: J. M. Successful experiments in the cultivation of Chicory for its roots as a mixture with Coffee were carried out in 1914 by the Aberdeen and North of Scotland College of Agriculture. The variety tested was Magdeburg. The experiments showed that the best soil for the crop is a deep loam, and sub-soiling previous to the seed being sown was proved to be a great advantage. No farmyard manure should be used immediately before planting, but dressings of artificial manures are beneficial. The crop was planted early in May, and lifted in November. The yield was 19 cwt. per acre, and the returns to the grower about £16 per ton. The ground roots produced excellent Chicory. There is considerable labour and expense entailed in connection with the crop owing to the heavy dressings of manure necessary, and the continuous cultivation to keep the land free from weeds in the early stages.

EMPLOYMENT OF GARDENERS: W. B. You will find that your question as to whether gardeners out of employment can be engaged by private employers is dealt with in the leading article in to-day's issue of this paper, p. 144.

FORCING BY ACETYLENE: M. Y. (See p. 126.) The paragraph you refer to was taken from *The Revue Horticole* for March 16, 1917, p. 250. It is not stated exactly what results followed the application of the acetylene gas, except that they were "comparables a ceux fournis par l'éthérisation." Nor is it stated whence the information is derived, except that it emanates from Switzerland, and is descriptive of experiments made in Austria. The correct temperature of the house is given as 17° to 19°, falling to 14° at night; but as it is not stated whether this measurement is Centigrade or Réaumur, we omitted it as not being sufficiently explicit.

GRUB: S. P. The grub is the larva of the cockchafer, or May bug, *Melolontha vulgaris* (see fig. 51). It is destructive to vegetable roots, and should be destroyed.

NAMES OF FRUITS: Somerset. The Apples were bruised and past; send fruits earlier next season.

PEACH TREE DISEASED: W. B. The tree is affected with Silver-leaf, which is said to be due to the fungus *Stemium purpureum*, but no control of the disease is known. Some authorities consider that the injury is due to an excess of nitrogenous matter in the soil. If

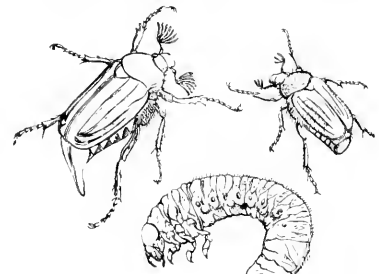


FIG. 51.—ADULT INSECTS AND LARVA OF THE COCKCHAFFER.

the malady is restricted to a single branch, cut out the shoot and burn it.

PLANET JUNIOR HOE: E. D. The Hand Planet Junior hoe is sold by horticultural sundriemmen and most nursery firms, though the stock in this country is said to be very low.

POTATOES WITH MARKINGS: An Old Reader. The brown markings in the flesh of the tubers (which are liable in cooking to turn black at such places) are characteristic of the disease known as "sprain." This is not caused by any organism, but is due to some deterioration of the Potato. Such tubers are quite fit for food (in their sound parts), and are unaffected for seed purposes.

TOMATOES UNHEALTHY: W. W. From your description of the plants we suspect that they are affected with disease. Send a specimen for examination.

VEGETABLE IMPORTS AND PRODUCTION: E. L. The total quantities of Potatoes and other vegetables imported into the United Kingdom in the years you name were, according to statistics furnished us by the Board of Agriculture, as follows:—

Year ending December 31.	
Potatoes, bushels	9,477,314 2,532,744 2,170,717 1,863,174
Onions, bushels	9,196,164 7,243,513 7,477,593 6,848,247
Tomatoes, cwt.	1,582,950 1,576,617 1,394,897 1,619,282
Vegetables, raw, unenumerated, value	519,340 475,714 518,382 233,840

The acreage and production of Potatoes in the United Kingdom in the same years were:—

	Acreage.	Production.
1913	1,173,418	7,604,804
1914	1,197,008	7,476,458
1915	1,202,259	7,540,240
1916	1,144,375	5,468,881

Communications Received.—A. Grove—L. F.—W. Cuthbertson—E. M. C. H. C.—J. O'B.—L. L.—D. D.—M. B. Java—W. H. D.—W. H. S. Q.—J. M.—C. J. M.—J. K.—J. E.

Cut Flowers, &c.: Average Wholesale Prices	
Anemone, Fulgens	s.d. s.d.
per doz. bun.	2 6 3 0
Arunis, per doz.	6 0 8 0
Azalea, white,	per doz. bun.
5 0 6 0	
Camellias, white	per doz. bun.
2 0 2 6	
Carunculus, per	doz. blooms
doz.	2 0 2 6
best American	varieties
2 6 3 6	
- Carola (crim-	son), ex. large
3 6 4 0	
Daffodils, Golden	Spur, per doz.
bun.	3 0 5 0
- Barrii, per	doz. bun.
4 0 5 0	
- Emperor, per	doz. bun.
5 0 6 0	
- Henry Irving,	per doz. bun.
2 0 2 6	
- Princess, per	doz. bun.
2 6 3 0	
- Sir Watkin,	per doz. bun.
3 0 4 0	
- Victoria, per	doz. bun.
6 0 7 0	
Freesia, per doz.	bun.
2 0 2 6	
Heather, white,	per doz. bun.
12 0	
Lilium longi-	florum long
5 0 6 0	
- short,	5 0
Lactifolium,	album, long,
5 0	
- rubrum,	per doz. long,
3 0 3 6	
- short	1 6 2 0
Lily-of-the-Valley,	per doz. bun.
21 0 24 0	
Narcissus, s.	Grand Prix
5 0 6 0	
French Flowers, &c.: Average Wholesale Prices.	
Allium (Star) per	doz. bun.
2 6 3 0	
Anemone, double	pink, per doz.
bun.	2 0 2 6
- single, mixed,	per doz. bun.
3 0 4 0	
- single, red,	per doz. bun.
1 6 2 0	
Cut Foliage, &c.: Average Wholesale Prices.	
Adiantum (Maid-	enhair Fern)
per doz. bunches	9 0 10 0
Asparagus plum-	osum, long
lea, per	half-dozen
2 6 8 0	
- medium,	doz. bunches
12 0 18 0	
- Sprengeri	10 0 12 0
Bronze foliage,	per doz. bunches
8 0 6 0	
Carnation foliage,	doz. bunches
4 0 5 0	
Croton foliage,	doz. bunches
17 0 18 0	

REMARKS.—Owing to the Easter festivities this week-end cut flowers will be more in demand, and prices are likely to advance considerably. The severe weather will probably check supplies. White Liliums and Richardias (Arums) are usually in good demand during this week. It is difficult to give correct quotations of prices, as the arrival of Guernsey and French flowers are now very irregular.

Plants in Pots, &c.: Average Wholesale Prices.

Aralia Sieboldii,	dozen	5 0 6 0	Ferns in 32's,	per doz.	12 0 18 0
Asparagus plum-	osum nanum,	per doz.	10 0 12 0	Geonoma gracilis,	60's per doz.,
10 0 12 0	- Sprengeri	8 0 10 0	60's per doz.,	2 6 8 0	6 6 7 6
Aspidistra, per	doz. creep.	24 0 26 0	Kentia Beltonii,	ana, per doz.	4 0 8 0
Cacti, various,	per tray of 15's	4 0	- larger per	doz.	18 0 36 0
tray of 12's	5 0	- Forsteriana,	per doz.	5 0 8 0	
Cineraria, 48's,	per doz.	12 0 15 0	Latania borbon-	ica, per doz.,	12 0 30 0
Cocos Weddell-	iana 48's, per	doz.	18 0 30 0	Lilium longi-	florum, per
doz.	18 0 30 0	- longifolium	per doz.	24 0 30 0	
Croton, per doz.	8 0 10 0	- album	24 0 30 0	Marqueterites in	48's, per doz.
Cyclamen, 48's,	per doz.	21 0 24 0	Panicum Veitchii	per doz.	36 0 48 0
Daffodils, 48's,	per doz.	12 0 15 0	Phlox rupi-	cola, each	12 0 21 0
Ferns in thumbs,	per 100,	10 0 15 0	Spiraea, per doz.	12 0 15 0	
- per 100, in	small and	large 60's	14 0 24 0	Remarks.—All pot plants are in good demand. White Hydrangeas, white Shucks, Mercurialis, Lilium longiflorum and white Spiraesae still sell freely.	

NOW READY
THE
HORTICULTURAL
DIRECTORY
AND
YEAR BOOK
FOR 1917.

Owing to the paper shortage, an unlimited number of copies of this work cannot be guaranteed, and purchasers are advised to order AT ONCE to avoid disappointment.

Orders will be dealt with in strict rotation.

The 1917 edition contains no name or address which has not been verified. The information given is therefore absolutely trustworthy.

Apply, enclosing 14 for each copy required, to:—

GARDENERS' CHRONICLE,
 LTD.,

41, WELLINGTON ST., COVENT GARDEN,
 LONDON, W.C. 2.

SELECT LIST OF BOOKS ON GARDENING.

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Publisher.
 Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

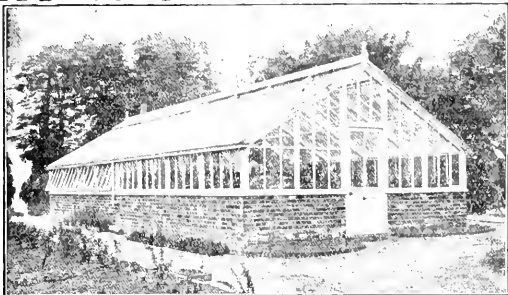
- Carnations and Pinks. By T. H. Cook, Head Gardener at Sunderinglam; James Douglas, V.M.H.; and J. F. McLeod. Contains 8 Coloured Plates, reproduced from colour photographs. 1s. 10d.
- Cottage Gardening; or, Flowers, Fruits, and Vegetables for Small Gardens. By E. Hobday. 1s. 9d.
- Cucumber Culture for Profit. By W. Dyke. A Practical Guide to the Cultivation in Frames and in the Open. 1s. 2d.
- Cyclopaedia of Botanical Drugs. Potter's. By R. C. Wren, with additions by E. M. Holmes. Containing the Names and Properties of all the Herbs employed medicinally in this country. 5s. 10d.
- Cyclopaedia of Horticulture, The Standard. By L. H. Bailey. In 6 vols. Fully Illustrated in Colour and Half-tone. A valuable book of reference. Each part, 26s.
- Date growing in the Old World and the New. By Paul P. Popenoe. Illustrated. 9s. 6d.
- Dictionary of Hardy Flowering Plants (see "The English Rock Garden," by R. Farrer)
- Diseases and Garden Pests, Book of Plant. By R. Hooper Pearson. 214 pages. Over 65 Illustrations. Cloth. 2s. 11d.
- Diseases of Cultivated Plants and Trees. By George Masee. 7s. 11d.
- English Rock Garden. By Reginald Farrer, author of "My Rock Garden," "Among the Hills," etc. This work contains up-to-date monographs of the Plants suitable for cultivation in the Rock Garden. The text consists of 500,000 Words. 500 Plants are Illustrated in Half-Tone Plates. In 2 Vols. Price £2 2s. 10d. (in the Press).
- Flora, British, Handbook of the. By Geo. Bentham. Revised by Sir Joseph Hooker. Seventh Edition. 9s. 5d.
- Flora, British, Illustrations of the. By W. H. Fitch and W. G. Smith. 1,315 Wood Engravings. Revised and enlarged. 9s. 5d.
- Florist's Bibliography, The. By C. Harman Payne. Second Edition, with Supplement and Index. Cloth. 5s. 4d.
- Flowers and Flower Culture. By H. W. Ward. 8d.
- Flowers, The Book of Hardy. By E. H. Jenkins. A Practical Guide to the Cultivation of Hardy Flowers. Illustrated. Cloth. 2s. 11d.
- Flowers, The Book of Old-Fashioned. By Harry Robert. 2s. 10d.
- Flowering Plants, Classification of. By Alfred B. Rendle, M.A., D.Sc. Vol. 1. Gymnosperms and Monocotyledons. 400 pages. Illustrated. 10s. 10d.
- Forestry, English Estate. By A. C. Forbes. Copiously Illustrated. 328 pages. 12s. 11d.
- Forestry, The Development of British. By A. C. Forbes. Illustrated. 11s.
- Forestry, The Practice of. By Percival T. Maw. A voluminous and practical manual. It deals also with the financial aspect of Forestry. 17s. 6d.
- Forestry, Webster's Practical. Fourth and Enlarged Edition. Illustrated. 5s. 4d.
- French Market Gardening. By John Weathers. With practical details of "Intensive Cultivation" for English Growers. Preface by W. Robinson. 2s. 11d.
- Fruit Growing, Profitable: for Cottagers and Small Holders of Land. By John Wright, V.M.H. A Gold Medal Essay, written for the Worshipful Company of Fruiteers. Illustrated. 1s. 3d.
- Fruit, Hardy, Culture for Amateurs. By S. T. Wright, with notes by W. D. Drury on Fungi affecting Fruit Trees. Illustrated. 1s. 3d.
- Fruit Ranching in British Columbia. By J. T. Beally. Illustrated. 5s. 11d.
- Fruit Trees and Their Enemies. With Spraying Calendar. By Spencer Pickering, F.R.S., and Fred W. Theobald. Cloth. 1s. 9d.
- Fruit Trees in Pots. By Josh Bruce, twenty-two years Foreman for Thos. Rivers and Son. Illustrated. 5s. 4d.
- Fruit and Vegetables, Packing and Selling; for Cottagers and Small Holders of Land. By R. Lewis Castle. A Gold Medal Essay, written for the Worshipful Company of Fruiteers. Illustrated. 1s. 3d.
- Fungoid Pests of Cultivated Plants. By Dr. M. C. Cooke. Many Coloured Plates. 5s. 6d.
- Garden Craft in Europe. By H. Inigo Triggs. £1 15s. 6d.
- Garden Pests and Plant Diseases, Book of. By R. Hooper Pearson. 214 pages. Illustrated. 2s. 11d.
- Garden Flowers for Town and Country Gardens. By John Weathers. Coloured Plates. 5s. 4d.
- Gardening, Alphabet of. By T. W. Sanders. Illustrated by diagrams. 1s. 9d.
- Gardening, Encyclopaedia of. By T. W. Sanders. A Dictionary of Cultivated Plants, Flowers, Fruit, Vegetables, Trees and Shrubs, with Description and Popular and Technical Names, Cultivation, etc. 466 pages. 3s. 11d.
- Gardening, Home. By W. D. Drury. A manual for the Amateur, containing instructions for the laying-out, Stocking, and Cultivation of Small Gardens. 1s. 3d.
- Gardening, Pictorial Practical. Edited by Walter P. Wright. Illustrated. Paper, 1s. 3d.; cloth, 1s. 9d.
- Gardening, School, A First Book of. By A. Logan. 1s. 9d.
- 1,500 Gardening Questions Answered. A useful Handbook for the Amateur Gardener, dealing with every phase of Gardening, both inside and out. Paper, 1s. 4d.
- Gardening, School, Cottage, and Allotment, A Practical Guide to. By John Weathers. 2s. 10d.
- Glass, The Garden Under. By W. F. Rowles. Illustrated. 6s. 6d.
- Grafting and Budding, The Handy Book of. By James Uihle. 7d.
- Grape Growing for Amateurs. A thoroughly practical book. 1s. 5d.
- Grape, The Book of the. Together with a Chapter on the History and Decorative Value of Vines. By H. W. Ward. Illustrated. 2s. 9d.
- Greenhouse and Conservatory, Construction and Heating. By Paul N. Hasluck. With 228 Illustrations. 2s. 4d.
- Greenhouse, The Amateur's. By T. W. Sanders. 416 pages, 154 Illustrations. 5s. 5d.
- Greenhouse Management, Pictorial. Edited by Walter P. Wright. Illustrated. Paper, 1s. 3d.; cloth, 1s. 9d.
- Greenhouse, The Book of the. By J. C. Tallack, Head Gardener at Shipley Hall. Illustrated. 2s. 10d.
- Hardy Flower Book, The. By E. H. Jenkins. A Descriptive and Practical Guide to the Cultivation of Hardy Flowers. Illustrated. Cloth. 2s. 11d.
- Hardy Trees, Flowering Shrubs, Conifers and Evergreens. By Geo. Bunyard. A Popular Handbook of 160 pages. 50 Illustrations. Useful hints. English and Latin names. 3s. 10d.
- Herb Garden. By Francis A. Bardswell. 16 Full page Illustrations in Colour. 4s. 3d.
- Insect and Allied Pests of Orchard, Bush and Hothouse Fruits. By F. V. Theobald, M.A., etc. 328 Illustrations. 30s. 6d.

Complete New Catalogue sent Post Free on application to

THE LIBRARIAN,
 41, Wellington Street, Covent Garden, W.C. 2.

W. RICHARDSON & CO., DARLINGTON.

**HORTICULTURAL BUILDERS
and HEATING ENGINEERS.**



PLANS and ESTIMATES prepared free of cost.

REPRESENTATIVES sent to any part of the Kingdom to advise and take particulars.

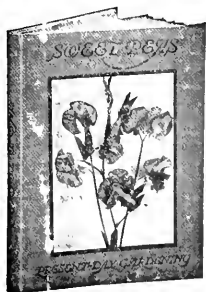
LARGE CATALOGUE of photographic views of Horticultural Buildings free on application.

GARDEN FRAMES, GARDEN SEATS, &c., supplied from stock.

**LONDON OFFICE: BELGRAVIA CHAMBERS,
VICTORIA STREET, S.W.**

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE EUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof. BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

**EVERY
GARDENER
KNOWS
THAT**

Clay's gets there
and makes the Garden
gay all the year round

Sold everywhere in TINS at 6d. & 1s., and in BRANDED & SEALED BAGS: 7 lbs., 2s. 6d., 14 lbs., 4s. 6d., 28 lbs., 7s. 6d., 56 lbs., 12s. 6d., 112 lbs., 20s. Or direct from the Works, Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mills & Bone Crushers, STRATFORD, LONDON E.

**IT IS THE
STANDARD
FOOD FOR
PLANTS.**

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 3981

No. 1581. Vol LXL.

{THIRD SERIES}

SATURDAY, APRIL 14, 1917.

{Registered as a Newspaper, {PRICE 3d. POST-FREE, 3jd.

SUBSCRIPTION—Inland, 15 -; Foreign, 17 6. (22/6. 10c.) {54 26c.} per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden W.C. 2.

Telegraphic Address—"Gardchron, Rand, London."

Telephone—Gerrard 1543.

For CONTENTS see page 149.

NOTICE TO ADVERTISERS.

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

COMMISSIONS and Failures made good by purchasing Storm's Seedlings, just ready for packing out or putting on at correct dates for best possible results; all popular Greenhouse plants, Summer Bedding and Hardy Border Flowers, &c. Grand lot of Cyclamen now ready. Write for catalogue.—STORRIE & STORRIE, Flower Seeds Specialists, Gloucester, Perthshire.

GISHURST COMPOUND.—Insecticide and Fungicide.—Over 50 years' reputation; highly Commended R.H.S. Scientifically-controlled Trials at Wisley, 1914-15. Sold by Dealers in Garden Sundries. Wholesale: FRICIS' PATENT CANDLE CO., LTD., Battersea, London, S.W.

KELWAY'S PERFECTLY GLORIOUS PAEONIES.

Kelway's beautiful blue Delphiniums
Kelway's brilliantly coloured Flaxies
Kelway's Colourful Heriars, ever in bloom
Kelway's new and choice hardy perennial plants of all kinds.

NOW is the time to ORDER for Spring planting.
Kelway's famous Gladioli
Kelway's many coloured Pyrethrums
Kelway's gay Gaillardias.

NOW is the time to SEND for particulars to
KELWAY & SON,
Retail Plant Department,
LANOPORT, SOMERSET.

BARR'S Beautiful LILIES, GLADIOLI, CANNAS, MONSTERIAS, TIGRIDIAS, &c., for spring planting. Descriptive Catalogue free on application.—BARR & SONS, King Street, Covent Garden, London.

BARR'S VEGETABLE AND FLOWER SEEDS of finest selected strains and tested growth. Catalogue free on application.

BARR'S Hardy PERENNIALS, ALPINES, ROCK PLANTS, Aquatics, Climbers, &c., for Spring planting. Catalogue free on application.

SANDERS, Orchid Growers, St. Albans.

BLACKMORE & LANGDON, Bath, will have pleasure in sending a copy of their 1917 Catalogue of Begonias and Delphiniums, &c., &c., free, if this paper is mentioned. Magnificent strong roots of our unequalled Delphiniums in superb variety.

WM. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham Gun servatories, Winter Gardens, Vineria, Peach-houses, Portable Buildings, &c. Catalogue gratis.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers; also Dickson's Improved Mushroom Spawn. Priced circulars free on application to DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.

SUTTON'S VEGETABLE SEEDS.

SUTTON'S FLOWER SEEDS.
The Best.

SUTTON & SONS, The King's Seedsmen, READING.

WATERER'S ALPINES, HERBACEOUS PLANTS and WATER LILIES. Large stocks of the best and most popular varieties. Descriptive Catalogue free.—JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Twyford, Berks.

VIOLAS, finest Scotch, 12 Bedding Varieties, correctly named, 2s. 6d., post free. Early Chrysanthemums, 12 very fine varieties, 3s. 6d., post free. Strong plants.—DOBBS & CO., Florists, Edinburgh.

ROSES—Wm. Paul and Son, Waltham Cross, Ltd., beg to offer a fine stock of all the best varieties, new and old, for present planting. Priced catalogue on application.—PAULS' ROYAL NURSERY, Waltham Cross, Herts.

SPORTSMEN, Farmers, Horsemen.—Try our splendid Yorkshire Whipped Towed; wear like leather, showproof; 7 yards for 17s. 6d. Patterns free.—BRADFORD WOOLLEN CO. (71), Bradford.

PERPETUAL FLOWERING CARNA- TIONS, strong, healthy plants, now ready, amongst which are the following varieties: 3s. 6d. per doz. out of sand, 5s. 6d. per doz. in pots: Enchantress-Snowstorm, May Day, Lady Northcliffe, Mikado, Rose Pink Enchantress, 5s. per doz. out of sand, 7s. per doz. in pots—Enchantress Supreme, Salmon King gorgeous White Enchantress, Champion, Triumph. Price List of Latest Novelties on application.—J. C. JENNER, Lynwood Nurseries, Rayleigh, Essex.

ORCHID PEAT, 6s. and 7s. 6d. per sack; Brown Peat, 10s. 6d. per yard in trucks, in bags, 2s. 6d. each, 30—dozen; Oak and Beech Leaf Mould, Yellow Leaf and Sphagnum and Peat, Oak, Silver Sand, 4-ton lots for 45s.; C.M. Fibre 24s. dozen bags; list free.—J. HANSCOMBE, FRHS, Feltham, Middlesex.

VERBENAS.—Miss Willmott (pink), King of Scarlets, Queen of Whites, Lovely Blue (lavender blue), Princess of Wales (purple), and Express, well rooted stuff from boxes 50 for 5s.; 9s. per 100; carriage paid for each.—H. DUDGEON, The Dorset Nurseries, Blandford.

SEED POTATOS, Queen Mary and Over Royal Kidney, good sample through 1 1/2 inch and 1 inch ribble, also Superb Express, Early Eclipse and Duke of York, all earlies mixed; price per cwt. on application.—MORLE & CO., 150-156, Finchley Road, N.W. 3.

GLADIOLUS, extra choice Hybrids from a selected prize collection: (Gibbii), named, 25s., 100, mixed, 14s.; 100; Grandisensis, named, 20s., mixed, 12s.—MORLE & CO., 150-156, Finchley Road, N.W. 3.

AMARYLLIS (Hybrids of Vittata); our magnificent collection, many now showing flower spikes, from Mr. W. Bull's wonderful 1st Prize Gold Medal varieties, at half usual prices; list free.—MORLE & CO., 150-156, Finchley Road, N.W. 3.

For Advertisement Charges see page v.

BATH'S CARNATIONS, PANSIES, DAHLIAS, CHRYSANTHEMUMS, and other flowers. New Illustrated Catalogue of the best new and standard varieties is ready, and will be sent post free on application.—(Dept. A) R. H. BATH, LTD., The Floral Farms, Wisbech.

BATH'S SELECT SEEDS.—New illustrated Catalogue of Choice Vegetable and Flower Seeds, with full cultural notes, is now ready, and will be sent post free on application.—(Dept. A) R. H. BATH, LTD., The Floral Farms, Wisbech.

GREENHOUSE PAINTING & GLAZING "Vitreolic" superior to White Lead Paint. "Mastin" superdries putty. Full particulars from W. CARSON & SONS, Grove Works, Bittensley, Agents throughout the country.

J. GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wire, 201, Western, London. Telephone: 201 Western.

"ROCK GARDEN PLANTS, Where and In What Soils to Plant Them," with Catalogue, free on application. Special selections, 12, 3s. 6d.; 25, 5s. 6d.; 50, 12s. 6d.; 100, 25s. All different, named, strong stock; please state position and soil.—G. R. PHIPPS, Alpine Nursery, Barnham, Bognor.

CALCEOLARIAS (GOLDEN GEM): strong, solid crown, 2s. 6d., 100, carriage paid.—ENGLAND & FURNESS, Frelands Road Nurseries, Bromley, Kent.

100,000 LARGE GARDEN FERNS, Dracena's, Reves, Erice, Gloxinias, Lilies, Hydrangeas, &c.; catalogues free.—J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

BAY TREES FOR SALE.—Twenty Specimen Pyramidal Bays, 8 to 10 feet high, in tubs.—Price and particulars on application to J. B. COOLING, 18, Willow Street, Derby.

CALANTHES FOR SALE.—Small Bulbs of Vetcher, 6s. doz.; Sanderae albiflora Sanderae albescens, Wm. Murray, Hyacin, bella, Turnerii, cheap. Would make bulbs to flower next winter.—GEO. KENT, Brockton Gardens, Hatfield.

OFFERS WANTED for CASSELL'S Popular Gardening, 2 books; Fungoid Pests of Cultivated Plants; Sandler's Orchard Guide; Thompson's Gardener's Assistant, 6 vols.; Greenh. by Watson.—G. KENT Brockton Gardens, Hatfield.

STEEL HAND PLOUGH and TRENCH BOK, A Wonderful Little Tool. A woman can do more with it than two men with spades. Gets more useful every day. Price 3s., carriage paid.—LAND TOOL CO., 18, Allsop Street, Baker Street, London, W.

FERNS' FERNS' Tree Ferns, Climbing Ferns, Backed Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns; catalogues free.—J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

SALES BY AUCTION.**WEDNESDAY NEXT, at 12 o'clock.****FRUIT TREES,**

Herbaceous Plants, Rhododendrons.

1,000 ROSES

10 varieties, Clematis, Carnations, Palms, Lilies, Gladiolus and other Bulbs, cases of Japanese Lilies, &c.

MESSRS. PROTHEROE & MORRIS

will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C. On view morning of sale and catalogues had.

WALTON GRANGE, STONE, STAFFORDSHIRE.

SALE OF THE COLLECTION OF RARE AND VALUABLE ORCHIDS FORMED BY THE LATE W. THOMPSON, ESQ.

MESSRS. PROTHEROE & MORRIS

have received instructions from the Executors to SELL by AUCTION on the premises as above, on

Tuesday, April 24th, and two following days,

at 11.30 o'clock each day precisely.

A list of the principal plants will be found in the advertisement in this paper for March 3rd. The Collection may be viewed by appointment with the Head Gardener, Mr J. Hovess. Catalogues are now ready, and may be had on application to the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

PLANTS, &c., WANTED.**WANTED, 1,000 Large ASPIDISTRAS,** old plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**5,000 CABBAGE PLANTS**

WANTED at once; autumn-sown.—quotations to W. H. AGGETT, Office, Thurland Road, St. James' Churchyard, Brompton, S.E.

MISCELLANEOUS.**THEY NEVER FAIL TO KEEP YOU DRY.**If you write today for the "Beacon Booklet," you are on the way to weather comfort. It shows many different styles in BEACON OILSKINS, and it will show you the coat that you want. Children's Coats 8/6 upwards. Men's from 9/. Ladies' Smart Oilskins 18/6. Long Leggings from 2/9. Sou'westers from 1/6. They always keep out the wet. Send p.c. today for our Free Booklet of "Weather Comfort," describing money-back guarantee.—Send now before you forget.—**BARBOUR'S, LTD., 66, BEACON BUILDINGS, SOUTH SHIELDS.****SITUATIONS VACANT.**

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.**WANTED, energetic SINGLE-HANDED GARDENER,** thoroughly experienced Inside and Out. State age, wages, references. BRADLEY, Union Club, Southampton.**WANTED, good SINGLE-HANDED GARDENER** for Hertfordshire; boy kept; no Glass-houses; good cottage.—Apply, J. F. CLERK, Esq., 50, Temple, London, E.C.**WANTED, SINGLE-HANDED GARDENER;** no Glass.—Apply by letter to CAPTAIN BRITT JAMES, School House, Mill Hill, N.W. 7.**WANTED, GARDENER;** good Single-handed; Fruit, Flowers, and Vegetables, no Glass or cottage.—MISS WOTHERSPOON, Holmby St. Mary, near Dorking.**WANTED, GARDENER (SINGLE-HANDED),** immediately; no children; experienced; abstainer; cottage.—Apply, stating age, wages and particulars, to "Summerlands," Curridge, Botley.**WANTED, GARDENER;** good wages; Inside and Out.—Apply at "Hillfield," Haverstock Hill nearly opposite Belzize Station, Hampstead Tube Railway.**WANTED, GARDENER,** for Institution; good all-round man, well up in Vegetables; abstainer, ineligible.—Apply, stating age, experience, and wages required, SUPERINTENDENT, Turners Court near Wallingford, Berks.**WANTED, experienced MAN (INSIDE);** wages 28s. per week and house.—Apply, with full particulars and references, to W. GROOM, Upper Gatton Park, Meitham, Surrey.**WANTED, GARDENER;** experienced Assistant; 30s. Bothy and attendance.—Testimonials, &c., to C. SIMPSON, Wenys Castle, East Wenys, Fife.**WANTED, GARDENER,** by May 3; either hand kept, good wages, cottage near garden.—Apply, C. DUNN, Ecdyng, Windermere.**WANTED, FOREMAN,** for Kitchen Garden, cottage provided, also MAN for Inside-work to live in Bothy.—Address, G. L. WIGG, Rockshaws, Merstham, Surrey.**WANTED, experienced UNDER FOREMAN** for block of Tomatoes, good wages for suitable man; also NURSERY HANDS, wages 35s. per week, Saturday afternoon and Sunday duty extra.—WYAN E. HAMILTON, The Ives, Waltham Cross, Berks.**BOROUGH OF BERMUDSEY.****EXPERIENCED MAN WANTED,** for Public Gardens (temporarily), principally Vegetable growing; ineligible, 40s. inclusive.—W. H. AGGETT (Supt.), Office, Thurland Road, St. James Churchyard.**WANTED, SECOND GARDENER,** for the Hon. Mrs. HOWARD; cottage provided.—State full information, and wages required, to THE AGENT, Siltton Park Lymington, Kent.**WANTED, UNDER GARDENER,** for Inside and Out, cottage or comfortable Bothy provided, also fire, light, and vegetables; good wages to suitable man. A. BRADBURY, Brynllupus, Llanudno.**WANTED, GARDENER,** under Head, for Vegetable and outdoor work; over 60; rooms provided if married; for family.—Apply, I. MAN, The Grange, Hampstead, London.**WANTED, MAN;** chiefly for Kitchen Garden, ineligible; wages 24s. and cottage.—M. SCHOLES, The Gardens, St. Cleve, Kensing, near Sevenoaks, Kent.**WANTED, IMPROVER;** Inside-Houses and Out; age 16; wages 18s., Bothy, vegetables and milk.—E. MORGAN, Wasand Hall Gardens, Hull.**WANTED, IMPROVER (INSIDE);** wages 18s. and Bothy; duty paid extra.—E. BRISTOW, Leywood Gardens, Greenbridge, Tunbridge Wells.**WANTED, IMPROVER (INSIDE and OUT);** able to take duty; wages, £1 per week and Bothy; duty and overtime paid.—Apply, with full particulars, to H. A. PAGE, The Gardens, Belzize Court, Hampstead, N.W. 3.**WANTED, FOREWOMAN,** for Inside and Out; 5 in Bothy; state wages, &c.—R. LEARMOUTH, The Gardens, Sherfield Manor, Basingstoke.**WANTED, TWO WOMEN UNDER GARDENERS,** one chiefly Inside, other Inside and Out, state wages, specified, with or without board and lodgings.—A. SHAKELTON, Burrough Hill Gardens, Melton Mowbray, Leicestershire.**WANTED, capable WOMAN GARDENER** to look after Rock and Rose Garden and Herbaceous Borders; other Gardeners kept, could live in with other servants, or have lodgings near; good wages given.—Write full particulars, REV. MALLINSON, Woodlands, Ledbury, Herefordshire.**WANTED, LADY GARDENER;** experienced, able to take charge of Houses.—E. SNEELGROVE, Buckham Hill House Gardens, Uckfield, Sussex.**WANTED, several JOURNEYMEN (INSIDE);** 24s. per week, with Bothy, &c.; 12 o'clock Saturdays and overtime paid.—Apply, with particulars, to C. H. WHEELER, Swinton Gardens, Masham, Ripon.**WANTED, active YOUTH, 16 (INSIDE);** wages 18s., Bothy, &c., alternate duties; duty and overtime paid.—Apply, D. ROBERTS, Prestwood, Loughborough.**WANTED, strong YOUTH, 16 to 17;** Inside and Out, live in; 7s. 6d. to 10s. per week.—Apply, GREEN, Amberley House, Gravelly Hill, Birmingham.**WANTED, Two intelligent well-educated YOUTHS,** age about 16 years, interested in Shrub and Hardy Plant culture.—Apply, E. BECKETT, Aidenham House gardens, Epsom, Berks.**WANTED, TWO LADS,** for Inside work, Bothy provided.—Apply, stating wages expected, to J. MINTY, Oakley Court, Windsor.**TRADE.****WANTED, LADY GARDENERS,** to work in London Florists' business, furnishing department.—Apply, WILKS & SEGAR, Royal Exotic Nursery, Onslow Crescent, South Kensington, S.W.**WANTED, a LADY GARDENER,** to take charge of Packing Department; must be very neat and content in her work.—MANAGER, Rodgwick Farm, Rodgwick, Sussex.**WANTED, thoroughly experienced FLORIST,** First Hand.—State wage, experience, TAIT & FRANCIS, 155, Princes Street, Edinburgh.**WANTED, GREENHOUSE MAN;** experienced in growing Tomatoes, Cucumbers, Chrysanthemums, &c.—Reply, HALLIFORD NURSERY, Slipperton.**WANTED at once, a practical WORKING MAN** for the general work of a small Nursery, one House only, for working Roses and Clematis; must be successful Building and Grafting, and good Hand Pruning and Transplanting all Outside Nursery Stock, and good at Violas; must be ineligible, or beyond any military call; cottage found close to the Nursery.—Apply, with references, stating age and wages required, to JAS. HOLDER & SON, Crown Nurseries, Reading.**WANTED, YOUNG LADY,** for Florist and Seed Shop.—Apply, CUNBY, Sudbury, Suffolk.**SEED TRADE.—TRAVELLER** required by leading North of England firm of Agricultural Seed Merchants to represent them in Durham and North Yorkshire; permanent situation and good salary to thoroughly reliable man.—Write, stating age, experience, and salary required, to F. S., Box 16, 41, Wellington Street, Covent Garden, W.C. 2.**WANTED, CLERK (LADY);** quick at shorthand, Typing, also Figures, comfortable office; state salary, experience.—E. W. KING, Seed Merchant, Coggeshall, Essex.

SITUATIONS VACANT continued on page v.

SWEET PEA PLANTS.

Autumn Sown. Cold Green.

Make sure of plenty of the National Colours

RED, WHITE, & BLUE.

Remember other Victories and the great demand.

Special Offer 100 best in the 3 colours 3 6.

PLANT NOW IN THE OPEN.

Send for our New List of 90 Varieties including 20 Novelties.

Variety	Per doz.	Per doz.
The following are a few selections from it	Per doz.	Per doz.
Pink-Hercules	8 4	4 6
Cream-Bobbie's Cream	8 4	4 6
Cream-Pink-Margaret Alice	8 4	4 6
Rose-Bessie	8 4	4 6
Salmon-Earl Spencer	9 1	5 2
Crimson-King Edward Spencer	9 1	5 2
Scarlet-Walter Emperor	9 1	5 2
Orange-Erbert Sydneyham	10 1	5 6
Orange-Scarlet-Thomas Stevenson	10 1	5 6
Orange-Pink-Eilron Beauty	7 1	4 2
Purple-Royal Prince	1 2	7 4
Maroon-King Maroon	8 1	4 6
Mauve-Bertrand Deal Improved	8 1	4 6
Blue Light-Floza Norton Spencer	8 1	4 6
Blue Dark-Lord Nelson Spencer	8 1	4 6
Lavender-Lavender Queen Herbert	8 1	4 6
Carmine-John Ingman	6 1	3 6
Pleotée Edgée-Evelyn Bonus	6 1	3 6
Conise-Lilac	6 1	3 6
White-King White	9 1	5 2
Mixture-Finespencer Waved	6 1	3 6

Collections.—5 plants each, 12 varieties, our selection, 3 3. 12 ditto 5 9. 25 ditto 10 3. 50 ditto 18 6.

Important.—We cannot too strongly emphasize the fact that these plants are Autumn Sown and Cold Green. There is a vast difference between such plants and those raised in the Spring in Heat.

TOMATOES.

Variety	Seed.	Seedlings ready for transplanting	Transplants ready for setting
Allia Craig Comet	6d.	1 1	1 1
Fillbasket Supreme	1 1	5 1	5 1
Kondine Sunrise	1 1	5 1	5 1
Bitch's Gem, Beakall	1 1	5 1	5 1
Bide's Recruit	1 1	5 1	5 1
Bucks' Tre co	1 1	5 1	5 1

COLLECTIONS. That you may TEST which suits you BEST 3 plants each 4 varieties, our selection, 1 9; 6 ditto 3 3; 12 ditto 5 9; 25 ditto 10 7.

Early Cauliflower Plants 6d. d. z. 4 - 1s.

TERMS.—C.W. Please refer to for postage.

BUCKS, IPSWICH.

St. John's



BENTLEY'S WEED DESTROYERS :

Liquid : Concentrated Strength 1 to 80.
Double Strength 1 to 50.
Patent Powder : 1 to 25.

BENTLEY'S DAISY KILLER (LAWN SAND).

BENTLEY'S INSECTICIDES.

BENTLEY'S FUNGICIDES.

BENTLEY'S FUMIGANTS.

BENTLEY'S MANURES.

Catalogue on application.

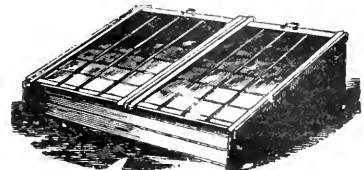
JOSEPH BENTLEY, Ltd.,
Chemical Works,
Barrow-on-Humber, HULL.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

FOOD SUPPLY. PORTABLE PLANT FRAMES

(Supplied from Stock),
Suitable for Allotments and Gardens at Reasonable Prices.



These Frames are made of the best materials, and can be put together and taken apart in a few minutes by any handy man.

Catalogues of Prices sent free on Application.
R. HALLIDAY & Co.,
Royal Horticultural Works, MIDDLETON, MANCHESTER.

NOW READY

THE HORTICULTURAL DIRECTORY AND YEAR BOOK

FOR 1917.

Owing to the paper shortage, an unlimited number of copies of this work cannot be guaranteed, and purchasers are advised to order AT ONCE to avoid disappointment.

Orders will be dealt with in strict rotation.

The 1917 edition contains no name or address which has not been verified. The information given is therefore absolutely trustworthy.

Apply, enclosing 1/4 for each copy required, to :—

GARDENERS' CHRONICLE, LTD.,
41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

RYDERS SEED Catalogue FREE.

Send Postcard for Free Copy of Ryders 1917 Catalogue Over 100 illustrations.

All Seed Orders are Dispatched by Return Post.

All Orders over 2/6 sent Carriage Paid.

SUGAR BEET FOR JAM MAKING.

The best variety for growing in this country. 8D.
Full instructions for sowing and growing on each packet. per oz. 1 lbs. 2 6.

No Agents. Only Address
RYDER & SON, Ltd.,
Seed Specialists, ST. ALBANS.
Beware of Imitators.

CHEALS' DAHLIAS.

NEW ILLUSTRATED CATALOGUE OF ALL SECTIONS OF DAHLIAS. POST FREE.

J. Cheal & Sons, Ltd.
The Nurseries, CRAWLEY.



PAULS' ROYAL NURSERIES. Waltham Cross, HERTS.

Large stocks of the following in excellent condition for Spring Planting, at very moderate prices :—
ROSES, in all forms, new and old varieties.
FRUIT TREES, for the orchard and garden.
HARDY TREES and SHRUBS.
HARDY CLIMBING PLANTS.
RHODODENDRONS and CAMELLIAS.
HERBACEOUS PLANTS.
SEEDS and Garden Sundries.

Wm. PAUL & SON, WALTHAM CROSS, LTD.



✓ SLUGS SLUGS

"SANITAS" POWDER
will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as **Worms, Rats, Mice, Sparrows, Cats, &c.**

Leaflet and Free Sample with instructions Free.
6d. & 1/- Tins & 15/- per Cwt. (to r. London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
Linchouse, London, E.
Awarded Medal at Royal Horticultural Exhibition, 1911.



ONLY MEDAL
INTERNATIONAL EXHIBITION EDINBURGH 1886
ONLY GOLD MEDAL EDINBURGH 1891

THOMSON'S CELEBRATED MANURES

PERFECT PLANT FOODS.
Unrivalled for all garden crops. Prices: Vine, Plant and Vegetable Manure, 1 cwt 20/-, 55 lbs 12/6, 3 lbs 7/6, 14 lbs 4/6, 1 lbs 2/6. Tins 2/6, 1/- and 6d. Carriage paid anywhere on 55 lbs. and up. Special Chrysanthemum and Top Dressing Manure: 55 lbs. 20/-, 25 lbs 11/-, 14 lbs 6/-, 7 lbs 6/6. Tins 1/- Carriage paid anywhere on 55 lbs. and up. Sold by all Seedsmen, Hole makers, Wm. Thomson & Sons, Ltd., Cloudfords, E.C.

LETHORION ::
VAPOUR Fumigator
CONE



Introduced 1885.
The marvellous effect of this simple and cheap method of Fumigating Greenhouses is fully borne out by the enormous increase of sales year by year.
Only a match required for starting the Cone. Full directions for use on each Cone.

Thousands of testimonials received from all parts.
Prices. No. 1, 500 to 1,000 cubic ft., 6d.; No. 2, 1,500 cubic ft., 8/-; No. 3, for 2,000 to 2,500 cubic ft., 1/-.

"TENAX" THE NEW AND MOST SUCCESSFUL Grafting Wax

It is a much required "HOME-MADE" article to meet the requirements of all Nurserymen and Gardeners.
It is rapidly taking the place of all Foreign and other preparations for all Grafting and Budding Purposes.

In Tins, each 6d., 1/-, 2/-, 4/-, 6/-. Also in bulk at reduced rates.
To be obtained through the Nursery and Seed Trade generally.

CORRY & CO., Ltd.,
Bonded Chemical Works, Shad Thames, LONDON, S.E.



SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
"Take quantity of each size required and have carriage paid" (variation "carriage" frequently amounts to half value of goods), or write for Price Lists, free.
SPECIAL POTS of all descriptions. Both Bowls and Fern Pots from 2d. each.
RICHARD SANKEY & SON, LTD.,
Dulwell Potteries, NOTTINGHAM.



Test the FREE Sample CRET Pot

as shown in the free booklet and you'll at once want CRETS. Their porosity, drainage and root-roominess will so improve your plants.
Specimen CRET Prices:—2 1/2 ins., 4/- per 100; 7 1/2 ins., 21/-; Safe Delivery Guaranteed: Orders over 20/- Carriage Paid;
FREE SAMPLE "CRET" POT on request, with the booklet giving prices and special assortments. Write to-day,

PETER BAILEY & SONS, LTD.,
2, Heaton Mersey Pottery, near Manchester.



"Bull's"
THE FOOD FOR PLANTS

PERPETUAL CARNATIONS

Flowering plants in 5in. pots.
Standard varieties, 18/- per dozen, 110/- per 100.
Novelties, 22/6 per dozen, 150/- per 100.

BORDER CARNATIONS

Strong plants in 3in. pots,
7/6 per dozen, 50/- per 100.
All plants CARR. PAID and packed free for cash.

A. F. DUTTON'S NOTED CARNATIONS.
IVER, BUCKS.

Exterminated by
"LIVERPOOL" VIRUS
NO Danger to Animals
NO BMELL
RATS
In Tins baited for Rats 2/6 and 8/- for Mice 1/6.
Of all Chemists, or write for particulars to—
EVANS, SONS, LESCHER & WEBB Ltd.,
25, Hanover Street, LIVERPOOL.

FORBES' ILLUSTRATED CATALOGUE.

Florist's Flowers, Hardy Plants, Vegetable and Flower Seeds.
Free on Application.
JOHN FORBES (Hawick), LIMITED,
The King's Nurserymen,
HAWICK, SCOTLAND.



Ammanford and Pontyberem Collieries.
SOLE AGENT.
T. T. PASCOE,
York Chambers,
SWANSEA.
Telephone 1048 Central.
grams Pascoe, Swansea.

Best Anthracite Large Coal for Horticultural purposes and Cobbles for House Furnaces.
Quick Despatch. Best Quality.
Lowest Prices.

Gardeners' Chronicle

No. 1681.—SATURDAY, APRIL 14, 1917

CONTENTS.

Table listing various articles and their page numbers, including 'Allotments, the cropping of', 'Rosary, the—', 'Belfast, allotments in', 'Best', 'Books, notices of', 'Botanical Magazine', 'Daffodil show abandoned', 'Digging, the incredible', 'Farm, crops and stock on the home', 'Galloway garden, notes from a', 'Market fruit garden, the 149', 'Obituary—', 'Duncan, David', 'Stredwick, James', 'Oreoid notes and gleanings', 'Oreostrophe rufipraga', 'Phytophthora, studies of the genus', 'Pigs, the rearing of', 'Potatoes, seed, for London', 'Robinson, Mr. C. H.', 'Illustrations', 'Oreostrophe rufipraga', 'Sundial, a simply constructed'.

ILLUSTRATIONS.

Table listing illustrations and their page numbers: Oreostrophe rufipraga (150), Sundial, a simply constructed (150).

NOTES FROM A GALLOWAY GARDEN. IV.*

WRITING at the end of February in the fatuous belief that we had reached the end of the severest winter since 1855, I expressed myself somewhat arrogantly on the way certain plants on the borderland of hardihood had borne the ordeal. I should have known better than to be deceived by a few mild mornings, which were but the prelude to visitations of intense cold on March 7, 8, and 26, and April 1 and 2. The temperature on the last of these dates was—Shade 25° and Grass 14°, being the lowest April temperatures recorded in Glasgow during fifty years, except on April 24, 1902, when the grass temperature fell to 11½° Fahr. This reiteration of Arctic conditions has wrought far more mischief than all that went before, not because plants had started into precocious growth; on the contrary, they had been kept well back by persistent low temperatures since the New Year. They suffered in March more than they had done in weather of equal severity in the short, dark winter days simply because the days in March are neither short nor dark. A good illustration of the effect of sunshine upon frozen vegetation is presented by a fine specimen of Trientalis lancolata, 10 feet high and 18 feet round the branches. Winter sunshine never reaches it, being screened off by high trees to the south and west, and the plant came scatheless through the severe frosts of February, carrying myriads of pendent flower-buds which will swell into carmine globes in June. But the sun of March rises over the tops of the sheltering trees, and about one-third of the bush has now been seared as if by flame. I comfort myself with the assurance that the bush will have a more picturesque outline after the dead branches have been cut out.

This morning (April 2), as I write, even the common Daffodils have bowed their golden coronets to the sward. Still, I do not think it will be found that many things have been killed outright, although all prospect of blossom on such wall plants as Clianthus puniceus, Sophora tetraptera, and Calceolaria violacea is utterly at an end for this season. Carpentaria and the common Myrtle are severely browned, but will recover; while Abelia floribunda, Berberisidopsis,

Buddleia Colvilei, and Lapageria—all on walls—remain unharmed. The new Chinese honeysuckle, Lonicera tragophylla, has proved as hardy and as precocious in growth as our native species. It is desirable because of its rich yellow flowers, although these are quite scentless; but even on our cloudy West coast it should be grown in a north exposure, for it is terribly subject to the ravages of aphides if it gets too much sun. It is surprising that the Chilian Myrtus Luma is not more often seen in gardens near the sea. It is true that neither the foliage nor the white flower which it bears in such abundance possesses the fragrance of the European Myrtle; but it is a very beautiful evergreen for all that, and may easily be raised from seed.

Another fine shrub which one does not often meet with is Berberis pinnata (Mahonia fascicularis de Candolle); in fact, the only private grounds, except my own, in which I can recollect seeing it are the neighbouring garden at Glasserton and the late Canon Ellacombe's lawn at Bitton.

It may, however, be more commonly grown than I suppose, seeing that in a young state it is very easily mistaken for the common Mahonia—R. Aquifolium; but it is of far more arborescent habit than that well-known shrub, rising to a height of twelve or fourteen feet, with a stem a circumference of 18 inches. This Barberry is usually a very gay object before the end of March, crowded with fragrant yellow blossoms; but this year it is very late, like every thing else. A native of the Southern States of North America, it is not so hardy as the common Mahonia, and should be given a position sheltered from the cutting winds, for the chief beauty of the plant consists in its fine pinnate foliage.

The mention of Mahonia brings to mind a pretty display which took place a few evenings ago in full view of our library window. A bulb in a china shop, a pike in a trout stream, a schoolboy in the still-room—each may serve as a type of destructive energy; but for unmitigated, devastating plunder, commend me to a cock pheasant in the spring flower border. Nor will this most voracious fowl consent to feed in solitude at this season. He must needs bring his chackled wife to share his repast on the blooms of Crocus, Dog's Tooth Violet, and Saxifraga Borrachiana, with crowns of young Clover in the sward. Wherefore, so often as a cock pheasant doth find his way into the flower garden, there ensues a stealthy stalk, a deed of blood, and precipitate flight of the feathered haron. But on the evening aforesaid we watched from the window the proceedings of a pair of marauders, and could not find it in our hearts to interfere with them, so brilliant was the colour display in the level rays of the westerling sun. These thieves were cock golden pheasants (Thaumalea picta); they had attacked a bush of Berberis Aquifolium, and were briskly devouring the yellow buds and blossoms. Golden pheasants, which one used to be told required the shelter of an aviary, are thoroughly naturalised in the woods here, and, though of no value for sport or the game-larder, greatly add by their fantastic plumage to the interest of a woodland walk.

There has been some discussion of late in the gardening Press about different forms of the spring Snowflake—Lewinjon verum. I saw lately in Sir John Stirling Maxwell's grounds at Polk, Kentishweshire, a remarkable and very decorative variety of L. carpathicum, or Vagant. The flower stalks are fasciated, and the blossoms are ranged as a coronet or wreath at the tops of them. One stalk bore as many as eleven blossoms in this fashion, producing a peculiarly rich effect.

Never have I known the Algerian Iris (I unguicularis) to flower so profusely as it has done in this ungenial season. Its position under the wall of a greenhouse (now devoted to the

growth of Tomatos) has enabled it to keep a succession of its delicately-tinted blooms right through the long frost. Iris reticulata flowers freely, and has done with it, but the Algerian Iris goes on for months. Herbert Maxwell, Moorwith.

THE MARKET FRUIT GARDEN.

MARCH this year did not "go out like a lamb." There was frost here, 79, as late as the night of the 27th, and there was a little snow during the night of the 29th. The wind had been in one of the northern quarters almost invariably for over a fortnight up to the 27th, and when it changed to the west on the 29th it was nearly as cold as ever. Still, a considerable portion of the month was favourable to work on the land, the rainfall at my station being only 1.45 inch, while there was a good deal of sunshine in the latter half. There was less rain in my district than was general in the division of England to which it belongs, and we had not one-fourth as much snow as was common further North. The soil, pulverised by the severe frosts, works remarkably well where the horse cultivation of orchards and the hand hoeing of the rows of trees and bushes have begun. Also, in consequence of the frosts, weed seeds have not germinated as they have done after recent mild and wet winters. Never before have my orchards been in so clean a condition at the beginning of the hoeing season as they are this year. This, however, is partly owing to the prolonged employment of a number of women as hoers and as diggers late in the last season. There is reason to hope that the comparative dryness of the last three months has been beneficial to the health of trees, particularly in relation to fungous diseases, which had become rampant after a series of wet and mild winters.

A VERY BACKWARD SEASON.

Among the sixteen past seasons in which I have recorded stages of vegetation in my present place, only two—those of 1901 and 1909—have been nearly as backward as the present season was at the end of March, in relation to the subjects of my observation as a whole. In the following statements the stages of vegetation on March 31 are compared with those of some preceding seasons:—

GOOSEBERRIES.—Leaf buds generally just burst, a stage reached last year on February 29, and occasionally earlier. In most seasons more or less in leaf by the end of March.

RED CURRANTS.—Only a few leaf buds bursting. In 1914 as forward by February 7, and frequently by the first week of March.

BLACK CURRANTS.—Hardly any leaf buds burst. In 1915 the bushes were partially in leaf by March 22, and occasionally they have been so earlier.

EARLY-BLOSSOMING PEARS.—No buds burst, though swollen. Last year as forward by February 23, and clusters of flower-buds were showing on March 18.

EARLY-BLOSSOMING PLUMS.—No buds burst. Last year a little blossom on March 18; in 1915, full blossom on March 31; and in 1912, on March 24.

EARLY-BLOSSOMING APPLES.—No buds burst. Last year clusters of flower buds showed on March 18. In 1915 buds on one variety were bursting on February 23, and a few blossoms were expanded on March 22. Still, Apples are less backward than other kinds of fruit.

RASPBERRIES.—No leaf buds burst. In 1914 one-fourth in leaf by March 31, and in 1915 by February 15.

QUINCES.—No buds burst. Last year one-fourth in leaf on January 31; in 1915, 1914, and 1913, by March 20; and in 1912 the trees were green with foliage on January 30.

* For previous articles see Jan. 13, p. 13; Feb. 17, p. 69 and March 10, p. 106.

ALMONDS.—No buds burst. In some seasons in full blossom by the end of March, and occasionally earlier.

BLACKBERRIES.—No buds burst. Occasionally forward by the end of February, and generally before the end of March.

PRIMROSES.—Very few in flower. Often more in January.

SNOWDROPS.—These flowers were fully out a fortnight ago. They were as forward last year by the end of January.

YELLOW CROCUSES.—In full blossom a fortnight ago. Occasionally they have been so in February.

DAFFODILS (Double Yellow).—None in flower. Often have been so by the middle of March, and occasionally earlier.

WALLFLOWERS.—Killed or partially killed by frost. No blossom. Last year in full bloom on March 22, which was earlier than usual.

ELDER LEAF.—Buds generally burst. Often have been as forward by the beginning of March, and occasionally in February.

LILAC LEAF.—Buds not burst, but on the point of bursting. Often as forward by the middle of March, and in some years before the end of February.

HAWTHORN LEAF.—No buds burst. In 1913 one-fourth in leaf by February 20 in sheltered spots, and often early in March.

FLOWERING CURRANTS.—Occasionally have been forward by the end of February, and usually before the end of March.

FORSYTHIA.—No buds burst. Last year in full blossom by February 12.

DEUTZIA SCABRA.—No buds burst. Last year more advanced by January 31.

TOP-GRAFTING APPLES.

My latest death-sentence on an unprofitable Apple is that which has been passed on Gascoyne's Scarlet Seedling, all trees of which in one orchard and part in another have been cut for top-grafting. Here we have one of the numerous varieties which ought to be put on the black list so far as commercial fruit-growers are concerned, unless, possibly, those whose land is quite light and dry may be excepted. The great trees now reduced to frameworks for grafting had been in the orchard ten years, and they produced only one fair crop four years ago, after which they developed canker on trunks, main branches, laterals, fruit spurs, and fruit buds more or less. The only other varieties ever grown by me which have shown any approach to the virulence of canker attack suffered by Gascoyne's Scarlet were King of the Pippins, Potts's Seedling, and Ribston Pippin, all grubbed up long ago. The cankers on the trunks of the trees about to be top-grafted have long callused over, and plenty of branches can be found for grafts free from canker below the parts cut off. Most of these trees will be re-grafted with Bramley's Seedling, with Newton Wonder on one row of trees, and Charles Ross in the orchard in which only a limited number of the trees has been condemned, the rest, on lightish soil, being comparatively healthy, so that they are to have another season's trial. Bramley's Seedling grafted on Irish Peach two years ago has grown into fine and well-furnished trees. Irish Peach was condemned for scab.

BARK SPLIT BY FROST.

For the first time I find splits caused by frost in the bark of many Apple trunks from a foot to two feet in length, and about half an inch deep. The trees most affected are those which are not over eleven years from the planting, and full of vigorous growth. The proportion of trees with these splits is not large— not over one in twenty in any variety. Cox's Orange Pippin is one of the most commonly affected varieties, as might be expected, seeing that it rarely misses anything bad that is going about. It is desirable to get some Stockholm tar into the cracks to prevent the entry of canker spores. *Southern Grower.*

THE CONSTRUCTION OF A CHEAP SUN-DIAL.

I HAD finished erecting my Rose arches, and had completed the laying of a long flagstone walk, my fishpond and fountain were in full working order, and I had to cast about in search of further "improvements." So I decided to construct a sundial; and the extreme simplicity and low cost of the whole affair has prompted me to describe the work.

First of all the site has to be chosen, and of course the sunniest part of the garden is the best, preferably at the end of a walk.

Dig a square hole, measuring 18 inches each way and about 6 inches deep. Pour into this a well-mixed compost of 1 part cement and 5 parts of grit, sand, or finely broken brick, being careful not to add any organic matter, such as



FIG. 52.—A SIMPLY CONSTRUCTED SUN-DIAL.

manure or garden soil, to the wet mixture. This when set, a matter of a couple of days, will form the foundation. If desired, the bottom stone of the pedestal can be laid on the cement directly if it is poured into the hole. The column is 3 feet 9 inches in height and is constructed of blocks of sandstone, shaped as little as possible, and tapering slightly towards the top. These irregularly shaped stones provide plenty of nooks and crannies in which *Sempervivum* and similar plants can easily be made to catch hold, if frequently sprayed with water.

In erecting the pillar it is best not to be in a hurry. Lay two, or at most three, stones and then let the cement harden. This will prevent any slipping. Equal parts of silver sand and cement will make a good medium.

If the stones or bricks are old and green, or moss-grown, as they should be, scrub them well with a stiff brush dipped in water wherever it is necessary for the cement to adhere, and do

not mix more of this very useful substance than you require for immediate use.

The cap-stone should be flat on top. This was easily managed in my case by grinding one stone on another, with water to aid the abrading, and a spirit-level is necessary to get it horizontally true. The use of a plumb-line in building the pedestal is not practicable in the case of an irregular outline. I ensured mine being upright by walking round it as I laid each stone, and observing carefully whether it appeared vertical.

It will be noticed that my capstone shows a certain amount of masonry. It was my first attempt, and was accomplished with an ordinary hammer and cold chisel; but in cutting stone be careful to have a very firm rest for the block you are operating on, and set the stone so that you are cutting horizontally.

And now for the dial. Most of the sundials I had seen had a metal face, but I had enough engineering knowledge to avoid, if possible, the wrist-racking task of graving a brass or copper plate, and it was a chance stroll through the churchyard that provided me with an alternative. Why not use slate? For I found myself gazing at headstones of this material seventy and eighty years old, absolutely unscathed by the weather.

An old roofing slate was sawn in halves. Use a fine-toothed saw for this, or repeated scorings both sides with a pointed knife-blade will ensure a clean fracture. The two portions were then ground together with a little fine sand and water, after which the dial was ready for marking out.

With regard to this task, all sorts of difficulties and insuperable obstacles had seemed to present themselves to me; but, in reality, they were non-existent.

One peculiarity must be noted here, and that is that the clock and the sun do not synchronise very frequently. For instance, on January 1 the sun is 3½ minutes behind the clock, and this interval gradually lengthens until February 12, when it is 14½ minutes out. Then the distance decreases until, on April 17, they are absolutely together. By May 16 the sun has gained 3½ minutes, after which they synchronise again on June 15. July 16 sees the sun 6½ minutes behind, and on September 2 the times coincide again. The greatest variation occurs by November 3, when the clock has been out-distanced by 16½ minutes, but Christmas brings, as it should, concord and unanimity, for on December 26 they again agree. All these variations are set out in extenso in any good almanac, such as Whitaker's, and should be available, as shown later, when setting the dial in position permanently. For graving the numerals and shadow-lines an ordinary penknife-blade answers admirably; but it must be frequently sharpened.

One very important feature is the gnomon or shadow-plate, which is usually of metal, brass being commonly used on small dials. It must be cut to an angle corresponding with the latitude in which it is to stand. For instance, Dover would be 51 degrees, Harwich 52, Nottingham 53, York 54, Newcastle 55, and so on. Reference to a reliable atlas will ensure this being correct. It has frequently occurred that a sundial has been moved from one latitude to another, when it has simply refused to work properly, to the surprise and indignation of its owner. An historical instance occurred as long ago as 263 B.C., when a famous Roman general looted a dial from a garden in Sicily and erected it in the grounds of his Roman villa, with most unsatisfactory results. In Dover museum is one of Roman workmanship, which when tested recently was, of course, inaccurate.

My gnomon I cut from a piece of brass ¼ inch thick which I found in my scrap-box; but, if economy is urgent, and brass is certainly at a high figure just now, iron, enamelled or painted, will do equally well. See that the edges are filed rectangular. Details of fixing can be gathered from the sketch, and if you have no mechanical ability, any engineering friend will quickly do

the job for you. I had mine all completed and ready for screwing on in less than an hour and a half. The shape is a matter for individual fancy, providing the angle of latitude is correct, or two suggestions appearing in the sketch.

First of all make a centre on the plate and scribe with a pair of steel dividers or compasses a 6-inch circle. Then rule a line through this centre, which must lie due north and south when in position; then two more equidistant and parallel lines which shall just cover the width of gnomon (see shaded portion of sketch). Points (a) and (b) should be about 1 inch from the centre, and these points are the most important of the whole setting out.

Do not cut hour-lines until after the dial is fixed in position.

The toe of the gnomon or style, as it is sometimes called, must just touch points (a) and (b) when screwed down.

Now, with dividers, take distances as given in sketch, and transfer them to the circle, making a small dot. This will give the approximate intersection of the hour-line protracted from either (a) or (b). Under these dots, or over them in the case of a big plate, cut the numerals, etc., and you will find, when completing, that the figures are in approximately the correct position. The gnomon is now screwed down to the dial, tested for perpendicularity with a set-square, and is then ready for fixing.

On the day selected—a sunny one, of course—look in *Whitaker's Almanac* and see what the variation is. Say, for example, the sun is shown to be 5 minutes in advance of the clock—i.e., the sundial will register 12 o'clock when it is 5 minutes to 12. Be sure your watch is right, and a few minutes before time wet some cement (pure this time), fairly sloppy, drop it on to the capstone and press the dial down on it, testing all over with a spirit-level to ensure a true horizontal plane, and get the shadow dead in the shaded portion at exactly 5 minutes to 12. Then leave it severely alone. Your job is done. Next day, or, better still, two days later, fill up spaces left under dial with more cement and dress the edges. All the foregoing applies to Greenwich time only. Should the reader wish to have actual meridian time, another reference to the atlas will give him the longitude of his locality, and he must simply add or subtract, as the case may be, 4 minutes to or from the clock time for each degree E. or W.

Now by watching his dial carefully the builder can gradually mark the actual line of the shadow for each hour, half hour, and quarter, not forgetting to refer to the variation for that day, and in the end he will find that the engraved numerals are in practically the correct position, and he will also find himself in possession of an instrument as accurate as it is possible for one to be. Be sure to rule lines from (a) for A.M. and from (b) for P.M. time, and use the curve of knife-blade near the tip, rather than the extreme point. Slate may be easily sawn with an old hand-saw, and the edges filed or ground to shape, so that a round plate, like mine, is quite practicable.

No article on a sundial can be considered complete without a few words on mottos.

Perhaps one of the commonest is "Perennet et impuntantur" ("They (the hours) pass and are reckoned"). Other suitable ones that might be mentioned are "Sic transit gloria mundi" or "Tempus edax rerum," a motto that will ultimately apply to your sundial, however well you build it. To the man who is inclined to be horticulturally procrastinative I would offer the following old Scotch monition, "Take tent of time ere time be tint."

For my motto I have chosen "Horas non numero nisi serenas" ("I number only the hours that are serene"); while in the child's slate which I have used to make another plate, is one which, freely translated, says, "Never a step backwards."

"Let not the sun go down upon your wrath"

has a homely warning that is particularly appropriate to the sweetness and beauty of a garden; while a sad, yet beautiful note is struck by my concluding examples. On the church dial of a peaceful little Surrey village can be read, "In coelo quies" ("In Heaven is rest"). To those who wish for a short motto I would suggest one which tells the story which all dial teach, "The night cometh." W. J. HENEY.

(white, with a faint blush and light purple disc), *D. nobile Cypheri*, and *D. nobile Statterianum*. Of the hybrids, *D. Cybele nobiliss* is one of the largest of hybrid *Dendrobiums* and fine in colour; *D. Apollo album* and *D. Rubens*, two extremes of the large-flowered section; *D. Ainsworthii intertextum*, cream-white, with purple disc; *D. xanthocentrum*, with rich orange-coloured centre to the lip; *D. Ophir*.

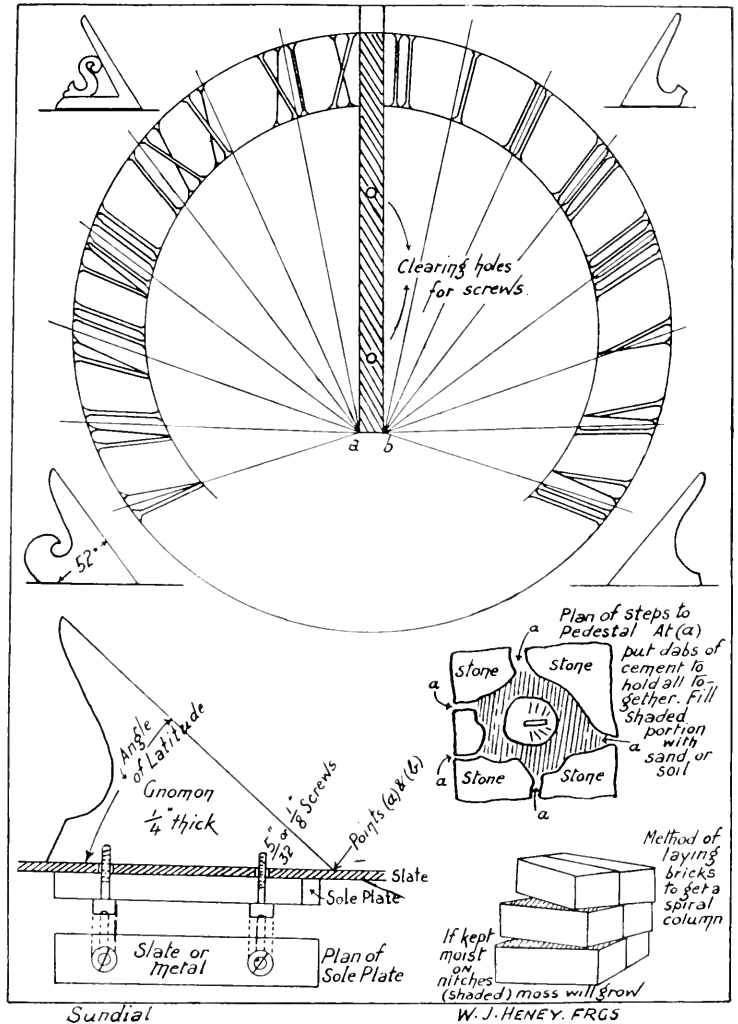


FIG. 53.—CONSTRUCTION OF A SUNDIAL; SHOWING DETAILS OF THE DIAL, GNOMON AND COLUMN.

ORCHID NOTES AND CLEANINGS.

DENDROBIUMS AT CHELTENHAM.

THE house of spring-flowering *Dendrobiums* is always a great attraction in the nurseries of Messrs. J. Cypher and Sons, Cheltenham, and this season they are especially fine. The forms of *Dendrobium nobile* range from the large purplish-crimson *D. nobile nobiliss*—one of the oldest and still the best-coloured form when the true plant is secured—to pure white. The best intermediate forms are *D. nobile elegans* (also an old variety and one of the best in shape and colour), *D. nobile murrhinaeum*

the charming fragrant hybrid between *D. aureum* and *D. signatum*, cowslip yellow with dark centre; and a pretty hybrid of *D. Rolfeae*, larger than but with the same features as the parent.

ODONTONIA BETESHAM.

THIS is a very pretty novelty raised, and now flowered, by C. J. Phillips, Esq., The Glebe, Sevenoaks, from seeds obtained by crossing *Odontonia Larresseae* (Miltonia Warscewiczii × *Odontoglossum crispum*) and *Odontoglossum illustrissimum* (*ardentissimum* × *Lambeauiannum*). The seeds were sown on July 8, 1913, and the first flower opened on March 20, 1917. The use of a good form of *O. illus*

trissimum as one of the parents has tended to widen the segments of *M. Lairesseae*, and introduce very effective shades of colour. The petals and sepals are broad, and overlap each other, the margins exhibiting undulation inherited from *Miltonia Warszewiczii*. The colour is brownish-orange on a lilac ground; the margins are lilac. The basal part of the lip has yellow and brown blotches; the rest is a shade of lilac.

VEGETABLES.

SELECT VEGETABLES.

I THANK *J. F.* for his information (see p. 115) respecting Haricot and Butter Beans. With reference to Kale, having grown all the varieties known to me, with the exception of *The Salvador*, which was once stated to be the best. I am rather surprised that there can be two opinions as to *Asparagus Kale* being the most useful and productive sort, given good cultivation and generous treatment. My trouble was to keep the young growths gathered and eaten fast enough; in pre-war days our poultry and pigs were given a few bushels of this vegetable to prevent waste. This Kale is always a good crop with me, grown at altitudes from 400ft. to 900ft. *J.*

LONGEVITY OF SEEDS.

In view of the scarcity of Vegetable seeds this season, any records of longevity will be exceedingly useful, especially as the scarcity may be even greater next season. It is rather difficult to estimate the age of seeds that have been purchased, as seedsmen do not always supply seeds of the previous year's growth.

Cabbage, Broccoli, and Savoy grow well when the seed is six years old, culinary Peas at two years old, Lettuce at two years, Melon and Cucumber at five years, Vegetable Marrows at three years. I have not tested Runner Beans, but have always been told they were of no use after the first year. This would probably apply also to dwarf Beans. I found that Tomatoes only gave a few plants after the first year. These were all kept in paper packets, placed in wooden drawers, in an airy room, where warmth was supplied in bad weather from hot-water pipes.

It is usually the custom amongst gardeners not to sow old seeds, and in view of the risk involved it was a good principle to act upon when new seeds could easily be obtained. We may now, however, be compelled to vary this rule, at any rate, for a time. *W. H. Divers, Westdean, Hook, Surbiton.*

POTATO CROPS.

DR. H. E. DURHAM's communication in your last issue opens up an endless question, but withal, a most interesting one. In the counties of Midlothian and East Lothian, where Potato growing is considered to be exceedingly well done by farmers, the usual distances for planting are:—Drills, 27 inches apart; sets dropped in at about 12 inches apart. To plant an acre at these distances requires about 19,500 sets, equal to about one ton of sets, averaging 20z. each. A good crop in the Lothians is 10 to 12 tons per acre, which is only equal to a return of rather under 1½ lb. per set. The average Potato crop for Britain is about 6 tons per acre, which is round about ¾ lb. of yield per set. In my notes in the *Gardeners' Chronicle* of December 30 (p. 312), I reported the yield at Wisley and at Edinburgh of nineteen varieties. Twenty sets of each of these nineteen were planted; the gross yield at Wisley was 1,043 lbs., and at Edinburgh 1,015 lbs. The average yield per set or root at Wisley was 2,745 lbs., or 2½ lb., equivalent to a crop of 14 tons 3 cwt. per acre. This is how it works out, taking the nineteen varieties altogether. Some of the sorts—notably Great Scott—showed a yield of nearly double that. Both at

Wisley and Edinburgh the sets were planted in drills 30 inches apart, and the sets were placed 18 inches apart in the drills. To plant an acre at these distances would require 11,760 sets. The cultivation at Wisley was spade cultivation. At Edinburgh the land was ploughed, but it is an old market garden, and there is no difficulty in getting a fine tilth 10 to 12 inches deep. My experience teaches me that in good land, strong-growing second early and Main Crop Potatoes require 3 feet between the drills and 18 inches between the sets to do themselves justice. Recently I had an interesting letter from Mr. John Fraser suggesting that I might turn my attention to raising Potatoes with dwarf, sturdier haulms for the special benefit of town-gardeners. Mr. Fraser pointed out that in confined gardens the present day Potato grew far too much to top, and the yield was often disappointing. It is just possible that one or two such varieties might be found in a batch of seedlings. Does not Mr. Molyneux think that with deeper cultivation, to get a better tilth, and wider planting, farmers might materially increase their average yield on a paying basis? *W. Cuthbertson, Daldrington, Midlothian.*



THE FLOWER GARDEN.

By *W. J. GRISE*, Gardener to Mrs. DEMESTER, Keele Hall, Staffordshire.

HARDY ANNUALS.—Sow hardy annuals in the open ground from now until the middle of May. In most gardens there will be a limited supply of bedding plants due to the scarcity of labour; still, very effective displays can be made by filling the beds or borders with hardy annuals. Many pleasing colour effects may be obtained by grouping or mixing, but simpler methods can be adopted. For instance, *Galearia*, *Lupinus*, *Eschscholzia*, *Nigella*, *Sweet Sultan*, or *Calendula* may be sown in rows 12 inches apart. The plants should be thinned out to the same distance. The taller varieties of *Larkspurs*, *Lavatera*, *Lupinus*, *Chrysanthemums*, *Crocus*, *Cornflowers*, and *Poppies* will require more space accordingly. For edging purposes suitable varieties are *Linarias*, *Linnanthus*, *Collinsia*, *Leptosiphon*, *Eschscholzia*, *Candytuft*, *Nemophila*, *Synmaria*, *Crocus*, *Linum*, and the Dwarf *Galearia*. If the beds have been well prepared, only a light forking will be necessary. Rake the surface to a fine tilth, and cover the seeds with sifted soil from the potting-bed. Guard against slugs by occasional dustings of soot.

HALF-HARDY ANNUALS.—Sow the seeds very thinly in boxes or pans containing a light sandy compost, and cover lightly with fine soil. A frame placed over a gentle hot-bed will answer the same purpose, but in either case very little heat is necessary. Directly they are large enough to handle, prick them out into boxes or frames 4 inches apart. The young plants should be encouraged to grow sturdy by careful ventilation, gradually hardening them off towards the end of May.

SUMMER BEDDING PLANTS.—Preparations should be made to remove bedding plants to cold frames. It is not advisable to retain the plants in warm houses too long, but one must be governed by the weather and district. Annuals in boxes should be placed near the roof-glass a week or so before being transplanted. *Pelargoniums*, *Marguerites*, and *Ageratum* may be placed in the Calceolaria frames directly they become vacant. Close attention must be given to watering and ventilation to prevent damping. Mats or other protective material should be ready at hand in case of frost. Continue to

dibble out seedlings into boxes or close frames whenever they are large enough to handle.

FORCED BULBS.—These should be packed closely in old frames as they pass out of flower. Continue to give them water until the foliage has died down. It will not harm the bulbs to remove the pots should they be required for other purposes. Daffodils can be planted on grass slopes, in shrubberies, and by woodland walks.

THE KITCHEN GARDEN.

By *J. DENN*, Foreman Royal Gardens, Windsor.

CAULIFLOWERS.—Cauliflower plants which have been wintered in cold pits should be hardened carefully and made ready for planting in some sheltered position as soon as the weather is favourable. While the plants are still in pots do not allow them to suffer from want of water at the roots. Early varieties, such as *Magnum Bonum* and *Great Dane*, should be planted in rows 20 inches apart and 18 inches between the plants in the rows. Early London and *Walcheren* may be allowed 2 feet each way. Water the plants thoroughly before their removal from the pots, and exercise great care in planting, so that the roots may not be injured. The soil should be made firm round the roots, and if necessary a copious application of soft water may be applied. If protection from rough wind can be afforded, so much the better. Young Cauliflower plants raised from early spring sowings should be pricked into nursery beds as soon as large enough and protected from inclement weather by placing spare lights over them.

PEAS.—A good sowing of Peas may be made now to produce pods about the end of June. Such varieties as *Gradus*, *Discovery*, *Royal Salute*, and *Superlative* should be allowed 5 feet between the rows. Sow the seeds thinly, so that the plants may not become overcrowded. Several varieties may be sown at one time, so that a continual succession of young pods may be available. As soon as one sowing is through the surface, another sowing can be made until the middle of June, when *Distinction* and *Antocrat* can be sown for late supplies. Young Pea plants should receive support as soon as they are of sufficient height to be earthed up.

POTATOS.—As soon as the weather and the state of the soil will permit, the planting of Potatoes should be pushed forward. The weather during the past few weeks has been against this work, but if the seed tubers have been laid out singly, and air freely admitted to the store rooms, the sets should be in good condition for planting when circumstances are favourable. With regard to the soil, although it may have been dug or trenched in winter, it will be necessary to stir it again to the full depth of the fork, and to break it thoroughly while planting. For Main Crop, and late, strongly growing varieties, 5 feet should be allowed between the rows and at least 15 inches between the sets in the rows, the tubers being buried 4 or 5 inches deep, according to the nature of the soil. Potatoes in pits should be freely ventilated during favourable weather, and a liberal supply of water given when necessary. In pits without fire heat, less water will be required, but a covering of some kind should be provided in frosty weather, or the foliage may be injured by coming in contact with the frosted glass. Protection should also be provided for the earliest plantations outside, and a careful watch kept over them as soon as they are through the surface.

CARROTS IN PITS.—Ventilation must be freely given to this crop. The final thinning should take place as soon as possible, leaving the plants about 3 inches apart each way. Occasional dustings of soot may be given previous to watering the bed with clear, soft water.

FRENCH BEANS.—If 8-inch pots are available, a sowing of French Beans should be made. Crook the pots carefully, and fill them to within 2 inches of the rim with good, rich soil. Eight seeds may be placed in each pot, and covered with 1 inch of soil. As soon as the plants are through the

surface, they should be raised to within 18 inches of the root glass and fully exposed to the light. A temperature of 60° is suitable, and the plants should be syringed frequently. Fortnightly sowings should now be made in order to keep an unbroken supply. Plants from which Buds are being gathered should be frequently syringed and occasionally watered with liquid manure.

FRUITS UNDER GLASS.

By JAS. HUTTON, Gardener to Mr. LEONARD DE ROHSCHILD, C.A. O., Gurnersbury House, Acton, W.

FRUIT TREES IN POTS.—Let fruit trees in pots have very close attention with respect to watering. Whilst an excess of moisture is harmful, the roots must not suffer for want of water. Watering should be very thorough, not a mere superficial moistening of the soil; and the frequency of application should be regulated by the condition of the weather. In sunny intervals some plants may get unexpectedly dry when growth is becoming active. Those in comparatively small pots may often need two, or even three, waterings at short intervals. Remember, too, that the soil in pots near the water-pipes will dry up more quickly than others. Do not yet commence to give manurial stimulants unless the fruits are well advanced. When Peaches and Nectarines are of the size of Hazel nuts it will be quite time to begin. Let the first application be of an artificial compound, containing plenty of phosphates and potash. The amount that can be held between the thumb and two fingers will be enough to begin with for pots of 12 inches in diameter. Repeat this about three times at intervals of a week. Then withhold the stimulant for one week, and water with clear liquid manure from the tan-yard well diluted at first. Pot fruits are, on the whole, setting well this spring. Last year there were many failures, both amongst pot trees and those in the open. Plums are setting as well as Peaches and Nectarines, but it is too soon to count upon pot Cherries. The blossom, however, is abundant, and looks very healthy. As soon as all the trees have safely set their fruits, give one fumigation as a safeguard against aphid and other pests. Do not attempt to hurry the Cherry trees. A few fruits may fall from these, as they often do on the open wall; but if the falling is excessive, it is an indication of too high a temperature.

THE COLD ORCHARD HOUSE.—The trees in this structure, if no fire heat is available, will be much later than usual this spring, but if careful attention is paid to the ventilation and the ventilators are opened when the sun is shining and closed early, so as to retain a little warmth, there should be no danger of not securing a good set. Keep the house quite dry whilst the trees are in flower, but do not let the trees dry at the roots. At this season the cold orchard house is a good place in which to start other batches of Strawberries, from which relays can be introduced into warmth as occasion may require. See to it that Strawberries still out in frames do not suffer for want of water.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

CALANTHE. The deciduous Calanthes that have been resting since flowering are commencing to make new growths, and should be repotted just as fresh roots begin to develop from their bases. Previous to repotting examine each plant, turning it out of its pot, removing all the rooting material from the roots, and shortening the roots to a sufficient length to hold the pseudo-bulbs firm in the soil. Thoroughly cleanse the plants of scale insects and mealy bug; this latter pest is found in clusters at the lower parts. In all these operations, take care not to injure the buds or young shoots. Remove the back pseudo-bulbs, leaving only those of the previous year. The pots should be almost half filled with clean crocks, for perfect drainage is essential, covering the crocks with a layer of rough Sphagnum-moss or half decayed leaves. The plants may be potted singly in 5 or 6 inch pots, or several

may be placed together in larger receptacles. Keep the base of the pseudo-bulb at least half an inch below the rim of the pot with the young shoot resting on the surface of the soil, but in no way cover the shoot; press the compost moderately firmly around the base of the pseudo-bulb. A suitable potting mixture is composed of one half rich, fibrous loam, broken up rather roughly, and with all the small particles removed; chopped Osunda-fibre, a little bone meal, dried cow dung broken up small, and Sphagnum-moss, adding sufficient coarse silver sand and crushed crocks to render the compost porous. After potting, use water sparingly until the new roots have developed well into the compost and have begun to cling to the sides of the pots, after which they will require copious supplies of moisture until the new pseudo-bulbs are fully developed. The plants should be grown in plenty of heat and atmospheric moisture, and should not be exposed to too much sunshine. The back pseudo-bulbs that have been removed may be employed to increase the stock. Arrange them on a layer of Sphagnum-moss in a shallow receptacle and place them in a warm, moist house, where they will quickly produce new growth.

PLANTS UNDER GLASS.

By J. G. WISDEN, Gardener to Lady Northampton, Maxwell Park, Kent.

HELIOTROPE.—Young plants of Heliotrope taken in autumn and now coming into bloom should be given short sticks to support the flowering shoots. Tie them up before they get too far advanced, and place them thinly in a light position, on a damp base, if possible. When the pots are filled with roots, see the necessity of giving extra water, and an extra feeding, and at intervals of water will be necessary, especially as the season advances. Half-timber plants trained in standard form have become very popular for arranging among a display of plants in the conservatory or show house, if only for their fragrance. To maintain a succession of plants in bloom, a number of the smaller ones should be pinched again and shifted into larger pots a little later. Cuttings taken now and inserted in ordinary sandy soil will root readily now, and will continue the succession right through the season. The variety Lord Roberts produces large heads of violet flowers, and is one of the best for general purposes. The Spider and Red and Neeps are both good varieties. The latter is, perhaps, the darkest of all.

THE FERNERY.—All the Ferns should be cleared out of the woodwork and glass washed, rock walls lime-washed or scrubbed, and all made clean before re-arranging the plants on the stages. Examine all plants to see if the drainage is perfect, and report any that may require it. A good, open compost is required, composed of rough turf, loam, peat, plenty of rubble, broken egg shells, charcoal, and sharp sand, so that the whole is thoroughly porous. Put very freely. The blinds should be in readiness to shade the Ferns after being distributed.

NEPHROLEPIS. The majority of forms of Nephrolepis exaltata are of strong and vigorous habit, and will repay liberal treatment. At this season, when Ferns are making new growth, plenty of atmospheric moisture should be maintained. Ventilate the house a little when the temperature rises above 65°, but shut the house early in the afternoon to conserve the sun heat. The temperature can then rise to 80°. Later in the season, when growth is practically completed, many Ferns are benefited by cooler and drier conditions. Some of the best of the Nephrolepis are N. toledoides, N. Whitmanii, N. Marshallii, N. Marshallii compacta, and N. superbiissima.

LATE CYCLAMEN. Two-year old plants now in full bloom should be kept quite cool, and shaded from bright sunshine. See that plenty of water is given at this stage. Any specially good forms selected for seed bearing should be removed from the main batch, and placed on a shelf in a light and well ventilated house. Reduce the number of blooms to ensure the maturing of a reasonable number of strong seed pods.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. F. DWYER, Abbots Wood to Felming, Surrey.

THE PEAR MIDGE DIPLOBIS PYRIVORA.—This pest, which of late years has been very prevalent and has done considerable damage, will soon be making its presence felt. Spray the trees (especially on south and south-west walls) with a weak solution of petroleum emulsion, which will destroy many midges in the larval state. The perfect fly appears during April, from eggs deposited in the flower by the fly while the trees are in bloom. The fly is very small, only one-tenth of an inch long. The female is busy depositing her eggs for three weeks or a month. She lays them in both the opened and unopened flowers. The petals are pierced and the eggs deposited on the anthers, and in a short time the fruits swell rapidly, turn a pale colour, and commence to drop from the tree. As an additional remedy and partial preventive, dress the soil under the trees with fresh soot or kainit. Doyenne du Comice, Williams' Bon Christian, Marie Louise, Jargonelle, and Pitmaston Duchess are among the varieties most liable to attack.

RED AND WHITE CURRANTS.—To combat attacks of the Currant moth, spray the trees with petroleum emulsion before the leaves are fully open. These moths begin their feeding and boring in April, or as soon as the foliage is sufficiently advanced.

FRUIT PROSPECTS.—The unusually severe weather we have recently experienced may have a beneficial effect on the crops, as it has retarded the too early development of flower buds. Many are quite six weeks later than last year. Should no very late frosts occur, we may expect a record crop of hardy fruits. In this district Apples and Pears are covered with plump flower buds, some of the flowers are on the point of bursting, while Plums, Damsons, and Cherries are also in first-rate condition. Those on warm walls will fare the worst if a severe frost occurs early in May. Strawberries appear to be growing strongly. If they have not already been mulched, no time should be lost in doing this necessary work, especially on light, sandy soils.

PEACHES AND NECTARINES.—Draw down the blinds each evening over the trees that are in flower, and remove them very early in the morning when there is no frost. Examine the foliage each day to see that no aphid is present, and the moment any is detected, take strong measures to exterminate it, or it will spread rapidly. For a spray or fine syringe, and apply strong solutions of quassia extract, which should be mixed with water at a temperature of about 70°. Spray every portion of the tree, and repeat the operation for several mornings. If mildew is detected, spray with sulphide of potassium at a strength of about an ounce to 5 gallons of water or dust the foliage with flowers of sulphur.

GRAFTS. Look well after newly grafted trees, and see that the grafting material is intact, the wood or sap may have displaced it. If the substance is missed over, it rarely requires a second doing.

STRAWBERRIES sown in February should now be pricked out into boxes or frames at about six inches apart, or potted up into 60-sized pots. Put them into a genial temperature for a week or ten days to recover from the shift, and then harden them off in frames.

GENERAL WORK. The work of pruning, tying and spraying should now be finished, and the disbanding of Apricots will soon claim attention, as the flowers are opening. Steps should be taken to pollinate some of the strongest flowers in the absence of bees. A rabbit's or a hare's tail on a stick is a good and expeditious way of distributing the pollen. The shoots grow very rapidly, and a disbanding should commence quite early. A little should be done about every two days. Some shoots must be removed entirely, and others stopped to make spurs. If cold, inclement weather and frost are anticipated, pull down the blinds, or other protecting material, for a few more nights, but do not use heavy, permanent coverings.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would oblige by delaying to obtain answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary Department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturalists.

Letters for Publication.—As well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer; desired signatures will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

THURSDAY, APRIL 19.

Manchester and N. of England Orchid Soc. meets.
Royal Society, 41, Abis (4.30 p.m.). Lecture by R. S. Pearson on "The Industrial and Economic Development of Indian Forest Products."

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 47.5°.

ACTUAL TEMPERATURE.—*Gardeners' Chronicle* Office, 41, Wellington Street, Covent Garden, London. *Thursday*, April 12 (10 a.m.): Bar, 29.0; temp, 41.5°. Weather: Cloudy.

SALES FOR THE ENSUING WEEK.

WEDNESDAY

Fruit Trees, Herbaceous Plants, Roses, Palmæ, Gladioli, Lilies, Ac., by Protheroe and Morris, at 67 and 68, Chancery, E.C., at 12 o'clock.

We offer no apology for again drawing attention to the series of pamphlets on War gardening issued by the Royal Horticultural Society.

The latest edition is in succession to others that have dealt with such subjects as "Economy in the Garden" and "The Cultivation and Manuring of the Soil," consequently it is devoted to the very important question of cropping. The authors have taken as an example an allotment of twenty rods (one hundred and fifty feet by thirty feet), and they have drawn up a scheme of cropping which is recommended as capable of yielding the largest amount of produce that can be expected from an area of the size mentioned. Being designed primarily for the present season, we are not surprised to find that about one-half of the area is reserved for main crop Potatoes, owing to the superior food value of the produce. The present scarcity of the coveted tuber is further recognised by the inclusion of early varieties which, in other circumstances, it is clear would have been omitted owing to their inferior

yield. There is almost an apology, too, for including two rows of Peas in the scheme, it being recognised that the yield per unit of area is so small that, during the war, they are to be regarded as a luxury crop. They are allowed here because it is felt that allotment holders have generally acquired the habit of growing them, but a hint is given that better value would be forthcoming from Broad Beans or Haricot Beans. There are few popular crops that are actually omitted, but amongst them is Celery, owing, it is said, to the plant being specially subject to disease. Many of our readers will feel some surprise that Brussels Sprouts are also discarded "because they give only poor returns."

For the rest, the forbidden crops are of little importance, and include Chicory, Salsify, Scorzoneria, and Dandelion. The last named, however, may be depended upon in many instances to put in an appearance unbidden. Having enumerated the exceptions, it is not necessary to name the chosen crops, which will readily occur to anyone, but as to their proportions it may be said that, following upon some consideration of the food values, the proportions are based on the conclusion that the four most productive crops are Potatoes, Parsnips, Beet and Artichokes. A plan is provided, and in this the plot is divided for convenience into two parts. There are numbers on the plan that refer to the crops listed, and in the lists or tables the following details are given:—Names of crops and varieties to grow, the number of rows of each, the amount of seed required, the time to sow, the distance of planting, and the time at which the crop should mature. Green lines in the plan show the position and number of rows of each of the main crops, red lines show the inter-crops (such as Broccoli and Kale, between rows of Potatoes), and black lines the crops that will be off the ground by mid-July, and so allow late summer sowing of crops for winter use.

For the convenience of those who intend to keep their allotments for a longer period a table is added showing how best to plant the crops next season, from the point of view, of course, of successional cropping. In addition to all this, each crop is dealt with under a separate heading, and a few apposite truths relating to their management stated in the briefest and simplest manner possible.

Experienced gardeners will not need such a guide as is afforded by this latest pamphlet, but amongst the many thousands who have assumed the responsibility of cultivating allotments this season for the first time there must be many who have no first hand knowledge whatever as to what relation the different crops should have to each other. For their instruction nothing could be more valuable than this little book prepared by the staff at Wisley, and it may be hoped that professional gardeners who may visit allotments for the purpose of giving advice to novices will take the opportunity of recommending it to those most in need of help.

"**BOTANICAL MAGAZINE.**"—The quarterly volume of the *Botanical Magazine*, containing the monthly parts for January, February, and March, gives illustrations and descriptions of the following plants:—

AMORPHOPHALLES KERRII, tab. 8,692.—A handsome Aroid from Siam, with solitary leaf, of which the petiole is over 5 feet long and the lamina 3-sect, each portion being sub-divided pinnately. The spathe is greenish yellow, marked on the exterior with greenish-white blotches. The ripe berries are deep blue.

CYRTIS ALBUS, tab. 8,693. The Portugal White Broom is a favourite in gardens because of its hardness. The history of the plant's introduction to this country on three occasions, together with the confusion relating to its classification and nomenclature by systematists, is dealt with at length.

COTONEASTER SALICIFOLIA VAR. RUGOSA, tab. 8,694. A graceful shrub from China, growing up to 10 feet high, and producing dull-whitish flowers in small corymbs, the blooms being succeeded by small, ovoid, coral-red berries.

QUERCUS DENSIFLORA, tab. 8,695. This Evergreen Oak is exceedingly abundant in certain parts of America, but is one of the rarest of cultivated Oaks in this country; yet it is described as being, in some respects, the most attractive of all the hardy evergreen species. The tree transplants with difficulty, a fact which may help to account for its scarcity here.

RHOODESIOIDES USULCOLA, tab. 8,696.—A large, white-flowered species from Western Hupeh, said to be the equal in beauty and fragrance to any of its immediate allies, and one of the latest of the group to flower.

MAURANDIA PERUVIENSIS, tab. 8,697.—This attractive plant is new to cultivation in this country. It is a native of Mexico, but may prove hardy in warm, dry situations. Plants at Kew have grown to a height of about 3 feet, but show no tendency to climb, as do most Maurandias. The flowers are rose purple, with a leaf-axils. The species promise a good plant for gardens.

SEXTETO MEXICO, tab. 8,698. At Ludgvan Rectory, Cornwall, this New Zealand Groundsel forms a compact bush 3 feet in height and 4 feet through. The flowers are developed in lax, corymbose heads, and are about the size and colour of the Ragwort.

PILSA FORGETTI, tab. 8,699. The foliage of this Venezuelan Urticaceous plant is very handsome, with shades of bronze, dark green, and yellowish green. The dense clusters of small, white flowers on the male plant are also attractive, raised on long pink stalks well above the leaves.

ANGULOA CLIFTONI, tab. 8,700. This species was introduced to cultivation by Messrs. CHARLESWORTH AND CO., who exhibited a specimen at the R.H.S. meeting on January 25, 1916, when the Orchid Committee awarded it a First-class Certificate. The petals are primrose-yellow, sepals deeper yellow, and lip tinged with cinnamon-brown.

BERBERIS STAPEFLANA, tab. 8,701.—One of the numerous Barberries introduced from China by Mr. E. H. WILSON. The small, ovoid, crimson berries ripen very late in the season—October and November.

CLERMAYNS FARGESII VAR. SOULEI, tab. 8,702.—This Clematis is a native of Western Szechuan, China, and a member of the Vitalba group. The flowers are white, and of delicate satiny texture. The plant is of great promise as a garden climber, and it continues in bloom from June to September.

MESSEMPHYSTEMUM PILLASSII, tab. 8,705.—The remarkable spatulate petals distinguish this species from all others of the genus. The plant was found by Mr. N. S. PILLASS in Cape Colony at an elevation of 2,000 feet, and Mr. PILLASS presented a specimen to the Cambridge Botanic Gardens, where it flowered in June, 1914. The flower heads are attractive in the outer purplish petals, each forming an elliptical-lanceolate blunt blade; the inner petals are shorter and white.

* The Cropping of an Allotment or Small Kitchen Garden. Royal Horticultural Society. Price 3d.

R. H. S. DAFFODIL SHOW ABANDONED.—In consequence of the continued inclemency of the weather the President and Council of the Royal Horticultural Society, acting on the advice of the Society's Daffodil Committee, have decided to abandon the special Daffodil show fixed for the 17th inst.

ALLOTMENTS IN BELFAST.—In Belfast 6,000 plot holders are at work, 4,500 having taken over plots since November last. The Department of Agriculture and Technical Instruction for Ireland has arranged for a course of popular lectures in Belfast on the cultivation of vegetables, insect pests, plant diseases, soils and manures, and has issued a pamphlet on Allotment Gardens in Belfast, by Mr. G. H. OLIVER.

SNAPDRAGON RUST.—Experiments⁸ made by Mr. W. L. DORAN on the effects of fungicides on rust of *Antirrhinum* lead to the following conclusions: Bordeaux mixture is useless. Eau céleste (copper sulphate and ammonia, 1 per cent.) destroys the spores of the fungus, but is apt to injure the foliage. Sulphur dusted on the plants interferes with the germination of the spores of the fungus, and hence is useful in the control of the disease.

MIDLAND DAFFODIL SHOW ABANDONED.—The Midland Daffodil Society's annual exhibition, originally fixed for the 26th inst. in the Birmingham Botanic Gardens, Edgbaston, has been abandoned. The committee has also decided not to hold the annual meeting this year; the officers for 1917 will continue in office during 1918.

MR. C. H. ROBINSON, representative of Messrs. J. BENTLEY, LTD., manufacturing horticultural chemists, has recently undergone a serious operation. His many friends in the gardening world will be pleased to learn that he is making satisfactory progress towards recovery.

THE FEEDING OF PIGS.—A valuable report on experiments with different feeding stuffs is issued by the University of Leeds. The need for experiment in this direction is particularly urgent just now owing to the high price of meals usually fed to pigs. In the Leeds experiments dried yeast was tried, with success. On two lots of ten pigs fed with five parts sharp to one of bran, to which food, after six weeks, a little barley meal and treacle were added in place of some of the sharps, the lot which had half a pound of yeast in place of that quantity of sharps gained 92 lb. live weight per head against 70½ lb gain of those which had no yeast. The addition of fish meal to the diet was also found to be of advantage, and it was also shown that Palm kernel cake could be used to replace one-fourth or one-fifth of the sharps. Those interested in pig keeping should procure a copy of the report.

SEED POTATOS FOR LONDON.—The *Times* reports that in the House of Commons Mr. FLAVIN asked the Secretary to the Local Government Board whether he was aware that numerous applications had been made to the London County Council for seed Potatoes by small cultivators in many parts of London, that all the forms and regulations had been complied with, and even the money paid for the seed Potatoes by the applicants over six weeks ago, and why many of these people had not yet received the seed for which they had prepared their plots of land. Sir R. WISELEY gave the following replies in Parliamentary papers: "The answer to the first and second parts of the question is in the affirmative. Part of the consignment has been delivered, and the greater part of the balance is now in transit. The weather during the past six weeks has been very unfavourable for bringing seed Potatoes from

Scotland, frequent frosts have interfered with the loading, and made the railway journey risky. The Potatoes in question are maincrop varieties, suitable for planting until the end of this month (April). In view of the present weather, it will be undesirable to plant the majority of the plots to which the hon. member refers before the middle of the month."

STUDIES OF THE GENUS PHYTOPHTHORA.—This genus of fungi comprises not only *P. infestans* of ill fame with Potato-growers, and we are all growers of Potatoes nowadays, but other species of destructive parasitic habit. It is, therefore, of great value to investigators to have an experimental diagnosis, such as is provided by Mr. J. ROSENTHAL. This author has studied the behaviour of the species under diverse nutritive conditions, and the table summarising the results which he has obtained should be very useful to the mycologist engaged in identifying species.

ORESITROPHE RUPIFRAGA.

ORESITROPHE RUPIFRAGA (see fig. 54) is a perennial belonging to the Saxifrage family, nearly allied to *Tiarella*, *Hemibeta* and *Paranassia*. It forms a woody root stock, and produces leathery leaves about 4 inches long by 3 inches wide, on petioles of about the same length. The white flowers are produced in March in panicles on stems about 6 inches high, and are persistent, like those of *Rodgersia*, turning to a greenish colour with age. The plant is a native of Northern China, and was first introduced into cultivation by Mr. F. MEYER, who found it growing in the Nankow Pass, and sent plants to Kew in the year 1915. Specimens first flowered at Kew in March, 1915, and the species is again flowering this year. It promises to be quite hardy, and when it has been propagated will be planted out. H. Z.



[Photograph by W. Trexler]

FIG. 54. *ORESITROPHE RUPIFRAGA*.—FLOWERS WHITE.

PUBLICATIONS RECEIVED.—*Experiments in the Disposal of Irrigated Crops through the Use of Hogs.* Bulletin No. 488, United States Department of Agriculture. (Washington, D.C., U.S.A. Government Printing Office.) Price 5 cents.—*Report on a Trial of Tarred Felt Discs for Protecting Cabbages and Cauli flowers from Attacks of the Cabbage-Root Fly.* By J. T. Wadsworth (Cambridge University Press.)—*Journal of the R.H.S. Gardens Club.* No. 1X, 1916. *Journal of the Kew Guild.* 1917. Vol. III, No. XXIV (London: Taylor & Francis).—*Herbs Used in Medicine.* By Mrs. John D. Ellis. (London: National Herb-growing Association.) Price 3s., post free.—*Paynter's System of Poultry Rearing.* (London: Country Life Press.) Price 3s. 6d. net.—*Gardening: A Complete Guide.* By H. H. Thomas. (London: Cassell & Co., Ltd.) Price 1s. 3d. net.

THE ROSARY.

SOME OF THE BEST DECORATIVE ROSES.

—IS a hot gravel soil one is forced to grow what one can, rather than what one will. But the following Roses have been very successful for the past two seasons:

Mrs. ARTHUR WANDERL. This very vigorous Rose with fine foliage, heads, in list, the deep copper and yellow flower, though on the thin side, being very beautiful and plentiful. I have known it equally successful on Essex clay and in sunny France, where it is highly appreciated.

Mrs. EDWARD POWELL. A beautifully shaped London Rose, verging on scarlet; a vigorous grower, with fine, dark foliage, a free flowerer, and the best all round red Rose I know.

ROUSSEAU. A very popular variety (for forcing especially) in America, and but little known in this country. Deep pink in colour, very free

⁸ "Controlling Snapdragon Rust," *Florists' Exchange*, March 3, 1917.

⁸ "Studies of the Genus *Phytophthora*," *Journal of Agric. Research*, VIII, 7, Feb. 1917.

flowering and weather-defying, and much admired here as an autumn Rose. Not that it does not flower freely all summer, but that in cold, wet weather, when the others are also finished, it carries on bravely and attracts attention.

LADY ALICE STANLEY.—Another fine bloomer of exquisite shaded pink, with bronze leaves. Not (with me) a vigorous grower, but, like Mme. E. Herriot, perpetually in flower. Its first bloom was hardly over when the second crop began, and it flowered from middle June to the end of July, rested in August, and flowered all the autumn. I even cut a handful of buds in Christmas week. A border of fifty plants, with Lavender as a backing and an edging of Pinks, was good all summer, especially as a thick planting of the Pink "Carnation Poppy," and the new lavender-hued Shirley, showed behind the Lavender hedge.

LADY HILLINGDON.—This variety is a wonderfully fine flowerer here, and the orange-coloured buds and red-brown foliage are much admired.

Everyone loves a crimson Rose, and I find very effective a big square bed of General MacArthur, with a dozen plants of George Dickson and George V. in the middle, the two last pegged down and throwing up over a dozen blooms to each shoot.

For cutting for tall vases, can anything be more beautiful than a long stem of Lady Waterlow, that superb pillar Rose? Such giant light-green leaves, and such a beautiful fluffy salmon-pink Rose.

That Rose of exquisite form and colour, Mrs. W. J. Grant, so "miffy" and disappointing in its growth, will make a splendid bedding Rose if the crimson variety be used, and it be pruned back each spring like an ordinary bush Rose.

PRINCESS MARY.—This single scarlet Rose is highly decorative in a mass, and has wonderful foliage. It is bound to be a great Rose for bedding.

ROSE MAE, EDOUARD HERRIOT.—This superbly-coloured Rose was a great success last summer, and did not seem at all affected by the cold, wet weather. Fifty plants were put out the autumn before, and provided cut bloom for the house from June till mid October. The bloom is thin and the colour soon goes in water, the glorious deep-coral buds or half-open Roses changing to a pretty coral-pink, loose-petaled flower. But nothing else evokes so much admiration as a table decoration or for bowls. Owing to scarcity of labour they were rather roughly treated, and planted very quickly on a wide kitchen garden border in rows, across which border a boy made a trench and shovelled in some manure on the other side of the row, so that there were alternate rows of Roses and manure. The plants did not make a great deal of growth, as they flowered too profusely to allow of that. Last autumn they were taken up and properly planted in trenched ground, and it will be interesting to see if they do well the second season or go off like some others of the same race.

Of the many new Roses shown at the R.H.S. last summer the following seemed to me the finest, but, of course, their habit of growth is yet to be seen, though many of them were described as "very perpetual." The finest yellow variety was Golden Emblem, almost the Rose the late Dean Hole sighed in vain to see. Mrs. C. E. Shea is a dazzling cherry-colour, while Cheerful reduced a stand of Mme. E. Herriot near it to comparative dullness of hue! K. of K. is a fine red garden Rose, and Flame of Fire, a brilliant orange, ran Mrs. C. E. Shea very close for the finest-coloured Rose in the Show.

Other lovely Roses were Golden Spray, semi-single, a yellowish-cream of Hugh Dickson's, who also had Charles Douglas, crimson, and Ulster Gem, yellow, single, that pleased me very much. Souvenir de Georges Pernet, crimson, and Chrome, Janet, a chamois-tinted Rose; Mrs. Willoughby, lemon and white; Christine, cadmium-yellow; Gladys Holland, cream and pink;

and Isobel, single, coral and yellow. *A. Martonau, Hurst, Berkshire.*

THE FROST AND THE ROSES

Now that the time has come when Roses have to be pruned—and although we may have no purely luxury gardening, we may snatch an hour to attend to Rose beds—it will be discovered, we fear, that the frost has done more damage than seemed to be the case. Although outwardly the shoots appear sound, the pith of many varieties has taken on an ominous grey colour which bodes no good. It is curious that the cortex of a plant should appear to be untouched and the deeper-lying pith destroyed. The observation is, perhaps, worth the attention of the plant-physiologist!

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

SUGAR FOR FRUIT-PRESERVING.—A few weeks ago I communicated with Lord Devonport on the subject of the provision of sugar this season for fruit preserving. He replied to the effect that "Private individuals will be well advised not to count upon any supplies other than those they can secure by saving from the ration allowed for domestic consumption." The subject of the provision of sugar having recently been one of considerable comment in the Press, it is reassuring to notice that Captain Bathurst stated in the House of Commons that "There is no intention to interfere with the legitimate saving from the domestic supply for the purpose of making jam." Householders have accordingly a clear line of action now before them, and it is hardly necessary to point out the wisdom of preserving as much fruit as possible this season. Amongst other reasons is, that the strain on butter production next winter will be lessened, and this may prove an important consideration in the future. It is true that Captain Bathurst also said: "As to the preservation of fruit, sugar, if available, would be supplied to domestic preserves," but I am strongly of opinion that as the matter all turns on "if available" we should do well to save now from our ration and not trust to the remote chance of more being forthcoming." *W. Wilks, Secretary, Royal Horticultural Society.*

WEATHER AT BRADFORD.—At 8 a.m. on Monday, the 2nd inst., during a blizzard, the thermometer registered 20°—32° of frost. We have had severe frost every night since the 2nd inst., until tonight, the 5th inst., when snow is falling. *R. Lambert, Mansfield Road, Bradford.*

THE "INCREDIBLE PROFIT OF DIGGING."—Whilst the fertile fields of France are being churned into sterile chaos by high explosives and the gentle German with his pedantic and silly obsession of thoroughness is destroying the fruit trees as he sullenly retreats, the soil of England is being subjected to the greatest upheaval that it has known for many a year. Thanks to the increased facilities for obtaining land now, allotments by the hundred thousand have been taken up, and at this Easter time no one can walk abroad without seeing the bent backs of armies of diggers. Although the eternal pessimist has been abroad among these people who are determined to ensure their food supplies by "digging themselves in," he has not been able to check their ardour. For that the sporting sense of the English is responsible. They know that they are a nation of amateurs, and not of experts, and are cheerfully prepared to undertake operations which others would embark upon only after much instruction and study. It is pleasant to reflect that this peculiar trait—so specially English—has high merit as well as grave defect. It makes an army as well as a Food Controller. It is giving them vegetable gardens which, though they will produce less than the diggers hope, will yield more than the pessimists proclaim. Sometimes, it is true, the unobservant sowing Parsnip seed on a windy day may not observe that the seed flies away as it is sown; but amateurs may be wise as well as foolish, and one of

the former, sowing Parsnips on Easter Sunday, was seen to be followed by a girl carrying a watering-can, and watering in the seed as it was sown in the drills. As is but natural it is the middle-aged and older people who, for the most part, are most active in digging just now. They understand the need better than the young, and, moreover, digging which is boredom to youth, is a diversion to the middle-aged. "There he sports are painful, and their labour, delight in them sets off." Gardeners everywhere are making it a matter of professional pride that the amateur enthusiasts of the spade shall have the benefit of their assistance, and besides giving set demonstrations, many of them are giving practical "at-homes" at stated times, during which inquirers may come and see and learn how to garden. Thus the keen and skilled gardeners on the staff of the London and South Western Railway are in their scanty leisure helping not only one another, but also the gardeners in their neighbourhood. Those who only think of food in terms of corn and meat do not regard all this multiplicity of effort on the part of small cultivators as meaning much. But they are wrong. It means a permanent addition to the fertility of the soil of this country, and it means, moreover, the acquisition of a greater thriftiness which, once learned, will be applied in many directions to the national benefit. One of the wisest of seventeenth-century men, "the most sensible, the least prejudiced great man of an age that boasted a galaxy of great men," Thomas Fuller, divine, historian, and wit, gave long ago the text for this present discourse, and one which we could wish might be preached from all the pulpits in the country:—"Oh, the incredible profit by digging of ground!" For though it is confessed that the plough beats the spade out of distance for speed (almost as much as the press beats the pen) yet what the spade wants in the quantity of the ground it manureth, it recompenseth with the plenty of fruit it yieldeth, that which is set multiplying a hundredfold more than what is sown." And the sequel is apposite. It is "incredible how many poor people in London live thereon so that in some seasons gardens feed more people than the field." *P.*

SOCIETIES.

ROYAL HORTICULTURAL.

APRIL 11. — The fortnightly meeting in the Drill Hall, Buckingham Gate, on Wednesday last was less important than usual, and there were fewer visitors. The four Committees sat, but only one award was made, by the Orchid Committee, namely a First class Certificate to a variety of Odontodia. The chief groups were those of Orchids, Tulips, Daffodils, and Alpine plants. Mr. ELISHA HICKS exhibited a new climbing Rose named Climbing Hillingdon, with the rich apricot-gold colour of Lady Hillingdon, and showed also some fine blooms of his novelty known as Mrs. Elisha Hicks, which he brought for the first time to the previous meeting. The exhibit of Tulips was the most imposing group in the show. It was staged by Messrs. R. H. BATH, LTD., and the plants, like those shown by this firm at previous meetings, were growing in bowls of moss fibre. Messrs. BARR and SONS displayed some excellent Daffodils; pot plants of Loveliness and Mrs. G. H. Barr were exceptionally fine. Amongst the cut blooms were fine flowers of the Trumpet variety Golden Chief, which resembles an enormous flower of Golden Spur; Golden Arrow, a Cyclamineus hybrid of the richest golden colour; and the old Santa Maria, whose deep yellow trumpet is a perfect shape, and the perianth segments curved somewhat after the manner of the blades of a propeller. Much admiration was shown for Mr. CLARENCE ELLIOTT'S exhibit of Alpines in pans, each of which was arranged to resemble a miniature rock garden, with pieces of stonework, and here and there a tiny Conifer to lend variety. There were no exhibits before the Fruit and Vegetable Committee, and as only three members were present, there would, in any case, not have been a quorum—an event which has not occurred for many years past.

Floral Committee.

Present: Messrs. H. B. May (chairman), W. J. Bean, J. Hudson, J. Green, T. Stevenson, J. Heal, W. Howe, J. F. McLeod, C. E. Shea, C. E. Pearson, J. W. Blakey, C. Dixon, C. Elliott, W. A. Bilyeu, H. Cowley, E. H. Jenkins, G. Paul and W. B. Cranfield.

GROUPS.

The following medals were awarded:—*Silver Flora Medal* to Mr. ELISHA J. HEKS, Tisbury, Berkshire, for *Roses*.—*Silver Banksian Medal* to Messrs. ALLWOOD BROS., Wivelsfield, Haywards Heath, for Perpetual-flowering Carnations. *Bronze Flora Medals* to Mr. G. REUTHE, Keston, Kent, for Alpines, and a new Rhododendron from China—*R. strigulosum*, with hairy stems and petioles, and rosy red flowers; and Mr. CLARENCE ELLIOTT, Stevenage, for Alpines.

Narcissus Committee.

Present: Messrs. E. A. Bowles (chairman), G. H. Engleheart, G. W. Leak, C. Bourne, F. H. Chapman, W. B. Cranfield, P. R. Barr, and C. H. Curtis.

GROUPS.

The following medals were awarded:—*Gold Medal* to Messrs. R. H. BATH, LTD., Wisbech, for Tulips growing in moss fibre. *Silver gilt Banksian Medal* to Messrs. BARR AND SONS, for Narcissus.

Orchid Committee.

Present: Messrs. Frederick J. Hanbury (in the chair), Jas. O'Brien (hon. secretary), J. Wilton Potter, R. A. Bolfe, T. Armstrong, Walter Cobb, J. E. Shill, R. Brooman White, and J. Charlesworth.

AWARDS**FIRST CLASS CERTIFICATE.**

Odontodia Coronation Orchid—*var. variety*, from Messrs. ARMSTRONG AND BROWN, Orchard Hurst, Tambridge Wells. A magnificent variety, with flowers nearly 4 inches across, and of fine form, the outer parts of the segments being cream white, the inner dark Indian red, and the bases of the petals white. The broad lip is cream white in front, with red markings around the yellow crest. The plant, with its four branched spike of forty-nine flowers, was one of the finest *Odontodias* ever seen.

GENERAL EXHIBITS.

Messrs. ARMSTRONG AND BROWN were awarded a Silver Banksian Medal for a group of very handsome seedling *Odontoglossums* and *Odontodias*, specially noteworthy being *Od. Royal Gem*, and *Cooksonia*.

Messrs. CHARLESWORTH AND Co., Haywards Heath, staged a group, in which the best novelties were *Laelia Cattleya Colombia* (Jeannette) (Wellsiana), a great improvement on *L. C. Gottoiana*, one of its ancestors, and with a very nice purplish crimson lip; and *Laelia Cattleya Circe* (Meippe × *Hypatia*), an interesting instance of colour development. In its ancestry are *Cattleya Trianae*, *C. Mossiae*, *C. Warszewiczii*, *Laelia purpurata*, *L. cinnabarina*, and *L. harpophylla*. The yellow in the last two predominates, and results in a clear chrome-yellow flower, with purplish-rose front to the lip.

Messrs. SANDER AND SONS, St. Albans, showed a selection of good hybrids, including four good white *Cattleyas*, the pretty *Odontodia Lada*, *Laelia Cattleya Joy Sander*, and a plant of *Laelia Cattleya Fried. Boyle* var. *Kerzhovae*, with two spikes of bluish white flowers.

Messrs. STEVART LOW AND Co., Jarvisbrook, Sussex, exhibited their new *Laelia Cattleya Cornus* (*L. C. Cornus* × *C. Eudis*) in colour primrose yellow, with a rose tint, the lip being reddish purple; *L. C. Calabaria*, light buff with orange disc; a fine scarlet *Soborinitis grandiflora*, and some cut spikes of *Vandas*.

Mr. J. E. SHILL, The Dell Gardens, Englefield Green, showed a fine plant of *Cattleya Lady Rowena* (*labiata alba* × *Suzanne Hye de Crom*), with large, pure white flowers of fine shape and substance; the disc and base of the lip are of orange colour, with white veining.

LINNEAN

MARCH 29—At the monthly meeting of the above Society, Sir David Prain, president, in the chair, Mr. W. BATESON, F.R.S., de-

livered a lecture, entitled "Prof. T. H. Morgan's Work on the Mechanism of Heredity," and summarised the results of recent work in America by Prof. Morgan and his fellow-workers on the cytology of the question, especially upon the fly *Drosophila*. The lecture was illustrated by diagrams and many lantern slides.

SCOTTISH HORTICULTURAL.

APRIL 3—The monthly meeting of this association was held at 5, St. Andrew Square, Edinburgh, on the above date, Mr. Phillips, the president, in the chair.

A paper on "Medicinal Plants and National Requirements," by Mr. R. CLUDE GUYER, was read, in Mr. Guyer's absence through illness, by Mr. Edgington. Mr. Guyer said that since the commencement of the war the cultivation of medicinal plants had been brought into great prominence; but, unfortunately, through a threatened shortage of a few very important drugs, a wrong impression had been created as to present and future needs. To co-ordinate and organise production a society had been formed, and it was to be hoped that the benefit of the experience gained would lead to success.

Mr. Guyer described in detail the proper methods of collecting and drying the plants, which are matters of paramount importance from the commercial point of view, and the marketing of the material. He then discussed the methods of cultivation applicable to the various kinds of plants, those required in large quantities being specially adapted to field cultivation, such as Poppermint, Fennel and Caraway, while *Aconite*, *Colchicum*, Foxglove, Chamomile, *Belladonna*, *Henbane* and *Valerian* were more suited to garden cultivation.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

APRIL 2—The monthly meeting of this Society was held in the R.H.S. Hall on Monday, the 2nd inst., Mr. Chas. H. Curtis in the chair. Two members were allowed to withdraw £26 4s. 10d. from their deposit accounts. The sum of £55 19s. 8d. was passed for payment to the nominees of five deceased members, all of whom were killed in action. The sick pay for the month on the ordinary side was £61 17s. 5s.; State Section, £11 11s. 8d.; maternity claims, £12. The suggestion to form a women section was again under discussion, and the secretary was instructed to communicate with the Commissioners for further information, which will be dealt with at the next meeting.

Obituary.

JAMES STREDWICK.—We learn with regret of the death of Mr. James Stredwick, of Silverdale Nursery, St. Leonards. Mr. Stredwick was one of the most successful exhibitors and raisers of *Dahlias* of recent times, and he also raised many fine *Chrysanthemums*. He took up the culture of *Dahlias* as a speciality about 27 years ago, as the result of a success he gained with this flower at a local show. Turning his attention to the raising of new varieties, he was successful in obtaining a number of good novelties, including one named after his son Harry. Others were named *Magnificent*, *Night*, *Eclipse*, and *Mayor Tuppenny*. He worked for a number of years at the improvement of the *Cactus Dahlia*, and did much to counteract the natural defects of the section. *Chrysanthemums* were in a secondary degree a speciality of his firm, and he raised several good new varieties, including *Mary Farnsworth*, which was illustrated in these pages on Nov. 20, 1909, p. 347, on the occasion of this variety's receiving an Award of Merit from the Royal Horticultural Society.

DAVID W. DUNCAN. *The Florists' Exchange* announces the death of Mr. David W. Duncan, florist, of Arlington, Massachusetts, U.S.A., on February 25, aged 51 years. Mr. Duncan was a native of Brechin, Forfarshire.

CROPS AND STOCK ON THE HOME FARM.

CABBAGE FOR CATTLE.—For cows and pigs, as well as for sheep and dairy cows, Cabbage is a particularly valuable crop. No other green crop can produce so much food for cattle on the same area. If Early and Late Drumhead varieties are sown early in April, the former will be ready for use at the end of September, and the late variety from November onwards. The heads will keep quite good until the end of February, thus maintaining a succession of food for five months. So hardy is the Late Drumhead variety that the severe and continued frost this season did not injure the heads here. The advantage of a Cabbage crop of, say, 50 tons per acre, when fed off by sheep, is that a heavy manurial dressing is left behind for the succeeding straw or Potato crop. These Cabbages are mild in flavour, and do not taint either milk or butter. Good seed costs from 3s. to 4s. per lb.; 1 lb. of seed is sufficient to raise plants to cover an acre. The seed bed should be in an open site, deeply and well manured. A fine tilth is necessary to ensure even germination of the seed. Previous to sowing, scatter superphosphate freely over the seed bed. Sow the seed thinly. When the plants are large enough to handle, they should be finally planted, the early variety in the second plough furrow, the later sort being given more space in the third furrow. Choose dry weather for planting, and dip the roots in a thick solution of soil and superphosphate or soot and water.

SHELTER FOR CHICKENS.—The present weather is most unfavorable for newly hatched chickens, especially where they are exposed to easterly winds. Many devices can be employed to provide temporary protection. In most gardens at this time of the year shrub pruning is an annual operation. The branches and clippings of Laurels, Yews, Firs and various conifers can be utilised, and will make quite a warm permanent shelter. On the north or east side of the site where chicken coops are placed, stout stakes, 3 feet long, driven in the ground 2 feet apart, allowing 1 foot in thickness for the shelter, make an easy and permanent support. Pack the prunings neatly between the stakes, and if there is danger from rats, small-meshed wire netting can be run round.

THE WHEAT PROSPECT.—In this part of South Hants, where grain of good quality is usually obtained, the Wheat crop this spring does not look promising, especially early sown plots after Clover on stiff soil. The trouble is, in my opinion, due more to the excessive rainfall during October, November and December than the severe frosts. For the purpose of effectively burying the Clover and preparing a good seed bed, we use the presser, with the result that such excessive amounts of rain as fell in October, November and December could not percolate quickly through the soil, but caused stagnation, resulting in weakened growth. Experience forces me to the conclusion that this method of Wheat-growing on stiff soil is wrong. Oats will be substituted for this crop next year, and the Wheat will be grown in fallow ground. A dry March favours Wheat in any soil, especially that which is heavy. Whether the customary harrowing early in April to break the caked surface of the soil, and afterwards making the plant firm with the roller will result in an improvement, remains to be seen. Some writers advise the use of sulphate of ammonia as a top dressing at the rate of 1 cwt. per acre, to give a fillip to growth. My experience does not warrant the use of this fertiliser, for while it produced an improved growth and colour in the straw and flag, the Wheat was of poor quality. The plant on the parts of the field light soil on which it was used had too many blighted ears. The Corn, generally, did not fill out, but remained "hoaty," or, as the term implies, hollow in the centre. My preference as a stimulant is 2 cwt. superphosphate per acre, scattered evenly previous to harrowing early in April. *E. Molyneux, Seacroft Park Farm, Bishop's Waltham, Hampshire.*

MARKETS.

COVENT GARDEN, April 11

We cannot accept any responsibility for the unaltered reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eos.

Cut Flowers, &c.: Average Wholesale Prices.

Anemone, fulgens, s.d.s.d. per doz. bun. 2 6-3 0	Narcissus, con. s.d.s.d. — Pheasant Eye per doz. bun. 3 0-4 0
Azulea, white, per doz. bun. 4 6-5 0	— Soleil d'Or, Guernsey, per doz. bun. 2 0-2 6
Camellias, white per doz. bun. 1 6-2 0	— Paper White, per doz. bun. 3 0-3 6
Carnations, per doz. blooms, best American varieties 2 0-3 0	— Cattleya .. 15 0-18 0
— Corolla (Crimson), ex. large 3 6-4 0	— Cœcelyne, per doz. blooms 2 0-3 0
Daffodils, Golden Spur, per doz. 2 6-3 6	— Cœcelyne, per doz. blooms 2 0-3 0
— Barrii, per doz. bun. 2 6-3 6	— Odon toglossum crispum 3 0-4 0
— Emperor, per doz. bun. 3 0-6 0	Petargoniums, per doz. bunches, doubles 15 0-18 0
— Henry Irving, per doz. bun. 2 0-2 6	— Primroses, per doz. bun. 2 6-3 0
— Princeps, per doz. bun. 2 0-2 6	Roses—
— Sir Watkin, per doz. bun. 2 6-3 0	— General Jacquemont, per doz. blooms 2 6-3 0
— Victoria, per doz. bun. 4 0-6 0	— Joseph Love, per doz. blms. 4 0-6 0
— Richmond, per doz. blms. 4 0-6 0	— Mme. A. Chateaubriand, per doz. blooms 4 0-6 0
— Plain Queen, per doz. blms. —	— Sunburst, per doz. blooms 5 0-7 0
— Sunburst, per doz. blooms 5 0-7 0	Tulips, white, per doz. bun. 21 0-30 0
— yellow, .. —	— Darwin in variety, per doz. bun. 18 0-24 0
— mauve Darwin per doz. bun. 21 0-24 0	— Princess of Wales, .. 3 0-5 0
— Grand Primo, per doz. bun. 3 0-4 0	

French Flowers, &c.: Average Wholesale Prices.

Allium (Star) per doz. bun. 2 6-3 0	— s.d.s.d. 2 6-3 0
Anemone, double pink, per doz. 2 0-2 6	— single, mixed, per doz. bun. 3 0-4 0
— single, red, per doz. bun. 1 6-2 0	

Cut Foliage, &c.: Average Wholesale Prices.

Adiantum (Maid) s.d.s.d. per doz. bunches 9 0-10 0	Cyrcas leaves, per doz. .. 3 0-6 0
Asparagus plumosus, long trails, per half-dozen .. 2 6-8 0	Fern, French, per doz. bunches 6 0-8 0
— medium, per doz. bunches 12 0-18 0	Ivy leaves, per doz. bun. 2 0-2 6
— Sprengeri .. 10 0-12 0	— Moss, gross bunches 6 0-7 0
Bronze foliage .. 8 0-10 0	— Myrtle, doz. bun. —
Carnation foliage, per doz. bunches 4 0-5 0	— small-leaved .. 6 0 —
Croton foliage, per doz. bunches 12 0-16 0	— thick-leaved, per doz. bunches 1 0-1 3
— of 6 trails .. 2 0-2 6	— Smilax, per bun. 2 0-2 6

Remarks:—There was a good demand for cut flowers throughout last week for the Easter decorations. Salesmen found no difficulty in clearing stocks, as all grades were in demand at advanced prices. Richardias (Arums) and white Lilliums were also in good demand, and prices rose considerably. The severe weather decreased the supply of Roses, Carnations and Violets. Home-grown Daffodils and Pheasants' Eye Narcissus and the large consignments from the Channel Islands (consisting chiefly of Bellflowers) sold freely at good prices. Many enquiries were made for white Tulips, but they are exceptionally scarce this season. Darwin Tulips, especially red ones, were cleared immediately the market opened, and buyers had to order in advance to obtain their requirements.

Vegetables: Average Wholesale Prices.

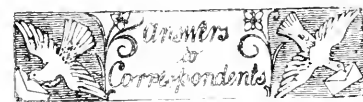
Artichokes, Globe s.d.s.d. per doz. 8 0	— Jerusalem, per cwt. 16 0-20 0
Asparagus, Paris, per Green, per doz. 2 9-3 0	— Broad Beans, French, per pad .. 6 0-7 0
— Broad, per doz. 12 0	— Brussels Sprouts, per 24 lb. 10 0 —
Beans, English, per lb. 1 1 6-1 9	— Cabbage, per tally .. 10 0-12 6
— Broad, purple sprouting, per bag .. 16 0 —	— Carrots, washed, per bag .. 14 0 —

Cauliflowers, per s.d. doz. 5 6-7 0	— s.d. 5 6-7 0
Celeriac, per doz. 6 0 —	— Celery, per doz. bundles 18 0-24 0
Chicory, English, per lb. 10 0-1 0	— Cucumbers, per flat .. 18 0-20 0
— Endive, per doz. 3 0-4 0	— Greens, per bag 16 0-20 0
— Garlic, per lb. 10 0 —	— Herbs, per doz. bun. 1 0-8 0
— Horse-radish, per cwt. 66 0-72 0	— Kale, per bag 10 0 —
— Leeks, per doz. bun. 6 0 —	— Lettuce, Cabbage and Cos, per doz. 1 6-2 6
— Mushrooms, per lb. 1 6-1 9	— Mustard, per doz. punnets 2 0-3 0
— Onions, per cwt 18 0-18 6	

Fruit: Average Wholesale Prices.

Almonds, per cwt. 80 6-85 0	— Apples—
— Californian New to grow, per case 15 0-16 0	— E n g l i s h Cooking, per bush 17 0-18 0
— Main States, barrels 44 0-66 0	— Oregon, per case 18 0-20 0
— Bananas, Red, per ton 25 —	— Jamaica, per cwt 22 —
— Chestnuts, per peck .. 5 0-5 6	— Dates, per doz. boxes .. 7 0-8 6
— Grapes: Almeria, per doz. lb. 10 6-12 6	

REMARKS.—Supplies of Apples are decreasing. The Pears now available consist of Californian and Kent varieties, notably Williams' Bon Chretien, White Nellis, Clapp's Favourite, and Beurre Hardy. Forced Strawberries are still limited in supply. Numbers of Grapes are now on offer, including English Green Chatham and several Cape varieties, black, white, and red. Asparagus is now obtainable, mainly Paris-Groen, Cavalloni, and Lauris, besides some from English growers. Seakale is much scarcer. But Worthing and Greenwich Beans are fairly plentiful. Forced Man is in fair quantities. There are a few English Tomatoes on offer, and fair supplies of Broccoli (Garnish and Rosefin) are arriving. Flats containing 2, 25 and 5 dozen Celery are fairly plentiful, but the green-stuffs continue difficult to obtain. E. H. R., Covent Garden Market, April 11, 1917.



COMPENSATION FOR ACCIDENTS: Shrewsbury. The amount of damages you will receive as compensation for your disablement depends on many circumstances; among others, on the extent of the injury you have received. You should send in a formal claim to your employer for the amount to which you consider you are entitled, and he, in his turn, will send it to the society in which he has insured his risks under the Act—provided he is so insured. The amount to which you are entitled will be settled by the department in charge of such claims.

CUTTIMERS IN FRAMES: J. M. Collect a quantity of stable manure and leaves for a hot-bed, mixing them together in an open yard every second day. If box frames are used, the hot-bed should be at least 3 feet wider than the frame, allowing a margin of 18 inches all round on which to place fresh fermenting materials later. The seeds should be sown singly in small, clean pots and germinated on the hot-bed. Cover the pots with glass, and allow a small space for moisture to escape, but not sufficiently wide to allow of mice reaching the seeds. See that the bed does not become too hot through excessive fermentation or the seeds may be damaged

When the plants have made two rough leaves they may be planted on mounds of light, rich soil. As soon as roots show through the soil, pinch out the tops of the plants so that several leading growths may be produced from the base. Train the shoots on the surface of the bed, and stop them when they have grown to a length of about 18 inches. Before the shoots extend too far the bed should be made up with sufficient soil to carry the crop through the season. Careful attention must be paid to stopping and thinning the shoots, or the frame will become crowded with foliage. It is better to stop and thin the plants once or twice weekly than to remove large quantities of foliage at one time. During the growing and fruiting periods the plants may be watered freely with liquid manure. Admit air to the frame with caution—it is better to show the p't lightly on sunny days than to admit a large quantity of cold air. All The Year Round is a good variety for frame or pit culture.

LAND FOR A NURSERY: T. B. With reference to your desire to obtain land after the war for carrying on the business of a nurseryman and florist, we learn that there are no public funds available from which advances may be expected. With regard to the provision of land by County Councils for purposes of small holdings, these authorities are authorised by the Small Holdings and Allotments Act, 1908, to provide small holdings for persons who desire to buy or lease, and will themselves cultivate the holdings. Under Section 61 (1) of the Small Holdings Act, the expressions "agriculture" and "cultivation" include horticulture and the use of the land for any purpose of husbandry, inclusive of the keeping or breeding of live stock, poultry, or bees, and the growth of fruit and vegetables. If you write to the Board of Agriculture, Whitehall Place, London, S.W., for their leaflet No. 215, this will give you further information.

NAMES OF PLANTS: M. S., Cheshire. Brassia variegata.—W. A. T. Howe. 1, Acacia cyanophylla. 2, Acacia longifolia. 3, Acacia podalyfolia. This last is a rather uncommon species, illustrated in the *Gardener's Chronicle*, January 4, 1908, p. 11.—J. H. W. 1, Mackaya (Diella); 2, Adiantum formosum; 3, Microlepia (Davallia) platyphyllo.

NECTARINE FLOWERS FAILING TO SET: C. W. The branch you send is perfectly healthy, and the flowers well developed. The failure of the tree to set fruits is probably due to some check, most likely the result of hard pruning, which you state the tree received to prevent excessive growth. If the tree continues to make gross growth this season, it should be root pruned in the autumn.

RICHARDIA WITH DOUBLE SPATHES: C. W. S. The abnormality is not uncommon, and we frequently receive examples of these twin Arums. You will find a reference to the same phenomenon in the report of the Scientific Committee of the R. H. S. in our last issue, p. 147. It is probably the result of cultivation, the plants receiving more generous treatment than in a wild state.

Rose: Ditta. If the shoot to which you refer arises above the grafted part, it will flower, however many segments the leaf may possess. If, however, it appears to be of a totally different growth, with smaller foliage, it may have arisen from the stock, in which case your friend's advice that it be removed should be followed. It is usually a simple matter to determine whether the growth arises from the stock or from the scion. Suckers, as shoots from the stock are usually termed, always come from the base; they are generally very long, spiny, of pale green colour, and bear smaller leaves.

Communications Received.—J. McD.—W. G. W.—Phlips, Merton.—A. H.—H. V. O.—A. J. P.—A. W. R.—L. L.—W. F. R., B.E.F., France.—P. L. R., Warrington.—D. C.—W. B. H.

THE WEATHER.

THE WEATHER FOR MARCH.

March was a cold month with a low rainfall. Apart from the gales of the 4th and 5th there were no high winds. Snow fell on seven days, and lay continuously from the 6th to the 14th. The rain-gauge yielded 1.33 inch, collected during 17 days of precipitation, while the number of rain days (over 0.04 inch) were eight. The heaviest fall, of 0.92 inch, was on the 10th. Of sunshine we had 124 hours—an average of 4 hours per day, and a percentage of 35. There were eight stress days. The highest barometric reading was 30.410 inches, on the 15th, and the lowest, 28.966, on the 29th, the mean for the month being 29.831 inches. Temperature varied between 54°—the highest maximum on the 18th and 25th—and 49°, the latter being the lowest minimum, and recorded on the 9th. The lowest maximum was 33°, on the 7th, and the highest minimum 40°, on the 25th, while the means of the maxima and minima were 45° and 30° respectively. From these data we get a mean temperature for the month of 37°, a mean range of 13°, and an absolute range of 46°. On 17 days the temperature fell below the freezing point. There were 26 nights of ground frost, the most minimum on the grass being 26°, with a lowest reading of 4°, on the morning of the 9th. The means of the wet-bulb and dry-bulb thermometers were 34.8° and 56°, giving a relative humidity of 80 per cent. At 1 foot deep the soil temperature fell from 37° to 33° and then rose to 39°. The prevailing winds were westerly. James Wallace, St. Andrew's Training College Gardens, Kirkton of Mans, Dundee.

DEBATING SOCIETIES.

READING GARDENERS'. The subject of the sowing of vegetables in July and August was dealt with at the recent meeting of the above Association by Mr. H. C. Loader, The Gardens, Egham Park, Reading. Mr. Loader said that land might be treated in such a way as to produce two useful crops within twelve months, without undue strain, by the sowing and planting of vegetables in July and August on ground which had already borne crops of early Peas, Potatoes, Cauliflowers, dwarf Beans, Beets, or Carrots. For these crops the ground would have been well tilled and manured during the previous winter and spring, and therefore no much labour was required to prepare the soil. Early sowing was necessary for success. The lecturer then dealt with the varieties of vegetables he had found successful late in the season.

WARGRAVE AND DISTRICT GARDENERS'.—The second lecture on war-time gardening before the members of this Association was given on March 28 by Mr. C. Moore, gardener to Mr. W. E. Cunn, Wargrave Manor, and entitled "Croping the Allotment." A plan of a 20 pole plot was drawn on a large blackboard, and on it were marked positions for the various crops recommended. The lecturer dealt with the following vegetables, giving a short description of how to sow or plant, and mentioning the best varieties: Artichokes, Peas, early and late Potatoes, Parsnips, Runner Beans, Onions, Carrots, Beet, Broad Beans, Cabbage Marrows, French Beans, Shallots, Cauliflowers, Lettuces, Parsnips, and herbs. Inter-cropping and rotations were explained. The hon. secretary (Mr. H. Colday) advocated the formation of an Allotment Holders' Society, and outlined the method of proceeding for its establishment. A vegetable show for allotment holders and cottage gardeners is being arranged for the autumn.

GARDENING APPOINTMENT.

Mr. J. Watson Jun., for the past 10 years (as donor to H. GIBBERT, Esq. and H. MAX, Esq. respectively at "Easton," Kingston Hill, Surrey, as Gardener to W. P. WILSON, Esq., Psychone Court, Dorking, Surrey (Thanks for 2s for the R.G.O.F. box.—EHS.)

CATALOGUES RECEIVED.

J. R. PEARSON AND SONS, Loddham, Nottinghamshire.—Bills and Strawberries. FOREIGN. VILMOREN, ANDRIEUX ET CIE, 4, Quai de la Mégisserie, Paris.—Hardy Plants.

THE ROCK GARDEN

A practical work on the cultivation and management of Rock Gardens, written by Reginald Farrer. One of the best and most popular works on the subject.

Contains 8 plates in colour. Price 1/10 post free. THE PUBLISHER, The Gardeners' Chronicle, Ltd., 41, Wellington Street, Covent Garden, London, W.C. 2.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

BALIFF or HEAD GARDENER; capable, wide business and trade nursery experience, with special knowledge of Hardy Plants and Rock Gardens, age 35, single, exempt, South preferred, good salary, P. Box 3, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD); first-class, expert—once in all branches, including Fruit, Vegetables, and Estate Management, age 48, no family at home, T. BENNETT, Maplehurst, Woodhouse Eaves, Loughborough.

GARDENER (HEAD); life experience, gained in large establishments, excellent references, single, married when suited, age 30 SAUNDERS, Martyr, Worthy, Winchester.

GARDENER (HEAD); first-class, expert; practical knowledge in every branch of Horticulture, with Estate management, if necessary, at liberty, A. B., Box 14, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD) or GARDENER BALIFF; age 46, fully experienced in the management of large Gardens and all kinds of Estate work, could organise for food production, disengaged, GARDENER, 23, Worston Road, East Grinstead.

GARDENER (HEAD WORKING) or GARDENER BALIFF; well up in all requirements of good establishment, thoroughly experienced, both outside and inside class, also landscape work, excellent references, 19 years' Head, age 48, married, no family, R. PRATT, Clayton Hall Gardens, Newcastle, Staffs.

HEAD WORKING GARDENER requires permanent situation, well up inside and out, over military age, long reference, near a town preferred, W. WHITE, The Homestead, London Road, Windesham, Surrey.

GARDENER (HEAD WORKING); where 2 or 3 Under Men are kept, life experience in good all round Gardening, can be highly recommended, age 38, married, no family, T. E., Box 6, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING) seeks engagement with lady or gentleman in good establishment, the experience in all branches and stock, age 38, wages, 5s, horse and fringe, J. SHIMPSON, 353, Notton Way, Letchworth, Herts.

W.M. CUTBUSH & SON have several first-class GARDENERS on their register who can be well recommended. Full particulars on application to Highgate Nurseries, London, N. 6.

LADY GARDENER; Inside experience chiefly, desires post under Head Gardener; good recommendations, quick and willing; Lancashire preferred.—BRADLY, Goswain Place, Birkhead, Cheshire.

LAD, aged 17, seeks Situation in Garden; good reference.—A BEAROCK, Trent College, Long Eaton Derbyshire.

TRADE.

MANAGER or INSIDE FOREMAN; A qualified to take entire responsibility; good references from up-to-date London and provincial nurseries.—F. H., Box 3, 41, Wellington Street, Covent Garden, W.C. 2.

FLORIST, FRUIT and VEGETABLE BUYER; 7 years' experience of Covent Garden; good knowledge of Market Nurseries; discharged soldier; active.—E. H. SEYMOUR, 6, Shaftsbury Avenue, New Barnet, Herts.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table with 4 columns: Ordinary Positions, Facing matter and Back Page, Half and quarter pages, column and half column spaces, pro rata, 4 line space not exceeding 20 words, Per inch, single column, Per inch, across 2 columns, Per inch, across 3 columns. Rates range from 10 10 0 to 1 1 0.

Front page (no display allowed) 1/- per line space, (Headline counted as two lines)

For discounts apply to address below.

SITUATIONS WANTED.

26 words 1s. 6d. and 6d. for every additional 8 words or fewer

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENING, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

Table with 2 columns: THE UNITED KINGDOM, ABROAD. Rates: 15/- per annum, 17/6

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telegrams: 1513 "GARDENERS, RAND, LONDON."

Telephone: 1513 GERRARD.

ONLY TO ORDER.

In consequence of the decision of the Board of Trade, which will come into force on May 1st, to prohibit the return to publishers of unsold copies of any journal, the GARDENERS' CHRONICLE will be obtainable after that date only if ordered beforehand. We ask, therefore, all readers who desire a copy each week (and are not already receiving it direct from this office) to give their local newsagent a definite order to this effect.

ORDER FOR NEWSAGENTS.

To Mr. Newsagent.

Address

Please deliver the GARDENERS' CHRONICLE to me each week at the address given below.

Name

Address

By Special Appointment to



His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

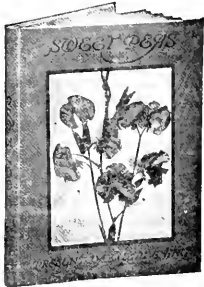
GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated
with Eight Plates Reproduced from Colour Photo-
graphs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof. BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

SEED TRADE.—TRAVELLER required by leading North of England firm of Agricultural Seed Merchants to represent them in Durham and North Yorkshire; permanent situation and good salary to thoroughly reliable man.—Write, stating age, experience and salary required, to F. S., Box 16, 41, Wellington Street, Covent Garden, W.C. 2.

AGRICULTURAL SEEDS.—Wanted, as Warehouse Foreman, experienced Man who understands Covers and Grasses and machinery for same.—Apply by letter, with full particulars of experience, references and wages required, to CHARLES SHARPE & CO., LTD., Seafood.

WANTED, MAN, for small Nursery; help in general work of same, speciality cut foliage, wages 38s.—CHIFFERFIELD, Hampton Hill, Middlesex.

WANTED, One or Two LADY GARDENERS, for work in a Curatorial Nursery.—Apply, stating age, experience, and wages required, to MESSRS. PERCY LOVELL & CO., LTD., The Manor Nurseries, Durrington, near Worthing.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d. for each succeeding eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

BAILIFF or HEAD GARDENER (exp. 10 yrs.) req. for a fine and trade garden, exp. 10 yrs., with special charge of Hardy Plants and Book Gardens, age 37, single, except 8/6m. present, good salary. Apply, MISS WING, 101, Covent Garden, W.C. 2.

GARDENER (HEAD) or GARDENER BAILIFF, age 36, full experience in the management of large gardens and all kinds of Horticulture, could organize a good production, discharge GARDENER, 23, Milton Road, East Greenwich.

HEAD GARDENER, Superintendent in large establishment, exp. 10 yrs., in charge of all the work, with special charge of Hardy Plants and Book Gardens, age 37, single, except 8/6m. present, good salary. Apply, MISS WING, 101, Covent Garden, W.C. 2.

GARDENER (HEAD); full experience in all work, superintending of all departments, including landscaping and planting, and care of choice Trees and Shrubs, Rockeries, and Water Gardening, and the general routine of a small estate, is open to negotiation with the lady of gentleman then is wanting a position of man with good experience, energetic, and reasonable, age over 50, family from home, good house, and wages required suitable to position, highly recommended from previous employer, would like to place wife, family of six or seven children. An interview preferred. MANAGER, Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD) and MANAGER; small Estate in England, 20 years' experience, 12 years as Head here, holder of B. Com. Agr., and all Horticultural certificates, as a result of some instruction. G. GRIMMER, Norton Manor Gardens, Sutton, Surrey, Surrey.

GARDENER (HEAD, where 3 or more are employed) full experience in all work, including all departments of Horticulture, including design and Apron Work, intelligible, married, wife, wages 40 WHITFIELD, 11, Blaylock Cottages, Maidenhead, Berks.

GARDENER (HEAD); first-class expert; practical knowledge in every branch of Horticulture with Estate management if necessary; at liberty—A. B., Box 14, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING); 47; life experience, or GARDENER BAILIFF; stock and poultry cabinet-maker, no family; excellent references—J. L., Box 22, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING, where 2 or 3 more men are kept); life experience in all branches of Gardening, can be highly recommended, age 47, married, no family—T. E., Box 20, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING) or GARDENER BAILIFF, well up in all requirements of good establishment, thoroughly experienced both outside and inside Glass, also Landscape work, excellent references—44 years, age 42, married, no family—R. PRATT, Clayton Hall Gardens, Newcastle, Staffs.

GARDENER (HEAD WORKING, where 2 or 3 more men are kept); life experience in all branches, 2nd references, married, age 48, J. HARWOOD, 6, Robinson Road, Preston Park, Brighton, Sussex.

G. H. Y. SHOEBRIDGE seeks SITUATION as HEAD GARDENER in good establishment, life experience in all branches, 34 years as Head, intelligible, no-24244. C/o Mrs. PRING, Stamford, near Rugby.

FOREMAN (INSIDE) BONDERS, SITUATION; 10 years' experience in large establishments, excellent references, age 42, 28/6 wages, no-24244. Apply, A. J. DEW, Tongue of Garden, Huddersfield, Yorks.

GARDENER; good at Vegetables, and all kinds of Horticulture, age 32, single, and paid 12/6 weekly, 20/6 wages, no-24244. Apply, A. J. DEW, Tongue of Garden, Huddersfield, Yorks.

DISCHARGED Soldier BONDERS, SITUATION; 10 years' experience in large establishments, excellent references, age 42, 28/6 wages, no-24244. Apply, A. J. DEW, Tongue of Garden, Huddersfield, Yorks.

YOUNG MAN (intelligible) seeks SITUATION as GARDENER in good establishment, as JOHN NEWMAN, 10 years' experience, inside and outside, age 21, 12/6 wages, no-24244. Apply, MISS WING, 101, Covent Garden, W.C. 2.

LADY GARDENER requires Position; 10 years' experience in all work, with special charge of Hardy Plants and Book Gardens, age 37, single, except 8/6m. present, good salary. Apply, MISS WING, 101, Covent Garden, W.C. 2.

LADY GARDENER requires Position; 10 years' experience in all work, with special charge of Hardy Plants and Book Gardens, age 37, single, except 8/6m. present, good salary. Apply, MISS WING, 101, Covent Garden, W.C. 2.

MRS. LEOPOLD SALOMONS, former Head Gardener, seeks Position; 10 years' experience in all work, with special charge of Hardy Plants and Book Gardens, age 37, single, except 8/6m. present, good salary. Apply, MISS WING, 101, Covent Garden, W.C. 2.

FOUR LADIES, 6 weeks' training, Veg. and Flowering, from May 1st to Garden Hand, 10/6 weekly, 20/6 wages, no-24244. Apply, MISS PORTER, 11, Blaylock Cottages, Maidenhead, Berks.

TWO LADY GARDENERS requires Position; 10 years' experience in all work, with special charge of Hardy Plants and Book Gardens, age 37, single, except 8/6m. present, good salary. Apply, MISS WING, 101, Covent Garden, W.C. 2.

TWO LADIES, 6 weeks' training in Veg. and Flowering, from May 1st to Garden Hand, 10/6 weekly, 20/6 wages, no-24244. Apply, MISS ALKON, 11, Blaylock Cottages, Maidenhead, Berks.

TRADE.

SITUATION, required immediately, as CHIEF HAND, 16 years' experience, at a large estate with an orchard, Tomatoes, Cucumber, and Chinese in the house, on to Market Garden, age 40, single, age 31, Address, GROWER, Box 27, 41, Wellington Street, Covent Garden, W.C. 2.

GROWER Cucumber, Tomatoes, and general fruit, Nursery produce, over military age; good references, at liberty, no fault of own through leaving present situation. GARDENER, c/o Mrs. Colles, Bradninch, Devon.

FOOD PRODUCTION.—Gentleman (intelligible), with some previous practical experience, requires employment on Fruit and Vegetable farm, where other gentlemen or ladies are employed, usual wages, or in lieu board and lodging, experience would assist in approval, well-established concern later. Address, D. R., Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

FLORISTS.—Young Lady requires re-employment; over 12 years' experience, Designs, Bouquets, Wreaths, Plants, some previous work, Bouquets, Letters, MISS FLORAL, c/o 23, Graham Road, Worthing, Sussex.

The Gardeners' Chronicle SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table with 3 columns: Description of ad type, Rate per line, and Total cost. Includes Ordinary Positions, Farming matter and Bank Page, Half and quarter pages, 4 line space not exceeding 20 words, 50 inch, single column, 50 inch across 2 columns, 50 inch, across 3 columns.

Front page (no display allowed) 1/4 per line space. Headline counted as two lines.

For discounts apply to address below.

SITUATIONS WANTED. 26 words 1s. 6d., and 6d. for every additional 8 words or below. These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

Table with 2 columns: Subscription type, Rate per annum. Includes THE LITTLE KINGDOM, 15s. per annum, and ARMSAD, 17.6.

Chèques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD., 41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2. Telegrams: 1533 "GARDENERS," RAND, LONDON." Telephone: 1533 GERRARD.

ONLY TO ORDER.

In consequence of the decision of the Board of Trade, which will come into force on May 1st, to prohibit the return to publishers of unsold copies of any journal, the GARDENERS' CHRONICLE will be obtainable after that date only if ordered beforehand. We ask, therefore, all readers who desire a copy each week (and are not already receiving it direct from this office) to give their local newsagent a definite order to this effect.

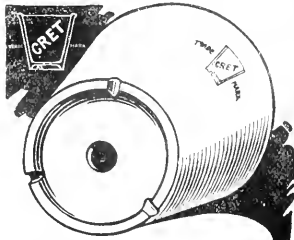
ORDER FOR NEWSAGENTS. To Mr. Newsagent.

Please deliver the GARDENERS' CHRONICLE to me each week at the address given below.

Name

Address

"Saw Bull's" THE FOOD FOR PLANTS



CRETS make re-potting easy and safe.

They are so smooth inside and cleanly shaped, and CRET drainage and porosity prevent roots getting sour or water-logged. Test CRETS against ordinary pots, and note difference in plants.

Specimen CRET Prices:—2 1/2 ins. 4/- per 100; 3 ins. 75/- . Carriage Paid on orders over 20/- . Safe Delivery Guaranteed.

FREE SAMPLE "CRET" Pot on request, with interesting booklet giving prices, special assortments, etc. Write today.

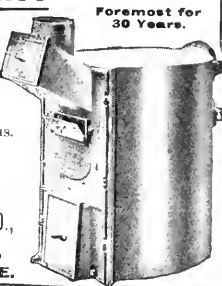
PETER BAILEY & SONS, LTD.,
2, Heaton Mersey Pottery, near Manchester.

Horse Shoe

Boilers

For Economy.
As used in the Botanical and Zoological Gardens.
PRICE OF COMPLETE APPARATUS ON APPLICATION.

C. P. KINNELL & CO.,
Ltd.,
Southwark St.,
LONDON, S.E.



Foremost for 30 Years.

FORBES' ILLUSTRATED CATALOGUE.

Florist's Flowers, Hardy Plants, Vegetable and Flower Seeds.

Free on Application.

JOHN FORBES (Hawick), LIMITED,
The King's Nurserymen,
HAWICK, SCOTLAND.

BOOKS ON FOOD GROWING.

- A Book About Potatoes and Other Vegetables. By Walter P. Wright. Illustrated 2s.
- Intensive Culture of Vegetables. By M. P. Aquilino 3s. 6d.
- The French system adapted to English requirements.
- Root and Stem Vegetables. By Alexander Dean. Illustrated 1s. 6d.
- Vegetable Growing Made Easy and the Cooking of Vegetables 1s.
- Practical Fruit Growing. By J. Cheal 2s. 6d.
- Fowls for Profit. By A. J. Macsell 2s. 6d.
- Poultry Farming for Beginners. By J. W. Hurst (Editor of the "Poultry World") 3s. 6d.
- The Farm and the Dairy. By Prof. J. P. Sheldon 2s. 11d.
- The Book of the Pig. By James Long. Illustrated 7s. 6d.

Write for a complete Catalogue.

THE TIMES BOOK CLUB,
380, Oxford St., London, W. 1.

CHEALS' DAHLIAS.

NEW ILLUSTRATED CATALOGUE
OF ALL SECTIONS OF DAHLIAS.
POST FREE.

J. Cheal & Sons, Ltd.
The Nurseries, CRAWLEY.

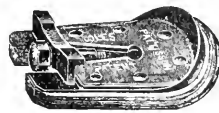


Fig. 1.



Fig. 2, A Quality.



Fig. 3, B Quality.

The "PATTISSON" HORSE BOOTS

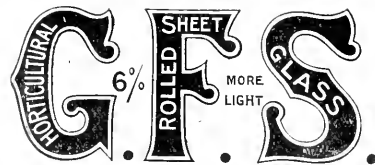
SIMPLEST! STRONGEST! MOST ECONOMICAL!
SOLES of best English Sole Leather (Waterproofed), with Motor Tyre Rubber Studs, or of Solid Rubber. Fig. 1 can be Refitted repeatedly, equal to New Boots. Rubber Soles Strongly Recommended.

USED FOR MANY YEARS IN THE ROYAL AND IN THOUSANDS OF THE PRINCIPAL GARDENS.

The "PATTISSON" BOOTS are the most durable on the market, outlast several sets of ordinary boots, and when worn out can be many times refitted and are then equal to new ones, but this may only be satisfactorily done by us, the makers.

SILVER MEDALS. Hundreds of Testimonies. Royal Horticultural Soc., 1904. "The Field" says:— & 1914. Royal International "As good as anything that could be devised" Exhibition, 1912.

Illustrated Price Lists, from the Makers.
H. PATTISSON & CO.,
4-6, Greyhound Lane, STREATHAM, S.W.
CONTRACTORS TO H.M. GOVT.



A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/8 in. (or equal to stout 21 oz.) in thickness. Can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of
GENUINE
WHITE LEAD
PAINT.

"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cans.

AND
BEST
LINSEED OIL
PUTTY.



Complete Price List of
Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C. 6
And Blackfriars Wharf, Upper Ground Street, S.E.
QUOTE GARDENERS' CHRONICLE.

SANKEY'S FAMOUS GARDEN POTS
Best and Cheapest.
Satisfactory quantity of each size required and have a "Trade and Retail" quantity frequently amounts to half value of ordinary pots. Write for Price List, free.
SPECIAL PRICE on all quantities. Both Wholesale and Retail.
RICHARD SANKEY & SON, LTD.,
Dulwell Potteries, NOTTINGHAM.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

EVERY
GARDENER
KNOWS
THAT

Clay's gets there
and makes the Garden
gay all the year round.

Sold everywhere in TINS at 6d. A 1s., and in BRANDED & SEALED BAGS: 7 lbs., 2s. 6d., 14 lbs., 4s. 6d.; 28 lbs., 7s. 6d.; 56 lbs., 12s. 6d.; 112 lbs., 20s. Or direct from the Works, Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mfrs & Bone Crushers, STRATFORD, LONDON E.



IT IS THE
STANDARD
FOOD FOR
PLANTS.

Gardeners' Chronicle

No. 1582 - SATURDAY, APRIL 21, 1917.

CONTENTS.

Acid phosphate for Roses	164
Agiary, the	167
British Pine seeds for	167
France	164
Campanula spiciosa	166
Craindeiwile Training	
School	168
Pruning in broken-up	
pasture	164
Farm, crops and stock	
on the home	167
Food production—	
Brussels sprouts	161
Glasgow allotments	161
Plowers	162
Potato-crops	161
President Wilson's ap- peal to growers in	
America	162
Pumpkins and Squashes	161
Relative food values	161
Books	163
Fruit and the food supply	163
Hansen, experiments	
with	166
Englis, Mr. David	164
ILLUSTRATIONS.	
Campanula spiciosa	166
Gilium Grayi	165
Lilium Parryi	165

THE EFFECT OF FROST ON LILIUM BULBS.

A POST BAG contributor writes to the editor regarding the effect of frost on the bulbs of Lilium, and states that a good deal of interest is taken in the subject, still, and, in fact, to prevent an account of the position.

On the above subject, and seeing that the subject is concerned, the genus Lilium, is a considerably hardly one in the literal sense of the word, as distinct from the interpretation that has been rather loosely placed upon it of late years in horticultural circles.

In the *Monograph of the Genus Lilium*, the geographical distribution of Lilium is given as from the 10th parallel to about mid-way between the 60th and 70th, not so very far from the southern limit of the Arctic Circle. By far the greater number of species is native of countries in which the winters are long and normally severe, and only two, *L. non-chlorinum* and *L. philippense*, have been found within the tropics. They are out of the reckoning so far as British gardeners are concerned, and so is the group of sub-tropical species, though not for the same reason.

In the case of the last-mentioned section it is not so much the effect of frost on the bulbs that makes their cultivation in the open such a one-sided gamble, as the fact that being either precocious or tardy, their normal season of growth places them at the mercy of the weather at a time when it is almost fatal to the element.

That is what renders the garden cultivation of *L. longibrum*, for instance, impossible in Great Britain for the young growth is almost certain to be cut down between the beginning of March and the end of May. Others, again, are so late in growth that in normal seasons the leaves are falling off the trees before the plants have been able to open their flower buds, and *L. sulphurum* is a case in point.

An enumeration of this section includes, besides *L. longibrum* and *sulphurum* at opposite ends of the scale, *L. nepalense*, *L. Wallingianum* and *L. Thomsonianum*, as well as *L. Downi* and the other Burmese Lilies.

The degree of cold the bulbs of many species normally bear in their natural habitat is as forthcoming, and is certainly never reached in this country. The Manchurian species, for instance, of which *L. tenuitubum* is best known to cultivators, probably suffer a lower temperature than other Lilies, though in parts of Canada *L.*

philadelphicum run them close. The European Lilies, among which the Martagons predominate, are all frost-proof, and bulbs of *L. candidum*, chalcidonicum and croceum, as well as *dalmaticum*, *ponponium*, *pyrenaicum* and *Szovizianum* may be frozen tight without hurt.

One may say the same of many of the Japanese species—even those of the southern half of Honshu—and both *L. speciosum* and *L. auratum* are frozen to an almost unbreakable ball of ice without permanent injury. *L. Hansonii* takes no account of cold, nor *L. Batemaniae* either; *L. japonicum* and *rubellum* do not seem to mind it, while *L. cordifolium*, *L. Glehnii*, and the diminutive *L. melolobodes* are as hard as nails. It has long been known that bulbs of *L. tigrinum* may be exposed to very severe cold without coming to any harm.

L. auratum, *macranthum* and *speciosum* might seem to be wild plants of islands off the southern coast of Japan, and one might suppose that they would almost certainly be injured by extreme cold. Yet a score of bulbs of each species in pots, purposely left out in the open last January and February with nothing between them and the heavens, are now growing strongly. Eight weeks ago they had been frozen so hard for more than a month that it was impossible to examine a bulb without first of all thawing out the pot and its contents.

In common with many Chinese plants of more or less recent introduction, *L. regale* is just coming from its first experience of the rigours of a severe British winter, and if other plants from the same country turn out to have been so little affected as this one, gardeners may well rub their hands together. Seed, seedlings, and mature bulbs alike have come through an ordeal that tried man and beast very severely, and almost seem the better for it. The same may be said of *L. Willmottingii*, for a basket of bulbs of this species intentionally left on the top of a wall, fully exposed, and with nothing to shield them from wind, rain, snow, and all the other terrors of last January and February, were turned into glistering balls of ice for weeks on end. Incidentally, the bulbs underwent a color transformation, changing from white to purple, but that had nothing to do with the matter, and is a point of minor importance. It is a pity that the bulbs of February some of these bulbs should have been of pure white, for the effect of the frost seems to show that retrogradation does not spoil their visible qualities.

Other Asiatic species that are not embarrassed by low temperatures are *L. Henryi*, in a lesser degree, *L. Sargentianum*, and the so-called *L. Brownii* group. *L. polyphyllum*, from the Himalayas, survives, and no one need have any anxiety about *L. griseum*, even though as a rule the bulbs are only just below the crust of the earth.

It is not possible to speak with so much confidence of all the North American Lilies, though *L. canadense*, *Grayi* (see 55), *suprum* and *philadelphicum* are able to stand anything they ever get in the way of cold in this country.

It is among the Lilies of the Southern and Western States that one must look for victims in winter, such as that now dying to a close in such dazing fashion, and neither the Washington Lily nor *L. tuberosum* has come through the ordeal any too well. Though by no means moribund, the bulbs of these are charred and have obviously had a serious shock. *L. Kelloggii*, *L. columbianum* and *Belanderi* Lily have been crippled, but in a minor degree; *L. parvulum*, in all its many forms, is unharmed, while, contrary to one's expectation, *L. Parryi* (see 62, 56) shows no hurt. *L. Catesbaei* is the only species that appears to have been actually killed by the frost, though *L. carolinianum* has had a narrow escape.

When the mercury falls to within a notch or two of zero, and to flesh and blood the wind seems far below that numbing point, no amount of covering serves to keep frost out of un-latched frames; a few weeks since frame thermometers were registering a state of affairs that prepared one for the discovery of pans and their contents frozen to a solid block. The result has obviously been a temporary setback, but it is equally obvious that no permanent harm has been done.

The foregoing notes refer to Lilies that have come under the writer's observation. They include all species in ordinary cultivation, as well as many, not specifically mentioned, that are not yet commonly met with in gardens. It is unquestionable that in the first two months of the present year the bulbs passed through a crucial test, for in the case of every one the ground was frozen hard to a point well below them. *A. Groom, Kenton's, Upper Calham, Berks, April 15.*

THE MARKET FRUIT GARDEN.

AWKWARD ALLINGTON.

ALLINGTON PIPPIN is a healthy growing Apple and a great fruiter in alternate seasons. But its habit of growth is more awkward than that of any other variety grown by me. It sends out a prodigious number of slender laterals at all angles, and often pointing downwards. Unless these are thinned out annually, a tree becomes a thicket of branches. As the variety produces a superfluity of natural fruit spurs, there is no need to prune for artificial spurs, and the best plan is to cut off all superfluous laterals close to the main branches. The leaders should be left entire after a tree is well furnished with branches, as the difficulty is to get sufficient upward growth. Summer pinning is particularly desirable for this variety, to prevent the waste of sap by cutting out cleanly all superfluous laterals as soon as they have started, and thus concentrating the vigour of a tree upon the leaders, which are apt to be too slender. The only other variety in my orchards which has a similar habit of growth is *Lancis Prince Albert*. With this variety there is the same tendency to throw out laterals in wrong directions, but this Apple is a much less vigorous grower than Allington, and is less liable to become densely crowded with laterals. Its treatment, however, should be the same as that described above.

GRASS ORCHIDS AND ISSUES.

The note on this subject from Mr. W. H. Davies on p. 119 is interesting. He does not suggest any reason for immunity from caterpillars of the winter moth and aphides in grass orchards when arable orchards near by were attacked. Possibly it is because trees with plenty of sappy wood are preferred by aphides when depositing their eggs, and the abundance of such wood would be greatest on cultivated ground. Certainly they attack young and sappy trees more than old trees with less tender new growth on them. This explanation is the only one that I can suggest in relation to the aphids. As to the winter moth caterpillars, it may be that they have more difficulty in burrowing into the solid grass-land than into the soft cultivated soil when they fall to the ground to pupate, so that many of them become the prey of birds before they can bury themselves. It would be interesting if other growers would state whether they have observed the difference mentioned by Mr. Dyer, also, whether they have found more or less immorality of grass than in arable orchards.

WINTER SPRAYING.

Winter spraying is most likely to prove effective against aphides and Apple-suckers, if it ever is so, just before the fruit buds open. Lime alone, 2 cwt. to 100 gallons of water, is

now the favourite specific, as it is believed to impede the action of aphides so that many of them perish, if it does not kill them outright. But lime-spraying is a laborious operation, and few growers, it is to be feared, have enough hands at the present time to carry it on extensively. As for lime-sulphur, which can be applied more expeditiously, it is not a good insecticide, and after a prolonged experience in its use, I cannot say that I am convinced that it has any material effect in the extermination of either aphides or Apple-suckers. Lime alone was used by me last year, but it was not a great aphid season, even for un-sprayed trees, and Apple-suckers were as numerous as usual in my orchards. My preference is for lime-sulphur, because it is a fungicide, and there is the hope

a serious matter where trees are to be profusely wetted, as they should be in winter spraying. The winter strength of lime-sulphur should not be used after the foliage has developed; but I have often applied it with impunity when fruit buds were on the point of opening. There will be no time for the winter spraying of Plums in my orchards this season, other than Monarchs, which were done some time ago to prevent bud-eating by birds. There has not been any bud-eating worth notice at present, but whether this immunity has been due to spraying or to the scarcity of budlinches in my district cannot be stated.

UNRIPE APPLE SHOOTS.

Unripe Apple shoots of last season's growth

voted to them. An Orange house should be well lighted, ventilated, and lofty.

In 1915, through the courtesy of Messrs. Rivers, who grow Oranges extensively, I was able to get a few grafts to put on some Lemon seedlings I sowed the year previously. The varieties were St. Michael's, Sustain and Embigo; they were put on in January, and grew apace. Last year (1916) I allowed them to carry fruit for the first time, which finished to perfection. The fruits were large, clean-skinned, with a very thin peel, deliciously flavoured, and full of juice. My largest fruit was 10½ inches in circumference, and weighed slightly over 9 ounces. The size of the pots varied from 6 to 8 inches. The compost is made up of equal parts loam and well-rotted leaf soil, with a



FIG. 55. *LILUM GRAYI*, ONE OF THE HARDEST OF THE NORTH AMERICAN LILIES. COLOUR OF FLOWERS REDDISH-CRIMSON (See p. 159)

that it may do something to check the development of cank and brown rot, particularly of scab on the wood, to prevent it from sending out spores to infect the leaves, from which the disease extends to the fruit. But there is so much uncertainty as to the efficacy of winter spraying against insects or fungous diseases that I should be disposed to give up a tedious operation which takes men from other important work, if it were not for the desire to cleanse trees of moss, which lime-sulphur of full strength does well. If the concentrated fluid tests about 72 Baumé, as factory-made lime-sulphur should (and as that of my own making does), I use it in the proportion of 1 to 12 of water. If nicotine were added, the mixture would be improved as an insecticide; but the costliness of this addition is

are uncommonly numerous. The wet weather and lack of sunshine experienced last autumn supply a probable explanation. *Southern Grower.*

ORANGES.

In private gardens good use could be made of some of the houses by growing fruits of the Citrus family, such as the Orange, Lemon, and Lime; by means of a few trees a crop of fruit could be grown much superior to imported fruits. Those who take up the cultivation of Oranges should grow only the best varieties. For the sake of convenience the plants should be grown in pots instead of being planted out in borders, unless a structure is entirely de-

sprinkling of charcoal and a little sand to give it porosity.

I endeavour to ripen the fruits under twelve months by starting the trees in January; fire-heat is used only early and late in the season, but we make as much of the sun's rays as possible in between. The trees are watered and syringed with rain water until the fruits show colour, when syringing is discontinued, and a drier atmosphere kept, with only sufficient water to keep the trees healthy. The fruits finish ripening here in a temperature of 55° to 60°, never higher. The trees have sufficient ventilation at all times. Soot-water and a little Clay's are all the stimulants given. After the fruit is cleared, the trees should be sponged with Quassa Extract or soft soap, and removed to a lower

temperature for a little rest before being started again. A temperature of 45° will suit them nicely.

If re-potting is required, this should be done after growth commences, and over-potting should be strictly avoided. In the early part of the season my trees are grown in an ordinary plant stove. Once a week a little Quassia Extract should be mixed with the syringing water; it will help to keep scale insects in check. A tree or two of the Seville or marmalade Orange should be in every collection. I have this year grafted some new varieties, and they are now pushing their growth.

When well grown, Orange trees are amongst the most attractive of plants, their glossy, evergreen foliage making a magnificent foil to the fragrant flowers and golden fruits. *Thomas P. McPhail, Horticultural Student, The Horticultural College, Surrey.*

ON INCREASED FOOD PRODUCTION.

PUMPKINS AND SQUASHES

As the present scarcity of vegetables is probably more at this time next year, my vegetables will be more numerous than at present consideration. The Pumpkin is not very common in this country, though in the Austral and Colonies, in South Africa, and in America it is second only to the Potato in importance as a food crop. Pumpkins or Gourds, including Squashes, are easily stored, and keep well for ten months or more. They provide a welcome change, and besides being eaten as a winter vegetable can be cooked in many ways. Pumpkin pie being especially good. They are easily grown, the treatment being much the same as for Vegetable Marrows. To get fruits of the largest size in this climate the seeds should be sown in February under glass, but this may be sown now in heat and gently forced on, hardened off, and planted out at the end of May or beginning of June, and if possible, a cloche over the young plant for a week or so after planting. If a cloche is not available, large pots or boxes placed over the plants at night will serve. When established, if the weather is favourable, they will grow very fast, and as soon as the first flowers open they should be hand-pollinated to make some of fertilisation, though it is generally not necessary. At least two plants should be grown and they should be cross-pollinated as the fruits do not always set well with pollen from the same plant. When three fruits of the larger or six to eight of the smaller fruited varieties have set, all the later flowers should be picked off, and the main shoots and any subsequent laterals after the second leaf stopped.

The most useful and the best keeping variety of Pumpkin, which is grown universally in Australia and New Zealand, is the Ironbark. The Hundredweight is similar (and possibly the same under a different name). This can easily be grown to 40lbs. or 50lbs. in this country, allowing only one fruit to a plant, and feeding liberally. In Australia fruits are seen up to 120 lbs. But if three or four fruits are allowed to mature they will be 15 to 25 lbs. each, and these are more useful. Another good large variety is Large Tours or Mammoth French.

The best flavoured Pumpkin is one known as The Turban or Turk's Cap in New Zealand, but it probably has other names; the French Red Etampes is similar. This is also a handsome fruit, having a buff orange skin, with scarlet bosses on the top part. It is a medium sized Pumpkin, weighing from 15 lbs. to a maximum of about 60 lbs., but the plants take up less space, and more fruits per plant can be grown. It is said to be less hardy than the Ironbark, and I have not grown it here, but in New Zealand it grows quite well.

The best Squashes are the Mammoth White Bush, Early White Bush, and the Hulbard. They keep well, but are also good to eat in a young state like Vegetable Marrows.

The fruits of both Pumpkins and Squashes should be harvested when ripe, or as late as possible before frost comes, and the less ripe ones eaten first. They keep best in a dry, cool store protected from frost. *A. J. Bliss.*

POTATO CROPS

The information and statistics given by W. Cuthbertson (see p. 152) concerning the field cultivation of Potatoes in the Lothians shows the practice of giving them a space of 27 by 12 inches to be identical with that of the farmers 100 to 200 miles further north. His suggestion that second early and maincrop varieties should have a space of 3 feet by 12 to 14 rounds in that many Potatoes are sown is too large for the table, necessitating the cutting of the tubers before they can be holed out in conformity with others of more moderate size. Would not closer planting result in saving a small amount of produce from a given area, of tubers of moderate size. In dry seasons all the late Potatoes are greatly increased before frost sets in. A sowing of the tubers commences in the first of June, and there is a loss of ground to the potatoes. After July 1st, this starts to be sown with the year. I sowed three rows of a second early Potato with sturdy tubers for small gardens. Sturdy stems and the fact that they could stand up 20, and I can remember that they were a very crop in the autumn, and that between 10 and 12 inches on the stem and 12 inches in diameter, but also a small one.

It is a pity that the soil is not being about garden results. Where a small garden is surrounded by high walls, also boarded fences, lodges, or other buildings, which obstruct the light and exclude the beneficial action of air and wind, the Potatoes grow tall, fall down, and give but a few and small tubers. A great many of these is due to the poverty of the soil, and to the need to manure more or less heavily, which only ennobles the soil. Many gardens have a good ground for Potatoes by the application of farm and poultry manure until the soil is deep and overabundant with humus. The plants are prey to aphides and various other pests, and when the foliage decays, the Potatoes are dug up, and prove satisfactory and almost unobtainable. There is very little stock in them, and late varieties are worse than early ones. The best remedy for this state of matters is an allotment in an open situation. *J. F.*

The depth of cultivation and the distances for planting are purely matters of circumstance. I have just completed the planting of a seven-acre plot on the "Deans," where the soil has an average depth of 8 inches overlying chalk. To attempt to plough deeper would bring up too much chalk, which would not be an advantage. The rows are made 2 feet 6 inches apart, and the tubers set 15 inches asunder in the rows. On this plot the growth is never luxuriant, neither is the crop heavy, but the cooking quality of the tubers is quite satisfactory, and, as a rule, there is not much disease. This is the eighth successive year Potatoes have been planted on this site, always, until this year, with a change of seed, generally Scotch grown. Up to date, where the soil is deeper, richer, and the growth more luxuriant I advocate deep cultivation and ample space for the more vigorous growing sorts, especially in gardens where trenching is done, and where the soil is of a heavy, tenacious character. On many farms where the soil is stiff it is difficult to plough so deeply as one could wish owing to the presence of large flints, which are freely mixed with the subsoil. In light, bony soils there is no excuse for shallow cultivation, and an advantage

would certainly be gained by deeper ploughing. The manner in which the different varieties grow should govern the distances apart; dwarf growing sorts need not have so much space as those of greater vigour. *E. Mulhaur.*

BRUSSELS SPROUTS

In your interesting review of the recently published pamphlet by the R.H.S. on the cropping of allotments, you express surprise that Brussels Sprouts are discarded from the list of vegetables recommended. I have many times of late put the question to market growers of vegetables, "What is the most valuable of green winter vegetables?" and have invariably received the reply, "Brussels Sprouts." How any person with knowledge of the subject, or, I would say, knowledge of what constitutes a full crop, could argue that "they give only poor returns," I am at a loss to understand. Well-grown plants are ready to pick from early in October and continue in bearing until the middle of April, when the tops further yield much useful food. With the exception of various forms of Kale, no other green vegetables have stood the severe weather of the past four months so well as Brussels Sprouts.

Much complaint of this crop is due to want of appreciation of the fact that to cultivate Brussels Sprouts well a long season of growth is required. Too many persons are sowing the seed when they should be putting the plants out in their final quarters. If the plant has not time in which to make true growth, say, 5 feet to 4 feet high, how can a full crop of Sprouts be obtained?

The miserable plants so commonly seen are but an apology for the real thing, and the sooner those who complain of the uselessness of Brussels Sprouts take a lesson in what is truly representative of the plant the better for all concerned. *E. M.*

THE RELATIVE FOOD VALUES OF DIFFERENT CROPS.

MR. D. W. SIMMONS, writing on "The Relative Food Values of Different Vegetable Crops" (p. 125), states that much is being written that is true so far as it goes, but is not calculated on a stable basis. I agree and rely, for Mr. Simmons goes on to draw comparisons between Potatoes and Parsnips, based on figures very unfair in the latter and a bit flattering to the former. Thus, 8 tons per acre he considers a fair estimate of a crop of Parsnips. I have known many crops of Parsnips which amounted to at least 16 tons per acre. I have not so much experience of Potatoes, but such as I have make me think that 10 tons per acre would be a very fair estimate for the crop, not 12 tons. Mr. Simmons does not make any allowance for the difference in the cost of growing an acre of each of these crops, which is very considerable. On p. 155, under "Fruit Prospects," advice is given to "lose no time in mulching Strawberries." I was always told not to mulch Strawberries, Gooseberries, Currants, or kindred fruits early, but to wait until the fruit is set, and experience teaches me the wisdom of the admonition. The risk of damage by frost is increased exceedingly by mulching. *Wm. Poupert, Tunbridgeham.*

GLASGOW ALLOTMENTS

The Parks Committee of the City of Glasgow has now provided upwards of 4,000 allotments, and there is still a demand for more. The land is mainly acquired under the orders of the Board of Agriculture, and has principally been unoccupied. In order to meet the demand, a popular feature of the Tollcross Park is to be sacrificed by laying out the park occupied by the deer for allotments.

TOO MANY BOOKS.

COMPLAINTS are being received from all parts of the country on the damage done by books, especially to newly-sown corn. In moderate

numbers, it seems certain that rooks do good to the farmer by destroying wireworm and other pests of the soil. But in many districts the number has become excessive, and where that is the case steps should be taken to destroy them. Probably the best method of attack is to shoot the young rooks just before they are able to fly away from their breeding-place, some time about the middle of May. This system has two advantages—(1) it supplies the basis for rook-pie, which is an excellent form of food; (2) it leaves the rooks alone while the young birds are being fed by the parents, during which time the rooks chiefly eat insects. But this year cartidges are scarce, farmers are busy, and it is difficult to arrange a shoot just at the right time. Another method of reducing the numbers of rooks is either to destroy the nests, or to secure the birds off the nests some cold night after the eggs are laid and before they are hatched. The eggs become chilled and fail to hatch out. When scared from the nest, the birds will probably desert it, and move to another clump of trees. Hence it is desirable to arrange the searing method over a considerable area of the neighbourhood. If the owners of rookeries are unwilling to allow the birds to be molested, the help of the Secretary of the Executive Committee should be invoked. When the numbers of rooks are really excessive, it is important that prompt steps should be taken.

ENCOURAGE THE PLOVER

THE common green plover is a good friend to the farmer; it eats large numbers of wireworms, leatherjackets, snails, slugs, and many other injurious creatures. In view of this fact, the apathy displayed by agriculturists in regard to this valuable bird is astonishing. Every encouragement should be given to the birds to multiply, and the luxury of plovers' eggs should be foregone—in wartime, at any rate. The small addition to the food supply the eggs afford is dearly bought if it is considered how many grubs the resulting birds would have eaten. Farmers should, therefore, discourage the collection of plovers' eggs on their land. The birds will begin nesting very late this year owing to the cold weather, and should be given every chance of hatching out the first clutch of eggs that they lay.

ORCHID NOTES AND CLEANINGS.

HYBRID ORCHIDS.

(Continued from March 3, p. 153.)

Hybrid.	Parentage.	Exhibitor.
Brasso-Cattleya Lady Delfino	B.C. Dighiano-Schröderae × C. Gaskelliana albens	Armstrong and Brown.
Brasso-Laelio-Cattleya Diana	B.C. Mrs. J. Leeman × L.C. Domaniana	Stuart Low and Co.
Brasso-Laelio-Cattleya Harrisonia	L.C. Juno × E.O. Mrs. J. Leeman	Flory and Black.
Cattleya Esbery	Lord Rothschild's Schroderae	Duke of Marlborough.
Cypripedium	Lady Duffell × Archiducillus Illustri	W. B. Lee, Esq.
Hendrobium Alerton	Euryalis Roberts × Cyclops	S. Gray, Esq.
Hendrobium Garton Jewel	Batelsianum × melanodiscus	Mr. J. Colman, Bart.
Hendrobium Garton Monarch	Lady Colman × noble Bardsley Hall	Mr. J. Colman, Bart.
Hendrobium Lady Southway	Lady Colman × chrysanthomae	Mr. J. Colman, Bart.
Hendrobium Regina	Lady Colman × Euryalis Garton Purple	Mr. J. Colman, Bart.
Hendrobium Wiganatum var. Helius	Wiganiae × signatum aureum	Mr. J. Colman, Bart.
Paludophila Rolfer	Petersiana × Ellsbaethae	Charlesworth and Co.
Phalaenopsis	Alex. × Blipatie × Odia. Robine	Charlesworth and Co.
Phalaenopsis Columbia	Jeanette × Weltsiana	Charlesworth and Co.
Laelio-Cattleya Domaniana	Domaniana × Aphrodite	Duke of Marlborough
Laelio-Cattleya General Maule	L.C. Rubens Langloisae × C. Hardyana	Chail-Smith and Co.
Laelio-Cattleya Omega	L.C. Corvus × C. Eudiscompe	Stuart Low and Co.
Laelio-Cattleya Saria	L.C. bluethevisana × C. Percivaliana	Stuart Low and Co.
Miltona Venus	veviliana × Phalaenopsis	Charlesworth and Co.
Odontodia Bellae	Odia roseifolliensis × Odia Her Majesty	C. J. Phillips, Esq.
Odontodia Rex	Alex. × Blipatie × Odia. Robine	C. J. Phillips, Esq.
Odontodia Yorkian	Odia. Charlesworthii × Odia. Yuhana	C. J. Phillips, Esq.
Odontodia Grassinator	Odia. Brachshawiae × Odia. Fascinator	Duke of Marlborough.
Odontodia St. Quentin	Odia. Zephyr × Odia. Wiganianum	Flory and Black.
Odontoglossum Enchelad	Emperor of India × Jasper	W. Ashworth, Esq.
Odontoglossum Berthae	anabile × Fascinator	C. J. Phillips, Esq.
Odontoglossum Bretebani	anabile × Lambardianum	C. J. Phillips, Esq.
Odontoglossum Carona	Doris × ardensianum	Armstrong and Brown.
Odontoglossum Norton	Jasper × Phoebe	Charlesworth and Co.
Odontoglossum Tackii	blaudum × Rolfae	Stuart Low and Co.
Odontonia Lettsiana	Odontonia Laroeseae × Odia. Illustriissima	C. J. Phillips, Esq.
Sophia-Cattleya Ashworthiae	Doris × Blipatie	R. Ashworth, Esq.
Sophia-Laelio-Cattleya Iris	L.C. Trevor × S.C. Doris	Armstrong and Brown
Sophia-Laelio-Cattleya Nense	S. L. C. Marathon × L.C. callistoglossa	Charlesworth and Co.

PRESIDENT WILSON'S APPEAL TO AMERICAN GROWERS.

IN the course of his appeal to the American nation for their whole-hearted co-operation in the war, President Wilson addressed the following words to farmers and all producers of food:—

"The supreme need of our own nation and of the nations with whom we are co-operating is an abundance of supplies, especially food-stuffs. The importance of an adequate food supply, especially in the present year, is superlative. Without abundant food, alike for the armies and peoples now at war, the whole great enterprise upon which we have embarked would break down and fail. The world's food reserves are low. Not only during the present emergency, but for some time after peace shall have come, both our own people and a large proportion of the people of Europe must rely on the harvests of America. Upon the farmers of this country, therefore, in a large measure rests the fate of the war, the fate of nations. May the nation not count upon them to omit no step that will increase the production of their land or bring about the most effectual co-operation in the sale and distribution of their products? The time is short, and it is of the most imperative importance that everything possible be done, and done immediately, to make sure of large harvests. I call upon young men and old alike, and upon able-bodied boys, on the land to a cept and act upon this duty."

"I particularly appeal to farmers in the South to plant abundant food-stuffs as well as cotton. They can show their patriotism in no better and more convincing way than by resisting the great temptation of the present price of cotton, and by helping upon a great scale to feed the nation and peoples everywhere who are fighting for their liberties and our own. The variety of their crops will be a visible measure of their comprehension of their national duty. The Government of the United States and the Governments of several States stand ready to co-operate. They will do everything possible to assist farmers in securing an adequate supply of seed, an adequate force of labourers when they are most needed at harvest time, and means for expediting the shipments of fertilisers and farm machinery, as well as the crops themselves when they are harvested. The course of trade shall be as unhampered as it is possible to make it, and there shall be no unwarranted manipulation of the nation's food supply by those who handle it on its way to the consumer. This is our opportunity to demonstrate the efficiency of a great democracy, and we shall not fall short in this."



THE KITCHEN GARDEN.

By J. DENN, Foreman, Royal Gardens, Windsor.

SEED-SOWING.—Make the principal sowing of autumn and winter Broccolis, Borecole, Hardy Cabbage, and Savoy during the next few days on ground fully exposed and not too rich. Sow the seeds in shallow drills made 1 foot apart. The bed should be tilled to prevent small birds from destroying the crop. Veitch's Self-protecting Broccoli is indispensable. For furnishing supplies in autumn and early winter Early Market, Early Feltham, and Snowdrop will continue the succession. St. Patrick's Day, Main Crop, April Queen, Mid Feltham, Model and Victory are sown at Windsor, and seldom fail to produce regular supplies until the earliest Cauliflower are ready to cut. Plants from a sowing of Halloween Giant Cauliflower made now will produce heads throughout October and November. This Cauliflower is not likely to be injured by early frosts. Christmas Drumhead Cabbage, Copenhagen Market Cabbage, and Savoys should be sown in quantity about the end of April.

CHICORY.—Sow seed of Chicory now and again a fortnight later in drills made 18 inches apart. Thin the plants to 9 inches in the rows as soon as they are large enough to handle. Slugs must be kept in check by dusting soil or lime along the rows in the early mornings whilst the foliage is damp.

CARROTS. A good breadth of Carrots should be sown as soon as the soil is in a suitable condition, choosing such varieties as Monument, Model, and Intermediate. The seedlings should be thinned as soon as they are of sufficient size. Dust soil along the rows on frequent occasions, and stir the soil lightly with the Dutch hoe as often as circumstances permit. Further sowings of stump rooted Carrots may be made up to the middle of July, selecting a sheltered situation for the latest sowings, the plants from which may remain in the ground throughout the winter. It is from these late sowings that Carrots are being supplied at Windsor now.

AUTUMN-SOWN ONIONS. The plants should be lifted carefully from the seed rows and transplanted in rich soil. Onions will be a valuable crop throughout the coming summer and autumn, and these autumn-sown plants will be of great service, as the crop sown in the open during March is almost certain to be late. After the seedlings have been thinned and transplanted, make the plants that still remain firm in the ground as soon as the soil is dry enough. Keep the bed free from weeds, and give occasional dustings of soot and artificial manure during the growing season. Onions raised in boxes this spring should be ready for transplanting, and the work should be done as soon as the weather is favourable. Lift the plants carefully with a trowel, and plant them in rows made 18 inches apart, making the soil firm around the bulb with the hand. Protection from rough winds may be necessary until the plants become re-established. Later, the Dutch hoe should be lightly worked between the rows to keep the soil free from weeds.

ENDIVE.—Plants of the latest batch of Endive which has been wintered in cold pits should be kept quite cool. Ventilate the frame twice by night and day, and shade the plants during bright sunshine. Cover the lights with some thin material ten days before the plants are required for salad. Make another sowing of Endive as soon as possible in rich soil, which is necessary to obtain a quick growth.

LETUCE.—Plants of Lettuce raised in February, and transplanted in heated pits, are making good progress. Stir the soil frequently

between the plants, and give a liberal supply of clear, soft water at the roots. The pit should be closed early in the afternoons to promote a quick growth. If slugs are troublesome use lime around the walls of the pit or lightly dust it over the crop. Lettuce may now be sown in the open. Sow the seeds thinly, and thin them as soon as they are large enough, leaving the plants in the seed rows 9 inches apart. Make further small sowings every three weeks throughout the season, and thin the seedlings before they become drawn. Monument is a splendid Cabbage Lettuce for summer use, and will stand a long time without running to seed.

FRUITS UNDER GLASS.

By JAS. HIRSON, Gardener to Mr. LEOPOLD DE ROTHSCHILD, C.V.O., Gunnerbury House, Acton, W.

MELONS.—With the advance of spring Melons should be showing more vigorous growth, and those who have not attempted to force their plants unduly will now reap the reward of their patience, for the increased power of the sun's rays will greatly favour the crop. In American gardens Melons are grown even in winter when frosts are intense, but the secret of success in that country is the relatively greater amount of sunshine. The earliest fruits will be set by now in many gardens, or on the point of setting. From now onwards keep the growth thinly disposed, and concentrate all the energies of the plant on the development of the fruits. When the Melons are seen to be swelling tend the roots with a little weak manure water. Guard against a dry, cold atmosphere by damping the bare spaces on frequent occasions, and keeping the evaporating troughs filled with water. Sprinkle the plants freely if there are any indications of red spider. Look to the successive crops, and sow more seed to keep up the supply of fruits according to the demand.

MELONS IN FRAMES.—One of the best methods of obtaining Melons of high first quality is to grow them in frames, but not so much fermenting material will be needed in pits as in frames, hence there is an economy in the use of pits, with possibly some and from water pipes. The seed should be sown without delay, whether for frame or pit culture. It will be easy to obtain sturdy plants now, but do not allow the growth to be checked before they are planted out. Seeds of Cantaloupe Melons should be sown, and the frame prepared for the plants for Cantaloupes in a second condition is suitable. Paris Favourite is one of the best varieties. Spare frames may be ready by the middle of May, and one barrow load of sweet fermenting material will be ample for placing under each mound of soil on which to set a single plant. Make the dung firm, also the loam, before planting is done. Half-hardy Melons may be grown in the same way as Cantaloupes. There is an advantage in cultivating the Melon in this way at the present time in the saving of labour and sparing the plant houses for other fruit crops.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to St. JERMAIN CONWAY, Bart., Garden Park, Basingstoke.

DENDROBIUM.—The spring-flowering Dendrobiums are passing out of flower, and many are developing roots from the bases of the new shoots. Well-established plants growing in good material and with sufficient room in the receptacle for the present season's growth only require top-dressing, first picking away some of the old compost from between the surface roots and replacing it with fresh material. Others with compost loose and sour should be re-potted. Turn the plants out of their pots, remove the old potting material and all decayed portions of the roots and useless pseudo-bulbs, leaving only two or three pseudo-bulbs behind each leading shoot. Ordinary flower pots or fairly deep pans are the most suitable receptacles in which to grow these Dendrobiums, and they should be only large enough to just accommodate the roots. Fill the pots to about one-fourth of their depth with clean crocks, placing a layer of short por-

tions of Fern rhizome over the top in order to ensure perfect drainage. The rooting medium may consist of either Osunda fibre or A I fibre and Sphagnum moss in equal proportions; the fibre should be cut into rather short pieces, and all the fine particles removed. Add sufficient crushed crocks to keep the compost porous. In re-potting, work the compost well between the roots and press it moderately firm, keeping the base of the plant just below the rim of the receptacle. The surface of the soil may be covered with a layer of chopped Sphagnum moss at once, or later when the new roots have grown freely, the latter being the better plan. Tie the pseudo-bulbs to stakes to keep the plant secure in the pots, as plants that are not firm in the soil rarely become well established. Water newly-potted plants with extreme care, as there is a danger of both the young roots and growths damping off if too much moisture is applied during this early stage. Whilst growing freely, let the plants have plenty of sunlight, short of scorching the foliage. In hot weather light sprayings overhead each afternoon will be beneficial. The old pseudo-bulbs that have been removed may be prepared if an increase of the stock is desired, selecting those with dormant eyes that have not produced flowers. Each pseudo-bulb should be labelled and placed on a stage in a warm house for a week or two before inserting it. In preparing the pseudo-bulbs for rooting, cut them to a single eye at a point that has not produced a flower. Cut close to the eye at the top end, leaving rather more of the stem at the bottom to insert in the compost, and the portion of stem will also help to sustain the young shoot. The cuttings may be placed in 4-inch pots, half-filled with crocks for drainage, putting a layer of Sphagnum moss over the crocks and filling to the rim with a mixture of leaf-mould, Sphagnum moss, and coarse silver sand. Insert the cuttings firmly in an upright position, taking care not to cover the dormant eye. They may be rooted in a warm propagating frame, that should be slightly ventilated each night, but closed during the daytime. Keep the rooting material on the dry side, and spray the plants lightly on bright days. When the young growths are about an inch long, shift the plants into small pots, using similar compost to that for established plants.

THE FLOWER GARDEN.

By W. J. COOK, Gardener to Mr. TEMPLETON, Kent, and HALL, Staffs.

PLANTING VIOLETS.—Directly the weather is favourable Violets that are propagated in frames should be transferred to rich, well-cultivated ground in the open. In a shady position the plants will not be so liable to attacks of red spider as when planted on hot, sunny borders, where it is practically impossible to keep this pest in check. Detach the strongest side shoots from the old plants, with a few roots whenever possible. A space of 12 inches should be allowed each way between the plants, to permit of a free use of the hoe, and allow for stringings, and occasional dustings of soot. The method we adopt at Kettle is to score the beds out with a trowel, place two or three crowns together, and cover the roots with light, sandy compost. The plants are syringed on bright days. Care must be taken not to injure the foliage, or the plants may never get a check to growth. The following are good double varieties: Countess de Brazza, white; Mrs. P. Argy, variegated; Mrs. J. F. Astor, bicolorous; and Lady Home Campbell. Good singles include Princess of Wales, probably the finest single Violet in cultivation; La France, Baroness de Rothschild, and A-Kama.

ORNAMENTAL GRASSES.—Annual and perennial grasses are useful plants for matted borders, and for the margins of streams, and forming large clumps on lawns. If the graceful, feathery panicles are cut in the autumn and carefully dried they will be found useful for decorative purposes. The stems of *Arrostis nebulosa* and *P. pulchella* are suitable for arranging with cut flowers. Seed of annual grasses may be sown now. *Eragrostis elegantis*, *Lagurus ovatus*, *Herdum jubatum*, and *Ochloa elegantis* are all ornamental species. The taller-growing *Erian-*

thus, *Eulalia japonica*, *Polypogon*, and *Elymus canadensis* are also very attractive.

THE ROCK GARDEN.—Should any difficulty be experienced in replacing failures amongst Alpines the vacancies may be filled by Violets and such annuals as *Portulaca*, *Calendula*, *Tagetes*, *Ageratum*, *Godetia*, *Gypsophila muralis*, *Candytuft*, *Nemophila* and *Eschscholzia*.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NOTTINGHAM, Eastwood Park, Kent.

SOUVENIR DE LA MALMAISON CARNATIONS.—Plants of "Malmaison" Carnations which have been kept practically dormant during the winter are commencing to grow freely. Give the plants occasional top-dressings with Carnation manure, and use a little diluted soot water at frequent intervals. More water will be required than hitherto, but on no account keep the soil saturated, or the plants will become unhealthy. Plenty of ventilation should be afforded whenever the weather is favourable. Plants grown in these conditions invariably produce the finest of flowers, the colour being much deeper, and the blooms of greater firmness and solidity, than when the plants are forced into bloom early. Tie the flower spikes neatly to stakes as they lengthen. If first class blooms are required, all flower buds, except the terminal one, should be removed as soon as they develop. The variety Princess of Wales is still very popular with growers. Other excellent varieties in various shades are Princess May, Mme. Patti, Lady Coventry, Duchess of Westminister, Maggie Hodgson, and Lady Naiman Solome. The last named is a deep apricot colour, and the blooms possess splendid lasting qualities.

PERPETUAL-FLOWERING CARNATIONS.—Shift young plants of Perpetual-flowering Carnations into larger pots as soon as the roots have reached the sides of the small pots, for if they are allowed to become pot bound a check will result, the shoots will become hard, and very slow in starting into growth. Return the plants to a light house, and keep this structure a little warmer than hitherto until the plants commence growing again, when plenty of air should be given. Pinch out the points of the shoots to induce the plants to break freely. A collection of the best varieties includes Champion, Pink Sensation, Aviator, Gollon, Triumph, Carola, Scarlet Carola, Grace, Gorgons, Mary Allwood, May Day, R. F. Felton, Salmon Embroidress, and Baroness de Brionne.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. F. DAVESY, Abbeys Wood, Godalming, Surrey.

FRUIT BLOSSOM.—All fruit trees are very late in blooming, but Peaches and Nectarines are on the point of expanding their flowers, and measures should be taken to protect them from frost, although, being so late in the season, there will be less danger than usual. Perhaps the greatest evil to be feared now are cold winds. Showery weather is the best for fruit setting, with intervals of bright sunshine. I have not noticed either a bee or a fly in our late Peach house, but have sprayed the trees every day while they were in flower, and have never had such a fine set. Keeping the trees on the moist side also prevents aphids from spreading.

CROPS ON FRUIT TREE BORDERS.—Vegetables should not be planted within 2 feet of wall trees, as this room is needed for operations to keep the trees healthy. Moreover, the surface roots of the trees must not be disturbed by digging the ground for the vegetables. Inferior wall trees are often the result of impoverishing the border with roots of other crops.

ALPINE STRAWBERRIES. The back or borders of white Alpine Strawberries are planted should receive attention. If the roots have been lifted by action of the weather, they should be pressed firm in the soil again. At the same time, add a good top-dressing of old potting soil, which will favour a rapid recovery from injury caused by the frosts.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would oblige by delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the EDITORS, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication. as well as specimens of plants for naming, should be addressed to the EDITORS, 41 Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY of the paper, sent us early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, APRIL 24.

ROY. HORT. SOC.'S COM. MEET., Nat. Amateurs and Promoters Soc. (Southern Section) Show with R.H.S.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 48.6

ACTUAL TEMPERATURES—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, April 19 (10 a.m.): Bar, 30.0; temp., 55.0; Weather (Showers).

SALES FOR THE ENSUING WEEK.

TUESDAY, WEDNESDAY AND THURSDAY.

Sale of the collection of orchids formed by the late W. Thompson, Esq., at Walton Grange, Stone, Staffs., by Protheroe and Morris, at 11.30 each day.

WEDNESDAY—

Roses, Rhododendrons, Carnations, Gladioli, Lilies, &c., at 67.50, Cheap-side, at 12 o'clock, by Protheroe and Morris.

It is to be hoped that the present difficulties which beset those to whom we look for providing year by year the seeds for our gardens may not only be overcome, but may also be turned to the permanent advantage of the British Empire.

Among these difficulties are, first, the lack of transport, and second, the lack of labour.

As is well known, the shortage of transport and the activity of the submarines are seriously restricting the free exchange of commodities. Both export and import are interfered with. Pedigree stock seeds raised in this country and ordinarily sent abroad to better seed-raising districts for producing seed in large quantities are often held up, and as a consequence the supplies which should be returned to this country are not forthcoming. It might be argued that this is not altogether a disadvantage, inasmuch as it should lead to a large increase of seed-raising in this country. But, unfortunately, this happy solution is by no means always practicable, and this for two reasons. In the first place, there are important vegetables—and also flowers which fail to ripen their seeds well

in this country. This, we believe, is the case with Cauliflower, Carrot and Onion, and among flowers Plox and Aster. In the second place, with the existing lack of labour many seed farmers who were in the habit of accepting contracts for seed raising are less disposed than in normal times to enter into contracts. It is probable also that with the higher prospective prices for purely agricultural crops, farmers are finding, on balancing probable profits and amount of labour available, that it is more profitable for them to grow corn than to raise vegetable crops for seed. The urgent need for increasing the Wheat supply is, moreover, causing agriculturists generally to look with disfavour on the farmer who gives up part of his land to growing minor crops. The fact that this prejudice is due to shortsightedness does not mitigate the seriousness of its effect. Hence from a multiplicity of causes the outlook of the seed industry is by no means too cheerful. Yet by a strange irony the present time offers an opportunity for the drastic revision of our customs with respect to seed-raising. In the past a large section of this trade has been allowed to pass into German hands. With their customary thoroughness, the Germans had made something like a monopoly of the seed trade in some parts of the world. Of the seed they sold, some was of their own growing, but much was raised by other countries and purchased and sold again by the Germans. There would seem to be no reason why much of this trade should not pass permanently into the hands of British firms. It is true, as we have said, that not all seeds can be raised successfully on a large scale in this country; but, on the other hand, many of the seeds of vegetables and flowers might quite easily be raised here. In any case, the Empire, which comprises every soil and every climate, gives ample ground for the raising of all the seeds of every kind of vegetable and flower which we require. Why, therefore, should not the great firms of British seedsmen seek the co-operation of the Government and endeavour to arrange a system of seed-raising within the Empire which should free them and ourselves for the future of the risk of finding our supplies cut off or curtailed in time of war?

At present the working up of pedigree stocks raised with infinite pains in this country—is by no means always satisfactory. Those stocks sent to another country may or may not be properly attended to, even though the senders themselves despatch skilled men to supervise the rearing. As a result, the seed derived from these stocks is not always as "true" as it should be, and that through no fault of our seed trade. Specialised seed-growing stations within the Empire, properly staffed, and co-operating with the great seed firms to secure the production and multiplication of the best seeds, would be of the greatest benefit to British horticulture, and should be of no less benefit to the seed industry. The loss of

crop from the growing of inferior or untrue varieties is often great, and that loss is almost entirely avoidable. In a better organised Empire the limitations of what can be achieved by the individual and what must depend on collective action will be recognised. If this recognition were to be applied to the seed industry it would result in the further specialisation of that already complex business. It would put the resources of British science at the disposal of the seedsmen engaged in improving the strains of plants, and it would make provision for the raising of the best strains in the most suitable climates.

R.H.S. WAR HORTICULTURAL RELIEF FUND.

An orchestral concert will be held at Queen's Hall, Langham Place, on Saturday, the 20th inst., at 3.15 p.m., in aid of the R.H.S. War Horticultural Relief Fund. The programme is to be rendered by the Stradling Players Amateur Orchestral Society. The concert has the patronage of H.R.H. the Duke of Connaught, K.G., and other distinguished personalities.

ACID PHOSPHATE FOR ROSES.—Tests made on the comparative flower-producing virtues of acid phosphate (20 lb. per 100 cubic feet of soil) and bone meal of a corresponding value lead to the conclusion that the former artificial manure is the better flower-producer. It is claimed that on the average the plants treated with this manure produce 2½ flowers more than those treated with bone meal.

CROPPING IN BROKEN-UP PASTURE.—An interesting account by Mr. C. HURSTONSON of the cropping of land which had been under grass (poor pasture) since the early nineties shows both the seriousness of the damage due to wire-worm, and also the effects of cultivation in averting the pest. The pasture was steam-ploughed in September, 1915. A Potato crop taken in the following year on part of the area, although attacked by wire-worm, yielded 6 tons to the acre. In the case of Wheat, it appeared from the results of 1914 that shallower ploughing might be beneficial in keeping down wire-worm, and the Wheat crop in the following year appeared to confirm this observation. Potatoes in 1915 were attacked as severely by wire-worm as in the previous year, but in 1916 the attack was only slight. Nor was the Wheat which followed the Potato crop attacked. The results of the experiment also indicate that after grass land has been turned up Oats are a safer first crop than Wheat.

MR. DAVID INGLIS.—MR. DAVID INGLIS, who succeeded the late MR. DAVID THOMSON as gardener to the Duke of Buccleuch at Drumlaigrig Castle, Thornhill, Dumfriesshire, is retiring at Whiteside. Mr. INGLIS will be succeeded by MR. ROBERT STUART, formerly gardener to the Right Hon. Viscount Maitland, at Thirlstane Castle, Lauder, Berwickshire, and recently engaged in the Parks Department, Glasgow. Mr. INGLIS will reside in future at Thornhill.

BRITISH PINE SEEDS FOR FRANCE.—In order to assist in re-establishing the forests of France so severely devastated during the war, the Agricultural Relief of Allies Committee, with the co-operation of the Royal English Arboreal Society, are this week sending a quantity of seeds of Scotch Pine to Dieppe. Nearly 1,000 lbs. of the seed have been obtained from British forests, and will be given to the peasants and small proprietors who in France own a considerable area of forest land. Free facilities for the conveyance of the seed

* "An Experience in the Breaking-up and Cropping of Old Pastures," *Journ. of the Board of Agric.*, March, 1917.

have been provided by the British War Office. The gift has been greatly appreciated by the French Government, and the mature tree will form a permanent memorial near the battle-field of the loss of Amos and sympathy, not only of the British and French troops, but of the farmers and arboriculturists of the two nations.

FRUIT AND THE FOOD SUPPLY.—In an address to the Fellows of the Royal Horticultural

waste domestic products such as bones, fur, wool waste, leathers, and calcium carbide residue was emphasised. The lecturer advised landowners to plant experimental plots in districts where fruit is not generally grown.

THE CULTIVATION OF WASTE LAND AFTER THE WAR.—It is the opinion of many that the cultivation of allotments on waste land should continue after the war until such time as the owners need the sites for building and other

Federation having been notified through the Wood Green District Council that the Prime Minister says: "It is not practicable to guarantee the occupation of vacant land as allotments for more than one year," expresses its dissatisfaction with this answer, and respectfully suggests to the Prime Minister the desirability of reconsidering his decision on this question; (2) That the Government be asked to introduce a Bill giving security of tenure to allot-



FIG. 56. LILIAL PARVA. A SPECIES UNHARMED BY THE RED SIX-LEAFED THROAT. COLOR OF FLOWERS YELLOW, MARKED WITH PURPLE (see p. 139)

tural Society on the 11th inst. on "Increasing the Home Fruit Supply." Mr. E. A. BESAYED called attention to the need of more careful selection of varieties to cover as long a season as possible, and to the possibility of storing late Apples and Pears in boxes, wrapping each fruit in paper. He stated that the hardy fruits will keep perfectly, and if frozen in an outside shed no harm results if the fruits are allowed to thaw slowly. The manurial value of many

legitimate purposes. Such persons argue that much labour and expense in tilling and manuring will be wasted if the ground is permitted to fall into a derelict condition again after the cessation of hostilities, and that the retention of the plots by the growers would be for the public good. The Wood Green Allotments Federation gives voice to this opinion in the following resolutions passed at a meeting of this Society held on March 31 last: (1) This

ment holders of unoccupied lands subject to the payment of a moderate rent, say, of 6d. per pole, the holdings being retained so long as the land is not required for building purposes.

A MAMMOTH POTATO. The month of many a quoniam would water at the sight of the Potato, an illustration of a tuber raised, appropriately enough, at Eureka, in California.

Fourteen inches long, the tuber of the variety Dutch Red weighed 4½ lb. Another of 16 inches was cut into six pieces and baked, and six people failed to consume it all, although its quality was said to have been excellent.

CRAIGENDOWIE TRAINING SCHOOL FOR WOMEN.—Good work in the way of training women for agriculture is being done at Craighendowie, Broughton, near Preston. The owners of the place, Mr. and Mrs. RITCHINGS, have laid out seventeen acres of the estate as a market garden, and here they train six students at a time for two months in various kinds of agricultural work. At the end of each period of two months, the trained students are sent to situations, and fresh recruits take their places.

PUBLICATIONS RECEIVED.—Income Tax Simplified. By Arthur Fieldhouse and H. Ewart Fieldhouse. Third edition. (London: Simpkin, Marshall & Co., Ltd.) Price 1s.—**Rockeries: How to Make and Plant Them.** By H. H. Thomas. (London: Cassell & Co., Ltd.) Price 1s. 3d. net—**A List of the Most Desirable Varieties of Most Kinds of Fruits.** Drawn up by the Royal Horticultural Society's Fruit Committee. (London: W. Wesley & Son.) Price 2s. net.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

LAWNS AND THE FOOD PROBLEM.—Instead of destroying lawns, I propose that Runner Beans be grown as follows:—Cut out pieces of the turf about 1 foot square and 3 inches thick all over the lawn, leaving, say, 2 feet of space between the holes so cut. In a lawn 27 feet each way, we should thus obtain eight rows of eight holes each, or sixty-four holes with turf between them and turf round the margin of the plantation. The soil in the holes need not be removed, but should be loosened up. The sixty-four turfs can be stacked in any spare part of the garden to be put back next November. The Runner Bean I suggest growing is that known as "White Dutch." It is one of those Beans that can be used as a "Haricot" or "Batter Bean." It is very nutritious as a winter food, a good cropper, and does well in this country. Most of this class of Bean are grown in Italy, and do not do well with us. I have eaten the "White Dutch" Bean, and consider it of even better flavour than the Italian grown varieties. To return to our plantation: In May or early June plant four of the Beans

conclusion that humogen supplied for the Wisley experiments was not standardised, asks what is the criterion for standardisation. There are two criteria by which a manure may be judged: (1) By direct measurement, where chemical analysis shows within narrow limits of error the quantities of its constituents, but which often fails as an infallible criterion because the methods of estimating "available" as against "unavailable" constituents are, in our present state of knowledge, necessarily empirical, and for other reasons; and (2) by indirect measurement, where the results of its application to a crop in a given set of conditions are measured. The experimental error in such attempts at indirect measurement are often large, but where care is exercised to reduce this error to relatively small dimensions, the latter is the more reliable. It should be remembered that there are many difficulties to be overcome in devising experiments in gardens which are peculiar to the conditions existing there, and these difficulties call for special measures in order to reduce the experimental error. The object of the Wisley experiments with humogen was to ascertain in the first place whether the material would give the results claimed for it. In Series I, it indeed greatly accelerated growth; in the following five series no marked benefit was derived. If the quality of the material had been the same in every case, i.e., if it were of standard quality, the results obtained should have been of the same order all through. They were not, therefore, judged by the second criterion; the material was not standardised. Published results from other sources confirm this view, and some of them show that the quantity of nitrogen present in the different samples analysed varied within wide limits, so that the judgment by the first criterion also, the substance was not standardised. It is impossible here to enter fully into the question as to what the occasional (and at first frequent) good results were due. It must suffice that there was nothing in the appearance or manner of growth of the plants in Series I, at Wisley repugnant to the idea that the active agent in the humogen was nothing more mysterious than available nitrogen. I have already pointed out the probable cause of its fall from its original standard. Though the figures Dr. Durlam gives of his Potato experiments are insufficient to enable one to judge of the probable degree of the experimental error in the results he obtained, his statement that "actual rows are contrasted, controls being placed proximally to the trial rows," suggests that one row of treated Potatoes was compared with one of untreated. We are not told how many plants constituted a row, but the results of weighings made at Wisley (which I quote below) show that where the average weight of the plants in a row of twenty Potatoes is compared with that of the adjoining rows of the same variety, receiving in all things equal cultural treatment, and with equal exposure, the differences may be as great as those disclosed by his figures where humogen and no-humogen additions are contrasted.

AVERAGE WEIGHT OF CROPS FROM 20 PLANTS IN EACH ROW

	Row 1. lb.	Row 2. lb.	Row 3. lb.
Affan Chief	5.90	5.51	5.70
Balmoral Castle	5.95	4.15	5.42
Great Scot	5.15	2.19	2.60
Stirling Castle	2.52	3.15	2.75
Windsor Castle	2.02	2.61	2.77

These figures merely illustrate the need for duplication, at least in garden experiments.
F. J. Chittenden.

SAXIFRAGA GLORIA.—At the meeting of the Royal Horticultural Society on March 27 last Saxifraga Buseriana Gloria was awarded a First-class Certificate by the Floral Committee, which fact is omitted from your report of the meeting on page 157. As many depend upon your journal for the list of plants to which First-class Certificates and Awards of Merit have been made I draw attention to the matter. W. T.

WHITE WOOD STRAWBERRY.—May I be allowed to express my thanks to Mr. E. A. Bunyard for his kindness in presenting me with plants of the White Wood Strawberry so praised by Jane Austen. A. N.

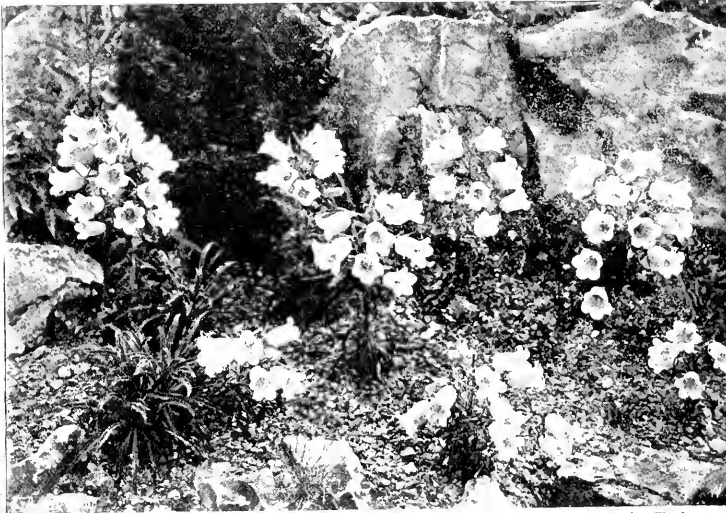


FIG. 57.—*CAMPANULA SPECIOSA*. FLOWERS LIGHT PURPLE.

CAMPANULA SPECIOSA.

The illustration on fig. 57 shows a group of the rare Pyrenean *Campanula* growing in the rock garden at Kew. The plant belongs to the same section of the genus as the better-known species, *C. alpina*, *C. barbata*, and *C. albanica*, with the habit of the last named in spreading by means of underground stolons. Growing from 6 inches to 1 foot high, the stems are stout, and branch from the base upward, with large flowers borne singly on rather long stalks. The blooms vary in colour from light to dark purple, and are produced during the month of June. The long, narrow leaves, as well as the stems, are covered with hairs. This species is only found in the Pyrenees, growing in high limestone cliffs and rocky places among debris, in which the roots wander about in the loose, stony soil, sending up rosettes of leaves here and there. A plant of this name is illustrated in *Bot. Mag.*, tab. 2639, but this is now considered to be a variety of *C. glomerata*. Moist conditions will suit this plant, which seeds freely, and is easily raised from seeds. W. J.

in each of the squares and put a stick to each Bean. For sake of economy one stick and one to each square can be made to do, instead of four sticks to the square. As soon as the Beans begin to run, feed them with weak manure water. When they begin to bloom and set, increase the feeding judiciously, and so through the summer. By careful pinching of the leaders, "pickings" may be taken of green summer beans, and yet many left to ripen and dry for winter use. I have made a careful under-estimate, based upon long experience, and have found that even allowing for green gathering in moderation, 1 lb. of seed should yield 40 lbs. of Beans to be dried for winter use! This is worth doing, but with intensive and careful feeding even greater results may be obtained. In November, when the crop is gathered in, the sticks are put away, the turfs are replaced, the lawn cut with a scythe and well rolled. It is surprising how soon it is as good a lawn as ever. A plantation like this could be made very pretty as well as useful, looking something like a little hop garden, and what is best of all, a good and valuable food crop may be grown on a small lawn without destroying it. Edward Lovett, Craydon.

EXPERIMENTS WITH HUMOGEN (pp. 115, 157, 146).—Dr. Durlam, in commenting on my

MARKETS.

COVENT GARDEN, April 18.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of the trial of the principal saler...

Plants in Pots, &c.—Average Wholesale Prices.

Table listing plants in pots and their prices. Includes items like Aralia Sieboldii, Asparagus plumosus, Aspidistra, Cacti, Cerebra, Cocos Weddelliana, Cyclamen, Daffodils, Ferns, and various thymus.

REMARKS.—Good plants of white, blue and pink Helianthus, and a few Roses in pots are now offered. No movement in the warbler will bring an increased demand for flowering plants.

Cut Flowers, &c. Average Wholesale Prices.

Table listing cut flowers and their prices. Includes items like Anemone, Arums, Azalea, Camellias, Carnations, Daffodils, Heather, Lillium longiflorum, Narcissus, and various roses.

French Flowers, &c.—Average Wholesale Prices.

Table listing French flowers and their prices. Includes items like Allium, Anemone, Asparagus, Aspidistra, Cerebra, Cocos, Cyclamen, Daffodils, Ferns, and various thymus.

REMARKS.—Lilium longiflorum is lower in price than for some considerable time past. A good number of Roses are now on the market, and the blooms are exceptionally fine. The best-selling varieties are Mine...

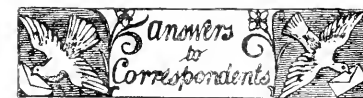
Vegetables: Average Wholesale Prices

Table listing vegetables and their prices. Includes items like Artichokes, Asparagus, Beans, Broccoli, Broad Beans, Brussels Sprouts, Cauliflowers, Celery, Chicory, Cucumbers, Endive, Greens, Herbs, and various potatoes.

Fruit: Average Wholesale Prices.

Table listing fruits and their prices. Includes items like Almonds, Apples, Bananas, Dates, Grapes, and various nuts and berries.

REMARKS.—Supplies of Apples are very limited but a consignment of the early fruit available is expected to arrive next week. Early now obtainable...



There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to inquire, or from not knowing whom to make the inquiry, they too often fail to obtain the information they are in want of.

CORRECTION.—In the list of decorative Roses, p. 156, for climbing variety of Mrs. W. J. Grant read climbing variety.

DESTROYING TREE ROOTS: AERIS. A method of destroying tree roots by means of blasting was described in the issue for February 24 last, p. 92.

NAMES OF PLANTS: G. H. B. I. QUERCUS THURETI? 2. Juniperus communis var. fastigiata; 3. Phytolmia serotinata.

PANTOCRITUM AND GARDENIA UNHEALTHY: F. H. Hughes. Bulb mites are present on the Pantocratum bulb. Remove the outside scales and burn them; then wash the bulbs with liver of sulphur, 1 oz. to 1 gallon of water.

PLANTS IN TUBS: Limicola. From your description of the plants with long, green leaves and bunches of blue flowers on a long stem, we suspect them to be Agapanthus umbellatus. Keep them in the stable until about the middle of May, when they should be played out-of-doors and watered freely.

PRUNING ENGLISH YEW AND HYBRID RHODODENDRONS: J. H. It is not too late to cut back the Yews, as the best time to do this work is just as the trees are starting into growth, which this year is later than usual. The Yew will break away again readily from the old wood, but we should advise you to give your plants a good top-dressing of manure when they commence to grow, as the Yew is a gross feeder, and well repays for a little assistance at the right time.

RHODODENDRONS TURNING YELLOW: J. B. The unhealthy condition of the foliage is not due to fungous disease or insect pests. The cultural treatment has been at fault, but without knowing how the plants have been managed we cannot say in what direction.

SOIL FOR CUCUMBERS: Limicola. The compost should consist of rich, fibrous loam mixed with well-rotted manure, wood ash, and a sprinkling of fertiliser. If the soil is deficient in fibre add a quantity of well-rotted leaf-mould.

Communications Received A W J P J S. F. W. C. J.

ENQUIRY.

ORNAMENTAL VEGETABLES

It is well known that certain vegetables, such as Beet, Parsley, and Runner Beans, add to their culinary qualities an appearance during growth that is decidedly ornamental. In many gardens there are large beds that are usually devoted to flowers which this season could perhaps be made quite attractive with selected vegetables. I write in the hope that an idea of this kind has already received attention from some of our leading gardeners, in which case I am sure many readers would thank them for any details they can give us of approved schemes of planting.

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Alpine Flora:** for Tourists and Amateur Botanists. By Dr. Julius Hoffmann. Translated by E. S. Barton (Mrs. A. Gepp). 7s. 11d.
- Alpine Flowers for Gardens.** By W. Robinson. Revised Edition. With Illustrations. 1s.
- Alpine Plants, Dictionary of** (see "The English Rock Garden," by Reginald Farrer).
- Alpine Plants of Europe.** By H. Stuart Thompson. With Cultural Notes. Price 7s. 10d.
- Alpine Plants, Sub.** By H. Stuart Thompson. Including Coloured Plates by G. Flemwell. Price 6s. 6d.
- Annals, Hardy and Half Hardy.** By Charles H. Curtis. Contains 3 Coloured Plates. 1s. 10d.
- Apples and Pears.** By George Bonyard, V.M.H. With 3 Coloured Plates. 1s. 10d.
- Asparagus, The Book of.** By Chas. Hott. With sections on Celery, Salsify, Scorzoneria, and Sea-kale. Illustrated. 2s. 10d.
- Bacteriology, Agricultural.** By J. Percival, M.A. 7s. 11d.
- Banana, The: Its Cultivation, Distribution, and Commercial Uses.** By W. Fawcett. With Preface by Sir Daniel Morris. 7s. 11d.
- Bee Keeping, Book of.** A Practical Manual on the Proper Management of Bees, especially written for Beginners. By W. B. Webster. Illustrated. 1s. 5d.
- Bees, for Pleasure and Profit.** By G. Gordon Sauson. With chapter on "Bee-keeping in Hot Climates." Illustrated. 1s. 2d.
- Botanic Terms, Glossary of.** By B. D. Jackson. 7s. 11d.
- Botanical Names, Dictionary of, and their English Equivalents.** By G. F. Zimmer. 2s. 9d.
- Botanist, The Young.** By W. Percival Weston and C. S. Cooper. Excellent for young people commencing to botanise. 3s. 10d.
- Botany, Agricultural.** By J. Percival, M.A. 7s. 11d.
- Botany, A Practical Introduction to the Study of (Flowering Plants).** By J. Bredland Farmer, F.R.S. 121 Illustrations. 2s. 10d.
- Botany, A Primer of.** By Sir J. D. Hooker, F.R.S. 1s. 3d.
- Botany, A Text-book of.** By Dr. E. Strasburger. Translated by H. C. Porter, Ph.D. Revised. Fifth Edition. 779 Illustrations. 2s. 6d.
- Botany, A Year's.** Adapted to Home and School Use. By Frances A. Kitchener. With 195 Illustrations. 5s. 4d.
- Botany, Elementary.** By Dr. E. Drabbe. 2s. 10d.
- Botany, First Course of Practical.** By G. F. Scott Elliott. Illustrated. 7s. 10d.
- Botany, Lectures on Plant Physiology.** By Dr. Ludwig Jost. Translated by J. Harvey Gibson. Morocco back, gilt top. 24s. 6d.; cloth. 21s. 6d.
- Botany, Practical Plant Physiology.** By Frederick Keeble, Sc.D., F.R.S. Recommended for use in colleges and schools. 5s. 10d.
- Botany, Structural.** By D. H. Scott, M.A. 2 Vols.
PART I—FLOWERING PLANTS. 3s. 11d.
PART II—FLOWERLESS PLANTS. 3s. 11d.
An excellent introduction to the Anatomy and Life Histories of Plants.
- British Plants, List of.** By G. C. Druce, M.A. A detailed list of Species and Varieties. 2s. 9d.
- British Plants, The Uses of.** By Prof. Henslow. 4s. 9d.
- Bulb Book, The.** A Practical Work on Cultivation, Propagation, etc. By John Weathers. Illustrated. 15s. 7d.
- Bulbous Plants, Beautiful.** By John Weathers. 5s. 4d.
- Bulbs and their Cultivation.** By T. W. Sanders. 2s. 10d.
- Bulbs, The Book of.** By S. Arnott. Illustrated. 2s. 9d.
- Calendar of Garden Operation, The.** Based on the original work compiled by the late Sir Joseph Paxton, M.P. Adapted to the requirements of Cottage Gardeners, Allotment Holders, and Amateur Gardeners, by members of the staff of the GARDENERS' CHRONICLE. Illustrated. (New edition in the Press.) 1s. 5d.
- Cambridge Manuals of Science.** Cloth edition. 1s. 4d. each, post free.
- Plant Animals: A Study in Symbiosis.** By Frederick Keeble, Sc.D., F.R.S.
- Plant Life on Land.** By Prof. F. O. Bower, F.R.S., Sc.D.
- Earthworms and their Allies.** By F. E. Bedford, F.R.S.
- The Earth.** By Prof. J. H. Poynting, F.R.S.
- The Atmosphere.** By A. J. Berry, M.A.
- The Story of a Loaf of Bread.** By Prof. T. B. Wood, M.A.
- Bees and Wasps.** By O. H. Latter, M.A.
- Soil, The Fertility of the.** By E. J. Russell, D.Sc.
- Insects The Life Story of.** By Prof. G. H. Carpenter.
- Carnation Culture, Commercial.** Edited by J. Harrison Dick. A collection of treatises by the best modern cultivators. Illustrated. 7s. 4d. (81 50).
- Carnations, Perpetual Flowering.** By Laurence J. Cook. A Practical Manual with Details of Cultivation. Illustrated. Paper. 1s. 5d.; cloth. 1s. 9d.
- Carnations and Pinks.** By T. H. Cook, Head Gardener at Sandringham; James Douglas, V.M.H.; and J. F. McLeod. Contains 3 Coloured Plates, reproduced from colour photographs. 1s. 10d.
- Carnations, Picotees and Pinks.** By John Fraser. Fully Illustrated. 8d.
- Chemistry of the Garden.** By D. R. Edwards-Kerr. A course of practical work designed for the use of Teachers and Students of Gardening. 1s. 8d.
- China, A Naturalist in Western.** By Ernest Henry Wilson. Illustrated, in Two Volumes. 41 10s. 6d.
- Chrysanthemums.** By Thomas Stevenson. With Chapters by Charles E. Shea and C. Harman Payne. Contains 3 Coloured Plates. 1s. 10d.
- Climbing Plants.** By W. Watson, M.L.S. With Introduction by W. Robinson, author of "The English Flower Garden." 2s. 10d. and 5s. 10d.
- Coco nut, The.** By Edwin Bingham Copeland. 10s. 6d.
- Cottage Gardening; or, Flowers, Fruits and Vegetables for Small Gardens.** By E. Hobday. 1s. 9d.
- Cucumber Culture for Profit.** By W. Dyke. A Practical Guide to the Cultivation in Frames and in the Open. 1s. 2d.
- Cyclopædia of Botanical Drugs, Pothers.** By R. C. Wren, with additions by E. M. Holmes. Containing the Names and Properties of all the Herbs employed medicinally in this country. 3s. 10d.
- Cyclopædia of Horticulture, The Standard.** By L. H. Bailey. In 6 vols. Fully Illustrated in colour and half-tone. A valuable book of reference. Each part, 26s.
- Daffodils.** By the Rev. Joseph Jacob. With Preface by the Rev. W. Wilks, M.A. A full treatise on their culture for private and Exhibition purposes. With 3 Coloured Plates. 1s. 10d.
- Dahlia and their Cultivation.** By J. B. Wroe. 1s. 2d.; cloth, 1s. 8d.
- Dahlia.** By George Gordon, late President of the National Dublin Society. Contains 3 Coloured Plates. 1s. 10d.
- Date Growing in the Old World and the New.** By Paul P. Paganie. Illustrated. 9s. 6d.
- Dictionary of Hardy Flowering Plants** (see "The English Rock Garden," by R. Farrer).
- Directory, Horticultural** (see *Gardener's Chronicle* Horticultural Directory).
- Diseases and Garden Pests, Book of Plant.** By R. Hooper Pearson. 214 pages. Over 65 Illustrations. Cloth, 2s. 11d.
- Diseases of Cultivated Plants and Trees.** By George Masson. 7s. 11d.
- English Rock Garden.** By Reginald Farrer, author of "My Rock Garden," "Among the Hills," etc. This work contains up-to-date monographs of the Plants suitable for cultivation in the Rock Garden. The text consists of 500,000 words. 500 Plants are illustrated in Half-tone Plates. In 2 Vols. Price 4/2 2s. 10d. (in the Press).

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 3983

No. 1583. Vol. LXL. {THIRD SERIES} SATURDAY, APRIL 28, 1917.

{Registered as a Newspaper, {PRICE 3d. POST-FREE, 3jd.

SUBSCRIPTIONS—Inland, 15-4; Foreign, 17-6 22/6; 10s. 5-4 26/- per annum. Entered at New York Post Office as second-class matter. Postal Address—41, Wellington Street, Covent Garden W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 169.

For Advertisement Charges see page 11

NOTICE TO ADVERTISERS

Owing to the earlier dispatch of the morning trains from London the hour of going to press has again been advanced, and in future advertisements received after 5 p.m. on Wednesday will be held over till the following week.

GREENHOUSE PAINTING & GLAZING
Vitreous, superior, and White Lead, Plaster, Plastics, wallpapers, putty. For particulars from W. CARSON & SONS, 10, Abchurch Lane, London, E.C. 4, Agents throughout the country.

J. GRAY, LTD. Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Oldham, London, N.W. 3. West 201, Western, London. Telephone 201 Western.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also Jackson's Improved Mushroom Spaw. Proved superior from an application to DICKSON'S Royal Seed Warehouse and Nurseries, Chelsea.

MACKENZIE AND MONCUR, Limited. Hot-house Builders and Heating Engineers, London, Edinburgh and Glasgow. By special Appointment to H.M. the King. London Office, 8, Camden Road, N.W.

WATERER'S ALPINES, HERBACEOUS PLANTS AND WATER LILIES Large stocks of the best and most popular varieties. Descriptive Catalogue free. JOHN WATERER, SONS & CO., LTD., The Nurseries, Tottenham, Kent.

VIOLAS, finest Scotch, 12 Bolding Varieties, superbly named, 2s. 3d., post free. Early Chrysanthemums, 12 very fine varieties, 3s. 3d., post free. Strong plants. DOBIE & CO., Florists, Edinburgh.

BATH'S CARNATIONS, PANSIES, DAHLIAS, CHRYSANTHEMUMS, and other flowers. New Illustrated Catalogue of the best new and standard varieties is ready, and will be sent post free on application. (Dept. A) R. H. BATH, LTD., The Floral Farm, Wisbech.

NOW IS THE TIME TO PLANT KELWAYS

COLOUR BORDERS of hardy plants, arranged to give a succession of bloom during the Spring, Summer, and Autumn. NOW THAT LABOR IS SCARCE, these borders solve the difficulty of having a garden always in bloom without the trouble of re-planting and lifting the plants every year. Plant a border now, and you will be able to enjoy its beauty for several years without any additional expense. Send the measurements of your beds or borders, and we will recommend a selection of plants suitable for your district, and quote our special 10-bush War prices.

KELWAY & SON, Retail Plant Department, Langport, Somerset.

GRAPE VINES, Hard, short-jointed, and all kinds bearing, also Planting, &c. List on application. WILL TAYLER, Hampton, Middlesex.

SUTTON'S VEGETABLE SEEDS
SUTTON'S FLOWER SEEDS
The Best.

SUTTON & SONS, The King's Seedsmen, READING.

ROSES Wm. Paul and Son, Waltham Cross, Herts., beg to offer a fine stock of all the new and most admired for present planting. Proved superior on application. PALES ROVAL NURSERY, Waltham Cross, Herts.

OMISSIONS and Failures made good by post, or 2s. 6d. extra. Seed catalogues just ready for post, or on application. For particulars for last possible date, send paper of Greenhouse plants, Summer Buildings, 14, Henrietta Street, London, W. 1. Grand set of Cyclamen, 10s. 6d. Woodstock Catalogue, STORRI & STORRI, Flower Seeds Specialists, Gloucester, Gloucestershire.

GARDENERS' COMPOUND, Insecticide and Fungicide. Over 50 years' reputation; highly commended. R.I.E.S. Scientifically controlled. Trials at Wisley, 1914-15. Sold by Dealers in Garden Sundries. Wholesale: R.I.E.S. PATENT CASTLE CO., LTD., Battersea, London, S.W.

SANDERS' Orchid Growers, 8, Abchurch Lane.

EXPENSIVE ADVERTISING. In these days, when every firm has to advertise or see business decline, it is now easy to make sure that the profitable publicity is so obtained that the results justify the expenditure. It is this consideration that has led to our keen business men to discontinue the wasteful method of advertising by catalogue. If enquiries be made any printing firm it will be found that catalogue printing has fallen away since the war by about 80 per cent., nor is this to be wondered at. The price of paper is nearly three times what it was ages ago, much to remark, so that the wholesale distribution formerly, printing rates are higher, and the cost of post of large catalogues is now too expensive for its own purpose. The new papers, though they themselves are produced at much greater expense all round, have nevertheless refrained from increasing their prices for advertisements, and it is by utilising these permanent notices that profitable advertising may still be practised.

SPORTSMEN, Farmers, Horsemen. Try our special Vardolite Whisky Case, wearable leather, sheep-proof, 7 yards for 17s. 6d. Patterns free. BRADFORD WOOLLEN CO. (71), Bradford.

ORCHID PEAT, 6s. and 7s. 6d. per sack; 10s. 6d. per 100, 6d. per yard in trucks, in bags, 6d. per bush, 7d. dozen, 6d. and Bush Leaf Mould, 4s. 6d. 100, 5s. 6d. 100, 6s. 6d. 100, 7s. 6d. 100, 8s. 6d. 100, 9s. 6d. 100, 10s. 6d. 100, 11s. 6d. 100, 12s. 6d. 100, 13s. 6d. 100, 14s. 6d. 100, 15s. 6d. 100, 16s. 6d. 100, 17s. 6d. 100, 18s. 6d. 100, 19s. 6d. 100, 20s. 6d. 100, 21s. 6d. 100, 22s. 6d. 100, 23s. 6d. 100, 24s. 6d. 100, 25s. 6d. 100, 26s. 6d. 100, 27s. 6d. 100, 28s. 6d. 100, 29s. 6d. 100, 30s. 6d. 100, 31s. 6d. 100, 32s. 6d. 100, 33s. 6d. 100, 34s. 6d. 100, 35s. 6d. 100, 36s. 6d. 100, 37s. 6d. 100, 38s. 6d. 100, 39s. 6d. 100, 40s. 6d. 100, 41s. 6d. 100, 42s. 6d. 100, 43s. 6d. 100, 44s. 6d. 100, 45s. 6d. 100, 46s. 6d. 100, 47s. 6d. 100, 48s. 6d. 100, 49s. 6d. 100, 50s. 6d. 100, 51s. 6d. 100, 52s. 6d. 100, 53s. 6d. 100, 54s. 6d. 100, 55s. 6d. 100, 56s. 6d. 100, 57s. 6d. 100, 58s. 6d. 100, 59s. 6d. 100, 60s. 6d. 100, 61s. 6d. 100, 62s. 6d. 100, 63s. 6d. 100, 64s. 6d. 100, 65s. 6d. 100, 66s. 6d. 100, 67s. 6d. 100, 68s. 6d. 100, 69s. 6d. 100, 70s. 6d. 100, 71s. 6d. 100, 72s. 6d. 100, 73s. 6d. 100, 74s. 6d. 100, 75s. 6d. 100, 76s. 6d. 100, 77s. 6d. 100, 78s. 6d. 100, 79s. 6d. 100, 80s. 6d. 100, 81s. 6d. 100, 82s. 6d. 100, 83s. 6d. 100, 84s. 6d. 100, 85s. 6d. 100, 86s. 6d. 100, 87s. 6d. 100, 88s. 6d. 100, 89s. 6d. 100, 90s. 6d. 100, 91s. 6d. 100, 92s. 6d. 100, 93s. 6d. 100, 94s. 6d. 100, 95s. 6d. 100, 96s. 6d. 100, 97s. 6d. 100, 98s. 6d. 100, 99s. 6d. 100, 100s. 6d. 100, 101s. 6d. 100, 102s. 6d. 100, 103s. 6d. 100, 104s. 6d. 100, 105s. 6d. 100, 106s. 6d. 100, 107s. 6d. 100, 108s. 6d. 100, 109s. 6d. 100, 110s. 6d. 100, 111s. 6d. 100, 112s. 6d. 100, 113s. 6d. 100, 114s. 6d. 100, 115s. 6d. 100, 116s. 6d. 100, 117s. 6d. 100, 118s. 6d. 100, 119s. 6d. 100, 120s. 6d. 100, 121s. 6d. 100, 122s. 6d. 100, 123s. 6d. 100, 124s. 6d. 100, 125s. 6d. 100, 126s. 6d. 100, 127s. 6d. 100, 128s. 6d. 100, 129s. 6d. 100, 130s. 6d. 100, 131s. 6d. 100, 132s. 6d. 100, 133s. 6d. 100, 134s. 6d. 100, 135s. 6d. 100, 136s. 6d. 100, 137s. 6d. 100, 138s. 6d. 100, 139s. 6d. 100, 140s. 6d. 100, 141s. 6d. 100, 142s. 6d. 100, 143s. 6d. 100, 144s. 6d. 100, 145s. 6d. 100, 146s. 6d. 100, 147s. 6d. 100, 148s. 6d. 100, 149s. 6d. 100, 150s. 6d. 100, 151s. 6d. 100, 152s. 6d. 100, 153s. 6d. 100, 154s. 6d. 100, 155s. 6d. 100, 156s. 6d. 100, 157s. 6d. 100, 158s. 6d. 100, 159s. 6d. 100, 160s. 6d. 100, 161s. 6d. 100, 162s. 6d. 100, 163s. 6d. 100, 164s. 6d. 100, 165s. 6d. 100, 166s. 6d. 100, 167s. 6d. 100, 168s. 6d. 100, 169s. 6d. 100, 170s. 6d. 100, 171s. 6d. 100, 172s. 6d. 100, 173s. 6d. 100, 174s. 6d. 100, 175s. 6d. 100, 176s. 6d. 100, 177s. 6d. 100, 178s. 6d. 100, 179s. 6d. 100, 180s. 6d. 100, 181s. 6d. 100, 182s. 6d. 100, 183s. 6d. 100, 184s. 6d. 100, 185s. 6d. 100, 186s. 6d. 100, 187s. 6d. 100, 188s. 6d. 100, 189s. 6d. 100, 190s. 6d. 100, 191s. 6d. 100, 192s. 6d. 100, 193s. 6d. 100, 194s. 6d. 100, 195s. 6d. 100, 196s. 6d. 100, 197s. 6d. 100, 198s. 6d. 100, 199s. 6d. 100, 200s. 6d. 100, 201s. 6d. 100, 202s. 6d. 100, 203s. 6d. 100, 204s. 6d. 100, 205s. 6d. 100, 206s. 6d. 100, 207s. 6d. 100, 208s. 6d. 100, 209s. 6d. 100, 210s. 6d. 100, 211s. 6d. 100, 212s. 6d. 100, 213s. 6d. 100, 214s. 6d. 100, 215s. 6d. 100, 216s. 6d. 100, 217s. 6d. 100, 218s. 6d. 100, 219s. 6d. 100, 220s. 6d. 100, 221s. 6d. 100, 222s. 6d. 100, 223s. 6d. 100, 224s. 6d. 100, 225s. 6d. 100, 226s. 6d. 100, 227s. 6d. 100, 228s. 6d. 100, 229s. 6d. 100, 230s. 6d. 100, 231s. 6d. 100, 232s. 6d. 100, 233s. 6d. 100, 234s. 6d. 100, 235s. 6d. 100, 236s. 6d. 100, 237s. 6d. 100, 238s. 6d. 100, 239s. 6d. 100, 240s. 6d. 100, 241s. 6d. 100, 242s. 6d. 100, 243s. 6d. 100, 244s. 6d. 100, 245s. 6d. 100, 246s. 6d. 100, 247s. 6d. 100, 248s. 6d. 100, 249s. 6d. 100, 250s. 6d. 100, 251s. 6d. 100, 252s. 6d. 100, 253s. 6d. 100, 254s. 6d. 100, 255s. 6d. 100, 256s. 6d. 100, 257s. 6d. 100, 258s. 6d. 100, 259s. 6d. 100, 260s. 6d. 100, 261s. 6d. 100, 262s. 6d. 100, 263s. 6d. 100, 264s. 6d. 100, 265s. 6d. 100, 266s. 6d. 100, 267s. 6d. 100, 268s. 6d. 100, 269s. 6d. 100, 270s. 6d. 100, 271s. 6d. 100, 272s. 6d. 100, 273s. 6d. 100, 274s. 6d. 100, 275s. 6d. 100, 276s. 6d. 100, 277s. 6d. 100, 278s. 6d. 100, 279s. 6d. 100, 280s. 6d. 100, 281s. 6d. 100, 282s. 6d. 100, 283s. 6d. 100, 284s. 6d. 100, 285s. 6d. 100, 286s. 6d. 100, 287s. 6d. 100, 288s. 6d. 100, 289s. 6d. 100, 290s. 6d. 100, 291s. 6d. 100, 292s. 6d. 100, 293s. 6d. 100, 294s. 6d. 100, 295s. 6d. 100, 296s. 6d. 100, 297s. 6d. 100, 298s. 6d. 100, 299s. 6d. 100, 300s. 6d. 100, 301s. 6d. 100, 302s. 6d. 100, 303s. 6d. 100, 304s. 6d. 100, 305s. 6d. 100, 306s. 6d. 100, 307s. 6d. 100, 308s. 6d. 100, 309s. 6d. 100, 310s. 6d. 100, 311s. 6d. 100, 312s. 6d. 100, 313s. 6d. 100, 314s. 6d. 100, 315s. 6d. 100, 316s. 6d. 100, 317s. 6d. 100, 318s. 6d. 100, 319s. 6d. 100, 320s. 6d. 100, 321s. 6d. 100, 322s. 6d. 100, 323s. 6d. 100, 324s. 6d. 100, 325s. 6d. 100, 326s. 6d. 100, 327s. 6d. 100, 328s. 6d. 100, 329s. 6d. 100, 330s. 6d. 100, 331s. 6d. 100, 332s. 6d. 100, 333s. 6d. 100, 334s. 6d. 100, 335s. 6d. 100, 336s. 6d. 100, 337s. 6d. 100, 338s. 6d. 100, 339s. 6d. 100, 340s. 6d. 100, 341s. 6d. 100, 342s. 6d. 100, 343s. 6d. 100, 344s. 6d. 100, 345s. 6d. 100, 346s. 6d. 100, 347s. 6d. 100, 348s. 6d. 100, 349s. 6d. 100, 350s. 6d. 100, 351s. 6d. 100, 352s. 6d. 100, 353s. 6d. 100, 354s. 6d. 100, 355s. 6d. 100, 356s. 6d. 100, 357s. 6d. 100, 358s. 6d. 100, 359s. 6d. 100, 360s. 6d. 100, 361s. 6d. 100, 362s. 6d. 100, 363s. 6d. 100, 364s. 6d. 100, 365s. 6d. 100, 366s. 6d. 100, 367s. 6d. 100, 368s. 6d. 100, 369s. 6d. 100, 370s. 6d. 100, 371s. 6d. 100, 372s. 6d. 100, 373s. 6d. 100, 374s. 6d. 100, 375s. 6d. 100, 376s. 6d. 100, 377s. 6d. 100, 378s. 6d. 100, 379s. 6d. 100, 380s. 6d. 100, 381s. 6d. 100, 382s. 6d. 100, 383s. 6d. 100, 384s. 6d. 100, 385s. 6d. 100, 386s. 6d. 100, 387s. 6d. 100, 388s. 6d. 100, 389s. 6d. 100, 390s. 6d. 100, 391s. 6d. 100, 392s. 6d. 100, 393s. 6d. 100, 394s. 6d. 100, 395s. 6d. 100, 396s. 6d. 100, 397s. 6d. 100, 398s. 6d. 100, 399s. 6d. 100, 400s. 6d. 100, 401s. 6d. 100, 402s. 6d. 100, 403s. 6d. 100, 404s. 6d. 100, 405s. 6d. 100, 406s. 6d. 100, 407s. 6d. 100, 408s. 6d. 100, 409s. 6d. 100, 410s. 6d. 100, 411s. 6d. 100, 412s. 6d. 100, 413s. 6d. 100, 414s. 6d. 100, 415s. 6d. 100, 416s. 6d. 100, 417s. 6d. 100, 418s. 6d. 100, 419s. 6d. 100, 420s. 6d. 100, 421s. 6d. 100, 422s. 6d. 100, 423s. 6d. 100, 424s. 6d. 100, 425s. 6d. 100, 426s. 6d. 100, 427s. 6d. 100, 428s. 6d. 100, 429s. 6d. 100, 430s. 6d. 100, 431s. 6d. 100, 432s. 6d. 100, 433s. 6d. 100, 434s. 6d. 100, 435s. 6d. 100, 436s. 6d. 100, 437s. 6d. 100, 438s. 6d. 100, 439s. 6d. 100, 440s. 6d. 100, 441s. 6d. 100, 442s. 6d. 100, 443s. 6d. 100, 444s. 6d. 100, 445s. 6d. 100, 446s. 6d. 100, 447s. 6d. 100, 448s. 6d. 100, 449s. 6d. 100, 450s. 6d. 100, 451s. 6d. 100, 452s. 6d. 100, 453s. 6d. 100, 454s. 6d. 100, 455s. 6d. 100, 456s. 6d. 100, 457s. 6d. 100, 458s. 6d. 100, 459s. 6d. 100, 460s. 6d. 100, 461s. 6d. 100, 462s. 6d. 100, 463s. 6d. 100, 464s. 6d. 100, 465s. 6d. 100, 466s. 6d. 100, 467s. 6d. 100, 468s. 6d. 100, 469s. 6d. 100, 470s. 6d. 100, 471s. 6d. 100, 472s. 6d. 100, 473s. 6d. 100, 474s. 6d. 100, 475s. 6d. 100, 476s. 6d. 100, 477s. 6d. 100, 478s. 6d. 100, 479s. 6d. 100, 480s. 6d. 100, 481s. 6d. 100, 482s. 6d. 100, 483s. 6d. 100, 484s. 6d. 100, 485s. 6d. 100, 486s. 6d. 100, 487s. 6d. 100, 488s. 6d. 100, 489s. 6d. 100, 490s. 6d. 100, 491s. 6d. 100, 492s. 6d. 100, 493s. 6d. 100, 494s. 6d. 100, 495s. 6d. 100, 496s. 6d. 100, 497s. 6d. 100, 498s. 6d. 100, 499s. 6d. 100, 500s. 6d. 100, 501s. 6d. 100, 502s. 6d. 100, 503s. 6d. 100, 504s. 6d. 100, 505s. 6d. 100, 506s. 6d. 100, 507s. 6d. 100, 508s. 6d. 100, 509s. 6d. 100, 510s. 6d. 100, 511s. 6d. 100, 512s. 6d. 100, 513s. 6d. 100, 514s. 6d. 100, 515s. 6d. 100, 516s. 6d. 100, 517s. 6d. 100, 518s. 6d. 100, 519s. 6d. 100, 520s. 6d. 100, 521s. 6d. 100, 522s. 6d. 100, 523s. 6d. 100, 524s. 6d. 100, 525s. 6d. 100, 526s. 6d. 100, 527s. 6d. 100, 528s. 6d. 100, 529s. 6d. 100, 530s. 6d. 100, 531s. 6d. 100, 532s. 6d. 100, 533s. 6d. 100, 534s. 6d. 100, 535s. 6d. 100, 536s. 6d. 100, 537s. 6d. 100, 538s. 6d. 100, 539s. 6d. 100, 540s. 6d. 100, 541s. 6d. 100, 542s. 6d. 100, 543s. 6d. 100, 544s. 6d. 100, 545s. 6d. 100, 546s. 6d. 100, 547s. 6d. 100, 548s. 6d. 100, 549s. 6d. 100, 550s. 6d. 100, 551s. 6d. 100, 552s. 6d. 100, 553s. 6d. 100, 554s. 6d. 100, 555s. 6d. 100, 556s. 6d. 100, 557s. 6d. 100, 558s. 6d. 100, 559s. 6d. 100, 560s. 6d. 100, 561s. 6d. 100, 562s. 6d. 100, 563s. 6d. 100, 564s. 6d. 100, 565s. 6d. 100, 566s. 6d. 100, 567s. 6d. 100, 568s. 6d. 100, 569s. 6d. 100, 570s. 6d. 100, 571s. 6d. 100, 572s. 6d. 100, 573s. 6d. 100, 574s. 6d. 100, 575s. 6d. 100, 576s. 6d. 100, 577s. 6d. 100, 578s. 6d. 100, 579s. 6d. 100, 580s. 6d. 100, 581s. 6d. 100, 582s. 6d. 100, 583s. 6d. 100, 584s. 6d. 100, 585s. 6d. 100, 586s. 6d. 100, 587s. 6d. 100, 588s. 6d. 100, 589s. 6d. 100, 590s. 6d. 100, 591s. 6d. 100, 592s. 6d. 100, 593s. 6d. 100, 594s. 6d. 100, 595s. 6d. 100, 596s. 6d. 100, 597s. 6d. 100, 598s. 6d. 100, 599s. 6d. 100, 600s. 6d. 100, 601s. 6d. 100, 602s. 6d. 100, 603s. 6d. 100, 604s. 6d. 100, 605s. 6d. 100, 606s. 6d. 100, 607s. 6d. 100, 608s. 6d. 100, 609s. 6d. 100, 610s. 6d. 100, 611s. 6d. 100, 612s. 6d. 100, 613s. 6d. 100, 614s. 6d. 100, 615s. 6d. 100, 616s. 6d. 100, 617s. 6d. 100, 618s. 6d. 100, 619s. 6d. 100, 620s. 6d. 100, 621s. 6d. 100, 622s. 6d. 100, 623s. 6d. 100, 624s. 6d. 100, 625s. 6d. 100, 626s. 6d. 100, 627s. 6d. 100, 628s. 6d. 100, 629s. 6d. 100, 630s. 6d. 100, 631s. 6d. 100, 632s. 6d. 100, 633s. 6d. 100, 634s. 6d. 100, 635s. 6d. 100, 636s. 6d. 100, 637s. 6d. 100, 638s. 6d. 100, 639s. 6d. 100, 640s. 6d. 100, 641s. 6d. 100, 642s. 6d. 100, 643s. 6d. 100, 644s. 6d. 100, 645s. 6d. 100, 646s. 6d. 100, 647s. 6d. 100, 648s. 6d. 100, 649s. 6d. 100, 650s. 6d. 100, 651s. 6d. 100, 652s. 6d. 100, 653s. 6d. 100, 654s. 6d. 100, 655s. 6d. 100, 656s. 6d. 100, 657s. 6d. 100, 658s. 6d. 100, 659s. 6d. 100, 660s. 6d. 100, 661s. 6d. 100, 662s. 6d. 100, 663s. 6d. 100, 664s. 6d. 100, 665s. 6d. 100, 666s. 6d. 1

SALES BY AUCTION.**WEDNESDAY NEXT, at 12 o'clock.**

Herbaceous Plants, Rhododendrons

ROSES

in variety, Clematis, Carnations, Lilies, Gladioli, and other autumn flowering Bulbs, cuses of Japanese Lilies, &c.

MESSRS. PROTHEROE & MORRIS, will sell the above by AUCTION at their Central Sale Rooms, 67 and 68, Chancery, E.C. 2. On view morning of sale and catalogues had.**PUBLISHERS' NOTICE.**

NEARLY READY. CROWN 8vo. 3s. 6d. NET.

"JOTTINGS OF A GENTLEMAN GARDENER."

A Practical Guide to Flower Gardening for Amateur Gardeners, to which is added Some Suggestions on Growing Food Plants during the War. By E. T. ELLIS, F.R.H.S.

ABSTRACT OF CONTENTS.**Starting a Garden.**

Animals, Biennials and Perennials.

Colour Borders.

Rock Gardens.

Weeds, Pests, Diseases, Paths.

Propagation of Plants

Soils and Manures and their Management.

Experiment in Gardening.

Picturesque Vegetable Gardening.

Calendars.

London

L. REEVE & CO., LTD., 6, Henrietta Street, W.C. 2

PLANTS, &c., WANTED.**WANTED, 3 cwt. Jer. Artichokes,** for planting, 5,000 Cabbage plants weekly, Garden Seed Potatoes, any variety, for cash. References, London Joint Stock Bank & W. F. RAMSHAW & CO., Seed Merchants, Sunderland.**WANTED, 1,000 Large ASPIDISTRAS,** old plants suitable for "Bark," cash or exchange. See other advertisements; catalogues free. — SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**WANTED, Motor Lawn Mower,** new or second hand, 20in. or 30in., in good condition. **HEAD GARDENER,** Hamstead Court, Hamstead, Surrey**PLANTS, &c., FOR SALE.****VERBENAS.**—Miss Willmott (pink). King of Scarlet, Queen of Whites, Lovely Blue (lavender blue), Princess of Wales (purple), strong, clean, variegated stuff from boxes, 50 for 5s., 9s. per 100; carriage paid for cash.—H. DUDDERIDGE, The Dorset Nurseries, Blandford.**GLADIOLAS,** extra choice Hybrids from a celebrated prize collection; Children, named, 25s. 100, mixed 14s. 100, Gandavensis, named, 20s., mixed 12s. 100.—MORLE & CO., 150-156, Finchley Road, N.W. 3.**AMARYLLIS (Hybrids of Vittata);** our magnificent collection, many now showing flower-spikes, from Mr. W. Bull's wonderful 1st Prize Gold Medal varieties at all usual prices.—MORLE & CO., 150-156, Finchley Road, N.W. 3.**MISCELLANEOUS.**

IF YOU'VE NEVER WORN

BEACON OILSKINS

You've yet to learn the bodily comfort that they afford in wet and stormy weather. They are proof against the hardest storm and have no disagreeable stickiness. We sell them on the understanding that you may have your money returned if BEACON OILSKINS don't satisfy you—there's no risk in dealing with us. We specialise in Oilskins, Men's Black Coats from 9/6, Long Leggings from 2/9, Sou'westers from 1/6, Children's Oilskins 8/6 upwards, Ladies' Smart Oilskins from 15/6. Send p.c. for Free Beacon Booklet, and choose the style and size you prefer.—BARBOUR'S, LTD., 66, BEACON BUILDINGS, SOUTH SHIELDS. (6)

The Gardeners' Chronicle**SCALE OF CHARGES FOR ADVERTISEMENTS.****Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.**

Ordinary Positions	per page	£	s.	d.
Facing matter and Back Page	12	10	10	0
Half and quarter pages, column and half column				
SPACES, PRO RATA.				
4 line space not exceeding 20 words		£	s.	d.
Per inch, single column		3	0	
Per inch across 2 columns		7	0	
Per inch across 3 columns		14	0	
Per inch, across 3 columns		1	1	0

Front page (to display allowed) 1/- per line space.

[Headline counted as two lines]

For discounts apply to address below.

SITUATIONS WANTED.

2/6 words 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM 15/- per annum.

ABROAD 17/6

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telegrams: 1543 GALEDION, RAND, LONDON.

Telephone: 1543 GERRARD.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.**WANTED, HEAD GARDENER,** near London; 3 or 4 assistants kept; must be thoroughly competent in all departments, house, coal, and gas found.—Write, giving full particulars of experience, stating age and wages expected, to A. F., Box 2, 41, Wellington Street, Covent Garden, W.C. 2.**WANTED, HEAD WORKING GARDENER,** 4 kept, experienced; married, intelligible, care of poultry and small estate. State wages (including house and wages expected), and if of the Church of England, and when free.—VISCONTESS KENT'S FORD, Knossworth Hall, Royston, Herts.**WANTED, Single-handed GARDENER,** good wages.—Apply, CAPTAIN BRETT JAMES, St. Augustine's, Tottenham, Herts.**WANTED, capable GARDENER;** willing to learn electric light engine, and with knowledge of cows preferred, chiefly Vegetable growing, small Green-house, help given; must be intelligible, and have good references. Wages, 5s., and good cottage and garden. Full particulars to HORBLE, MISS HAMILTON RT'S 58/4, Yarlington House, Wincanton, Somerset.**WANTED, good all-round GARDENER**

(Inside and Out) for Garden in North London; must be experienced and reliable, another kept; wages 35s.; good house and vegetables.—State full particulars to X. Y. Z., Gresham House, Old Broad Street, London.

WANTED, GARDENER, intelligible;

single handed; understanding Vines and Conservatory work, rooms, coal, and gas found. State family, age, and wages.—T. G. H., "Claremont," Culloden Road, Enfield, N.

WANTED, SECOND GARDENER, for

Inside, discharged soldier preferred; good wages, with Bothy.—State experience to HAWKINS, Galsden, Hayes, Kent.

WANTED, Two JOURNEMEN, ex-

perienced (Inside and Out), with Bothy, Vegetables, and good wages; intelligible. Write, stating age and experience, to H. SWAIN, The Garden, Wilton Park, Beaconsfield, Bucks.

UNDER GARDENER for London suburb

will be required, with all round (inside) experience.—Write fully, stating age, if married, experience, wages required, and when free, GARDENER, 14, Bartholomew Close, E.C. 1.

WANTED, MAN, over military age

(single if possible), with knowledge of Carnations and all-round Gardening, to look after Gardens till end of War for owner on War Service.—Apply, by letter, stating salary required and references, to CAPTAIN HASTINGS WHEELER, Ospringe Place, Faversham.

WANTED, discharged soldier (married),

with knowledge of Gardening, offered suitable employment, with good cottage. Apply, stating age, experience, and number of children, JEFFERSON, Lapworth Hill, Hookley Heath, Birmingham.

WANTED, IMPROVER, for Inside and

Out, able to take duty, wages £1 per week and Bothy, duty and overtime paid.—Apply, with full particulars, to H. A. PAGE, The Gardens, Belsize Court, Hampstead, N.W. 3.

WANTED, IMPROVER, Inside and Out;

age 15 to 16, wages 18s., Bothy, vegetables, milk. E. MORGAN, Wassand Hall Gardens, Hill.

WANTED, at St. Leonard's School

for Girls, St. Andrews, Etc., a fully qualified and well-qualified WOMAN, to act as HEAD GARDENER and INSTRUCTOR in GARDENING; knowledge of the growth and sale of Vegetables and the care of Grass is essential, and some experience in teaching desirable.—For further particulars apply to the HEAD MISTRESS.

WANTED, Two WOMEN GAR-

DENERS, experienced, chiefly Inside; one part-time attending outside, which is provided furnished.—Apply, with particulars, THE GARDENER, Hardeston House, Salisbury.

WANTED, good Practical WOMEN GAR-

DENERS for Herbaceous Borders and Rock Gardens, &c., Bothy and the usual particulars.—Apply, stating age and experience, to A. FRESHWATER, Pans Hill Gardens, Colham, Surrey.

WANTED, Two WOMEN UNDER

GARDENERS; experienced Inside and Out, Rose and Flower Gardens, Rockery, Herbaceous Borders, &c., moving, accommodation provided, no board! State qualifications and references.—Apply to MR. ROWELL, The Lodge, Butler's Court, Beaconsfield.

WANTED, Two WOMEN UNDER GAR-

DENERS for general Garden work, both Inside and Out, take turn on duty (no fires)—Apply, stating age, experience, and wages, with Bothy, coal, light, milk, and vegetables, to DUNCKLEY, Clifton Hall Gardens, Nottingham.

LADY GARDENERS WANTED.

—HEAD for (a) Somerset, titled family; (b) Pinner, 28s., 30s., vegetables, fruit, poultry, 1 Under kept. HEAD and UNDER for (a) Bletchley, Sussex, good salary, furnished cottage and coal, chiefly vegetables, garden about 3 acres, Under would clean and wash car (2 seater); (b) Hexham, vegetables chiefly, little grass; (c) Wolverhampton, good experience required, Under must be able to milk; also for Derby and Surrey. SINGLE HANDED, (d) Slough, 26s., vegetables, and nice roomy cottage, near residence, chiefly Vegetable, Kitchen Garden, 3 an acre, some help green; (e) Sligo, 2 wanted, one for Garden, other for Inside and milk; 2 rooms, make butter; (f) Somerset, temporary for 3 months, main Garden; (g) Wores, Vegetable and Fruit growing, must have training and experience, and other poss.—MRS. HUNT, LTD., 68, High Street, Marylebone, W. 1. No fee to lady Gardeners. All suited entirely free.

WANTED, YOUTH, about 16 to 17 years

of age, to work in the Houses as Improver; wages 16s., Bothy and vegetables; Sunday duty and overtime paid; 1 o'clock on Saturdays.—W. L. BASTIN, Buscot Gardens, Faringdon, Berks.

TRADE.

WANTED, MANAGER for Seed Department; must be thoroughly efficient and practical; good salesman and organiser, knowledge of general nursery trade; able to take full control if necessary.—Full particulars to HOPWOODS, Nurserymen and Seedsmen, Cheltenham

WANTED, at once, FOREMAN for general Nursery and growing plants for food production, good wages—all particulars to CLARKE'S NURSERY, Hampton, Middlesex.

WANTED, MAN; ineligible; well up in Cucumbers and Tomatoes, good prospect to obtain Foreman position—Write, L. J., Box 26, 41, Wellington Street, Covent Garden, W. C. 2.

WANTED, near Chester, experienced GROWER for Fruit Trees, Tomatoes, Cucumbers, &c.—2, Burford Avenue, Whalley Range, Manchester.

FLORIST'S and NURSERYMAN'S MAN WANTED for shop—G. POOCOCK & SON, Golders Green.

WANTED, LADY FLORIST; able to buy with taste; must be artistic maker up; good salary to right person.—Apply, with full particulars, experience, age, &c.—W. B., Box 27, 41, Wellington Street, Covent Garden, W. C. 2.

WANTED, immediately, smart young LADY FLORIST, experienced; with knowledge of Seed Trade preferred; must have good references.—State age and salary required to BROOKE, BRAY & SONS, Sherwood Vale, Sheffield.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

GARDENER (HEAD); first-class expert; practical knowledge in every branch of Horticulture, with Estate management if necessary; at liberty—A. B., Box 14, 41, Wellington Street, Covent Garden, W. C. 2.

GARDENER (HEAD), where 3 or more are kept, life experience Inside and Out, good references, single, age 33, ineligible; please state wages—W. MILLER, c/o Mrs. Watter, 5, Ormeau Terrace, Meantwood Road, Leeds.

GARDENER (HEAD), Scotch, age 43, in large establishment, thoroughly experienced in all branches, active, good manager; for 12 years' Head at institution; leaving through death of the Right Hon. F. J. S. Fuljant; excellent references, used to producing Vegetables and Fruit in large quantities.—Apply to JAMES B. ALLAN, Osberton Gardens, Worksop, Notts.

GARDENER (HEAD of good SINGLE-HANDED), active, capable, reliable all-round man; life experience, good references; age 44; married—A. BROWN, 96, North End Road, W. Kensington.

GARDENER (HEAD WORKING), where 3 or 4 are kept; life experience in all branches; 8 years as Head; good references; ineligible; age 35; married (no family)—G. H. AKERMAN, The Lodge, Gaversfield, Beccles, Oxon.

GARDENER (HEAD WORKING), where 2 or 3 more men are kept; life experience in all branches of gardening; can be highly recommended; age 49, married (no family)—"T. F.," Box 26, 41, Wellington Street, Covent Garden, W. C. 2.

GARDENER (HEAD WORKING) requires permanent situation, well up Inside and Out, over military age, long reference, near a town preferred—W. WHITE, c/o H. White, Stanningdale Nurseries, Widdlesham, Surrey.

GARDENER (HEAD WORKING), where 3 or 4 are kept, life experience in all branches, including home stock, excellent references, 42 years last situation, 6 previous; married; age 41, ineligible; must be single—SAILER, 1, Rose Cottage, C/O Green, Maidenhead.

GARDENER (HEAD WORKING) seeks situation, life experience in all branches, highest references, age 47, married—E. LIMEHOUSE, 62, Princes Road, Romford.

GARDENER (HEAD WORKING); expert in all branches, where 3 or 4 are kept, 29 years in present situation, age 52, wife and one daughter at home, leaving through death of employer, Chislehurst, Appy, to Mr. R. G. CANN, Penderdin Gardens, St. Austell, Cornwall.

GARDENER (HEAD WORKING), where 2 or 3 more men are kept, life experience in all branches, good references, married, age 49, J. HARRWOOD, 6, Robinson Road, Preston Park, Brighton, Sussex.

GARDENER (HEAD WORKING) seeks position, 2 years' life experience, Inside and Out, married, over military age, daughter (16) as under 16; preferred—W. GREEN, 10, Victoria Road, Woodville, Newbury.

GARDENER (SINGLE-HANDED), aged 42, 2 years' life experience, 10 years' home management, 4 years' in last position, 20 years' in horticulture—W. GARDNER, Box 27, 41, Wellington Street, Covent Garden, W. C. 2.

GARDENER (ineligible); quite willing to leave home to obtain the situation of working in a 2nd class and Fruit, Inside and Out, age 42, single, good references—GARDNER, c/o Mrs. Cook, Broomfield, Chiltonton, Devon.

YOUNG MAN (26), reports; seeks situation as GARDENER (single-handed), good references—T. J. J. PETERS' Cottages, Hill Street, Hove, Sussex.

A LADY GARDENER, 1 year's experience, capable, with a job as part in the morning, home & garden, 4 hours a day, in the forenoon, during a week, or evenings, would prefer to work under Gardeners or other conditions. Apply, C/O at Covent Park, St. Albans.

TWO LADY GARDENERS (friends) desire engagement in or near Luton if possible, 2 years' college training, L. W. HAMILTON, The Club House, Parkside Park, Luton.

TRADE.

FOOD PRODUCTION. Gentleman (ineligible), with some previous practical experience, requires employment on Fruit and Vegetable farms, where other gentlemen or ladies are employed, usual wages, or in lieu board and lodging, expected, could invest in approved, well established concerns later. Address, D. R., Box 21, 41, Wellington Street, Covent Garden, W. C. 2.

SITUATION required immediately as CHARGE HAND, 10 years last place, life experience with Cucumbers, Tomatoes, Chrysanthemums, and Christmas. Please state wages offered, including overtime and sundry work, except, age 31, WHITE, 123, Albany Road, South Westham, Surrey.

MAN (42) seeks permanent situation, experienced in Vines, Tomatoes, Chrysanthemums, total abstainer. Kindly state wages.—WINGHAM, 54, Frith Road, Leytonstone, Essex.

CLERK (HEAD) of Book-keeper; 19 years in previous situation, 2 years in present; age 47, J. C., 60, Woodlands Park Road, Haringey, N. 15.

FLORIST, as Manager or First Hand in high-class business, excellent references—T. B., Box 1, 41, Wellington Street, Covent Garden, W. C. 2.

NOW READY THE HORTICULTURAL DIRECTORY AND YEAR BOOK FOR 1917.

Owing to the paper shortage, an unlimited number of copies of this work cannot be guaranteed, and purchasers are advised to order AT ONCE to avoid disappointment. The 1917 edition contains no name or address which has not been verified. The information given is therefore absolutely trustworthy.

Apply, enclosing 1/4 for each copy required, to:—

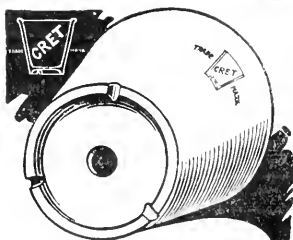
GARDENERS' CHRONICLE, LTD., 41, WELLINGTON ST., COVENT GARDEN, LONDON, W. C. 2.

ONLY TO ORDER.

IN consequence of the decision of the Board of Trade, which will come into force on May 1st, to prohibit the return to publishers of unsold copies of any journal, the GARDENERS' CHRONICLE will be obtainable after that date only if ordered beforehand. We ask, therefore, all readers who desire a copy each week (and are not already receiving it direct from this office) to give their local newsagent a definite order to this effect

ORDER FOR NEWSAGENTS.

To Mr.....Newsagent
Address.....
Name.....
Address.....
Please deliver the GARDENERS' CHRONICLE to me each week at the address given below.



Write for FREE "CRET" BOOKLET

if you wish to avoid mildew or drainage troubles with pot plants. It also shows other CRET advantages of Porosity, Drainage, Ventilation, and Reliability.

Specimen CRET Prices: 2 1/2 ins. 4/- per 100; 1 1/2 ins. 75/-. All CRETS are per 100. Carriage Paid on orders over 20/-. Safe Delivery Guaranteed.

FREE SAMPLE "CRET" POT on request, with the booklet giving prices and special assortments. Write to-day.

PETER BAILEY & SONS, LTD.,
2, Heaton Mersey Pottery, near Manchester.



BENTLEY'S WEED DESTROYERS :

Liquid : Concentrated Strength 1 to 80.
Double Strength 1 to 50.
Patent Powder : 1 to 25.

BENTLEY'S DAISY KILLER
(LAWN SAND).

BENTLEY'S INSECTICIDES.

BENTLEY'S FUNGICIDES.

BENTLEY'S FUMIGANTS.

BENTLEY'S MANURES.

Catalogue on application.

JOSEPH BENTLEY, Ltd.,
Chemical Works,
Barrow-on-Humber, HULL

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.

STOVE and GREENHOUSE PLANTS of ALL KINDS.

Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.



✓ SLUGS SLUGS

"SANTAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt (over London) of all Chemists, Stores and Nurserymen.

THE "SANTAS" CO., Ltd.
Limehouse, London, E.
Awarded Medal at Royal Horticultural Exhibition, 1911.

ONLY MEDAL INTERNATIONAL EXHIBITION EDINBURGH 1886 ONLY GOLD MEDAL EDINBURGH 1891

THOMSON'S CELEBRATED MANURES

PERFECT PLANT FOODS. Unrivalled for all garden crops: Peas, Vines, Plant and Vegetable Marrow, 1 cwt 20/-; 50 lbs. 12/6; 100 lbs. 7/6, 14 lbs 4/6, 7 lbs 2/6. For 2 1/2, 1 and 6d. *Carriage and cost of tin 3d. 1/2 lb and 1/4 lb several thousand and up to several thousand and up to 100 lbs. 10/-; 50 lbs. 5/-; 25 lbs. 2/6; 14 lbs 6/-; 7 lbs 3/6. This 1/- Carriage paid anywhere on 8 lbs. and up sold by all Seedsmen, Sole makers: Wm. Thomson & Sons, Ltd. Glasgow, fords, N.E.*

CHEALS' DAHLIAS.

NEW ILLUSTRATED CATALOGUE

OF ALL SECTIONS OF DAHLIAS.
POST FREE.

J. Cheal & Sons, Ltd.
The Nurseries, CRAWLEY.

"They come out of their holes to die"

LIVERPOOL VIRUS exterminates **RATS & NICES.**

No unpleasantness and danger from smells. It is quite harmless to man and domestic animals. It is thus really prepared with bait; for Rats 2/6 & 6/-; for Mice 1/6. Call Chemists. Write for particulars to

EVANS BROS BREKERS & WEDD, Ltd., 24, Newover St., Liverpool.

COLLECTION OF ORCHIDS.

RARE WHITE CATTLEYAS.
RARE GYPRIPEDIUMS.

Comprising:—

SEEDLING ODONTOGLOSSUMS.
SPECIMEN CYMBIDIUMS.

List and Prices —

BAYLOR, HARTLAND & SONS, Nurserymen, CORK.

Ammanford and Pontyberem Collieries.

SOLE AGENT:

T. T. PASCOE,
York Chambers,
SWANSEA.

Telephone 1048 Central. Gram 1048 Central. Pascoe, Swansea.

Best Anthracite Large Coal for Horticultural purposes and Cobbles for House Furnaces.

Quick Despatch. Best Quality.
Lowest Prices.

THE Gardeners' Chronicle

No 1583 - SATURDAY, APRIL 28 1917

CONTENTS

Almond, flowering of the	175	Galloway garden, notes	149
Dicotyled. fls.	175	from a	149
Farm, crops and stock	175	Molyneux, Mr. Edwin	175
on the home	175	Oleander	175
Food production, in-	177	Heath, Henry	177
creased—		Went, C.	177
Brussel's Sprouts	171	Orcid notes and glean-	179
Carbage root fly	171	ings	179
Celery	172	Onion seeds	150
Encourage the plover	171	Societies—	
Flower-crops	171	Haywards Heath Hort.	177
Polio-societies	171	Oleander	177
Seed growing on heavy	172	National Anticida	177
soil	171	Royal Horticultural	175
Under glass	174	Spring bedding plants	176
Vegetables, ornamental	171	Tools and shovels	176
Fertil. prospects and	175	Wax items	175
mulchings	175	Week's work, the	172, 173

ILLUSTRATIONS

Alangium platanifolium	170
Flat houses used for food production at Assisi	174, 175
Phanotoglossum erispum Breadth night	176
Wax items	175
Weeks, vases-coloured and black	176

NOTES FROM A GALLOWAY GARDEN. V.*

WRITING last month, see p. 149 in praise of *Berberis pinnata*, *Mahonia fasciculata*, of De Candolle, I mentioned that I could recollect meeting with it, but two gardens beside our own. Since then I have had the privilege of examining the treasures in the paradise surrounding Carhayes, Castle in Cornwall, among which are several plants of the Barberry. They are young as yet, but will make a fine display when they attain to full stature. As I know that there is a fine specimen 15 feet high in the grounds of Cris Wall near Stratton where Mr. Carrick Binham has a collection of interesting plants, well-grown and well tended.

No genus of flowering plants has received from botanists a more appropriate name than *Chionodoxa*. We have not yet coined a good one in English, the literal translation of the Greek title, *Glow of the Snow*, being too general for everyday purposes, but how those little flowers have gladdened in this April of the Snow! In the frost never so keen, or the wind never so bitter, they never bow their bright heads. They run into considerable range of size and colour, all I presume varieties of the type *Chionodoxa*. Some bulbs which I scraped out of an Old copper at Cettling, in Montenegro, turned out to be small, but brightly coloured, form of the variety *Chionodoxa*, which bears nothing but having developed the white eye of the type. Most companions for the charming bulbs are *Sanguinaria*, *Narcissus*, and *Dog's Tooth Violet*, rose coloured and white; while the variety so preposterously named *gigantea* (it is but 6 inches high flowers a fortnight or three weeks later and accords well with the citron-coloured variety of hoop-petticoat (*Narcissus triandrus*) *Chionodoxa gigantea* varies a good deal in colour, having a tendency to unpleasant slaty grey and in one pink shade, which should be ruthlessly extirpated. The best forms bear pale sky-blue blossoms. It is not until the second season after planting that *C. gigantea* does much to justify the high praise it has received; but once the bulbs are established the blooms increase annually in profusion, and like all varieties of *Chionodoxa*, *C. gigantea* propagates itself freely both by seed and offsets. It is well worth the trouble of sowing and scattering the seed under choice deciduous shrubs such as *Viburnum Carlesii*, *Hammamelis*, *Einkanthus*, *Exochorda* and the like. I think I overhear some experienced gardener mutter: "Why so much fuss over a thing of such simple requirements as *Chiono-*

doxa?" But all amateurs are not experienced, and so many people have expressed disappointment with *C. gigantea* in its first season that perhaps this is one reason why it is not so often seen as it deserves to be.

Comparatively few amateurs seem to have realised the beauty of several North American species of *Dog's Tooth Violet* (*Erythronium*). The European and Asiatic *E. Dens-canis* is easily naturalised in British woods at least where pheasants do not abound. Where they do, the plant has not much chance of perfecting its seeds; for although rabbits do not molest the attractive foliage, pheasants pick off and devour every blossom. There are some pretty colour varieties in the common *Dog's Tooth*, but none can compare with the soft brilliance of *E. Johnsoni* from British Columbia, which is supposed to be a geographical variant of the Californian *E. revolutum*, though it does not poll back the segments of its perianth into so tight a Turk's cap as distinguishes that form. The generic name *Erythronium*, the *Ruddy One*, was assigned to the *Dog's Tooth* before the American species were known to European botanists. It now covers several species of which it is far from being descriptive. *E. americanum*, for instance, the yellow *Adler's tongue* of the Eastern United States, has flowers of a clear yellow, stained with purple at the base of the petals, and *E. californicum* carries many flowers of a stem nearly a foot high, the petals being more coloured with an orange-tinted base. The Western *Dog's Tooth Violets* form the subject of an interesting paper by Mr. Carl Purdy in *Elmer's Florist*, vol. 1, pp. 250-255, which should be studied by those who mean to cultivate these beautiful spring flowers. The best one for them is the "double" *Chionodoxa* or forest tree" says Mr. Purdy. "I have often seen *E. californicum* growing to a height of 6 or 8 inches with but a single flower; after a year it may be 10 inches or as much as 2 feet high, with from four to seven flowers."

I have said that rabbits will not eat the *Erythronium Dens-canis*, we have never given them the chance of sampling the American species, for the simple reason, I suppose, that they avoid "small" of the *E. californicum* and the *Dog's Tooth* is a number, from the strictly and smooth looking to the one 2 or 3 feet high in the common Wood Heath. *Erythronium Dens-canis*, like *E. americanum* and *E. japonicum*, throws the bulbs after a few months in a heap in the bar. East-west plants, and that are protected against the rabbit, are of course rabbit.

Mr. Purdy states that one of the American *Dog's Tooth Violets* is the white-flowered *E. Hartwegii*, because he collects from the soil. The genus *gigantea*, like the other species, is suffering since after flowering, which a new one form a good deal to be the next season's growth. This can hardly apply to the European species, which form large flowering clumps if left undisturbed. I intend to ascertain the mode of increase as soon as the leaves decay. The flower buds are more bare this year than they should be towards the end of April, which makes the curious shining nuts of the *Greening Grenville* (*Galiospermum purpuraceolum*) more conspicuous than an ordinary season. Rightly descriptive is the generic name of this plant. Stony seeded for the nuts are of flinty hardness, resembling white porcelain or dental enamel more closely than any vegetable product that I know of.

Early flowering *Rhododendrons* have had a chequered experience this season. On the whole they have fared better than during the mild spring of 1915, which had them into premature growth in 1, in the first week of May, a couple of nights of bitter frost turned all the fresh young shoots into black ruin. The cold weather which persisted throughout the first three months of the present year has acted in salutary restraint. New growth is only just starting now (April 21), and *R. arboreum*, which opened its first blooms on March 10 in 1915, have delayed display till

the present week. Of *R. barbatum* there are two forms, an earlier and a later. Of the earlier and more hairy variety, a bush about thirty years old began to flower here in February, and during a brief mild spell was a brilliant object with hundreds of blood-red blossoms. It is a sorrowful object now, with all its splendour turned to russet. The later form, with richer foliage than the other, is now taking up the running, showing how desirable it is to grow both forms, thereby securing a double chance of escaping frost. The rose-coloured variety of *R. barbatum* has not flowered with us yet, but it is almost better than the type.

Many of the newly introduced Chinese species start dangerously early into growth and flower; but they also have luckily been kept back by their ferocious spring. For instance, *R. pachytrichum* flowered last year on March 11, whereas it has only opened its first bell to-day (April 21). It is a desirable plant, the flower buds being bright carmine, opening to a pale rose coloured bloom. It is reported as growing to a height of 20 feet; but, unlike most *Rhododendrons* of arboreal habit, it begins to flower when a couple of feet high.

And now, speaking about *Rhododendrons*, let me make a clean breast of the folly whereof I have been guilty for an unaccountable number of years. It may serve to prevent others being led astray. Situated as our garden is, within a mile of the sea, we have been in immemorial habit of using sea-sand for propagating and cultural purposes. It answers well enough for such plants as do not abhor lime; but it never occurred to me that it is composed largely of triturated shells until lately I was staying with a friend whose Cornish home is within shooting distance of a beautiful sandy bay. He spoke of his difficulty in getting sand of the right sort for using in raising *Rhododendrons* from seed. I pointed to the abutment bay and asked if that was not good enough. "Seventy per cent of lime," was his terse reply. Returning home, I dropped soil plants and on some of our sand; it tizzed vigor only, and I became aware of the stupidity which had thwarted, and in many cases, entirely nullified, my attempt to raise *Heath* plants and lime-bud *Lilium* from seed. One lives and learns; the pity is that sometimes one has nearly done with living before learning. *Herbert Marshall, Monmouth*.

P.S. Writing yesterday, I accused the pheasants of nipping off the flowers of *Erythronium*. This morning reveals the fact that there is some other agent of the Evil One at work. A group of *E. revolutum*, around which were not long had been placed so as to render access by pheasants impossible, yesterday had a fine flower bud between each pair of mottled leaves. This morning every bud has been eaten clean off. Whether this be the work of a slug, a mole mouse, or a vole has yet to be determined.

ORCHID NOTES AND CLEANINGS

CYPRIPEDIUM QUARRYENSE.

A crown of this new hybrid, originally raised by Messrs. Armstrong and Brown, is sent by Francis Swanzy, Esq., The Quarry, Sevenoaks, with whom it has now flowered. The parents are *C. gigan* (*Harrissianum* s. *Lawrenceanum*) and *C. Guston Bulbif.* It is a fine, bold flower, of perfect shape, the petals, which are 1 1/2 inch wide, and the dorsal sepal (3 1/2 inches across), being flatly displayed. The hybrid is nearest to *C. Guston Bulbif.* on which it is an improvement. The dorsal sepal is white at the margin, the surface bearing a network of dark claret coloured lines on a pale rose ground. The petals and lip are tinged with rose colour, and have fine purple lines; the petals also bearing lines of purple spotting on the lower inner half. The undivided lower sepals are broadly ovate, pale green, with chocolate coloured lines.

* For previous articles see Jan. 13, p. 13; Feb. 17, p. 69; March 10, p. 105; and April 14, p. 149.

ORCHID SEEDS.

An interesting test made by Mr. J. Charlesworth, of Messrs. Charlesworth and Co., gives an estimate of the enormous number of seeds in a single capsule of many large-fruited Orchids. He selected a capsule of *Cymbidium Tracyanum*. The flower had been set with pollen of the same species, and in due time the capsule ripened. Mr. Charlesworth undertook the task of attempting to arrive at the approximate number of seeds by counting a determined proportion which had been previously weighed, and by comparison with the weight of the bulk, after making all allowances for a possible over-estimate. The total arrived at was 850,000 seeds in the ovary.

TREES AND SHRUBS.

ALANGIUM PLATANIFOLIUM.

This shrub has been grown in gardens for over 30 years, and will be known to many as



FIG. 58.—ALANGIUM PLATANIFOLIUM AT ALDENHAM

Marlea platanifolia. It is nearly related to the *Cornus*, though it has little in common with that genus so far as appearance is concerned. It is a native of Japan and China; Chinese specimens were collected by Mr. Wilson in 1907.

Alangium platanifolium is well worth growing as a foliage plant. In outline the sharply lobed leaves resemble those of the Plane, but are far more luxuriant, deeply veined, and richly coloured, this last characteristic making it conspicuous in a hot, dry season. The leaves average from six to nine inches across. The flowers, which are rarely seen, are small, white, and rather insignificant.

Strong, vigorous, pithy shoots three to five feet long are thrown up from or near the base every year, and these are liable to be damaged by severe frosts. The plant illustrated, growing at Aldenham, though severely cut this winter, has been pruned hard back and shows every sign of breaking out into growth this season.

The best position for this shrub is one not too much overhung by tall trees, and where there is plenty of room for development of the foliage.

BROWN AND GREEN OAK TIMBER.

WHAT is known in the trade as Brown or Red Oak timber is only found in this country, and in a very limited number of stations there. It should be understood that Brown Oak timber is a strictly English product that is more or less confined to the midland and eastern counties, and does not exist on the Continent. The largest and most valuable trees of this kind that I have had to deal with are growing on the Duke of Bedford's property, at Amptill, though probably a tree pointed out to me by the woods manager at Welbeck, which had been sold for £100, contained timber quite as valuable. At Ashridge, in Kent, there are many valuable Brown Oak trees, also in the famous Rockingham forest in Northamptonshire, where quite lately £105 and £76 were paid for trees of this type. There are other estates where Brown Oak timber is to be found, but the above are the principal.

Strange as it may appear, all the best trees

be brown from decay, and certainly many of those at Amptill, where some of the most beautiful wood is produced, are in such a condition. On the other hand, the highest-priced and most beautiful Brown Oak timber that I have seen was from a tree that was perfectly free from rot or blenish, and had not been pollarded. There is, however, considerable difference in the colouring and texture of wood produced by pollarded and unpollarded or maiden trees. The timber from the pollard Brown, or Red Oak, is usually of fantastic shapes in graining, with a great variety of beautiful figuring, owing largely to the growth being stopped vertically and spread over the butt end. It has been said that Brown Oak owes its colour to the activity of a fungus living in the wood, but specimens of the timber from Welbeck and Woburn fail to substantiate the statement. It is far more likely that the absorption of iron from the soil is the cause of the beautiful colouring in Brown Oak, and experiments now in hand tend to uphold this theory.

GREEN OAK.—The beautiful vivid green colour assumed by Oak timber under certain conditions is said to be due to the action of the parasitic fungus, *Peziza*, or *Helotium aeruginosum*. In this country Green Oak timber is comparatively scarce, the finest samples that I have seen being from an estate in Kent, and another in the North of Ireland. I learn that in lower Normandy a large number of the Pear trees have their wood coloured green, and in other parts of the Continent the timber of the Birch and Beech are similarly tinted. The appearance of the green colouring in the timber of the Oak is not an indication of disease in the tree, but rather of its having attained to maturity. Although in France it is known as "green rot," yet this is a mistaken appellation, as the timber is remarkably hard, and the texture unaffected, whilst the durability of the wood has been found to be quite equal to that of the ordinary Oak. Owing to the scarcity and high prices of Green Oak timber, experiments have been undertaken to produce the desirable green colour by artificial means, but without success. Green timber of Oak and Pear is much appreciated, both on the Continent and at home, for artistic cabinet work. Submerged Oak sometimes assumes a green colour, particularly when the timber is embedded in mud. *A. D. Webster.*

RAISING PLANTS FOR SPRING BEDDING IN 1918.

THE latter half of April is the best time to propagate *Aubrietias*, Mossy Saxifrages, *Phlox amœna*, *Phlox subulata*, and its varieties, *Arabis alba*, and its double form, *Primroses* and *Polyanthuses*.

Aubrietias should be attended to first, as they are very uncertain in rooting if dry winds prevail before they are established. The old stock plants should be divided, securing a portion of root to each portion if possible. If the old stems are long and wiry, make holes in the ground with a trowel, and curl the stems in them, making the soil very firm. The rows should be one foot apart, and the plants nine inches apart in the rows. The plants should almost cover the space by October. Saxifrages may be placed 6 inches apart in the rows, as they do not spread so wide as *Aubrietia*. The other plants mentioned should be the same distances apart as the *Aubrietia*. Although it may be impossible to pay so much attention to these plants as formerly, it will be well to raise fresh stock in order to preserve the varieties for future years, for if left too long in one position the old plants become weak, and are liable to die in hot, dry weather. *W. H. Divers, West-dean, Hook, near Subitton.*

ON INCREASED FOOD PRODUCTION.

BRUSSELS SPROUTS.

E. M. is quite right to insist (see p. 161) that Brussels Sprouts are the most valuable of green winter vegetables to the market gardener, but his standard of values is not the same as that which, in the present circumstances, the authors of the statement in the R.H.S. Pamphlet felt bound to adopt. In choosing crops to recommend they had to bear in mind the limited size of the garden with which they were dealing, and the urgent need for obtaining the largest quantity of food over as much of the year as possible. The choice lay between Savoys, Kale and Brussels Sprouts for the main supplies of winter greens. Comparison of the yields given by these crops under good cultivation showed that one might reasonably expect 2½ cwt. of Savoys from a square rod (and suitable choice of varieties will carry Savoys well into March), 1½-2 cwt. of Kale from the same area, or 75 lb. of Brussels Sprouts (or, including the tops, 100 lb.). These are average good market-garden yields, calculated over several years' cropping. There is no doubt which is the most remunerative crop from a market-gardener's point of view, but these figures amply justify the statement that Brussels Sprouts "give only poor returns" when judged by the quantity of food produced by them. *The Authors of the R.H.S. Pamphlet.*

LATE CELERY AS A GREEN VEGETABLE.

HAVING a surplus of plants when planting the main batch of Celery last summer, and fearing a shortage of vegetables, we planted a good number of the plants in a skeleton frame, 1 foot apart in the rows and 9 inches from plant to plant. The first week in December the stems were tied together loosely, and about 3 inches of soil was placed round the base of the plants. They are now (April 20) found to be extremely palatable. Trimmed, well washed, cooked whole and served as an ordinary green vegetable, they make an excellent and appetising dish, eaten either with a little butter or with cooked meat.

POTATO CROPS.

OVERGROWING is one of the chief causes of failure with Potatoes, and especially amongst mid-season and late varieties. The stronger-growing sorts, planted in wet, heavy land, need plenty of room for the light and air to reach the ground. That this detail is of the utmost importance can easily be proved by a careful examination of the outside roots and the outside rows, marking the difference between the yield and condition of the tubers as compared with those in the centre of an overrowed patch.

I do not agree with *J. P.* as to closer planting than is generally advocated. A space of 3 feet between the rows and 20 inches from tuber to tuber is a suitable distance for all main crop varieties. It does not follow that large tubers will be the only result; a heavier yield of a better quality will be obtained than when planted closer, unless, of course, the soil is very rich, light, and poor in quality, when the distance may be slightly decreased. *E. Beckett.*

SEED GROWING ON HEAVY SOILS.

The sowing of seeds, and especially small ones, in tenacious or clay soils that have been only a short time under cultivation, may lead to disappointment owing to the young plants being unable to penetrate through the surface of the soil. This difficulty is increased if the surface, after being trenched or dug, has been pulverised by the action of the weather, or the rake at the time the seeds were sown, and subsequently raked by rain before the young plants have had time to appear above ground. In

these conditions it is impossible for plants such as Carrots to break through. Difficulties of this kind may be overcome by carefully breaking the crust of the soil by tapping it with the teeth of a rake, which is best done immediately before the soil gets dry after being made wet by rain, or by the aid of a spray or rised watering-can. A better way, however, of dealing with this matter is to cover the seeds at the time of sowing with finely-sifted, light soil. I have adopted each of these plans with success.

My attention was last season drawn to a field sown with Mangolds upon which heavy rains had caused a hard crust to form upon the drills, beneath which the young plants were found to be in a curled state. The owner hesitated upon being advised to run a light horse-roller over the drills in order to break the crust, fearing the plants might thereby be seriously damaged. This was, however, ultimately done, and with perfectly satisfactory results. *Thos. Coomber, The Hendon Gardens, Monmouth.*

pinched out as soon as they began to run. The result was that they flowered profusely, and the pods being picked as soon as they were ready, a display of blossoms, with their marked contrast of scarlet and white, was kept up for a long time. This bed was not only generally admired, but it yielded a good return in the shape of edible pods. Another way in which I have noted Runner Beans grown so as to display their ornamental qualities to the best advantage was as a tall screen, and allowed to climb up lofty sticks. In this case the white and scarlet flowered forms were planted alternately, and owing to the marked contrast displayed, when at its best, was a very striking one.

Another class of vegetables well worthy of consideration for their ornamental features are the different Kales. In their case, of course, it is not the flowers but the foliage which is so ornamental, especially those in which the leaves are exceedingly curled and crisped. The



FIG. 50.—UTILISATION OF PLANT HOUSES FOR FOOD PRODUCTION IN MR. ELMOROLD DE ROTHSCHILD'S GARDENS, VIAREGGIO. (See p. 154.)

ENCOURAGE THE PLOVER.

THE beauty and utility of the plover (see p. 162) are indisputable, but it is not necessary to give up eating the eggs on that account. In Holland there is a large trade in the eggs, which are, chiefly, I believe, exported to this country. Almost every egg is taken up to May 1, after which date they are protected by law. Under this system the plover has largely increased in number, I suppose, owing to the fact that the later hatches of young would, in any case, have a better chance of coming to maturity than the very early ones. *Chas. E. Pearson.*

ORNAMENTAL VEGETABLES.

Your correspondent, *P. R. H.*, page 166, does well to direct attention to the fact that some vegetables, apart from their economic value, are well worthy of consideration from an ornamental standpoint. This matter was brought markedly home to me last summer, when I had under my observation a large bed filled with the Painted Lady Runner Bean. The plants were grown without sticks, and the tops

variegated kinds, too, impart a colour feature, quite distinct from the uniform green of the others.

Apart from the Beet and Parsley mentioned by your correspondent, the Asparagus, when the plume-like shoots are developed, is not only ornamental when growing, but useful when cut for arranging with flowers in vases for home decoration.

The Fan-like leaves of the Carrot, too, are very attractive, especially in autumn, when they acquire a reddish tinge, while as an ornamental foliaged subject the Endive must not be passed over, as well-grown plants are decidedly attractive. Of plants bearing a sub-tropical aspect, the Globe Artichoke is well worth growing for this purpose alone, while much the same may be said of the common Fennel. Now that we have an early race of Maize or Indian Corn, these plants will, given favourable weather, yield a number of much-appreciated cobs, as well as form an attractive feature in the garden. Other plants might be named; indeed, to many, the ornamental value of a uniform crop of nice young Cabbage is great. *W. T.*

THE SPRAYING OF POTATOS.

In order to put the means of spraying within the reach of allotment holders, and gardeners generally, the Food Production Department is ordering from the manufacturers a large supply of the best types of Knapsack spraying machines, and is making arrangements for the sending out in packets, ready for making up, of the materials for spraying. Particulars will be ready about May 1. For the benefit of those who have not had experience in the use of the Knapsack spraying machine, demonstrations by experts are being arranged in different parts of the country. An illustrated leaflet describing how and when to spray will be ready for issue in about ten days' time, and may be had free of cost on application to the Director of the Horticultural Section, Food Production Department, 72, Victoria Street, London, S.W. 1. The price of the Knapsack spraying machines which have been selected is £5 each, inclusive of packing and delivery. It will probably be found that the organisations that have been established in the villages will purchase these machines, and arrange for the carrying out of the spraying operations on the allotments, as the smaller cultivators would otherwise be unable to obtain the spraying outfit, even at the low price stated above.

THE CABBAGE ROOT FLY AND TARRED FELT DISCS.

REFERENCE to a trial made in the use in this country of discs of tarred felt for warding off the attack of the Cabbage-root fly has already been made in these pages. A full account of the trial has since been published.*

The damage done by the Cabbage root maggot—the larva of *Chortophila brassicae* is well known. Plants attacked by this pest appear to stand still and flag during periods of sunshine. The resultant loss of crop is often very considerable. Since the fly lays its eggs in the soil close to the plant, and since the larvae which hatch out have no great powers of travelling, American horticulturists conceived the idea of warding off the attack by placing a paper "collar" around the base of the stem of the Cabbage or Cauliflower plant. The first experiments, made by Prof. Tracy in 1897, were not successful, but when the paper was replaced by tarred felt—as was done by Prof. E. S. Goff in 1899 the experiment succeeded in a striking manner, and growers in America are now using the method on a large scale.

Mr. Wadsworth's tests of the value of the tarred discs are also favourable. With Cabbages, whereas 7.6 per cent. of unprotected plants were attacked, none out of a total of over 400 (plants) of the protected Cabbages suffered from the pest.

With Cauliflowers, 15.4 per cent. of the unprotected plants were attacked—72 out of 466—whereas not one of a similar number of protected plants succumbed.

Tarred discs ready for use may be obtained from F. Robinson, 13, Langdale Road, Victoria Park, Manchester. They should be put on soil which has been raked smooth, so that the discs lie flat on the ground, otherwise the female flies may crawl beneath them and deposit their eggs near the plant. The discs should be put in position immediately after planting out.

To ensure complete immunity from the Cabbage root fly the seedlings in the seed-bed must be protected. This, we believe, is done in America by screening the seed-bed with fine gauze or muslin. Much damage is undoubtedly done by the attack of this pest on planted-out Cabbages and Cauliflowers, and we recommend those who have in the past suffered loss from this cause, and who are not satisfied with other methods of prevention, to make use of the tarred felt discs.

* Report on a Trial of Tarred Felt Discs for Protecting Cabbages and Cauliflowers from Attacks of the Cabbage Root Fly, by J. T. Wadsworth, *Annals of Applied Biology*, III., 2 and 3, Jan., 1917.



THE KITCHEN GARDEN.

By J. DEXX, Foreman Royal Gardens, Windsor

BEET.—A sowing of Turnip-rooted Beet may be made now, and another in ten days' time, for summer supplies. Several sowings of Globe or Turnip-rooted Beet should be made throughout the next two months. This crop needs rich soil. The main crop of Beet need not be sown before the middle of May. Make a careful examination of all seeds which were sown early in March, and if their germination is not satisfactory, sow again before the season is too far advanced.

ASPARAGUS BEDS.—The surface of Asparagus beds should be carefully pricked over with the points of a digging fork as soon as the soil is sufficiently dry. Although this work may have been done early in the season, the recent heavy showers have flattened down the surface of the beds. The soil should be made as fine as possible, all hard lumps being broken small. There is no better time than the present for making new beds if the soil is sufficiently dry. If the ground has been prepared in winter by trenching and manuring, the surface should now be lightly broken up, and the roots placed in position, allowing at least 18 inches between the plants each way. A covering of three or four inches of fine soil from the space between the beds should then be placed over the roots as quickly as possible, as exposure to the sun and air is very injurious. In selecting a place for new beds heavy, stagnant soil should be avoided. Moreover, do not select a position which is exposed to rough winds, as this has a detrimental effect on the plants in the autumn unless they are secured to sticks or wires. Asparagus seeds may now be sown in drills 18 inches apart in order to produce a stock of young plants for future plantations. Sow the seeds thinly and keep the ground quite free from weeds during the summer months.

CUCUMBERS IN BOX FRAMES.—In order to maintain the necessary heat in these frames, frequent additions should be made to the fermenting materials which surround the box, and a covering of some dry material placed over the frames at night. The plants will now be making good progress, and will benefit by a top-dressing of light, rich soil, which should be applied before the plants have extended too far over the bed. Stop the shoots at the second or third joint beyond the fruit, according to the space, and never allow them to become crowded by permitting side shoots to run unchecked. Another sowing may be made to produce plants for succession. Sow the seeds singly in small, clean pots, and place them in a mild bottom heat. All The Year Round is a good variety for this purpose.

MUSHROOMS.—Beds made up at the present time either in a cool, open shed, or behind a north wall, will be more productive than those in an ordinary Mushroom house. If horse droppings are available, they should be collected and placed in a dry, open shed, where they should be frequently turned until a sufficient quantity has been prepared. When thoroughly sweetened, and when the temperature of the material is about 80°, the bed may be made up. Leave it loose until the heat begins to rise, then tread the droppings tightly, and spawn when the heat begins to decrease. The bed should be about 18 inches deep when finished, so that a mild heat may be retained in the manure as long as possible. If beds are made in the open the droppings may be placed behind a north wall and the bed made in a sloping manner 4 feet wide and about 3½ feet up the wall. This must be made quite firm by treading or ramming, and spawned at a temperature of 80°; the surface of the bed being made quite firm afterwards. In a day or two, when all chance of excessive heat is over, a covering of new loam should be applied, after which

a quantity of long litter may be spread over the surface to prevent evaporation.

TOMATOS.—Tomatoes for outdoor cultivation should now be ready for potting into 6-inch pots. Make the soil moderately firm, and place the plants in a temperature of 60° until they become established in the new soil. At this stage they should be freely ventilated, and gradually prepared for planting on a south wall about the end of May. Plants in pots which are ripening their fruits will benefit by a top-dressing of fine loam and artificial manure, and by frequent applications of weak liquid manure from the farmyard. Stop the plants as soon as a sufficient number of trusses has been secured, and remove all side shoots as they appear. A temperature of 65° should be maintained with sufficient ventilation to keep the atmosphere in a buoyant condition. Make another sowing to produce plants for fruiting in August and September. Grow these plants in a cool, well-ventilated house, and pot them on as it becomes necessary.

RIDGE CUCUMBERS may also be sown now and grown in a moderate temperature until they produce two rough leaves, then harden them gradually for planting early in June.

THE FLOWER GARDEN

By W. GURSE, Gardener to Mrs. DEMESTER, Keele Hall, Staffordshire

PERPETUAL-FLOWERING CARNATIONS.—Old surplus plants of Perpetual-flowering Carnations from the greenhouse will provide large quantities of flowers through the summer and autumn if they are planted outside in beds or borders. Prepare the ground as for border varieties, and take care to rid the soil of insect pests. Guard against deep planting, which might cause the stems to rot. Allow space between the plants to facilitate the work of watering, hoeing, and tying. Make the soil firm about the roots. During warm, dry weather liberal waterings and syringings are necessary. The following are a few of the best varieties for planting outside:—Britannia, Mayday, Mikado, Mrs. C. W. Ward, Mrs. H. Burnett, White Empress, Lady Alington, British Triumph, and Duchess of Devonshire.

THE WATER GARDEN.—It may be necessary to divide and replant some of the stronger-growing plants near the water's edge; for instance, *Gamora maritima*. Certain of these moisture-loving plants are gross feeders and require plenty of decayed manure. Water plants usually remain in an excellent condition of growth for many years, and should not be disturbed unless it is absolutely necessary. Remove dead foliage and rubbish, and apply suitable top-dressings to plants that require it. Trees in variety, *Callias* (Marsh Marigolds), *Spiraeas*, *Tritomas*, *Ranunculuses*, *Astrantias*, *Myosotis palustris*, tall *Polygonums*, *Cimicifugas*, *Hemocallis* in variety, *Funkias*, *Epilobiums*, *Lythrums*, *Arundo conspina*, *Bocconias*, *Arundo Donax* (a very effective plant), *Phragmites communis* (the Golden Margined Water Reed), *Aconitums*, *Richardias*, *Primulas*, and *Liliums* are all suitable for planting by the waterside. Certain *Liliums* also thrive in marshy places, but they will not tolerate stagnant moisture, and peat should be used freely when planting them.

STANDARD BEDDING PLANTS. Plants intended to be trained as standards for the flower-beds should be neatly staked, and all side growths removed as they appear. Directly the plants have grown to a suitable height, pinch out the points of the leading shoots to form a "head." The plants should be re-potted as they require increased root-room. *Fuchsias*, *Heliotropes*, and *Pelargoniums* require only a moderate heat. Frequent waterings and syringings are necessary, with occasional applications of liquid manure or concentrated fertiliser. Apply top-dressings of rich material to large specimen plants in tubs and vases.

AGAPANTHUS UMBELLATUS.—*Agapanthus umbellatus* is a gross-feeding plant, and should be given manure-water at frequent intervals.

If the plants were not re-potted last autumn they should be given a shift without delay, or a top-dressing of rich loam and decayed manure may be given instead.

HYDRANGEA.—Plants of *Hydrangea hortensis* in tubs should have the surface soil removed, replacing this with rich, loamy compost. Very little pruning is necessary beyond removing exhausted or decayed wood. Liberal supplies of water and frequent applications of liquid manure are essential to produce fine heads of bloom. The plants should be allowed to remain in a cool house for the present.

EVERLASTING FLOWERS.—*Helichrysum* gives flowers of several beautiful colours. The spikes should be cut before the blossoms are fully expanded. *Statice*, *Xeranthemum*, *Arochidum*, and *Rhodanthe* are also showy genera. The seed should be sown now to raise plants for flowering in summer.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. F. Davry, Abbots Wood, Godalming, Surrey.

THE LACKEYING MOTH (CLISSIGMOGA NEUSTRIALIS).—This moth is very destructive, especially to Apple and Pear trees. The eggs are deposited in the autumn in close rings around the branches. The rings often contain from one to two hundred eggs, which usually begin to hatch in mid-April, but they may be later this year. The grubs very soon form a web, which embraces both fruits and shoots, on which the insects feed voraciously, and cause great injury to the tree. To combat this pest, spray with arsenate of lead. Isolated cases may be dealt with by hand picking, either by using the grubs or dropping them into a pail containing a strong insecticide.

FIGS.—If Fig trees are starting into growth and frost continues, let them have some temporary protection, even if it is removed daily, as the young growths are very tender and sensitive of cold and frost.

APRICOTS. Apricot trees are much later in developing their growth than most this season, and especial efforts must be taken against insect pests which are most harmful when growth is slow. The trees should be sprayed with insecticide twice a week as a preventive.

INSECT PESTS. Keep a sharp look-out for aphid on Peach and Nectarine trees. *Pectinophora gossypiella* is a suitable species for this pest, and it should be applied as a very fine wet spray to the foliage early in the day, wetting every part of the leaves. In these early days, when growth is slow, aphides, if allowed to spread, would destroy many of the flowers. Watch the spray for 7 or 8 days, and if not matter in the least if it wets the flowers, spray, do they live one day again before nightfall. Continue to spray down the plants at night in case of severe frost until the blooms are set, leaving nothing to chance.

TREES IN ODD CORNERS.—See that no tree has escaped notice in pruning, remembering that even if it grows in an out of the way place it has still a purpose to serve. A good mulch of manure will greatly assist growth.

FRUITS UNDER GLASS.

By JAK HIBSON, Gardener to Mr. LEBOLD DE ROTHSCHILD, C.V.O., Gunnersbury House, Acton, W.

FIGS IN POTS.—Figs raised from cuttings inserted early in January should be ready for shifting into 8 in. pots (2½'s). In these pots they will, if kept growing without a check, yield a few fruits by September, without in any way harming them for another season. Bottom heat will not be necessary, nor fire-heat, during the hottest months of the year. Our plants of late Figs in pots are starting well into growth. They are syringed daily and watered a little more freely than hitherto. The plants will soon need more room to prevent growth becoming weakly and attenuated, but until the other kinds of fruits in pots are cleared from the houses, it will not be possible to give them all the room they need.

STRAWBERRIES IN POTS.—May is probably the most critical month for Strawberries in pots, and the grower must exercise great care in guarding against attacks of red spider. A vinery, even if it be the late house, is scarcely suitable for Strawberries during the coming month. A late Peach house is better, but even there a sharp watch must be kept for the pest. It, however, the advice previously given to dip the plants in a pallid of sulphur and water is followed, it will have done much good. The berries will ripen now in a cool house if exposed to the sunlight. Do not give in excess of water at the finishing stage of the fruits, or the flavour will be impaired. As soon as the crop is cleared, if the plants are required for planting out, remove them either to a cold frame, or to the open, under a north wall. I prefer to gather the berries in the morning rather than later in the day; they are then finer and pack better. Endeavour from now onwards to start the latest batches in cold frames or pits. The flower trusses will soon be showing even on plants still in the open. Admit air to the frame or pit both night and day in order to keep the conditions drier. Make a note of the requirements for next season's forcing, and reduce the stock whenever possible to save labour. A saving of labour in watering may be effected if the pots are plunged to their rims in frames. The lights may be removed entirely for a part of the day.

THE ORCHID HOUSES.

By J. G. HARRISON, Gardener to Sir Benjamin Flower, Bart., 10, Grosvenor Place, London, W.

CATTLEYA, LAELIA, AND LALIO CATTLEYA. Many a grower has heard of Cattleya and Laelia, and even of the Lallio Cattleya. It is not, however, the Cattleya which is called the orchid, but the Cattleya of the Atlantic, *C. Hopleyana*, also called *Cattleya*, with which are the *Laelia* hybrids, and many *Brassavola* hybrids that flower during the late autumn and winter, and developing new roots from the base of the front pseudo-bulbs, and this is the best time for potting the plants. Healthy specimens that require a second rooting stage should be transferred to larger pots, taking care, if the same pot is in a moist condition, not to disturb or injure the roots more than necessary. If the roots, being so firmly to the sides of the pots that the plants cannot be taken out without damaging the roots, break the pot over the purpose. Every specimen that is one of the pot should be inspected and should be given a smaller pseudo-bulb, or the more desirable than that of more than 2 or 3 other, but away are the pseudo-bulbs that are being taken off, retaining only two or three behind the head. Plants that have sufficient pot room and are in a satisfactory condition at the roots may be top dressed instead of re-potted. Remove some of the old compost from between the roots, and replace it by fresh material. Unhealthy plants growing in a poor soil should be taken out of the pots, their decayed roots and useless pseudo-bulbs cut away, and the plants placed in receptacles only just large enough to accommodate them. Those with long, heavy pseudo-bulbs should be secured firmly to strong stakes. The old pseudo-bulbs that have been taken off may, if they possess sound eyes at their base, with a portion of the rhizome, be placed in small pots with plenty of drainage, and a little *Sphagnum* moss, giving them a position in a moist part of the house. It is advisable to start all newly potted plants together at the warmest part of the house, and keep them shaded from direct sunshine, giving them special treatment in the matter of shading, watering, and spraying. For a few weeks they will need very little direct watering at the roots, but they may be sprayed overhead whenever the weather is favourable. The surroundings should be kept moist by frequently damping between the pots, until root action again becomes general, when they may receive ample supplies of water at the roots and reasonable exposure to the sunlight. Use as a potting medium either *Osmunda* or *Alf* fibre, cut rather short, or small portions of crushed crocks and Splag-

num moss. *Cattleya* and *C. Warscewiczii*, and their hybrids are now starting into growth, but should not be too liberally supplied with water at the roots until the young shoots have attained the height of 2 or 3 inches. The plants should be exposed to more sunlight than is usually allowed others of this genus. This latter remark also applies to *Brassavola* and its hybrids.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcote, Eastwell Park, Kent.

TREE FERNS. These Ferns are most ornamental for the conservatory and show house, and for standing in tea houses, corridors, or balconies during the summer. The plants are producing new fronds, and should be given a little extra attention. Healthy vigorous plants growing in large pots or tubs, need not be disturbed at the roots. If given an abundance of water, and a generous supply of stimulants, Tree Ferns may be grown in the same receptacle for many years. Encourage the development of new growth and roots by syringing the stems two or three times daily. Tree Ferns thrive excellently in large coarse varieties or planted out in borders; and as they do not soon outgrow their positions they are more manageable than Palms. *Dicksoma antarctica* is probably the most popular of these Ferns, the growth being robust and healthy. *D. squarrosa* is also a free grower; whilst *Cyathea medullaris* and *C. dealbata* are both suitable for cool greenhouses and remain in better health than when grown in warm, close houses. *Asplenium australe* and *A. exelsa* can also be grown in the same conditions, but these are scarcely equal in beauty to the *Dicksomas* and *Cyathes*. Tree Ferns in full growth need constant supplies of moisture, both at the roots and stem, and the fronds should be syringed regularly. Syringing will help to keep the plants free from thrips and other insect pests.

HYDRANGEA.—Plants of *Hydrangea* started into growth in heat early in the season should be afforded stimulants regularly when in full growth. Those that have been grown in a cool place during the winter should be brought into a slightly warmer house to finish a succession to the early batch in flower. It is best to keep the roots dry, but do not give them much water until growth is further advanced. *H. hortensis* and *H. paniculata grandiflora* are valuable for decorative purposes. The newer varieties, *Avalanche*, *General Annettes de Villars*, *Mme. E. Moulleure*, *Maesata*, *President Edières*, and *Radiant* are great acquisitions.

PRIMULA OBOCNICA. Plants of *Primula obconica* should be well supplied with soft water and weak liquid manure about twice weekly. Shade the house during bright sunshine, or the flowers will quickly lose their brilliant colouring.

PRIMULA KEWENSIS. This yellow flowering plant thrives in treatment similar to *P. obconica*. If a batch of *Primula kewensis* is required for early flowering the seed should be sown now. Use light, sandy soil, making it firm in the pans or pots, and water, if before sowing the seed, or pots, and water, if before sowing the seed or pots. The slightest sprinkling of soil or sand on the seed is all that is required. Place a pane of glass over the pan, and germinate the seeds in a warm house or frame. Shade from sunshine, and take care that the soil never becomes dry, for neglect in this respect is often the cause of minute seeds failing to germinate. Apart from their usefulness as pot plants, both *Primula obconica* and *P. kewensis* are suitable for planting under the greenhouse stages at the edges of the path-way, and are especially effective if a little rock-wool is introduced. There are other plants suitable for such places, including *Begonia Rex*, Ferns, *Aspidistras*, and *Cinerarias* of the stellata and cactus flowered types. Others of mossy or creeping habit may be utilised to fill spaces between the flowering plants.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C. Editors and Publisher—Our correspondents would oblige delay in obtaining answers to their communications and save us much time and trouble, if they would kindly advise the authors printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents—The Editors do not undertake to pay for any contributions or illustrations, or to return valued communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY of the paper, sent us early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the closing week deduced from observations during the last fifty years at Greenwich, 43.5.

ACTUAL TEMPERATURE—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, April 20 (10 a.m.): Bar, 30.1; temp. 48.5. Weather, Sunny.

Food Production under Glass.

Many gardeners are making good use of their glass-houses for the purpose of increasing food production, but it may be doubted whether there is to be seen anywhere in the Kingdom such a remarkable demonstration of what may be done in this direction as that in Mr. Leopold de Rothschild's garden at Ascott, near Loughton Buzzard. Recognising that the food problem was bound to become more and more serious as time went on, and desiring moreover to maintain throughout the year as large a supply of fresh vegetables for the hospitals in which Mrs. de Rothschild and himself are interested, Mr. Leopold determined last winter to raise the largest possible quantity and the greatest possible variety of vegetables under glass. As he himself puts it, "I have turned Ascott and Gunnersbury into market gardens."

In carrying out this programme Mr. Rothschild has the advantage of the assistance of three able gardeners—Mr. Hudson and Mr. Reynolds at Gunnersbury, and Mr. Jennings at Ascott. Mr. Jennings, whose work we have now to describe, has been with Mr. Rothschild for fifty years; yet, in spite of this long period of service, he is as vigorous as the plants he grows. Among the most striking crops which are now being raised at Ascott are the Potatoes. The "seed" was planted on January 9, and no attempt was made to force the plants, which, in fact, were grown as "cool" as possible. The varieties planted are Sharpe's Victor and Sharpe's Express, both of which are producing excellent

crops. These new Potatoes are at least as good as any in the market. One of the two large, span-roofed houses planted with Potatoes is shown in fig. 60. The seed tubers, it should be added, were planted in borders, well drained, and raised about a foot from the ground. In a third small house the crop, now in large part lifted, was grown in a centre bed, with 1 foot of soil. As the Potatoes are lifted, their place is taken by Cabbages of the variety Harbinger, which, planted at 1 foot apart each way, are growing vigorously.

The most remarkable feature of all the vegetable crops is their vigour; they seem to have suffered not a jot from the extraordinarily sunless season through which we have passed.

On the side stages of the last-mentioned house, with Potatoes in the centre, Cabbage Lettuce has been planted, and is ready for use. The variety selected is Paris Market, and the plants growing in a bed, with 6 inches of soil, have made wonderful growth. Another division of this house is devoted mainly to French Beans in pots. The plants are vigorous and clean, and are producing a heavy crop.

Mr. Jennings is carrying out the programme laid down, namely, to produce all the food that can be produced in the most thorough-going manner. Up every column and pillar of the houses climbing French Beans are growing. The borders of the narrow Apricot houses are planted with strong dwarf Cauliflowers, and on either side of the Potatoes in the span-roofed houses already mentioned is an early Pea of Mr. Jennings' own raising. The variety is one on which the raiser deserves to be congratulated. From 4 to 5 feet high, it begins to bear very near the ground, and continues to the top of the haulm. Although single-podded and round, it bears very freely, and is of excellent flavour. The pods are of medium size, and are well filled. In front of the Peas are "borders" planted with Cabbages (Harbinger) and Early April, Cauliflower (Fore-runner), and Lettuces (Paris Market and Paris Green).

To make room for more vegetables which are already outgrowing their seed-beds, the Roses planted out in beds in another large house are to go. The Carnations, which are always such a beautiful sight, are, however, to be allowed to remain in part, for the hospitals require flowers as well as fresh food. The formal garden will have to rely on vegetables for its formality. It has been cleared, and is now ready for planting.

Needless to say, with the example of Mr. Leopold de Rothschild before their eyes, the inhabitants of the villages of Ascott and Wing are also doing their utmost to produce ample food crops.

Of the 284 cottages in Wing 126 have gardens. Fifty-seven of these are of 10 rods or upwards. For those who have no cottage garden, or whose garden is small, allotments are provided. At Lenslade the allotment ground measures 28½ acres, and is divided into 170 plots, ranging from 10 to 40 poles each. At Wing there are

three allotment fields: Ceffs Close (3½ acres), 56 plots of 10 poles each; Moor Hills (5 acres), 40 plots of 20 poles each; and a third, Ayr (2½ acres), at Moor Hills, is now being broken up to provide yet another 18 plots of 20 poles each. Moreover, for the inhabitants of Wing, Lady Wautage has provided 23 acres of allotments, which are cultivated by 174 people.

Thus in Ascott and Wing there are no fewer than 617 plots (allotments or cottage gardens). The soil, though for the most part of a sandy nature, is fertile, and the fact that each allotment holder receives a load of manure accounts in part for the excellent condition of the ground. What chiefly accounts for it, however, is the industry with which the allotment-holders cultivate their ground. On the day of the visit to Ascott, of which the foregoing is a brief impression, the Director of Horticulture recently appointed by Sir Arthur Lee, of the Food Production Department, had been asked by Mr. de Rothschild to give an address on the importance of food production, and it needed all the kindly persuasion of Mr. Leopold to detach the allotment-holders from their work on the ground. However, all went to the meeting, and agreed enthusiastically that everyone at Ascott should try to do more even than he was already doing to produce food.

It should be added that the work in the glass-houses at Ascott has been carried on in spite of the labour difficulties, which are as acute there as elsewhere. Old men and young women have to do the work, and it says much both for them and for Mr. Jennings' energy and power of organisation that Mr. Leopold de Rothschild has succeeded in giving such a splendid demonstration of food production under glass.

HORTICULTURAL CLUB—The next house dinner of the Horticultural Club will take place at 6 p.m., on Tuesday, May 8, at the Hotel Windsor, Victoria Street, Westminster. In the course of the evening Mr. J. K. RAMSBOTTOM will deliver a lecture on "Investigations in Fusarium Disease of Daffodils," illustrated by a series of lantern slides obtained during the investigations carried out at the Royal Horticultural Society's Gardens at Wisley.

SEEDLING ROSES AT THE DRILL HALL.—As was announced in the *Gardeners' Chronicle* for March 31, p. 156, owing to the exceptional circumstances now prevailing, and the call for National Service, the Council of the National Rose Society has cancelled the summer show, which was to have been held at the Royal Botanic Gardens on Friday, July 6, 1917. In order, however, that nurserymen and others may have an opportunity of exhibiting their novelties, arrangements have been made, in conjunction with the Royal Horticultural Society, for holding a special display of seedling Roses at the Drill Hall, Buckingham Gate, on Tuesday, July 17, and also for an autumn meeting to be held in the same hall on Tuesday, September 11, 1917.

FORESTRY AND HYGIENE.—Prof. A. HENRY will deliver, under the auspices of the Chadwick Trust, three public lectures at the Royal Society of Arts, Adelphi, London, on May 8, 11, and 14, at 8 p.m. The subject of the lectures will be "Forests, Woods, and Trees in Relation to Hygiene."

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

FRUIT PROSPECTS AND MULCHING (see p. 161).—It would be instructive to know in what way the early mulching of Strawberries increases the risk of the flowers being damaged by frost. A mulch of fresh straw, cow dung applied during February should diminish this risk because the straw will have been washed by rain to a lighter colour than the soil, and the manure will keep the soil colder; this helps to retard the flower-spikes, until such times as frost may be past. Possibly the ideal time for mulching bush fruits is as soon as it can be seen that the crop will be worth the labour; to apply it earlier means waste of labour and manure, as barren bush fruits are in most gardens better without a mulch. To apply it later may possibly mean the loss by evaporation of valuable water stored in the soil from earlier rains. *J. E.*

THE FLOWERING OF THE ALMOND.—The Almond tree growing near Wandsworth Common, about five miles from the centre of London, the flowering of which is observed by us every year for purposes of comparison, is only now (April 23) partly in bloom. The unusual severity of the winter and early spring has retarded every sort of growth, and the Almond shares with many other trees an altogether abnormal lateness in flowering. The tree has been observed each year since 1904, and the dates, reckoning backwards from 1916, have been as follows: February 13, March 9, March 2, January 25, February 24, March 11, March 12, April 1, March 25, March 20, February 23, March 7, March 21. Last year the date of flowering was the earliest but one, in consequence of a mild winter and early spring. This year the date is three weeks behind the latest hitherto recorded, namely, April 1.

MR. EDWIN MOLYNEUX.—The many friends of our valued correspondent, Mr. EDWIN MOLYNEUX, farm steward at Swanmore Park, Bishop's Waltham, will hear with deep regret of the death of Mrs. MOLYNEUX after an intermittent illness, lasting several months. Young gardeners who passed through Swanmore during the years that Mr. MOLYNEUX had charge of the gardens will recall the pleasant personality of Mrs. MOLYNEUX, whose kindness to the many visitors to Swanmore will not soon be forgotten. For several years past Mr. MOLYNEUX has received valuable help in gardening and other matters from his only daughter, who will now be called upon to fill the unfortunate gap left by the bereavement.

WAR ITEMS.—M. JEAN DE VILMORIN, brother of M. PHILIPPE DE VILMORIN, has been appointed a Captain in the Cavalry regiment in which he is serving at Salonica. M. PIERRE DE VILMORIN, the youngest son of M. MARCEL DE VILMORIN, has been awarded the War Cross for gallantry. M. PIERRE DE VILMORIN is only eighteen years of age.

— Lieutenant R. F. AMPHILL of Paradise, Wolverhampton, eldest son of his Honour Judge R. H. AMPHILL, was killed in action on the fifth inst. He was a member of the Wolverhampton Town Council, and secretary to the Wolverhampton Floral Fete Committee.

— We regret to learn that Captain DOUGLAS CRETNEY, M.C., of the 5th Middlesex Regiment was killed in action on the 10th inst. Captain CRETNEY was the elder son of Mr. W. H. and Mrs. CRETNEY, of the Barnet Nurseries. He was educated at Bognor and Tonbridge, and attained his majority last month. He spent some time in the bulb fields of Holland, but at the outbreak of war was in Orleans, France. He came home immediately, and on his arrival in England offered himself for the Army, but was rejected as medically unfit. He then assisted at the Alexandra Palace with the Belgian refugees until after Christmas. He was taken ill at the Palace, but recovered, and was given a commission in the 5th Middlesex Regiment in May, 1915, and was sent to the Front in October, 1915. In January, 1916, he was wounded by gunshot in the thigh, and was in hospital and on light duty for some weeks. On November 10 he was awarded the Military Cross, and the following notice appeared in the *Gazette*: "He displayed great courage and ability in reorganising his company, and consolidating the position under heavy gunfire. He set a fine example." The commanding officer has written to Mrs. CRETNEY as follows: "His loss is our loss as well as your, as he was an exceptionally keen, brave, and capable officer, and greatly beloved by all his brother officers." He led his company, of which he had command, with skill and judgment, and exposed his own person with an absolute disregard of fear. At the time of his death his company was under heavy machine gun and sniper fire, and he was struck in the head by a bullet."

SOCIETIES.

ROYAL HORTICULTURAL.

APRIL 24.—The fortnightly meetings, held in the London Scottish Drill Hall at Buckingham Gate, are attracting increasing numbers of visitors, and the exhibits are also more numerous than in the early part of the year. The weather on Tuesday last was exceptionally fine, and this circumstance added to the success of the meeting. The National Aricuta and Primula Society held its annual exhibition in conjunction with the R.H.S. Show. There were several interesting exhibits of Primulas, but the war had its influence on this show as on others.

In regard to the R.H.S. exhibition, Orchids, Daffodils, Roses, Carnations, Ferns, forced Shrubs, and Alpines comprised the main features. Probably the finest exhibit was a group of Narcissi staged by Messrs. BARR AND SOXS, which received a Gold Medal. Messrs. DORRIS AND CO.'S exhibit of Tulips was



FIG. 60. VEGETABLE CROPS IN THE GLASS HOUSES, AT ASCOTT (See p. 174.)

DAFFODIL FLIEB.—Daffodil growers may be reminded that at present is a good time to look for the pupae of the Merodon grub, which are much later this season than usual. During the past week I have collected from the plots in which the bulbs were not taken up more than twice as many pupae as all the flies caught last year. Even here, in the comparatively warm climate of South Devon, they had evidently only recently pupated, as I also found two grubs which had just left the bulbs preparatory to pupating; and in more northern districts they will probably be a week or more later. Where the bulbs are planted singly in rows, it is easy to note a blank; but where the bulbs have been indiscriminately for two or three years a failure is not nearly so obvious. The pupae are always found just above the undflowered bulb within less than a 2 in. radius, and about half an inch below the surface, to an inch at the most. After a very little experience, they are quite easily found by scraping away the soil over and around the suspected spot with the pointed end of a label. *A. J. Bliss.*

also of outstanding merit. Several noted Rose growers brought collections, of which the blooms were of more than ordinary merit, especially considering the late mid-winter weather. Mr. EUSTIA THOMAS' group included the species *R. Willmotiae*, which bears delightful little blooms of delicate rose-pink colour, and the prickles stand out conspicuously; the sulphur yellow flowered *R. Hugonae*; and *R. Mueyssi*, with crimson blossoms.

Messrs. B. R. CANN AND SOXS showed some superb blooms of Edward Maxwell, and fine flowers in vases of the new H.T. Lady French. Messrs. FRANK CANN AND CO.'S exhibit was chiefly remarkable for some magnificent blooms of Mrs. Foley Hobbs.

Perpetual-flowering Carnations, which have formed a feature of the shows all through the winter, are decidedly improving as the weather becomes warmer and finer. Messrs. ALLWOOD BROS. and Messrs. STURANT LOW AND CO. both displayed extensive groups of the best varieties. In addition to the Carnations, Messrs. LAW AND CO. showed a collection of Aeneas and the

beautiful clear blue *Leschenaultia biloba* major. Messrs. W. CUTBUSH AND SONS showed forced shrubs covered with bright flowers, amongst which Labacs and Azaleas were especially prominent.

A pleasant change from the bright masses of flowers was afforded by a long table of exotic and hardy Ferns, staged by Messrs. H. B. MAY AND SONS. These beautiful foliage plants are never more attractive than in spring, with the delicate young fronds of tender green. Messrs. H. CANNELL AND SONS' collection of Zonal Pelargoniums included old favourites as well as the newer sorts. Specialists in Alpines and hardy flowers contributed large groups of Saxifrages, Androsaces, Primulas, and Anubrietas. Mr. G. REUTHE'S collection included the beautiful Teco-

Pearson, B. CRISP, J. P. McLeod, H. J. Jones, H. C. Cowley, R. W. Wallace, J. Dickson, C. Dixon, S. MORRIS, C. Elliott, C. E. Pearson, E. H. Jenkins, J. Hudson, C. E. Shea, and W. A. Binley.

AWARD OF MERIT.

Androsace villosa.—This dwarf Alpine from the Pyrenees forms a dense, cushion-like growth, consisting of a series of rosettes, the taller of which, in the centre, had nine flowers. Each side-shoot was also flowering profusely. It is a plant of dainty appearance, the relatively large flowers being of rosy-carmine colour, with a deeper coloured eye. The specific name is from the ciliated margins of the leaves, which are imbricated and of oblong-lanceolate shape. Shown by Messrs. R. TUCKER AND SONS.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Veitch, Messrs. Jas. O'Brien (hon. secretary), W. Bolton, W. H. White, Walter Cobb, J. Charlesworth, T. Armstrong, C. J. Lucas, Paulia Ralli, R. G. Thwaites, F. J. Hanbury, R. A. Rolfe and R. Brooman-White.

AWARD OF MERIT.

Laelio-Cattleya Scriba var. perfecta (L.C. St. Gothard × C. End), from Messrs. CHARLESWORTH AND CO., Haywards Heath. This is the third variety of this fine hybrid to be recognised by the Orchid Committee, and the best in colour and size. Although it is the third remove from its ancestor, *Cattleya Warneri*, one of the parents of L.C. Gottoiana, that fine and distinct species asserts itself with enhanced qualities in the hybrid. The flowers, which are of the largest in *Cattleyas*, are of perfect form, the segments overlapping and well arranged. The sepals and petals are light rose colour, the lip is purple with a lilac margin and orange-coloured disc, into which light purple lines run from the base.

PRELIMINARY COMMENDATIONS.

Odontoglossum crispum Dreadnought (see fig. 61), from Messrs. ARMSTRONG AND BROWN, Orchidhurst, Tunbridge Wells. A grand seedling, obtained by crossing two finely-blotched forms of *O. crispum*, and resulting in a richly-coloured flower the like of which has never appeared among imported specimens. The flower, although the plant is small, is large and perfectly formed. The sepals and petals are of bright reddish-chariot colour with white margins, the lip being white blotched with dark red in front of the yellow crest.

Odontoglossum Rex (*O. crispum* × *O. hybrid unrecorded*), from Messrs. ARMSTRONG AND BROWN. A large flower with white ground; the inner parts of the segments are densely spotted with mauve-purple, the fine labellum being a specially attractive feature.

GROUPS.

MESSRS. ARMSTRONG AND BROWN were awarded a Silver Flora Medal for an attractive group of hybrids, *Miltonia Iycaea sandhurstensis* is a fine white flower with a faint tinge and veining of pink and a reddish-bronze mark on the lip.

MESSRS. CHARLESWORTH AND CO., Haywards Heath, were awarded a Silver Pansian Medal for a group rich in *Odontoglossums*, *Odontodas* and *Laelio-Cattleyas*.

MESSRS. SANDER AND SONS, St. Albans, staged a group of *Laelio-Cattleyas* and other hybrids and interesting species. Novelties were *Laelio-Cattleya Watsoni* (L.C. Cauhamaiana Rex × C. *Schroderae* albata), a pretty white flower with violet-coloured blotch on the lip, which has a yellow disc and purple lines at the base.

Narcissus and Tulip Committee.

Present: Mr. E. A. Bowles (chairman), Miss E. Willmott, Messrs. Joseph Jacob, Herbert Smith, W. F. M. Copeland, F. Herbert Chapman, George Moore, jun., R. W. Wallace, J. D. Pearson, and Chas. H. Curtis (hon. sec.).

There were several nominations for the awarding of the Peter Barr Memorial Cup "for good work done in connection with Daffodils"; the voting was unanimously in favour of Mr. Walter T. Ware, of Inglescombe, Bath, who will hold the cup for the ensuing year.

AWARD OF MERIT.

Narcissus Michael. A bold, shapely, trumpet variety of large size, and deep, solid, golden-yellow colouring. This variety was raised by Mr. J. C. Williams, and exhibited by Messrs. BARR AND SONS, Covent Garden.

GROUPS.

The most important exhibit was a large group of cut Daffodils staged by Messrs. BARR AND SONS, for which a Gold Medal was awarded. The flowers had come chiefly from the firm's nursery at Rosemorn, near Penzance, and were notable for their fresh, clear appearance. Trumpet and giant Leedsii forms were conspicuous among the two hundred varieties comprising the display. Lord Roberts, Lolah, the handsome King Alfred, the white Peter Barr, Titius,

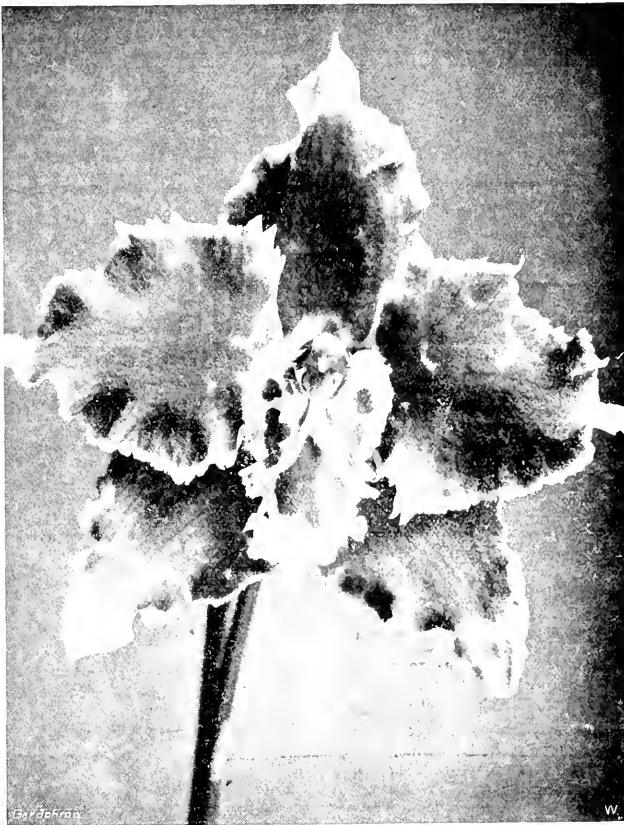


FIG. 61.—*ODONTOGLOSSUM CRISPUM DREADNOUGHT*.
(R.H.S. Preliminary Commendation, April 24, 1917.)

philaea cyanocrocus, and *Bongardia Rauwolfii*, a monotypic genus of the Berberideae, with glaucous stems and compound leaves, striped with chocolate brown; the yellow flowers are not unlike those of *Cheidonium majus*. Messrs. R. TUCKER AND SONS showed some charming Alpine gems in *Androsace pyrenaica*, *A. ciliata*, and *Primulas*. Alpines were also well shown by Messrs. J. IDEAL AND SONS, the Misses HOPKINS, Mr. G. W. MILLER, and Messrs. JOHN WATERER, SONS AND CRISP, whose *Saxifraga Rocheliana* and *Primula Crispii* with large rosy-purple blooms, were especially fine.

Floral Committee.

Present: Messrs. H. B. May (chairman), W. J. Bean, J. Green, G. Reuthe, G. Harrow, J. Heal, E. F. Hazelton, J. W. Moorman, T. Stevenson, W. Howe, J. Jennings, R. Hooper

MEDAL AWARDS.

The following medals were awarded to groups: *Silver Flora Medals* to Messrs. W. CUTBUSH AND SON, Highgate, for forced shrubs and Alpines; Mr. E. HUGHES, Teyford, for Roses. *Silver Pansian Medals* to Messrs. ALLWOOD BROS., Weydsfield, for Perpetual-flowering Carnations; Messrs. B. R. CANT AND SONS, Colchester, for Roses; Messrs. STUART LOW AND CO., Enfield, for Perpetual-flowering Carnations and Acaecias; Messrs. H. B. MAY AND SONS, Edmonton, for Ferns. *Bronze Flora Medals* to Messrs. F. CANT AND CO., for Roses; Mr. G. W. MILLER, Wisbech, for hardy flowers; Mr. G. REUTHE, Keston, for Alpines. *Bronze Pansian Medals* to Messrs. H. CANNELL AND CO., Eynsford, for Pelargoniums; Misses HOPKINS, Shepperton, for hardy plants; Messrs. WATERER, SONS AND CRISP, LTD., Twyford, for Alpines.

Cleopatra, a new Australian seedling named The King, after the style of King Alfred, with three new yellow varieties named Michael, Nebius, and Pinneas respectively, were among the best trumpets. Brilliant small-cupped sorts were Firebrand, Jasper, Furnace, and Blazing Star.

Messrs. DOBBIE AND Co., Edinburgh, put up a delightful group of Tulips consisting of Cottage, Darwin, and other late-flowering sorts. The flowers had all been grown under glass, and although another three days' growth would have improved them so far as size is concerned they were in just the condition purchasers love to buy their blooms. Silver-gilt Banksian Medal.

Fruit and Vegetable Committee.

Present. Messrs. J. Cheal (in the chair), E. A. Banyard, W. W. Jks., F. Perkins, J. G. Weston, H. Markham, J. Allrove, Geo. Kell, E. Beckett, A. Bullock, A. R. Allan, P. C. M. Vetch, W. H. Divers and W. E. Humphreys.

The only exhibit before this Committee was a collection of desiccated vegetables, shown by the ALLIANCE VEGETABLE COMPANY, LTD., 52, New Broad Street, London.

Potatoes, Carrots, Onions, Spinach, Parsnips, Beet, Swede Turnips, Cabbage, Sage, Parsley, and Celery tops were exhibited in the dried form, with specimens soaked ready for boiling. The Committee awarded a Silver-gilt Knightian Medal, and expressed a wish to see cooked samples at the next meeting.

NATIONAL AURICULA AND PRIMULA (Southern Section)

APRIL 23. The annual exhibition of this society was held in the London Scottish Drill Hall, Buckingham Gate, in conjunction with the R.H.S. fortnightly meeting. The exhibition was much smaller than usual, Miss LOWENSKY, Mr. BENNETT POLE, and Messrs PHILLIPS and TAYLOR being the chief contributors. Miss LOWENSKY, Titonhurst, Sunninghill, Berkshire, was awarded the James Douglas Memorial Challenge Cup offered for the best six varieties of Auriculas in Class 2. Miss LOWENSKY showed, among others, Acme, Mrs. Phillips, Harrison Weir, and Buttercup. The same exhibitor also won 2nd Prizes for (a) 4 Auriculas, dissimilar, and (b) 6 Alpine Auriculas, dissimilar, and 1 Alpine Auricula, dissimilar. She showed the best Alpine Auricula with white or cream centre, the variety being Mrs. Douglas and Mr. BENNETT POLE was second in this class with the same variety. Mr. BENNETT POLE's chief successes were in the classes for (a) single specimen of self-coloured variety, in which he showed a very good plant of Harrison Weir, (b) 6 Alpine Auriculas, dissimilar, stamens Argus, Dean Hole, Mrs. Douglas, Teviotdale, Rose Mount, and Phyllis Douglas, (c) 4 Alpine Auriculas, dissimilar, with Dean Hole, Teviotdale, Argus, and Mrs. Douglas. This latter was adjudged the best premier Alpine Auricula in the show. Mr. H. W. MASON, Binstead, Surrey, was awarded the 1st Prize in the class for 6 Alpine Auriculas, open only to amateurs. His best plants were King George and Commander.

Mr. G. W. MILLER, Wisbech, had the field all to himself in the classes for Primulas and Polyanthes; he was awarded the 1st Prize in six classes. His pans of double Primroses were exceedingly choice. Mr. JAMES DOUGLAS, Eden side, Great Bookham, staged a non-competitive exhibit of choice Auriculas, and Messrs. PHILLIPS and TAYLOR, Bracknell, showed a group of Alpine varieties.

HAYWARDS HEATH HORTICULTURAL.

APRIL 5. At the annual general meeting of the above Society, Mr. H. M. Knight presided over a good attendance of members. Mr. Plummer presented the financial report, which showed a balance in hand of £23 5s. 10d. The accounts were adopted. Colonel Stephenson R. Charle, C.B., J.P., was re-elected president, Mr. H. Plummer hon. treasurer, and Mr. G. Prevett hon. secretary. Mr. Prevett stated that the Society undertook to cultivate the gardens and allotments of soldiers on service. The number had gone up to 140. Of that num-

ber, 120 had been dug. The members of the local Volunteer force, who had assisted in the work, had dug between 70 and 80 gardens, and the rest had been done by private gardeners. The chairman announced that there would be no show this year, and the meeting then went into committee to discuss further the question of the upkeep of the soldiers' gardens.

Obituary.

HENRY HEATH.—We regret to announce the death of Mr. Henry Heath, formerly nurseryman and florist of Covent Garden, at his residence "The Elm," Oakthorpe Road, Palmer's Green. Deceased, who was in his 78th year, retired from business some ten years ago, and was succeeded by his son Henry, of Barkwell Green, Wincote Hill. The funeral took place at Old Edmonton Churchyard on Friday, the 27th inst.

C. WANT.—We regret to record the death, on the 16th inst., of Mr. C. Want, for twenty-eight years gardener at Clare Lawn, East Sheen. A native of Leatherhead, Surrey, he was in early life connected with the celebrated "Downside" collection of Orchids. Before going to Clare Lawn in 1889, he was employed at Gayton's Grove, Leatherhead. He leaves a widow and only son.

THE APIARY.

By CHLOEIA.

[WATER.—I would impress on bee keepers the need of providing pure water for the bees. I have found a difficulty in inducing bees to utilise that provided. In apiaries I have visited the following plan has been adopted. Take a vessel of cold water and drop on it a few drops of melted wax, the scent of which attracts the bees, and the flakes will provide floats on which the bees can rest to take in a supply of water. Another precaution, which appeared to me, was to place a sheet of glass well above the water to prevent the excitement of flying bees from falling into the water, which should be kept as pure as possible. It is most to be aware by now that the danger of Isle of Wight disease arises from the spores of *Nosema apis* being in the excitement. It is asserted that the glass allows the sun's rays to warm the water, and thus a further inducement for the bees to make increasing use of the water so provided. Of course, this all implies that all other sources of water must be banished from the vicinity of the hives, all empty vessels, tins, etc., which might catch rain water and so become contaminated.

CROPS AND STOCK ON THE HOME FARM.

BUCKWHEAT

Now that there is a prospect of a shortage of ordinary food for fowls, it behooves all who keep them to strive their utmost to grow substitutes.

The common Buckwheat (*Polygonum Fagopyrum*) is a plant that might be employed with advantage. In the past Buckwheat was mainly grown in odd corners of fields, situated on the margin of woods as an encouragement to pheasants, and not as a crop to harvest. The common Buckwheat is an annual plant, with smooth, pinkish stems which grow to a height of 2 feet. The flowers grow in crowded panicles. Each flower possesses five pinkish white sepals, eight stamens, and an ovary, which, when ripe, forms a dark-brown nut similar in shape to, but smaller than, a Beech Nut.

The grain is extensively employed as poultry food, and a little is sometimes mixed with oats for horses.

As a honey plant for bees, Buckwheat is excellent, the flowers lasting over a considerable period.

Ploughed in green like Mustard, Buckwheat adds humus to the soil. The plant cannot with stand frost either in the spring or autumn, and seed should not be sown before the middle of May. Cold, sunless weather is against rapid

growth, and consequently against the production of seed.

Light, sandy, or chalk soils are more favourable to growth, being warmer than heavier, colder ground.

Too much manure induces rampant growth at the expense of seed, and also renders the plant more easily injured by frost. On a warm plain, with a moderate amount of manure and good tilth at no-time, one bushel of seed per acre drilled shallow will, in a good season, produce four quarters of seed per acre. The end of August or the early part of September is a reasonable time to expect the bulk of the crop to be ripe. As the plant continues to grow until frost checks its progress, it is useless to expect all the seed to ripen, therefore it is wise to cut early and secure the best seed. *E. Molyneux.*

CORN PRODUCTION.

The Bill which Mr. Prothero introduced to the House of Commons on Wednesday, April 25, has for its immediate object the raising at home of a large proportion—if possible so large as 82 per cent.—of the food required by the people of these islands.

It is difficult to believe that anybody who is living through the experiences of the present can doubt not only the desirability, but the sharp necessity for doing everything that can be done to secure this end. And this, not only because of the present somewhat menacing outlook, but also on the permanent interests of the nation.

The prime means whereby Mr. Prothero proposes to accomplish this increased production of Corn are by giving a guarantee with respect to minimum prices and by fixing a minimum wage for agricultural labour.

The increased production is to be brought about by the breaking up of grass land, of which it is estimated that eight million acres will have to be added to the present area.

Even with a total of twenty seven million acres of arable land there would be only three-fifths of the area of the country under the plough, as against two-thirds in France and one-tenth in Denmark.

In spite of labour, climatic, and other difficulties, 500,000 additional acres in England and Wales, and 700,000 acres in Ireland have already been converted into arable land, and the programme which the Board of Agriculture has set for itself is to secure that each county shall increase its arable in due proportion, so that, if possible, in two years hence three million acres may be added to the land under the plough.

Small cultivators are to contribute towards the 13 per cent necessary to complete the supply of home grown food, and we believe that if sufficient facilities are given to them they will be able to do this.

If, out of the casual and somewhat chaotic conditions with respect to agriculture which prevailed before the war a vigorous, defined and practical policy for the colonisation of those islands were to emerge, something, and something worth while, would have happened to compensate in some measure for the waste of the war.

CENSUS OF HORSES, LIVE STOCK, AND AGRICULTURAL MACHINERY.

A CENSUS of horses and mules, and a census of cattle, sheep, pigs and agricultural machinery in Great Britain on April 21, 1917, are to be taken at the end of this month, in connection with the measures necessary for obtaining horses for the Army, for increasing the production and economising the use of grain, and for conserving food supplies (particularly meat and milk).

Orders have been made under the Defence of the Realm Regulations making it compulsory on every person who owns any horses or mules, or any cattle, sheep, pigs or agricultural machinery, to make a return, by May 1 at the latest, on forms which have been prescribed for the purpose and are to be obtained from any police station—a buff form for the census of horses and mules and a white form for the census of cattle, sheep, pigs, and agricultural machinery. Every owner of any of the animals or machinery in question should take care to provide himself with a form (if he has not received one from the police) in time to have his return ready by the end of the month.

MARKETS.

COVENT GARDEN, April 25.

Cut Flowers, &c.: Average Wholesale Prices.

Anemone fulgens, s.d.s.d. per doz. bun. 2.0-2.6	Peas, white and coloured, per doz. bun. 6.0-12.0
Azalea, white, per doz. bun. 4.6-5.0	Pelargoniums, per doz. bunches, double scarlet 6.0-8.0
Camellias, white per doz. blms. 1.6-2.0	Primroses, per doz. bun. 1.6-2.0
Carnations, per doz. blooms, best American varieties 2.0-3.0	Roses - General Jacquemont, per doz. blooms 1.6-2.0
Carlia (Cormson), ex. large 3.6-4.0	Joseph Lows, per doz. blms. 2.6-3.0
Daffodils, Golden Spur, per doz. bun. 1.6-2.0	Lady Hillingdon, per doz. blms. 1.6-2.6
Barri, per doz. bun. 1.6-2.0	Liberty, per doz. blooms 3.0-4.0
Emperor, per doz. bun. 2.0-3.0	Melody, per doz. blooms 3.6-4.0
Princes, per doz. bun. 1.3-1.6	Mme. A. Chateaux, per doz. blooms 3.0-4.0
Sir Watkin, per doz. bun. 2.6-3.0	Mme. Edouard Herriot, per doz. blooms 2.6-3.0
Victoria, per doz. bun. 2.6-3.0	Opelia, per doz. blooms 3.0-5.0
Forget-Me-Not, per doz. bun. 6.0-8.0	Prince de Bulgarie, per doz. blms. 3.0-3.6
Freesia, per doz. bun. 1.6-2.0	Richmond, per doz. blms. 2.6-3.6
Heather, white, per doz. bun. 12.0-16.0	Sunburst, per doz. blms. 2.6-3.6
Iris, Spanish blue, per doz. bun. 5.0-36.0	White Molly Sherman Crawford, per doz. blms. 4.0-5.0
Lily of the Valley, long, per doz. 1.6-2.0	Stephanotis, per 72 pins 3.0-3.6
short, per doz. 3.0-3.6	Tulips, white, per doz. bun. 14.0-24.0
Lanatifolium album, long, 2.6-4.0	yellow, per doz. bun. 12.0-18.0
short, 1.6-2.0	Darwin in variety, per doz. bun. 21.0-24.0
Lily of the Valley, per doz. bun. 24.0-30.0	Princess of Wales, single, per doz. 3.0-5.0
Narcissus, Grand Primo, per doz. bun. 1.6-2.0	
Pheasant Eye, per doz. bun. 2.0-3.0	
Orchids, per doz.: Cattleya, 12.0-15.0	
Odontoglossum, 3.0-4.0	

REMARKS.—Cut flowers are now more plentiful, and prices are considerably lower throughout the market. This week very large quantities are being received from the Channel Islands. Daffodils and White Narcissus are offered at very low prices. There is also an abundant supply of home-grown Daffodils. Roses are cheaper, and some exceptionally fine blooms of the following varieties are on sale:—Mme. Abel Chatenay, Mme. Edouard Herriot, White Molly Sherman Crawford, Melody, Lady Hillingdon, Prince de Bulgarie, President Carnot, Opelia, Sunburst, Liberty, and Richmond. Sweet Peas are increasing in quantity. Some fine bunches of white, pink, and mauve flowers are being received from our own growers, and a few boxes from Guernsey. French flowers are finishing, owing to the warmer weather. Owing to delay, many baskets are received here in an undesirable condition. Spanish Iris is also making its appearance, and a few bunches of blue are being sold at 5s. per doz. blooms.

Vegetables: Average Wholesale Prices.

Artichokes, Globe, s.d.s.d. per doz. 5.0-7.0	Kale, per doz. 10.0
Jerusalem, 4.0-6.0	Leeks, per bag, 3.6-5.6
Asparagus, Paris Green, per doz. 3.6-4.0	Letuce, Cabbage and Cos, per doz. 2.0-2.4
Beetroot, per bag, 16.0	Mushrooms, per lb. 2.0-4.0
Beans, English, per lb. 1.0-1.6	Mustard and Green, per doz. punnets 1.0-1.6
Broad Beans, per bag, 9.0	Onions, per cwt 18.0
Brussels Sprouts, per doz. 7.0	Paris, per bus. 14.0
Carrots, washed, per bag 25.0	Paris, per bus. 25.0-27.0
Cauliflowers, per doz. 4.0-6.0	Peas, French, per lb. 2.6-3.0
Celery, per doz. bunches 10.0-15.0	French, per pad 7.6-9.0
Chicory, English, per lb. 0.10-0.10	Pokoy, new, per lb. 1.0-1.3
Cucumbers, per doz. 13.6	Radishes, per doz. bun. 1.6-2.6
Endive, per doz. 2.0-3.0	Rhubarb, forced, per doz. 1.0-2.0
Greens, per bag, 14.0	natural, per doz. bun. 4.0
Herbs, per doz. bun. 4.0-8.0	Savoy, per tally 15.0-20.0
Horseradish, per doz. 66.0-72.0	Seakale, per doz. punnets 3.0-3.0-29.0
	Shallots, per lb. 0.6-10.0
	Spinach, per bus. 5.0
	Swedes, per ton 50.0-90.0
	Turnips, per cwt. 10.0
	Tops, per bag 14.0
	Vegetable Marrows, per doz. 8.0-12.0
	Watercress, per doz. 0.8-0.9

Fruit: Average Wholesale Prices.

Almonds, per cwt. 80.0-85.0	Grapes—con. s.d.s.d. - English (new season) Hambro, per lb. 6.0-8.0
Apples - English Cooking, per bus. 20.0	Lemons, per case 25.0-40.0
French, per case 22.0-24.0	Nuts, Brazil, new, per cwt. 95.0-100.0
Bananas, Jamaica, per ton 122.0	Cocoanuts, per 100 31.0-32.0
Cranberries, per cask 11.0-12.0	Oranges, per case 40.0-70.0
Dates, per doz. boxes 7.0-8.6	Peaches, per doz. 21.0-24.0
Figs (Worthing), per doz. 15.0-24.0	Pears - Californian 16.0-20.0
Grapes: Almeria, per doz. lb. 10.0-15.0	Strawberries, forced, 6.0-10.0
	Tomatoes, English, per lb. 2.6-3.0
	Walnuts, per cwt. 65.0-85.0

REMARKS.—Apples continue to be limited in supply. A shipment of Australian fruits is now due. The first of the new English crop of Black Hamburg Grapes is to hand this week, and Figs and Peaches are also available. Supplies of morning gathered Strawberries are increasing daily. The forced vegetables now obtainable are Peas, Beans, Cucumbers, Asparagus, Seakale, Vegetable Marrows, Tomatoes, and new Potatoes. French salads are plentiful, but all varieties of green vegetables are, as usual at this season, scarce. E. H. R., Covent Garden Market, April 25, 1917.

ANSWERS TO CORRESPONDENTS.

BOOKS.—Correspondent. Forbes and Hemsley's *Enumeration of Chinese Plants* is out of print, and can only be obtained second-hand. You might be able to get a copy from John Wheldon and Co., 58, Great Queen Street, W.C. The list was published in the *Linnean Society's Journal*, vol. 23, etc. *Plantula Wilsoniana* may be obtained from our publishing department. It consists of nine parts, price 12s. 6d. each part.

MAIZE, OR SWEET CORN: F. W. C. The heads of Maize, known as Sweet Corn, form a deli-

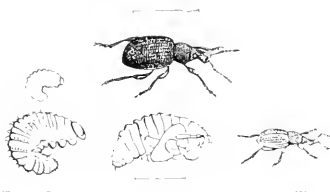


FIG. 62. BLACK AND CLAY COLOURED WEEVILS.

icious vegetable. Unfortunately it is a some what precarious crop in this country, and grown in the ordinary way during a wet or dull and sunless summer is of little use, but it is worth a little extra trouble in order to overcome these difficulties. The seed should be grown in gentle warmth in boxes during April, the seedlings potted, and finally planted out in frames, on an old hotbed for choice, in a sunny position, treating the plants in much the same way as for Vegetable Marrows; gradually harden the plants, and finally remove the lights entirely towards the end of May. Plenty of water is essential during spells of dry weather. Spare plants may be planted in well prepared ground, in a sunny position, from the middle to the end of May, and if these are potted up and encouraged to make strong plants before putting them out, so much the better. The cobs are fit for table in a green state before the seeds commence to harden. As well as being useful as a vegetable all the varieties of Indian Corn are extremely ornamental.

NAMES OF PLANTS: *Shirehampton*, *Aureone Hepatica*, double pink variety. The species is commonly known as *Hepatica triloba* in gardens.—*J. H. L.* 1. *Odontoglossum Wilkeanum* (crispum × luteo-purpureum); a very good form. It may be either an imported natural hybrid, or home-raised; 2. *Odontoglossum gloriosum*; 3 and 5, forms of *Cypripedium Lawrenceanum*; 4, *Cypripedium barbatum nigrum*; 6, *Cypripedium conspicuum* (villosum × Harrisianum).

NUTS: F. T. The nuts are the seeds of *Lecythis Zabucajo*, and are sold in shops as *Sapirata nuts*. The tree grows to a great height, and is mostly found in Brazil, the principal source of the seeds being Para.

SCALE INSECTS ON PEACH TREE: M. M. Sponge the plants with weak paraffin emulsion. Dissolve one ounce of soft soap in a pint of boiling water, and whilst it is still boiling hot pour the mixture into two pints of paraffin and churn until a creamy fluid is obtained. Use one part of the emulsion to 50 or 60 parts of water. Next winter treat the trees with a caustic alkali wash, using a brush to remove the scale. Syringing the trees when dormant with water at a temperature of 145° is also effective.

SLOW GERMINATION OF VEGETABLE SEEDS: E. H. R. If the Onion and Carrot seeds were sown they should germinate satisfactorily even though a long time has elapsed since they were sown. These vegetables take much longer to germinate than the others mentioned. Woodlice would not affect them. The best way to destroy wood lice is to pour boiling water on their haunts.

WEEK WITH A BULB: M. L. Y.—We think you have made a mistake in calling your weed *Sheep's Sorrel* (*Rumex acetosella*). That plant does come into the garden occasionally, but is easy to eradicate. Wet, cold, poor, and sour soils are those where it appears in thousands, and is most at home. In such places it can be gradually eradicated by draining and liming the soil to counteract its sourness. You state that your plant has a bulb, which points to it being an *Oxalis* or *Wood Sorrel*. Several of the South African species have become a nuisance in this country—some in greenhouses and others outdoors. *O. corniculata* maintains itself out-of-doors in gardens in any part of the country, but it is not bulbous, being the only South African species that is fibrous rooted, maintaining itself by seeds. A notorious bulbous one is *O. cernua*, with yellow flowers; but some others are quite as bad in the borders of greenhouses, not outdoors. They seldom flower, but increase rapidly by means of bulbs, and digging merely disperses them more widely. Gaslime, at the rate of 1 pound to the square yard, is the most likely agent to kill the bulbs. It should be applied in autumn when the border is empty. When the plant comes into full leaf early in summer you can dust the foliage with sulphate of ammonia, not exceeding 1 ounce to the square yard, while other plants occupy the border. A third part of common salt mixed with it would make it more effective. Both these salts should be perfectly dry and powdery when used, and should be dusted only on the foliage, as far as possible. The bulbs will most likely throw up fresh foliage, but repeat the treatment each time this occurs, preferably in dry weather, and during the early part of the season, when rain is not so prevalent as in the autumn. The object of this is to exhaust the reserve food in the bulbs. Pea-flowered or Leguminous plants should not be grown in the border whilst these salts are being used.

WEEVILS ON ROSES: J. G. L. The insects attacking your Roses are clay-coloured weevils, *Otiorynchus picipes* (see fig. 62). Your method of catching them at night is the best one to pursue. They drop from the plants on being suddenly disturbed, and especially if a bright light is flashed amongst them. By spreading a white cloth beneath the plants you would be able to trap the creatures easily, or sheets of paper smeared with a sticky substance might be used instead of the white cloth. Another method of killing the insects is to fumigate the house late at night with hydrocyanic acid gas.

Communications Received Sir H. M. G. M.—A. V. R.—R. G. H. J. H. Kew.—Rev. W. F.—J. R. J.—Nat. Chrys. Soc.—T. H.

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- English Flower Garden, The.** An Illustrated Dictionary of the Plants Used, and Directions for their Culture and Arrangement. By W. Robinson. With numerous Illustrations. 15s. 7d.
- Ferns, The Book of British.** By C. T. Drury. Illustrated. 3s. 10d.
- Ferns, Choice, for Amateurs.** For the Garden, Conservatory and Stove. Illustrated. With full directions for their Cultivation, and Formation of Ferneries, Rockeries, etc. By George Schneider. New Edition. 3s. 11d.
- Fern Culture.** By A. Hemsley. Well Illustrated. 2s. 9d.
- Ferns and Fern Culture.** By J. Birkenhead. Third Edition, revised by F. Parsons. 1s. 2d.
- Fertilisers and Manures.** By A. D. Hall, F.R.S. 5s. 5d.
- Flora, British, Handbook of the.** By Geo. Bentham. Revised by Sir Joseph Hooker. Seventh Edition. 9s. 5d.
- Flora, British, Illustrations of the.** By W. H. Fitch and W. G. Smith. 1,315 Wood Engravings. Revised and enlarged. 9s. 5d.
- Floral Decoration, British.** By R. F. Felton. Containing 26 full-page Illustrations (12 in colour). 4s.
- Florists' Bibliography, The.** By C. Harman Payne. Second Edition, with Supplement and Index. Cloth, 5s. 4d.
- Flower Garden, The.** By T. W. Sanders. The Formation and Management of a Garden, and the Culture of Outdoor Flowers and Plants. 450 pages. 104 Illustrations. 8s.
- Flowering Plants, Classification of.** By Alfred B. Rendle, M.A., D.Sc. Vol. I (Gymnosperms and Monocotyledons). 400 pages. Illustrated. 10s. 10d.
- Flowers and Flower Culture.** By H. W. Ward. 8d.
- Flowers, The Book of Hardy.** By E. H. Jenkins. A Practical Guide to the Cultivation of Hardy Flowers. Illustrated. Cloth, 2s. 11d.
- Flowers, The Book of Old Fashioned.** By Harry Roberts. 2s. 10d.
- Forestry, English Estate.** By A. C. Forbes. Copiously Illustrated. 328 pages. 12s. 11d.
- Forestry, The Development of British.** By A. C. Forbes. Illustrated. 11s.
- Forestry, The Practice of.** By Percival T. Maw. A voluminous and practical manual. It deals also with the financial aspect of Forestry. 17s. 6d.
- Forestry, Webster's Practical.** Fourth and Enlarged Edition. Illustrated. 5s. 4d.
- French Market Gardening.** By John Weathers. With practical details of "Intensive Cultivation" for English Growers. Preface by W. Robinson. 7s. 11d.
- Fruit Farming, Practical,** for Commercial Fruit-growers and others. By Cecil H. Hooper. 3s. 10d.
- Fruit Farming for Profit.** By George Bunyard. A practical treatise on all the more profitable Fruits. Sixth Edition. 2s. 9d.
- Fruit Garden, The.** By George Bunyard and Owen Thomas. 13s.
- Fruit Growing, Profitable:** for Cottagers and Small Holders of Land. By John Wright, V.M.H. A Gold Medal Essay, written for the Worshipful Company of Fruiteers. Illustrated. 1s. 3d.
- Fruit, Hardy, Culture for Amateurs.** By S. T. Wright, with notes by W. D. Drury on Fungal affecting Fruit Trees. Illustrated. 1s. 3d.
- Fruit Raunching in British Columbia.** By J. T. Bealby. Illustrated. 3s. 11d.
- Fruit Trees and Their Enemies.** With Spraying Calendar. By Spencer Pickering, F.R.S., and Fred. V. Theobald. Cloth, 1s. 9d.
- Fruit Trees in Pots.** By Josh Brace, twenty-two years Foreman for Thos. Rivers and Son. Illustrated. 5s. 4d.
- Fruit Trees, The Scientific and Profitable Culture of.** From the French of M. Du Breuil. Fifth Edition, carefully Revised by George Glenny. With 137 Woodcuts. 3s. 9d.
- Fruit and Vegetables, Packing and Selling:** for Cottagers and Small Holders of Land. By R. Lewis Castle. A Gold Medal Essay, written for the Worshipful Company of Fruiteers. Illustrated. 1s. 3d.
- Fungoid Pests of Cultivated Plants.** By Dr. M. C. Cooke. Many Coloured Plates. 5s. 6d.
- Garden Beautiful, The, for Home Woods and Home Landscape.** By W. Robinson. Illustrated 7s. 10d.
- Garden Planning and Planting.** A Guide to the Laying-out and Designing of Flower Beds and Borders. Illustrated. Paper, 1s. 3d.; cloth, 1s. 9d.
- Garden, Chemistry of the.** A Primer for Amateurs and Young Gardeners. By Herbert H. Cousins, M.A. 1s. 2d.
- Garden Craft in Europe.** By H. Inigo Triggs. £1 15s. 6d.
- Garden Designs, The Book of.** By Charles Thonger. 2s. 10d.
- Garden Flowers for Town and Country Gardens.** By John Weathers. Coloured Plates. 5s. 4d.
- Garden Furniture, The Book of.** By Charles Thonger. 2s. 9d.
- Garden Guide.** By Walter P. Wright. A Practical Handbook for all Garden lovers. 100 Illustrations. Cloth, 1s. 9d.
- Garden Plants, A Practical Guide to.** By John Weathers. Contains descriptions of Annuals, Biennials, Perennials, Flowering and Ornamental Trees and Shrubs, Conifers, etc., and also the best kinds of Fruits and Vegetables that may be grown in the open air. 1,192 pages. 163 Illustrations. 21s. 6d.
- Garden Receipts.** Edited by Charles W. Quin. Fourth Edition. 1s. 8½d.
- Garden, The Well Considered.** By Mrs. Francis King. 4s. 10d.
- Garden Under Glass, The.** By W. F. Rowles. Contains much practical information. Price 6s. 6d. Illustrated.
- Garden Series** (edited by R. Hooper Pearson).
- My Garden in Spring.** By E. A. Bowles, M.A., Chairman of Scientific Committee of Royal Horticultural Society. With Preface by Reginald Farrer. 320 pages. Contains 16 Coloured Plates and 24 Half-tones. Price, 5s. 6d.
- My Garden in Summer.** By the same author as above. Price 5s. 6d.
- My Garden in Autumn and Winter.** By the same author. Issued 1915. Price 5s. 6d.
- Gardener's Assistant, The.** New Edition by William Watson, Curator, Royal Gardens, Kew. 6 vols., cloth, 8s. 5d. each. Also in 2 vols., Roxburghe binding, 52s.
- Gardeners' Chronicle Horticultural Directory** (58th Year.) Revised edition for 1917. This unique Horticultural Directory contains, amongst other valuable information:—A Register of the principal Nurserymen, Seedsmen and Florists; Mansions of the United Kingdom, with their Occupiers and Head Gardeners; Horticultural Builders and Engineers; Landscape Gardeners; Horticultural and Floral Societies; Fruit, Flower and Vegetable Trades' Societies; Principal Fruit and Flower Salesmen and Commission Agents in London. List of County Staff Instructors in Horticulture appointed by the County Councils; Principal Public Parks in Great Britain and Ireland. Indispensable to every Nurseryman and professional Gardener. Every possible means is taken to revise this work each year; this involves over 15,000 communications by post, as a form for verification is sent to every name included in the lists. Published on January 1 each year. Price 1s. 4d.
- Gardening, Alphabet, of.** By T. W. Sanders. Illustrated by diagrams. 1s. 9d.
- Gardening, Encyclopædia of.** By T. W. Sanders. A Dictionary of Cultivated Plants, Flowers, Fruit Vegetables, Trees and Shrubs, with Description and Popular and Technical Names, Cultivation, etc. 466 pages. 3s. 11d.
- Gardening, Home.** By W. D. Drury. A manual for the Amateur, containing instructions for the Laying-out, Stocking, and Cultivation of Small Gardens. 1s. 3d.
- Gardening, Pictorial Practical.** Edited by Walter P. Wright. Illustrated. Paper, 1s. 3d.; cloth, 1s. 9d.
- Gardening, School, A First Book of.** By A. Logan. 1s. 9d.
- 1,500 Gardening Questions Answered.** A useful Handbook for the Amateur Gardener, dealing with every phase of Gardening, both inside and out. Paper, 1s. 3d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

SALES BY AUCTION.

WEDNESDAY NEXT, at 12 o'clock. A choice assortment of Roots, Hardy Herbs, Plants, etc.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Chopsale, London, E.C. 2.

SOUTHGATE, N.

CLEARANCE SALE BY ORDER OF THE EXECUTORS MESSRS. PROTHEROE & MORRIS.

On Tuesday and Wednesday, May 15th and 16th, 1917, at 12.30 o'clock, precisely, the whole of the STOVE, GREENHOUSE, and BEDDING PLANTS, etc.

On Friday, May 18th at 1 o'clock on view two days prior and morning of sale.

CORK, IRELAND.

The oldest dried Nurseries of BAYLY, Hopton and Sons, of Ardaraun, Cork, as a going concern.

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORISTS' AND SEED BUSINESSES to be Let or Sold.

MESSRS. PROTHEROE & MORRIS every month. Copies may be obtained post free on application.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, odd plants suitable for stock; cash or exchange.

MISCELLANEOUS.

THEY WILL KEEP YOU DRY!

BEACON OILSKINS never fail to keep out the wet. That's why they are worn by hundreds of farmers, gamekeepers, and other outdoor men, women and children.

EXPENSIVE ADVERTISING.

In these days, when every firm has to advertise or see its business decline, it is necessary to make sure that the needed publicity is so obtained that the results justify the expenditure.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table with 2 columns: Description of ad types (Ordinary Postions, Facing matter and Back Page, Half and quarter pages, etc.) and Rates (per page, per inch, etc.).

Front page (no display allowed) 1/- per line space (Headline counted as two lines)

For discounts apply to address below.

SITUATIONS WANTED.

2/- words 7s. 6d., and 6d. for every additional 8 words

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

Table with 2 columns: Location (THE UNITED KINGDOM, ABROAD) and Rate (15/- per annum, 17/6 ..).

Cheques and P.O.s only made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telegrams: 1543 "GARDENERS," RASD, LONDON." Telephone: 1543 GERRARD.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Intuits at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

WANTED, HEAD WORKING GARDENER (single-handed), thoroughly experienced. Vegetables, outdoor Fruit, and small home farm.

WANTED, GARDENER (single-handed), thoroughly experienced. Vegetables, outdoor Fruit, and small home farm.

WANTED, practical SINGLE-HANDED GARDENER for Ripon, some help given. Apply with particulars and wages required, with reference, to C. H. WHEELER, Swinton Gardens, Masham, Ripon.

WANTED, GARDENER, for Berks, who is willing to learn and manage electric engine; cottage found. Apply, first instance, to MR BILLMOORE, Cavesham, Reading.

WANTED, GARDENER or LADY GARDENER.

THOROUGH home for Vegetable GARDENER who understands poultry, live in; good wages, good food. 67, Wigmore Street, London, W.

WANTED, IMPROVER, Inside and Out; age 15 to 16, wages 18s. 6d. only, vegetables, milk. -E. MORGAN, Wessand Hall Gardens, Hull.

WANTED, several YOUTHS, 16 to 17; Inside and Out, wages 18s. per week, Bath, &c.; Sunday duty and overtime paid. 1 o'clock Saturdays; travelling expenses paid.-C. GARRATT, Canwell Hall Gardens, Sutton Coldfield, Birmingham.

WANTED, LADY GARDENER, for Glass Department. State age, experience, wages required, to GEO. W. HADON, Burwalls, Leigh Woods, Bristol.

WANTED, a LADY GARDENER or experienced GARDENER (man) for duration of war; man at 1 hour kept, GENTLE LADY PENRYN, Hill Place, West Meon, Hampshire.

WANTED, at St. Leonards School for Girls, St. Andrews, Fife, a fully qualified and well-educated WOMAN, to act as HEAD GARDENER and INSTRUCTOR in GARDENING; knowledge of the growth and sale of Vegetables and the care of Grass is essential, and some experience in teaching desirable. -For further particulars apply to the HEAD MISTRESS.

EXPERIMENTAL and RESEARCH STAFFS, Chesham, Berks. Young lady required to assist in taking measurements and keeping records of crop production. Applicants must be accurate and reliable in their work. Previous experience in science is desirable but not essential. Hours, 7.30 am. to 5.30 pm. Apply to the Director, stating age, experience, wages required, enclosing a copy of one recent reference.

WANTED, LADY GARDENER, under another lady, all round experience. Apply to MRS. ROBINSON, Bellinch House, near Salisbury.

LADY GARDENERS Wanted: all suited (country) free of charge. Head, for Dorse, 4 Under, kept, good district glass. Two Under for Berks (7 kept); must understand Peaches and 1 Carnations. Glass, Bechill (single-handed), 5 acres, small amount Flowers, Vegetables, girls' school, live with mistresses. Cheshire, Green (2 under), with boy 3 acre ground; small pony, shoes, bath, Under, good Head Man (Gardener), who trains well; gentleman could live in house. Hertford, 2 required, one for Garden, other for small farm (5 cows), Hants, single-handed, with boy; electric light plant, Slough, 7/6 and furnished cottage, electric Vegetables, Sussex, 2 warts as Head and Under, Garden 5 acres, chiefly Vegetables, and other good posts.-MRS. HUNT, LTD., 59, High Street, Weybridge.

WANTED, young WOMEN GARDENERS, one for Houses, others for Pleasure Grounds, live in furnished house, with attendance. Apply, stating reference, to A. J. COBB, Duffryn Gardens, near Cardiff.

WANTED, highly respectable WOMAN; widow or wife of a Gardener now in Army preferred, to act as Housekeeper for 4 or 5 young women Gardeners. Apply to A. J. COBB, Duffryn Gardens, near Cardiff.

WANTED, for Glass-houses, a LAD of 16, or a single Man, to live in Bath; Sunday duty and overtime paid extra. Apply to HEAD GARDENER, Wyfold Court, near Reading.

TRADE.

WANTED, MAN, ineligible; well up in Cucumbers and Tomatoes; good prospect to obtain Foreman position. Write, L. J., Box 26, 41, Wellington Street, Covent Garden, W.C. 2.

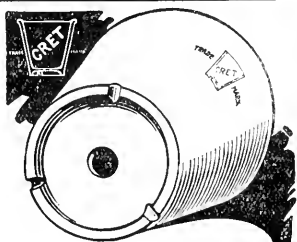
WANTED, GROWER; able to take charge. Bolding Plants and Ferns. Please state wages required.-B. E., Box 9, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, in London district, a reliable MAN (ineligible) for Crops and Cucumbers; wages 46s. and overtime. T. Box 7, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, Competent Cucumber Grower; also Tomato Grower and one with experience of Vines, ineligible. State age, wages required, and where experience gained. -NOWELL, Roden, Wellington, Salop.

RELIABLE MAN (ineligible) wanted in London Nursery for market Ferns. State wages. -R., Box 8, 41, Wellington Street, Covent Garden, W.C. 2.

"Saw Bull's"
THE FOOD FOR PLANTS



Test the FREE Sample CRET Pot

As shown in the free booklet and you'll at once want CRETS. Their porosity, drainage, and root-roominess will so improve your plants.

Specimen CRET Prices:—2½ ins., 4/- per 100; 7½ ins., 21/- Safe Delivery Guaranteed. Orders over 20/- Carriage Paid.

FREE SAMPLE "CRET" POT on request, with the booklet giving prices and special assortments. Write to-day.

PETER BAILEY & SONS, LTD.,
2, Heaton Mersey Pottery, near Manchester.

VEGETABLE PLANTS.

Brussels Sprouts Profile	Per doz.	Per 100
Cabbage First of All (very early)	4/-	2 6
Caulliflower Autumn Giant	4/-	2 6
Tomato Holmes' Supreme, ex 60 pots	4/-	3 6

Strong, hardy plants from our selected strains of seeds, ready for immediate despatch

JOHN WATERER, SONS & CRISP, LTD.,
The Nurseries,
BAGSHOT, SURREY, & TWYFORD, BERKS.

PERPETUAL CARNATIONS

Flowering plants in 5in. pots.
Standard varieties, 18' per dozen, 110/- per 100.
Novelties, 22 6 per dozen, 150 - per 100.

BORDER CARNATIONS

Strong plants in 3in. pots,
7 6 per dozen, 50/- per 100.
All plants CARR. PAID and packed free for cash.

A. F. DUTTON'S NOTED CARNATIONS.
IVER, BUCKS.

SANKEY'S POTTS

The BEST and CHEAPEST
Great quantity of first and second quality plants and seeds in stock.
SPECIAL POTTS of all sizes.
RICHARD SANKEY & SON, LTD.
Bulwell Potteries, NOTTINGHAM.

TURF LOAM.

Very Fibrous Yellow Turf Loam

For VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.

Quantities Carriage Paid or Delivered.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.

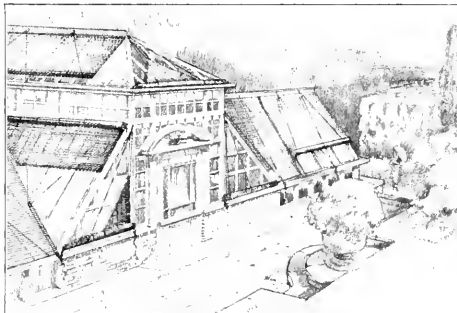
ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE and GREENHOUSE PLANTS OF ALL KINDS.

Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

BAMBOO BLINDS for GREENHOUSES.

SIZES
IN STOCK
FROM
10ft. x 8ft.
TO
15ft. x 15ft.



PRICE LIST
SENT
POST FREE
ON
APPLICATION

J. AVERY & CO., Horticultural Blind Makers
81, GREAT PORTLAND STREET, LONDON, W. 1

MAN YEARS REPUTATION.
EUREKA WEED KILLER
LASTING RESULTS - NO NEW EXPERIMENT.
LABOUR SAVERS: "EUREKA" LAWN SAND, SOILFUME NICOTINE INSECTICIDES FUMERS, SPRAYS, AND OTHER CHEMICALS & SUNDRIES.
SEE LIST. PLEASE ASK YOUR AGENT FOR THE EUREKA ARTICLES - THEY ARE ALWAYS SATISFACTORY IF ANY DIFFICULTY IN OBTAINING, WE SEND DIRECT CARRIAGE PAID.
Only Address: **TOMLINSON & HAYWARD, LTD., LINCOLN.**

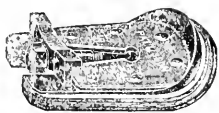


Fig. 1.



Fig. 2, A Quality

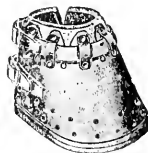


Fig. 2, B Quality.

The "PATTISSON" HORSE BOOTS

SIMPLEST! STRONGEST! MOST ECONOMICAL!
SOLES of best English Sole Leather (Waterproofed), with Motor Tyre Rubber Stools, of best India Rubber. Fig. 1 can be refitted repeatedly, equal to New Boots. Rubber Soles Strongly Recommended.
USED FOR MANY YEARS IN THE ROYAL AND IN THOUSANDS OF THE PRINCIPAL GARDENS.

The "PATTISSON" BOOTS are the most durable on the market, outlasting several sets of ordinary boots, and when worn out can be many times refitted and are then equal to new ones, but this may only be satisfactorily done by us, the makers.

SILVER MEDALS. Hundreds of Testimonies. Royal Horticultural Soc., 1904 & 1914. Royal International Exhibition, 1912. "The Field" says:— "As good as anything that could be devised"

Illustrated Price Lists, from the Makers.
H. PATTISSON & CO.,
4-6, Greyhound Lane, STREATHAM, S.W.
CONTRACTORS TO H.M. GOVT.

EVERY GARDENER KNOWS THAT

Clay's gets there and makes the Garden gay all the year round



IT IS THE STANDARD FOOD FOR PLANTS.

Sold everywhere in TINS at 6d., 1s., and in BRANDED & SEALED BAGS: 7 lbs., 2s. 6d., 14 lbs., 4s. 6d., 28 lbs., 7s. 6d., 56 lbs., 12s. 6d., 112 lbs., 20s. Or direct from the Works, Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mfrs & Bone Crushers, STRATFORD, LONDON, E.

Gardeners' Chronicle

No. 1682—SATURDAY, MAY 5, 1917.

CONTENTS.

Black Currant, abnormal blossom on the	180	Fertilization with hydrocyanic acid	184
Books, notices of—		Grass, the effect of, in orchards	186
The Conifers and Taxodi of Japan	179	Banjozen, experiments with	186
Daily imports from France	186	Obituary —	
Chionodoxas	186	Singleton, Robert	187
Damage to plants	186	Wilson, Edward	187
Farm, crops and stock on the home	187	Wood, James	187
Food production, increased—		Ochler, a sale of	185
Brussels Sprouts	181	Peter Barr Memorial Cup	185
By school children	181	Potato, a mammoth	185
Lawns and the tool problem	181	Potatoes in Iceland—	
Mole draining	181	seventy years ago	185
Nettles as a vegetable	181	Potatoes, spraying	186
Planting Potatoes	181	Saxifraga apiculata alba	186
Potato crops	181	Sedum rariflorum	186
French horticulture	181	Shrubs damaged by frost	187
After the war	181	Societies	187
		Royal Horticultural	187
		sun heat, the value of	185
		War item	185
		Week's work, the	182, 183
		Women and the land	185

ILLUSTRATIONS.

Black Currants, abnormal blossom on	180
Pinus pomila	179
Saxoy and Brussels Sprout, hybrid between the	181
Saxifraga apiculata alba	182
Sedum rariflorum	185

THE CONIFERS OF JAPAN.

THIS remarkable work on the Conifers and Taxodi of Japan,* lately published by the Arnold Arboretum, U.S.A., is the result of a year's travel in that country by the distinguished English botanist, Mr. E. H. Wilson, whose explorations of the Chinese flora are so well known to gardeners and foresters. Mr. Wilson has had the rare advantage of seeing in the wild state all the species which he describes. The plates, taken from photographs of the trees in their natural surroundings, add much to the interest of the book, which in addition to being a critical botanical study is replete with information on the habit and habitat, and on the economic and decorative uses of an important group of plants.

Wilson admits that eight species of indigenous Conifers in Japan, one of a pair of which are found wild outside of that country. The Ginkgo, now generally considered to belong to another order, is cultivated in Japan around temples, as it is also in China. Its occurrence in the wild state was until lately denied, but Frank N. Meyer, botanical explorer for the U.S. Department of Agriculture, states that it grows spontaneously in rich valleys over some ten square miles near Changhua Hsien, about 70 miles west of Hinghsien, in the Chekiang province, China, where the trees are so common that they are cut for firewood.† Wilson gives an interesting account of the five species of the order Taxaceae that occur in Japan, and mentions a magnificent tree of *Torreya nana* at Kano, in Satsuma province, which is 55 feet in height and 18 feet in girth. This species is readily distinguished from the Chinese *Torreya grandis* by the short, becoming reddish brown in the second and third years, whereas in the latter species they remain yellowish-green until they ultimately assume a greyish tint. In New England the Japanese Yew is the hardiest of all the species.

Six Pines are found wild in Japan, of which *Pinus pomila* is the most remarkable. It is creeping in habit, with one or several main stems which lie flat on the ground for 70 to 50 feet, emitting roots freely throughout their whole length, and sending up a tangled mass of lateral branches from 1 to 3 feet high. The other three white Pines of Japan, *P. Amamih* (native of

* *The Conifers and Taxodi of Japan.* By E. H. Wilson, pp. 34, 194, with 59 full-page illustrations. Issued December 31, 1916, as *Publications of the Arnold Arboretum*, No. 8, (Cambridge, Mass., U.S.A.)

the two Southern isles of Tanega and Yaku), *P. koraiensis*, and *P. parviflora*, are well known in cultivation in Europe. Wilson abolishes the *P. pentaphylla* of Mayr, which cannot be distinguished from *P. parviflora* even as a variety, and states that the dwarf specimens with short needles of the latter species owe their peculiar habit to the fact that they are grafted on *P. Thunbergii*, which stunts their growth. The two hard Pines of Japan are *P. densiflora*, the Eastern representative of the Scots Pine, which it resembles in its perpetually scaling reddish bark, and *P. Thunbergii*, the representative of the Austrian Pine. The latter has influenced Japanese art more than any other tree, and is a familiar object in paintings, wood carvings, and embroideries.

The Japanese Larch, styled *Larix Kaempferi* Sargent in this book, but best known as *L. leptolepis* Gordon, is the most important discovery that the East has yielded to European forestry. According to Wilson, it often grows in pure stands of considerable area, but is also found in mixed woods with other Conifers, and with broad-leaved trees like Oak, Beech, Hornbeam, and Birch. Its maximum size is about 110 feet in height and 17 feet in girth; but such trees are rare, the average being about 85 feet high and 6½ to 10 feet in girth. The wood is very durable, and is valued in Japan for use in ship-

Wilson recognises six species of Spruce in Japan, including the lately discovered *Picea Koyamai*, of which there are seedlings growing in the Arnold Arboretum. *P. bicolor*, of which two varieties have been described by Shirasawa, is certainly represented in England by two distinct forms, one of which, however, has not produced cones. Wilson ignores these. The blue Spruce of Hondo, commonly cultivated in England, and distinguished by Mayr as *P. hondoensis*, is united by Wilson with the Continental *P. ajanensis*, the aggregate being known as *P. Jezevskensis*, Carrière. In cultivation in England, it will be advisable to keep up the two former names, until the seedlings of *P. ajanensis* assume the adult foliage and produce cones. The name *P. Aleoekiana* must be discarded, as being based on mixed material of two species. The Japanese Douglas Fir (*Pseudotsuga japonica*) is an extremely rare tree, very distinct from the Oregon species in its moderate size and slow growth, rarely attaining 100 feet in height. The Formosan *Pseudotsuga Wilsoniana*, Hayata, seems to be identical with the rare Western Chinese *Pseudotsuga sinensis*, Dode, of which there were seedlings growing in 1913 in Chennault's nursery, Orleans.

Wilson recognises five Silver Firs in Japan, and adopts the name *Abies homolepis* for the species ordinarily known in England as *A.*

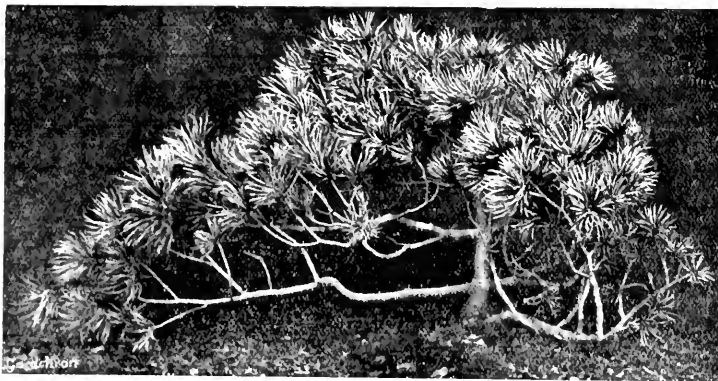


FIG. 62. PINUS POMILA.

building and for jet-ports, railway sleepers, and telegraph poles. It is extensively planted, not only in the main island, where it is indigenous, but also in Holland, where no species of Larch occurs in the wild state. Wilson makes the important observation that the scrubby form (var. *Murrayana*, Maximowicz) growing at high elevations (5,000 to 9,500 feet) on Fuji-san is the direct result of local ecological conditions, and is not of a hybrid character, as proved by the plants growing in the Arnold Arboretum. Seeds were collected in 1872 at the upper limit of the scrubby Larch, and trees raised from them are now 40 feet high, having grown as rapidly as trees raised from seeds collected from the ordinary form at low elevations. This experiment requires fuller confirmation, as it contradicts the results obtained at Swiss and German experimental stations, where seeds of various Conifers from high and low elevations were sown. *Larix koraiensis*, with pubescent, reddish shoots, occurring in Sighalien and Kurile Islands, is regarded by Wilson as a variety of *Larix dalmanica*, native of the mainland in Korea, Manchuria, and Northern China; but the structure of the leaves and cones appears to be distinct. Moreover, as grown at Kew, the habit of true *L. dalmanica* and *L. koraiensis* is strikingly different, the appearance of the latter being quite unlike that of any other species.

brachyphylla. He considers *A. umbellata* Mayr to be a variety with green cones, but there is a possibility that this tree is a hybrid between *A. firma* and *A. homolepis*. The latter is the finest of the Silver Firs in Japan, attaining about 120 feet in height and 20 feet in girth.

Perhaps one of the most interesting parts of the book is the graphic description of the famous forest in the southern island of Yakushima, where *Cryptomeria japonica* is dominant, growing in a mild climate, from sea level to 6,000 feet, in a rich soil with abundant rainfall. The wood is highly valued, selling in Japan at fancy prices. It is fragrant, pale brown in colour, often beautifully spotted and figured, and much prized for house-decoration and furniture-making. The wood is extremely durable, trees felled 20 years ago lying quite sound on the floor of the forest. *Cryptomeria* is much planted in Japan from the extreme south to the north of Hondo. It takes root readily from cuttings, branches as thick as the third finger, and from 12 to 20 inches long, being put in the ground close together during late autumn, winter, and early spring, according to climate, and in time these grow up and form new forests. Seeds produce better and more quickly growing trees, but the initial cost is greater than by using cuttings. *Cryptomeria* does not quite rival in size its close allies, the two *Sequoias* of Cali-



FIG. 63.—NORMAL BLOSSOM OF BLACK CURRANT.

forma, but immense trees occur, those in the famous avenue on Koyasan being 200 feet high and 20 feet in girth, and about 650 years old.

Thuopsis dolabrata, of South Japan, is a small tree, but the northern form, var. *Honda*, with larger cones, attains a height of 110 feet. The Japanese *Thuja* rarely exceeds 50 feet in height, but, as seen in a few rare examples in England, is very handsome and distinct. Of the two Japanese Cypressess, *Cupressus obtusa* is the more valuable, as the wood is more esteemed than that of any other Conifer by the Japanese, who use it largely in afforestation work, but only on the best sites.

Of the *Junipers* in Japan Wilson recognises five species, reducing to a variety of *J. communis* the peculiar Alpine shrub distinguished by *Matsumura* as *J. nipponica*. *J. chinensis*, var. *Sargentii*, is a very peculiar vigorous variety, remarkable for its long spreading stems, which hug the ground. It was introduced in 1892 into the Arnold Arboretum, where it has proved perfectly hardy, and is used for forming neat, low, wide-spreading masses of green foliage close on the soil.

These few notes will show the interesting character of this handsome volume, which is full of information valuable alike to the gardener and to the forester. *J. Henry*

ABNORMAL BLOSSOM ON BLACK CURRANT.

THE Black Currant variety plots at the Wye College Fruit Experiment Station, East Malling, have now been under observation for two seasons. The observations are yielding many useful facts; but perhaps one of the most interesting is the appearance of abnormal blossom. Several plots, notably the North Holland Black and the Lee's Prolific plots, early showed signs of so-called "reversion" or "nettlehead"; but until 1916 all these bushes continued to set some fruit. In the spring of 1916 it became obvious that one bush of Lee's Prolific was conspicuously "nettle-headed"; this was quite apparent early in May, and the bush was kept under observation from that time. During a general examination of blossoms, abnormal trusses were noticed on the bush in question, and on May 24 the inflorescence was described and photographed. The following is the description:—The fruiting spurs of the abnormal inflorescence consist of one or more single blossoms each on a short pedicel (stalk), together with several racemes (trusses of flowers). The abnormal condition of the blossoms differed in the two instances.

The single blossoms were below normal size. A single whorl of irregular spatuloid leaves, reddish

in colour, took the place of petals and sepals, but originated around the base of a superior ovary; in the normal flower, it will be remembered, the ovary is inferior. The pistil was apparent, and there were signs of rudimentary stamens. The ovary was found to be full of ovules, but the blossoms failed to set fruit.

In the case of the racemes, the flowers were not nearly so far developed. On first appearance, as is shown in the illustration (fig. 65), they looked like small unopened buds. A close examination showed that there arose from the peduncle (main stalk), instead of a number of single blossoms, as normally each on its own pedicel, a number of what appeared to be minute buds (often four or five) on each pedicel. These "buds" were almost obscured by numerous threadlike bracts, in the axils of which they were produced; but the buds and bracts were so compact on each pedicel as to give to the naked eye the impression of a single flower bud in an early stage of development. These "buds" were dark brown in colour as if dead.

Both types of abnormal blossom appeared on each "spur," and were fairly frequent over the whole bush, which showed no normal flowers and set no fruit. The blossoms shrivelled up and remained hanging on the bush through the winter, just as the normal stalk often hangs if



FIG. 65.—ABNORMAL BLOSSOM OF BLACK CURRANT LEE'S PROLIFIC. A SINGLE FLOWER WITH SUPERIOR OVARY IS SHOWN AT X.



FIG. 64.—REVERTED BRANCH OF BLACK CURRANT LEE'S PROLIFIC SHOWING THE NETTLE-HEADED LIKE GROWTH AND ABNORMAL TRUSSES OF BLOSSOMS AT THE SPURS

the fruit has dropped off. The bush in question showed no visible sign of "big bud," but was very "nettle-headed." A single "big bud" is now apparent.

Other bushes which had been marked as showing the earlier stages of "reversion" were examined for this abnormal blossom, but none was found. All these bushes had some normal flowers and set some fruit.

It is therefore impossible at present definitely to connect this abnormal blossom with "reversion," and more detailed observations will be made this year. However, it would be

useful to know whether growers of Black Currants have observed these abnormal flowers at all generally, and, if so, whether they have noticed them upon "reverted" bushes. As the blossoming season is at hand, any reliable evidence would be most helpful. If these abnormal blossoms should prove at all common upon "reverted" Black Currants at the stage when they cease fruiting altogether, such information might be of use in discovering the real cause of "reversion." It seems likely that though the condition called "nettle-headed" may be caused by injury to terminal buds, by "big bud," and the "Capped Bud," where "reversion" leads to complete sterility some defect in the flower is to be looked for. *R. G. Hutton and J. Amos.*

TREES AND SHRUBS.

SHRUBS DAMAGED BY FROST

MANY *Azaleas* and *Crimodendrons* in these gardens have been killed by the frost, whilst certain *Rhododendrons*, *Azaleas* of the *Hexa* variety, and some plants of *A. amurensis* have been badly injured. *Abutilon vitifolium* I thought was dead, but I find that growth is breaking from the hard wood. The *Azaleas* have been badly crippled, as have also *Ceanothuses*. Some *Ericas*, including *E. lusitanica*, have been killed, whilst others are in full bloom, quite unharmed. These remarks also apply to *Olearias*. Plants of *Eucalyptus* have been cut to the ground level. *Avicaria retinoides* has been killed outright. *Rhododendron ciliatum* has lost all its flower trusses on some bushes, while others are now showing flower. *Veronica Hulkeana*, though very badly injured, is breaking into growth from the hard wood. A handsome plant of *Berberidopsis corallina* has been killed outright. *W. A. Cook, Abbot's Wood Gardens, Godalming, Surrey.*

SAXIFRAGA APICULATA VAR. ALBA.

S. APICULATA is a well-known early-flowering species which has been grown under various names, including *scardica* and *Malyi*. It is evidently a hybrid between *S. sancta* and *S. Roeheliana*. The influence of the latter parent is partly proved by the appearance some seven years ago in three or more different gardens of

the white variety (see fig. 66) amongst patches of the yellow *apiculata*. The albino is a free-growing, floriferous plant of the same habit as the type, the pure white flowers being produced in loose heads of three or four. Both forms are valuable for the rock garden, where they look best planted in rock crevices, although they do equally well on flat ledges. *S. apiculata* is also suitable for pot cultivation; specimens flower very early in an Alpine house and last for a long time in bloom. *W. L.*

ON INCREASED FOOD PRODUCTION.

PLANTING POTATOS.

I HAVE always planted all varieties of Potatos in rows, two feet apart, and at a distance of one foot between the sets. At Bletchley Castle gardens last year the variety Evergood grew thirty-three and a half inches in height, and was a perfect thicket of stems all over the plot, yet the result when lifted was 22 tons 2 cwt. of ware and seed per acre, and 4 tons 7 cwt. of small tubers. I do not consider this would have been exceeded by wider planting. No disease attacked the tubers; although other varieties near it were able to do the maximum growth made by the tops in 24 hours was 2½ inches. Factor, a variety which produces only a moderate amount of haulm, growing by the side of Evergood gave 11 tons 6 cwt. 3 qrs. per acre of ware and seed, and 2 tons 3 cwt. of small tubers; also 1 ton 8 cwt. diseased tubers of various sizes. This gave a total of 14 tons 11 cwt. 7 qrs. per acre against 26 tons 9 cwt. of the more generally growing variety. The plants were grown in strong soil overlying lias clay, and were given every encouragement in the way of cultivation and manure; it should be noted that Evergood is not of first-rate quality when cooked. Experiments made at Ketton Hall with various manures, some 25 or 30 years ago, gave 12 tons 2 cwt. of ware and seed, and one ton of small tubers per acre, as the highest yield. The crop was under field cultivation on a shallow soil—6 to 9 inches deep overlying oolite lime stone, the variety being Magnum Bonum. *W. H. Dimes.*

LAWNS AND THE FOOD PROBLEM.

IT would be interesting to know, when one visits a country, your own or abroad, Mr. Lovett, produced 30 lbs. of dried Beans from 1 lb. of seed, as stated on p. 166. Such statements appear somewhat outrageous to the world's food producer, and may result in the unnecessary waste of valuable land. My experience in this country in producing dried Beans as a source of food for winter use is that they are a very precarious crop, and nothing like so productive and adaptable to our climate as the Pea when grown and used for a similar purpose. *G. H. H. W.*

FOOD PRODUCTION BY SCHOOL CHILDREN.

At Abergavenny, in Wales, 24 acres of land have been rented and laid out in narrow rows for Potatos. Nearly every child in the higher departments of the public elementary schools has taken a row, paying 7s. in 28 weekly instalments of 5d. each to cover the expenses. The organisers of the scheme arrange for manuring, ploughing, moulching and haulage; while the children will be expected to set the Potatos, clear the rows before moulching, lift and peck the crop, and put it into bags. It will then be delivered at their homes. Some £100 rows have been taken, and it is hoped that about 120 tons of Potatos may be obtained from the 24 acres.

POTATO CROPS.

I HAVE grown Potatos in gardens with soil varying from almost pure sand to ground overlying the red sandstone, and as heavy as brick earth a foot or so under the surface. In all

cases I would be guided by the nature of the soil and the surroundings, as to the distances between the rows and sets. I have never planted late or main crop Potatos in the garden, but relegated them to the field. Even where we had 11 acres inside the garden walls and more ground outside, those planted in that garden were first and second earlies, not mid season ones, if I may be allowed to use the expression. When Sutton's Magnum Bonum was first sent out as a strong-growing white kidney, suitable for field cultivation, we planted it in the fields on the home farm, with good results. I have dissuaded hundreds of would-be planters from growing main crop Potatos in gardens, and particularly those who desire to plant them 3 feet apart and then plant a row of Brussels Sprouts or some other member of the Brassica tribe between them. Mr. E. Beckett (p. 171) in advocating a space of 3 feet by 20 inches for all main crop varieties must refer to rich and deeply cultivated soils. If he refers to field culting the land in his district must be in very fine condition indeed, otherwise the Potatos would never cover the ground. I have been observing the Potato

A powerful foreign engine is arranged to pull, not a plough, but the draining tool. This consists of a round steel plug about 3 inches in diameter. It is fixed to the bottom of a strong coupler or knife, the top of which is attached to a frame mounted on wheels. When pulled by the engine or its wire rope, the frame runs along on its wheels, the coupler makes a cut in the soil, and the steel plug, two feet or so below the surface, is dragged through the solid clay, leaving an open 3 inch channel behind it. The cut made by the coupler soon closes up, but the 3 in hole remains, and makes an effective drain something like a mole run. It will last for 10 to 20 years.

The mole drains may be laid seven or eight yards apart, but if the land lies in ridge and furrow, the drains must follow the lines of the furrows. It is usual to form the main drain of the field with pipes, and let the mole drains run into them. But, if necessary, for the time being, the main can be made a mole drain also, or the small drains run straight into a ditch, so that pipes can be dispensed with altogether till peace returns. Before the war, the cost of mole



FIG. 66. SAXIFRAGA APICULATA ALBA. (Photograph by C. P. Raffall.)

has not only to be plough in Middlesex and Surrey for many years past, and could not understand why they were so poor. Only within the last few years have I seen a satisfactory crop of Potatos in the field, and that was on chalk. The modern race of Potatos is of greatly increased vigour, and that may be beginning to tell in farm culture in the home counties. Mr. Beckett did not say how many stems he allows on his sets. That would have some bearing on the size of the tubers. *J. F.*

MOLE DRAINING.

FARMERS, whose land is heavy often lose by undrained fields, or fields where old drains have become choked. But pipes cannot now be obtained, and there is no labour to lay them if they could be got. In many cases, the trouble could be met by the cheap system of mole draining, as carried out in Essex and other south-eastern counties. To make mole drains a success, the subsoil must be a fairly stiff clay, with no big stones or pockets of gravel; it must neither be quite flat nor of irregular, hilly surface, and the work must be done when the top is dry and firm, and the subsoil moist, a condition often found in April and May.

draining was from 20s. to 25s. an acre, and this cost was often covered by the improvement in the crops of the first year. Farmers with suitable clay land, whether grass or arable, who have not the necessary tackle themselves, should get their County War Agricultural Executive to arrange for the mole draining of their fields.

BRUSSELS SPROUTS.

THE value of Brussels Sprouts has been proved during the recent severe winter in a marked degree, but, as *R. M.* points out, the plants need a long season of growth. A method of cultivation which has never failed here, but has enabled us to pick Sprouts from late September till April, is as follows: A frame is placed upon a mild hotbed, and filled with silted soil from the potting shed. The compost is made firm, and the seed sprinkled thinly on the surface, covered lightly and watered with a rose can. The frame is covered with a mat until the seeds germinate, and afterwards ventilated fully. As soon as the plants have made two rough leaves, a space in the garden about six feet wide is edged with nine-inch boards, the ground well raked, the seedlings pricked out about four inches apart, well watered, and covered with an old

fish net. The plants are damped overhead on warm days, and well watered at the roots occasionally. They soon make fine plants, and are ready for planting out when the leaves touch one another. I always plant second early Potatoes four feet apart on ground, choosing, if possible, land that has been recently cropped with Celery and Leeks. As soon as the Potatoes are through the soil, the Brussels Sprouts are planted between the rows, eighteen inches apart. The Potatoes may be earthed up without harming the Brussels Sprouts, and when the former are dug, the soil can be drawn up in turn to the stems of the green crop, thus giving them support until they are staked for the winter. Staking is beneficial as the plants yield much better if kept upright, and the space between the rows is utilised for late Turnips. It is a mistake to plant Sprouts closely as the stems lose much foliage; besides, the damp from the leaves in autumn makes picking inconvenient. The variety Veitch's Exhibition gave us stems between four and five feet long, with very firm Sprouts from top to bottom. If the Sprouts are not picked too close to the stem, they will develop a second crop of greens. Cudworth Rosette and Hardy Green have proved invaluable this winter, and were not injured in the slightest by frost, but Spring Cabbages are a sorry crop. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

BRUSSELS SPROUTS.

It is to be hoped that the planting of Brussels Sprouts will not be lessened by the statements in the R.H.S. pamphlet (see pp. 161, 171), although they may be true in respect to light and open soils. The figures given in the *Gardeners' Chronicle* (page 171) by the authors of the pamphlet, comparing the yield of Savoys and Brussels Sprouts per square rod, are convincing enough as to the relative produce values of the two crops. Yet, if I were asked to grow only one green crop for yielding a continuous supply during winter, I should select Brussels Sprouts as being the safest crop. From the point of view of the cottager and allotment holder, one favours the growing of Brussels Sprouts for a winter crop, and they are the easiest, cheapest, and safest crop, giving a succession of produce on the "out and come again" principle.

To grow good Savoys that will give a supply until March, at least three varieties are required, and the seeds used must be obtained from a very reliable source, otherwise failures by non-heating or by bolting may be experienced. Three varieties will mean three separate packets of seeds, which will also mean a surplus of seed unless the allottees co-operate. I do not recommend the buying of plants unless the source of the seed is guaranteed. The ultimate crop of Savoys will depend a great deal upon the state of the weather at planting time in June and July; if the young plants suffer from drought they will not develop good heads. According to the weather in winter each batch of Savoys may require to be utilised at once; this would be a great trouble to the cottager, and again if the weather in January and February is too mild, the late batches will bolt to seed and rot heart in at all. When comparing the Savoy with the Brussels Sprout, it seems that the Sprouts have the advantage by cropping more or less perpetually, especially if one is careful to pick only the lower and most open Sprouts on each plant, leaving the top intact until the last.

To those anxious to include Brussels Sprouts in their allotment scheme, I have suggested that they should raise plants by sowing seed early in March and pricking the plants out towards the end of April, one foot apart, with eighteen inches between the rows. This ensures very sturdy plants, which will produce Sprouts quite near the ground. As soon as the early Potatoes are being lifted the plants of Brussels Sprouts are transferred to the Potato ground; they should be taken up with a good ball of soil by means

of a spade and planted as soon as possible to prevent flagging. The distances I recommend are two feet or two feet six inches between the plants, and if the Potatoes are in rows, two feet apart, let the Brussels Sprouts be planted in alternate rows, that is, four feet apart. Between the rows of the earliest-planted Brussels Sprouts, Beetroot might be grown; the roots usually come large enough this way; the later-planted Brussels Sprouts could be intercropped with Spinach, Turnips, or Lettuce, as the demand required.

In autumn, when these "snap" crops are over, Spring Cabbages could be planted at eighteen inches apart, then in the following spring, after the Brussels Sprouts have become useless their place could be taken by Dwarf Beans, or even trenches made for Celery and Leeks. On larger plots the system of cropping might be: after Peas, dig and manure liberally, and in spring sow Spinach, Turnips, Early Beetroot, or plant Lettuces in rows, three feet apart. Raise the Brussels Sprout plants as suggested above, and plant them out at the end of May, between the "snap" crops, allowing two feet six inches between the plants, and three feet between the rows. The temporary crops are away before the leaves of the Brussels



FIG. 67. HYBRID BETWEEN THE SAVOY AND BRUSSELS SPROUT.

Sprouts get large. Liquid manure or dry poultry manure may be given at intervals up to mid-August to assist the plants to grow tall with strong, straight stems. All decayed leaves must be removed during autumn and winter to allow the Brussels Sprouts to dry.

After the Brussels Sprouts, dig in any waste leaves and shoots (not the roots) and crop with Potatoes or utilise the ground for Leeks and Celery.

When the authors of the R.H.S. pamphlet considered the question of Savoys versus Brussels Sprouts, I wonder whether they thought of a compromise by using the "Savoy Sprout" (see fig. 67). It will be a very useful vegetable when it has a longer stem, and this feature is sure to come with selection. *A. D. T.*

NETTLES AS A VEGETABLE

IN view of the shortage of green vegetables, the common Nettle may be made use of as a substitute for the next few weeks while the shoots are tender.

The green tops, cut 6 inches long, well washed, and boiled for twenty minutes in a small quantity of water make a most appetising dish much resembling Spinach; indeed, in the opinion of some, superior to that vegetable. *E. M.*

The Week's Work.

THE KITCHEN GARDEN.

By J. DUNN, Foreman Royal Gardens, Windsor.

LEEKS.—If seeds were sown in February with a view to producing large Leeks the plants should be ready for planting permanently. Narrow trenches may be prepared in the same manner as for single rows of Celery, digging a quantity of decayed manure into the bottom of the trench. Lift the plants carefully, and set them 18 inches apart in the rows. After the planting is finished water the plants to settle the soil about the roots. As the season advances, place soil carefully around the stems, until the trench becomes filled with earth. The crop should receive liberal supplies of liquid manure throughout the summer; one of the best times to apply this stimulant is just previous to earthing up the plants. Good Leeks, suitable for ordinary purposes, may be grown without trenches, provided the ground has been trenched, and well enriched with decayed manure. In this case set the plants in rows, made 18 inches apart, allowing a space of 1 foot between the plants in the rows. Another good way of growing Leeks is to make deep holes with a dibber, and drop the plants in the holes to the full depth of the stem, with just sufficient crumbling soil to cover the roots. The Leek is very hardy, and is often available when most green vegetables have been destroyed by frost.

SCARLET RUNNER BEANS.—Runner Beans form one of the most remunerative of crops, and will repay for extra labour incurred in a thorough preparation of the soil and care of the plants in their early stages. They should be planted in ground that has been trenched and manured during the winter, and allowed to remain rough on the surface until the time of planting. Early pods may be had by sowing seeds in 4 inch pots now, and growing the seedlings in a cool structure until it is safe to transplant them in the open. They will need protection both from rough winds and frosts for a time. The main sowing may be made in the open about the middle of May. It is important that the sticks be placed securely in the rows as soon as the plants are large enough to require support. Scarlet Emperor and White Emperor are two reliable varieties.

FRENCH BEANS.—An early crop of French Beans may be obtained by sowing in beds in cold pits. If the soil has been used for other crops during the winter it should be dug deeply and manured. Plant the Beans in shallow drills, covering them lightly with fine soil. Keep the pits closed until the young plants show through the surface, when a little air should be admitted during favourable weather, and some protection given by night. Beans may also be sown in small pots, and raised in heat with a view to planting them in cold pits. Plants in pots from which roots are being gathered should be given liberal supplies of liquid manure, and syringed twice daily to keep red spider in check.

CAULIFLOWERS.—All Cauliflower plants which have been wintered under glass should be planted out at once, or they may become stunted. Water them carefully before they are put out, and again when planting is finished, continuing to give careful attention to this matter until they become established. Frequent applications of manure water at the roots while the plants are growing will favour their development. Cauliflower plants in large pots should be stimulated by frequent light dressings of guano, or waterings with liquid manure from the farmyard. Seeding Cauliflowers, Brussels Sprouts, and spring-sown Cabbage should be transplanted into nursery beds as soon as they are of sufficient size for shifting.

POTATOES.—Main Crop and late Potatoes should be planted with as little delay as possible. Pulverise the ground thoroughly, and allow plenty of room for the plants to develop. Strong-growing varieties require a space of 3 feet between

the rows, and at least 15 inches between the sets in the row. Exercise great care in handling the tubers not to break the young shoots. The seed-tubers of all varieties are making shoots and should be afforded much ventilation to prevent the "spears" from becoming spindly. As soon as the shoots of the earliest plants show through the surface, protect them from frost by applying a covering of some light, dry material, which should be kept in readiness for the purpose. Keep the soil drawn close up to the stems, but do not allow it to cover the tops.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcott, Eastwell Park, Kent.

GLOXINIA.—The earliest plants of Gloxinia are developing their flowers. Place them close to the roof-glass in order that the flower-stems may grow firm and erect. When the pots are filled with roots, use a small quantity of artificial manure and a little soft water weekly. Seedlings raised from seed sown last January should be repotted when they are well rooted, for if they become pot-bound they will receive a check to growth. Gloxinias grown in a moderate temperature, staked thinly, and grown in plenty of light, develop firm foliage and give fine blooms over a long period.

WATERING PLANTS IN POTS.—At this season, when many plants have been repotted, and are not re-established in the new soil, great care and judgment are necessary in watering. The danger is greater now than the care of the plants is, in many establishments, in the hands of inexperienced assistants, who, at the slightest sign of dryness on the surface of the soil are apt to use the water-can. Once a plant falls into an unhealthy condition through over-watering, it is a hard matter to restore it. Soil used for potting should be sufficiently moist just to hold together when pressed in the hand. It will then contain sufficient moisture for the majority of plants for several days. In hot, sunny weather, light sprayings will be needed to keep the plants fresh. When the roots and moisture they should be well soaked, and this should suffice for some little time. Plants should never be repotted when the soil is dry. If possible, they should be watered thoroughly the afternoon previous to potting, thus giving time for the surplus moisture to drain away. Plants that have been resting all the winter, and with comparatively little foliage, require very little moisture at present than a daily spraying. As growth increases, increase the amount of water to the needs of the plant. Large Palms, Cordulines, and other specimen foliage plants, that have been growing in the same pots for several years, require a greater amount of moisture. Cyclamen, Isopetes, Pansies, and other grasses, that are usually grown in small pots, can never be kept in a good condition without an abundant amount of water at the roots. When the pots are filled with roots, the soil must never be allowed to become dust-dry, or the plants will quickly become shabby.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

COELOGLYNE.—Plants of *Coeleglyne cristata* and its varieties that have been afforded a short period of rest since passing out of flower are starting into growth, and may be repotted, but as these plants are impatient of frequent root disturbance they should not be repotted unless it is absolutely necessary. Large specimens may be afforded bigger receptacles, and those in an unhealthy condition divided and the sound portions potted separately. In repotting shake the old soil from the roots, and remove the useless pseudo-bulbs, leaving only four healthy pseudo-bulbs behind each leading growth. A number of these leading shoots may be placed together, more or less according to the size of the specimen desired. Pansies of medium depth form the most suitable receptacles, and they should be half-filled with clean crocks to ensure perfect drainage, covering the crocks with a layer of Sphagnum-moss. Arrange the com-

post highest in the centre, and direct the young growths towards the middle of the plant, pressing the materials moderately firmly about the rhizomes. A suitable rooting medium consists of rich fibrous loam and Osmunda-fibre in equal proportions, removing the finer particles and adding a liberal quantity of crushed crocks and Sphagnum-moss. Grow the plants in a shady position in a house having an intermediate temperature, and give them very little water until the roots have made considerable progress, and the pseudo-bulbs have regained their plumpness. At a later stage they should be given abundant supplies of moisture, and sprayed frequently overhead. If a plant is in a healthy condition, and does not require repotting, remove some of the old compost from the surface and replace it with fresh material. Such portions as may be projecting over the sides of the pots should be trained towards the centre of the plant and pecked to the compost.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR DAVY, Abbots Wood, Glastonbury, Strury.

DISBUDDING PRACH AND NECTAR TREE.—As soon as the trees are sufficiently advanced the work of disbudding, as the removal of superfluous shoots is termed, should be commenced. Remove all foreign and useless shoots, and see that a strong "break" is left at the base of each remaining shoot or branch, for it is these that will form the fruiting branches of the following season. Leave at the apex of each growth a suitably placed leader, which, if not required for extension, may be stopped at a later period. In the case of young trees, leave as many growths as are necessary to furnish the main spurs, taking care, however, not to train more than are required. Arrange the shoots thickly and evenly in order that the wood may become thoroughly ripened. Do not hesitate to remove fruitless branches, as these trees will be gradually occupied by new growths. It is at this season that over-crowding of the branches becomes apparent, and as crowded branches often harbourers of insect pests, and develop only puny fruit, and impede the free impartment of proper nutrition of the growths, cannot be over-estimated. Disbudding should not be completed at one operation, but the trees should be gone over three or four times, removing the stronger shoots first, and after that the weaker ones.

NEWLY GRAFTED TREES.—Examine the scions and shoot carefully, and take measures to support the main shoots, and guard against strong winds. The shoots may be tied to small stakes inserted in the ground. Another method, where the stocks are seedlings growing in pots, is to insert strong stakes in the soil at intervals and fasten Bamboo-rods across the top. The small upright stakes may be tied to the cross-pieces and the shoots secured. On dry days spray the grafts with lukewarm water. Keep the soil stirred with the hoe and free from weeds.

FRUITS UNDER GLASS.

By JAS. HINSON, Gardener to Mr. Leonard de Rothschild, C.V.O., Gonesbury House, Aton, W.

VINERIES. I am more than ever convinced that it does not pay to start permanent Vines before the New Year. More especially is this true in gardens where fogs are frequent, and the atmosphere much laden. Pot Vines are best for obtaining early bunches, but these are somewhat costly. The berries are colouring, but no attempt should be made to hasten their ripening; rather keep the temperature somewhat lower. If the temperature of the house is 65° at the time the fires are banked, and a little air admitted through both the top and bottom ventilators, the berries will finish well. These remarks apply also to early permanent Vines, with Grapes commencing to colour. Where, in later Vineries, the berries are swelling after stoning, do not allow the Vines to make an undue amount of growth, but stop the shoots freely. It may be advisable, however, to allow a little latitude in this respect to obtain an equal distribution of leaf-growth without crowding. Keep a sharp watch for red spider

and syringe the Vines freely with water directly the pest is detected. Do this at the time of closing the houses. The shoots of Vines in this stage of growth should be tied to the wires. The thinning of the bunches on later Vines should be done forthwith. I do not approve of the tying up of the shoulders of large bunches, there is no practical utility in such a practice; far better reduce the size of the bunches at first.

CHEERRY TREES IN POTS. Cherries have set remarkably well in these gardens on pot trees, and the fruits are swelling fast. The bunches have been cleared of the scales at the base around which a few caterpillars often harbour. To destroy this pest, and to guard against attacks of aphid, the house has been fumigated. With milder weather no fire heat will be needed. Our earliest fruits are showing colour, the variety being *Gaigue d'Annonay*. The plants need a top-dressing, and will be given a mixture of Hop manure, manure from a spent Mashroom-bed and turf loam. The compost should be used on the damp side in order that it may cling together when pressed in a ring around the top of the pot. Water freely trees that are bearing well, and feed them on two or three occasions with weak liquid manure, at a strength no darker in colour than sherry wine.

THE FLOWER GARDEN.

By W. J. GUSE, Gardener to Mrs. DEMSTER, Keele Hall, Staffordshire.

DAHLIA. Shift young Dahlia plants into larger pots, as they require more room; steady growth and plenty of water are essential to success. The points of the shoots should not be pinched out, but a neat stake placed to each plant. Occasional syringings with an insecticide will keep the plants free from aphid. Place the old tubers in cool frames, and cover them with a light compost. The roots may be divided now or at a later period.

NYMPHAEA. During the next few weeks Water Lilies may be divided and replanted, and it will facilitate the work at the lake or pond in which they are grown is emptied. The lakes at Keele are in a valley, and each can be emptied independently of the others. If the depth of water varies, plant the shallow parts with varieties that are the least robust and with compact habit, reserving the deeper parts for stronger growing sorts. For most varieties a depth of 2 feet is suitable. Shallow baskets form the best receptacles in which to plant, and light perforated tubs, boxes, or even sieves are also suitable. Filling these, moulds may be made with stones with the tops situated just below the water level. The plants should be tied in the receptacles, which should be filled with rich, fibrous loam. After the plants have been sunk in the water no further attention is necessary beyond removing decayed foliage, dead flowers, and rubbish. Established plants will readily respond to top-dressings of fresh fibrous loam. A few of the best varieties are *Nymphaea sanguinea* (black), *N. Gladstoniana* (white), *N. Froehlii* (purple), *N. Elliana* (purple), *William Dawson* (pale pink), and *N. Ladykeri* (pale green). The last-named should be planted in shallow water. Nymphaeas may be raised from seed sown under glass in pots filled with a heavy compost; place the pots in tubs containing sufficient water to just cover the surface. Change the water occasionally. Place the seed lines in small pots directly they are large enough to handle, returning them to the tubs immediately. Shift them into larger pots as required and plant them in the lake when they are of a suitable size.

PLANTING HOLIBES. If care be taken to lift specimen Holibes with a good ball of soil success in present planting will be assured. Syringe the roots with clear water directly the plants are lifted to keep them moist until they are again covered with earth. Ram the soil firmly around the ball of roots, and water the litter liberally directly planting is finished. A mulch of moisture-retaining material spread over the roots will be beneficial. In dry weather syringe the plants daily for a week or ten days after planting.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W. C.

Editors and Publisher.—Our correspondents would oblige by not delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction in gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication. as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last 20 years at Greenwich, 51.6°.

ACTUAL TEMPERATURE—*Gardeners' Chronicle* office, 41, Wellington Street, Covent Garden, London, *Thursday*, May 3, 10 a.m. Bar, 29.8. Temp. 41.5°. Weather, Sunny.

SALES FOR THE ENSUING WEEK.**WEDNESDAY**

Herbaceous Plants, Rhododendrons, Roses, Clematis, Begonias, Gloxinias, and Lilies, by Protheroe & Morris, at 65 and 67, Chispeale, E.C.4, at 12 o'clock.

Fumigation with Hydrocyanic Acid Gas.

The conclusion reached by Messrs. Samsel and Borden¹ is one which has been already

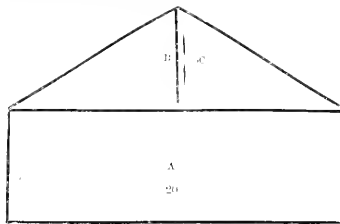
urged in these pages, that hydrocyanic acid gas (hydrogen cyanide) is, in competent hands, a safe and certain means of destroying all—or almost all—the insect pests found in greenhouses, including thrips, aphides, white flies and scale insects.

The authors recommend the use of porcelain or glazed earthenware jug-shaped jars as generators, and advise that the jug should be provided with a corrugated cover of copper or corrugated iron, the grooves of which allow the gas to escape more gradually than is the case when open jars are used.

Other appliances required are a balance, reading to 1-10th ounce, an 8 ounce graduated jar for measuring acid and measuring acid and water, and bags or tissue paper in which to place the cyanide.

Before fumigating, replace all broken glass in the greenhouse and seal all cracks; adjust the ventilators so that they may be opened from the outside of the house after

fumigation is finished. The authors give the following simple method for finding the cubic contents of the house: Make a sectional plan, thus:—



Area of section = A + B + C.

$$\text{Area of A} = 20 \times 5 = 100 \text{ sq. ft.}$$

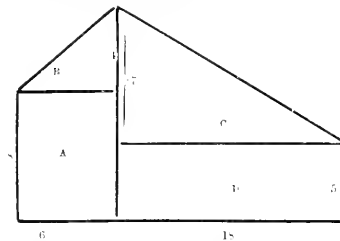
$$\text{.. B} = 10 \times 5 = 25 \text{ ..}$$

$$\text{.. C} = 10 \times 5 = 25 \text{ ..}$$

150 ..

150 × length = cubic contents (feet).

If the house be 12 span:—



Area of section = A + D + B + C.

$$\text{Area of A} = 6 \times 8 = 48 \text{ sq. ft.}$$

$$\text{.. D} = 18 \times 5 = 90 \text{ ..}$$

$$\text{.. B} = 6 \times 4 = 24 \text{ ..}$$

$$\text{.. C} = 18 \times 7 = 126 \text{ ..}$$

$$\text{.. D} = 18 \times 7 = 126 \text{ ..}$$

213 × length = cubic contents (feet).

Do not fumigate earlier than one hour after sunset nor in windy weather. Choose a night neither very cold nor very warm, for the best results are obtained between 55° and 68° Fahr. When the house contains a mixed collection a light fumigation only is safe, and this will not destroy eggs. Hence a second fumigation must be given after eggs undestroyed by the first have hatched out. The materials are sodium cyanide, sulphuric acid, and water.

Sodium cyanide may be bought in 1 ounce lumps, must be kept in airtight tins labelled "Poison," and stored in a safe place. It must contain 51 per cent. cyanogen. Commercial sulphuric acid (about 1.84 specific gravity or 66° Baumé), 93 per cent. pure, gives satisfactory results. Keep it in glass-stoppered bottles and store them in a safe place. If spilled on the hands or clothes it burns them seriously.

Tender succulent plants are more susceptible to injury by hydrocyanic acid gas than are woody plants. When delicate plants are among those to be

treated, use the fumigant at the rate of $\frac{1}{4}$ ounce of sodium cyanide per 1,000 cubic feet. The authors eradicated white fly with three successive fumigations at intervals of seven or nine days by using $\frac{1}{2}$ ounce of sodium cyanide per 1,000 cubic feet, in houses containing Coleus, Ageratum, Heliotrope, Fuchsia, and similar plants, and the foliage was uninjured. Houses which do not contain Roses, "Asparagus ferns," Verbena, Antirrhinum or Sweet Peas, may be treated with $\frac{1}{2}$ ounce sodium cyanide per 1,000 feet.

Cattleya Trianae suffered no injury from fumigation with this strength for one hour. Chrysanthemums, on the other hand, were burned severely. Adiantum, Lastrea, Nephrolepis and Polystichum were uninjured by fumigation with $\frac{1}{4}$ or $\frac{3}{8}$ ounce sodium cyanide. For each ounce of sodium cyanide use 1½ fluid ounce of sulphuric acid and 2 fluid ounces of water. Having fixed on the amount to be used in each generator so that the total amounts are those required for the whole house, add to each generator just the measured quantity of water, and after that the measured quantity of sulphuric acid; then, having previously weighed out the requisite amounts of sodium cyanide and having wrapped each in a paper bag, carry the bags to the end of the house furthest from the door and drop gently but quickly a bag of sodium cyanide in each generator, and in no case stop during the operation until outside the closed door of the house. It is best to place generators at every 20 or 25 feet. Short exposures with greater strengths are better than long exposures with a weaker strength of fumigant. One hour is generally a satisfactory period.

Ventilate thoroughly after fumigating and before entering the house. With a breeze, ten to fifteen minutes is sufficient, but on a still night allow double the time to elapse. Do not fumigate when the temperature is above 70° F. or below 55° F.—at all events, not below 50° F.

Light increases the chance of injury. Therefore fumigate at night, and if on the following day it is very sunny shade the house.

Much moisture in the house will not increase the risk of damage to the plants, but since the gas is soluble in water the strength will be reduced. It will be best to syringe the plants four or five hours before fumigating them, so that any excess of moisture will have time to evaporate.

If the air is very moist and also very warm—70° to 75° F.—the foliage suffers, but at 60° to 65° F. high humidity (98° to 100°) produces no damage to the plants. It is a great advantage to have a fumigating box of a capacity of 200 cubic feet in order to test the strength of fumigant that a particular class of plant will stand.

Finally, the authors of this valuable bulletin make the interesting observation that the growth of many plants is not only uninjured, but actually stimulated by fumigation with hydrocyanic acid gas.

¹ Fumigation of Ornamental Greenhouse Plants with Hydrocyanic Acid Gas. Bull. 513, U.S. Dept. of Agric.

"PETER BARR" MEMORIAL CUP.—As we announced last week, the Narcissus Committee of the Royal Horticultural Society has awarded the "Peter Barr Memorial Cup" to Mr. WALTER F. WARE, of Inglestone, Bath. It will be remembered that this cup was established as the outcome of a wish of some of the late Mr. BARR's admirers to do something to perpetuate his memory, and a joint committee of the Floral and Narcissus Committee of the R.H.S. was appointed to carry out the project. This joint committee placed the cup in the hands of the R.H.S. to be awarded every year by the Narcissus Committee to anyone who, in its opinion, has done good work of some kind on behalf of the flower.

FRENCH HORTICULTURE AFTER THE WAR.—Our contemporary, the *Revue Horticole*, reports an address given by Monsieur CHEVENEY, vice-president of the Société Nationale d'Horticulture de France, and president of the Union Commerciale des Horticulteurs et Marchands crémiers de France. The address was given before the Association Nationale d'Expansion Economique, and contained a programme of measures which he suggested should be taken after the war, in order to restore French horticulture, and still further develop it. Monsieur CHEVENEY recommended, among other things, a protective tariff, special railway rates for produce, the reorganisation of approved novelties, the suppression of the system of foreign middlemen, the capture of markets beyond the French frontiers, a complete commercial organisation, and the diffusion of horticultural instruction.

POTATOS IN ICELAND SEVENTY YEARS AGO.—How capricious the Potato plant was, last year, you will see by the enclosed extract from a German paper, which announces that of all places Iceland was particularly favoured with good Potatoes. "According to news from Iceland that island was visited last autumn by a variety of successive epidemic diseases, among others a bloody flux, which some considered as a consequence of the eruption of Mount Hecla. Mortality was generally very great. In the autumn and winter of 1846 and 1847, smoke was observed to issue from the volcano. In Reikjavit, and the neighbourhood, earthquakes were felt on the 15th February, and on the nights of the 20th and 3rd of March, and alarming movements were experienced at Reikjafj in the parish of Hlíðuvæli, so that the houses, beds, and everything that was loose fell down. It is, however, worthy of remark that the cultivation of Potatoes seems to be not very extensive in this island, was extremely successful last autumn, and the crop was so much so that the exportation of thirty tons of the manse of Loevavatn, in the northern district." *Gardener's Chronicle*, May 1, 1847.

APPOINTMENT.—The Secretary of the War Office has issued the following item of news:—Mr. J. A. COOPER, agent for Sir JESSAY GARRIBER, Lassadell, Sligo, Ireland, has recently been appointed to take charge of the new Raw Materials Finance Branch, which deals with the business of such matters as Home and Colonial wool, hides, flax, jute, hemp, and timber.

WOMEN AND THE LAND.—The Board of Agriculture has appointed the Women's National Land Service Corps as agents for the organisation of women workers for temporary unskilled agricultural work. The chief need at present is for supplementary labour in places where local labour is scarce, to secure the adequate weeding of crops, and, later, the harvesting of Corn and fruit.

SALE OF THE WALTON GRANGE ORCHIDS.—The sale by MESSRS. PROTHROBE AND MORIS last week of the collection of Orchids formed by the late Mr. WILLIAM THOMSON was very successful, both trade and private buyers being well represented. The total amount realised was just under £2,500. *Odontoglossum*, for which the collection was noted, realised good prices. *O. crispum* Solms fetched 60 gs.; *O. c. Palatine*, 44 gs.; *O. c.*

Alabaster, 30 gs.; *O. c. Perfect Gem*, 20 gs.; *O. King Albert*, 50 gs.; *O. Waltonense* Alabaster, 35 gs.; *O. Walton Gem*, 36 gs.; and other hybrids from 20 gs. to 55 gs. each. *Cattleya Lady Vetch* 50/4 for 54 gs., *Cypripedium Acteans Bianca* Westonbury variety 22 gs., *C. Desdemona* 26 gs., and *C. Waltonense* magnificent 20 gs.

IMPORT OF BULBS FROM FRANCE. French bulbs growers are uneasy lest the prohibition on the import of bulbs from foreign countries into England be extended, during the current year, to apply to France, which has hitherto been excepted from the general prohibition. The growers have prepared their crop for 1917, and feel that it would be a hardship, involving huge loss, if the harvest were excluded from these islands. Several of the larger organisations representing the interests of the bulb growers approached the French Government on the subject. Monsieur CLUMESTER replied that he had placed the matter before the English Government, representing to them

in this way that certain plants without having fires at all. When there are only occasional outbreaks of sunshine, the restricted ventilation sustaining the heat during the dull periods. The growth that plants make under sun-heat is healthier and more vigorous than that produced in considerable artificial heat, which, if employed in excess, causes great mischief. Nothing contributes more to the benefit of Orchids, stove and other hot-house plants than high temperatures that result from sun-heat, especially in spring and autumn. Excellent crops of Cucumbers have been grown in un-ventilated houses heated by sun-heat, and with very small amounts of manure forming the hot-beds inside. Much might be said on the subject, but as the requirements of different gardens vary much, it will suffice at the moment to call attention to the subject. Owing to the war, many plant-houses will be diverted from their customary use, and by utilising sun-heat and providing hot-beds they may be employed to provide food crops, and much of the necessary work, provided it is properly supervised, can be



FIG. 66. *SOLM-SOLMIFLORUM*. FLOWERS WHITE (80 p. 186.)

the advantages of permitting the entry into Britain of the products of the French bulb growers.

THE VALUE OF SUN HEAT.—There is every reason to believe that greater use could be made of sun-heat for maintaining the temperature in glass structures employed for growing plants and fruits, and in view of the present need for economising fuel, gardeners should give the question their serious attention. In many gardens there might be greater restrictions on the ventilation of the houses, especially in the spring, when, owing to the presence of cold winds, ventilation is by no means an unmixed blessing. At such times ventilation from the bottom ventilators will generally be sufficient, some escape at the top being provided by the laps in the glass and other small openings. On bright days, before the sun becomes powerful, check or damp down the fires, as these will not be needed again until the afternoon, damping down the floors and closing or partly closing the ventilators in order to maintain the required temperatures. In summer much can be done

carried out by means of unskilled labour. There is just one point on which a word of warning is necessary, namely, the danger there is in reducing the ventilation on sunny mornings for the purpose of increasing the temperature. The higher the temperature, the more moisture is necessary, and in its absence scorching would be bound to follow.

WAR ITEM. Private Alfred Davis writes us as follows: "I thank you for posting me the *Gardener's Chronicle* each week to Mesopotamia, where it is read with much interest by me and my comrades who in civilian life are gardeners. My address is 'Somewhere in Mesopotamia,' as usual. I shall be glad to hear from any of the Inwood boys who are now serving their King and Country in the various theatres of the war. Some of us who used to be at Inwood will, I hope, meet again after the war, unless we get a 'top-dressing,' as we say in gardening language. No doubt many gardeners will be glad to see their men back from the wars." I see by the *Gardener's Chronicle* that many of the large gardens in England have sent

all their staff, so our head gardeners will be much overworked, especially at this time of year. However, instead of thinning Grapes, we have to now thin the enemy, and we hope to "top dress" him heavily. I wish the old paper every success."

SEDUM RARIFLORUM.

THE distinct Chinese sports of *Sedum*, illustrated in fig. 68, has a perennial woody root-stock, and produces numerous annual stems. The shoots are well furnished with narrow, green, sharp-pointed leaves, and terminate in an inflorescence of satiny-white flowers. Unlike the majority of the members of this genus *S. rariflorum* is of a neat, attractive habit, with stems from 4 inches to 6 inches high, forming a compact, bushy-like tuft. The plant is quite hardy at Kew, having survived the recent cold winter in the rock garden, and is now coming up strong again. Specimens were received at Kew from Mr. F. N. Meyer, of the American Legation in Peking, who found it in the Chihli Province in Northern China in 1913. They flowered freely in June the next year. The species is easily propagated by means of cuttings, and does well in freely drained, gritty soil. W. J.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

EXPERIMENTS WITH HUMOGEN (pp. 115, 157, 146, 166).—As concerns chemical standardisation of Humogen, Mr. Chittenden apparently relies on the "quantity of nitrogen" surely this can be of little value until one knows in what combination that nitrogen exists. If a nitrogenous body is the agent at work, the actual amount of that body must be estimated before chemical standardisation comes into argument. The method of "indirect measurement" hardly seems to be of the nature of a criterion of standardisation, for so many of the factors at work are unknown or not at present recognisable. The rows were about 10 yards long, with 16 plants; the figures represent the produce of each plant in lbs. Yeast and lime 4.61; Rite 3.55; old Humogen 4.09; nil 4.04; nil 3.72; new Humogen 4.06; nil 3.20; nil 3.64; nil 3.52. Ridge trenched area nil 3.93; am. sulp. 3.95; ditto 4.06; new Humogen 3.64; nil 4.07; ditto 4.06; ditto 4.05, all consecutive. Sixteen other rows are only counted in the grand average, the ends of some coming near a Hornbeam hedge and another a different variety. In the ridge trenched area, except the Humogen row, the figures per row are practically level; on the other path the untreated rows have rather greater limits, but only one came up to the 4 lbs. In such small trials definite results must show some 20 or more per cent. of concordant difference. I hardly think that we can yet name the bodies which may be considered to contain available nitrogen in such complex material; nor yet tell how much of their respective nitrogens are really available, and that until we can do so we are not in a position to lay down a law of standardisation. Differences may also be due to instability, inherent or due to some factor to be discovered. With the differences between rows given by Mr. Chittenden, it would appear advisable to place the rows at right angles in alternate croppings. H. E. Durham.

DAMAGE TO PLANTS BY FROST AND WIND AT BROADSTAIRS.—The extent to which vegetation has suffered here from the very severe weather of the past winter can now be fairly well estimated. Some plants have been injured more by the violent, biting winds than by low temperatures; others have been hopelessly injured, or killed outright, by intense and continued frost. I do not propose entering into full details, but will give a few examples of plants

generally classed as hardy in the South of England, including the South East, my selections, where not otherwise explained, being from the "front," where there are no trees larger than medium Laburnums. Not less, probably, than 25 per cent. of the shrubs are *Euonymus japonicus* in variety, and these have proved the hardest of all the kinds with which they are associated. Exposed for days to the full blast of a half gale from the north east, with the lowest temperature about 25° Fahr., the leaves were killed, but new shoots began to unfold with slightly milder weather. Many of the ordinary green-leaved variety are throwing foliage of a clear yellow of the Evening Primrose hue, giving the bushes the appearance at a short distance of bearing terminal flowers of an ornamental character. Broadstairs, like some other southern watering-places, has been noted for some years for the almost ubiquitous *Chrysanthemum* (*Pyrethrum*) *frutescens*, in front gardens of all aspects, where it flowered profusely almost all the year round, especially in southern and western aspects. Apparently not a solitary individual has escaped death, and there were many fine specimens of considerable age. *Berberis Darwinii* and *B. stenophylla* in the shrubberies on the "front" are quite dead, or badly injured, owing partly, perhaps, to repeated hard pruning and consequent loss of vitality. Sweet Bays and Laurastins, and young *Pinus insignis* are severely cut, more probably from wind than low temperature. New Zealand *Veronicas* have succumbed in exposed situations, whilst the Mexican *Choisya ternata* has escaped in sheltered places. Wallflowers and Stocks are killed, or injured, in similar situations. A large tree of *Cupressus macrocarpa* below the cliff in the north east cusp of the bay is only slightly discoloured, whilst younger examples in the town have the appearance of being dead. What strikes one particularly in this connection is the unequal distribution of cold waves, and their effects. For example, the minimum on February 3 at Ramsgate was 20° Fahr.; at Broadstairs, 24°; and at Margate, 21°; whilst at Canterbury, less than twenty miles inland, the thermometer fell to 7° Fahr. on February 1, the Broadstairs instrument registered 19° Fahr., and on the 6th it dropped to 4° below zero at Benson, near Wallingford, Berkshire. This, I believe, was the minimum for the month in all England. Benson is less than 200 feet above sea level, and one is puzzled to account for this local development of cold; but meteorological records offer many problems difficult of solution. W. F. Howbery.

A MAMMOTH POTATO.—The immense tubers of Potato Dutch Red, mentioned on p. 165, must have been imposing, and, no doubt, many in this country would desire to grow the variety, if only out of curiosity or by way of experiment. The climate of California would be in favour of quality; and if the name indicates that it is of Dutch origin, it would also suit the sandy soils of that country. That would also raise the suspicion that it was this variety, or one resembling it, that came under my notice some decades ago in the fields of a relative. The tuber was a reddish-purple kidney if I have not seen the illustration in *Horticulturalist*, varying from 6 to 9 inches in length under field cultivation. I had some tubers, but the variety was never cultivated to any extent. A large number of the tubers were stabled by the fork in digging them, notwithstanding care. One could never tell how far they extended from the stem of the plant. They were equally troublesome to lift by the plough. J. F.

EFFECT OF GRASS IN ORCHARDS (see p. 106).—The following observations may be of interest to *Southern Grower*. Some of my Iris plants were left unweeded last year and the ground around these was lightly carpeted with young Grass. When top-dressing them this spring I found that wherever the soil was bare the roots, or some of them, were running out horizontally quite close to the surface, being but half an inch deep or less, so that it was impossible to hoe or stir in the manure without disturbing or breaking them. But where the ground was covered with grass the roots were all much deeper and the whole sod close up to the tips of the rhizomes

could be pared off one to two inches deep and turned over without meeting with any roots. This was the case without exception, irrespective of the variety, for in some instances the grass was on one side of the plant only, and there the roots ran deep, while on the other side, in the bare soil, the roots were on the surface. Nor does the condition of the soil have any influence, whether hard trodden, as in the alley ways, or loose between the rows. If grass in orchards has the same effect on the roots of the fruit trees, forcing them to run deep, it may perhaps explain the checked growth and diminished size of the fruits. A. J. Bliss.

THE SPRAYING OF POTATOS.—The note on this subject in your last issue (see p. 172) concludes with the remark that "it will probably be found that the organisations that have been established in the villages will purchase these machines, and arrange for the carrying out of the spraying operations on the allotments." If that be done, the risk to which the crops, in other circumstances, would be subjected, will be considerably reduced. The few words of the quotation which I have italicised are of the utmost importance if the Potato crop is this year to be as immune from disease as it is possible for human effort to make it. In some districts allotments may be numbered by the hundred—I write from one where there are six hundred of a permanent character within a mile, and I know not how many more plots of a temporary character that have only been started this year. In all the districts there is, at the present, no gardening society or organisation. When recently giving an address on Vegetable Culture I urged upon those assembled to form themselves into an allotment-holders' association for the purpose of purchasing spraying machines, artificial and other manures, and, if necessary, to secure paid men to undertake the work of spraying at the right time. I pointed out that a farthing subscription per week, or say, a shilling a year, would from the number given produce an annual income of £50, a sum which would go a long way towards purchasing spraying machines and materials. But even with that difficulty overcome, there is still the greater one to be faced of getting the spraying done before the disease puts in an appearance. In the vast majority of instances, those having allotments have but an hour or two in the evening to devote to them, and so infections in a disease as the Potato disease may overwhelm whole areas before, in the ordinary course of events, it can be combated. Moreover, the ordinary allotment-holder knows little of the infectious nature of the disease, or that it is important when spraying that all parts of the plant—the under-surfaces of leaves as well as the upper-surfaces—should be wetted. The many thousands who this year are cultivating plots of ground for the first time are in an even worse plight. This is revealed by the elementary questions they put to one from time to time. Hence it would appear that in districts where no organisation exists nothing short of a properly-organised band of sprayers—men or women—can adequately meet the case. H.

CHIONODOXA.—Sir Herbert Maxwell's remarks on *Chionodoxa* on p. 169 induced me to look up what Mr. Bowles had to say about *Chionodoxa* in *My Garden in Spring*. Sir Herbert does not refer to *Chionodoxa*, the only form which is now in bloom with me at Duddingston—all the others are over. Mr. Bowles says of it: "C. Tindal (roughly spelt Tindalst sometimes, as if named after a man instead of the mountain), but which I and also the Dutch growers find has a habit of dying after seedling, otherwise it would be a pleasant wind up to the *Chionodoxa* season." I have not found it behave in this way in Scotland. I have half a dozen little colonies of it planted three or four years ago, and I find it improving every year. On my table now I have beautiful sprays of it, each carrying eight very bright star-shaped flowers—large, pure white centres with soft blue tips—quite an inch and a half from tip to tip. I consider it the most brilliant of all the *Chionodoxas*. Possibly our climate in the north is too cold for it to set seed, and hence it behaves otherwise with me than with Mr. Bowles. I shall observe carefully this season and see if any seed-pods form. W. Cuthbertson, Duddingston.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

APRIL 24.—*President*, Mr. E. A. Bowles, M.A. (in the chair); Sir Edward van Thunm, Messrs. E. M. Holmes, J. Fraser, E. J. Allard, W. Hales, and F. J. Chittenden (hon. sec.).

Forms of Agrostis alba.—Mr. J. Fraser showed a series of specimens of forms of *Agrostis alba* from various localities, illustrating the wide range of variation which this species exhibits in its range from seashore to wet pasture lands.

Primula sinensis.—Mr. Bowles showed specimens of the two forms of this Chinese species, the one with the other without, scent. Mr. Farrar has given an account of the two in his report of his Chinese journeys. He also showed flowers of the form called *Primula Loebii*, nearly related to *P. farinosa*, but forming stolons and several plants around the parent one.

American Gooseberry Midge.—The following note on observations made by Mrs. E. V. Horne at the R.H.S. Laboratory at Wisley, on the effect of Burgundy mixture on the winter fruits of the American Gooseberry midges was read:

During the late autumn and winter I collected and examined a large number of twigs from Gooseberry bushes affected with the American Gooseberry midges at Wisley, which had been sprayed with Burgundy mixture by Dr. Horne in July, 1916, with the object of discovering whether the spraying had destroyed the vitality of the perithecia (winter fruits).

Spraying was done after mature winter fruits had formed on a large number of the twigs. Prior to the spraying, several twigs were labeled, viz.: 1. Twigs without midges; 2. Twigs with white midges only, perithecia not formed; 3. Twigs with mature perithecia.

The results were as follows:

1. Twigs not midged at the time of spraying. No midges subsequently appeared.

2. Twigs with white midges but no perithecia at the time of spraying. No perithecia were subsequently observed, with the exception of a very few young ones in a few cases, probably present at the time of spraying. The contents of these were destroyed.

3. Twigs with mature perithecia present at the time of spraying. The perithecia contained shrunken asci and shrivelled ascospores, so as to resemble, when immersed in water or dilute sugar solution and pressed out, the perithecia burst within a few seconds. The ascospores were not discharged naturally, and failed to germinate.

The perithecia from unsprayed bushes, used as a control, discharged perfectly healthy asci and ascospores, which did not burst when immersed in sugar solution, but sometimes burst in water after the lapse of a comparatively long period. Ascospores were discharged from these perithecia and collected on cover glasses arranged at a distance of one quarter of an inch to over two inches from the perithecia. On several occasions the ascospores germinated, producing a short germ tube. Unsprayed twigs from other localities yielded similar results.

Twigs sent for examination from a locality where the operator admitted that the bushes were sprayed with a mixture imperfectly prepared yielded a large proportion of perithecia capable of setting spores.

The question of ascospores has been observed in December, January, March, and April.

From these results it is evident that spraying with Burgundy mixture was effective not only in preventing the appearance of midges, but also in destroying it when present, whether in an early or in an advanced stage in its life history.

The mixtures used were:

Copper sulphate	9½ oz.
Sodium carbonate (washing soda)	11 oz.
Soap powder	6 oz.
Water	6 gallons

and

Copper sulphate	9½ oz.
Sodium carbonate (washing soda)	11 oz.
Soap powder	12 oz.
Water	12 gallons

Obituary.

ROBERT SINGLETON.—Mr. Robert Singleton, for sixty-five years in the employ of Messrs. E. P. Dixon and Sons, Ltd., Hull, died at his residence, 70, Ryde Street, Hull, on the 25th ult., in his seventy-ninth year. For nearly fifty years of this long period deceased was manager of the firm's nursery at Scarborough, and afterwards at Catterham. He attended to his duties until a week prior to his death, but had a seizure on the 15th inst., and died five days later. As a nurseryman he ranked high in his profession, and was well known to gardeners and members of the nursery trade throughout the country. He will be well remembered by the older generation of gardeners as a successful exhibitor at the leading shows thirty years ago.

EDWARD WILSON.—We learn with regret of the death of Mr. Edward Wilson, for twenty years gardener to Lord Lilford, at Lilford Hall, near Oundle. Mr. Wilson was well known in Northamptonshire and South Lancashire, also in the Preston district of Lancashire. After occupying the position of foreman at Lilford



MR. ROBERT SINGLETON.

Hull, for two years he was appointed gardener to the Earl of Lindsey at Clifton House, leaving Clifton to take up a similar post to the Hon. J. Pease, at Preston, where, during his two years' stay he made many improvements in the gardens. When the present Lord Lilford succeeded to the peerage, Mr. Wilson was invited to return to Lilford Hall as gardener, where he served for twenty years. Three years ago, failing health compelled him to seek well-earned retirement, and his resignation was accepted with great regret by Lord Lilford, who granted him a pension.

JAMES LONDON WOOD. We announce with deep regret the death, on the 25th ult., of Mr. James London Wood, managing director of the firm of William Wood and Son, Ltd., horticultural establishment. Deceased, who was 72 years of age, had been unwell for some considerable time, and died as the result of an operation. For over 50 years Mr. Wood was the proprietor of Wm. Wood and Son, Ltd., Wood Green, in BEE the business was formed into a limited company, with Mr. J. L. Wood as managing director, which position he held at the time of his death. He was a Freeman and Liveryman of the City of London. He leaves a widow, three daughters, and seven sons, four of whom hold commissions in the Army, another being in the Royal Naval Air Service. During recent years, Mr. A. J. Wood, the eldest son of deceased, has taken an active share in the management of the company.

CROPS AND STOCK ON THE HOME FARM.

THE REARING OF TURKEYS.

THAT turkeys can be reared successfully at a profit to one with experience will deny. Many imagine that these birds are especially difficult to manage, and as a consequence they are deterred from keeping them. With good management turkeys are not difficult. Much, however, depends upon the weather, which has a distinct influence, for a dry summer is all in their favour, whereas continuous wet and cold cause chills, diarrhoea, and roup. Even with these drawbacks the beginner need not be deterred if only he will follow advice.

Where turkeys are reared every year, either privately or for sale, it is wise to keep stock birds. A healthy hen will lay thirty eggs in one season. This estimate will guide the beginner as to how many hens he requires. One male is sufficient for ten hens. Some recommend not mating turkey pullets with a cockerel, but with the latter mate hens year-old birds and a year-old male with pullets. My experience leads me to say that pullets and cockerels together are quite satisfactory.

A tree grass run is a distinct gain for the birds. The only objection to this is that the hens are fond of laying their eggs away in seclusion, which means that without constant watching the eggs will be lost. An orchard of an acre or two would be an ideal run, and secluded places can be arranged with boughs, under which the hens would make their nests. The birds should be well fed, but not made too fat. Oats are good food during the day, and plenty of green food, with warm meal in the morning. A regular supply of grit is essential for shell formation, which has a bearing upon hatching results, as thin-shelled eggs are easily broken by the hens. Although turkeys are easily hatched in incubators, I prefer to put them under hens, as I think the pullets make greater progress, especially during cold or wet weather. Ten eggs are sufficient for one hen to cover properly, and twenty-eight days is the normal period of incubation. When the pullets hatch remove the shells, but do not attempt to hasten hatching by the removal of the shells from the chicks, for if the chicks are made to bleed they are almost sure to die.

Allow them to remain under the hens until thoroughly dry, as they do not need food for the first twenty-four hours. Place a boarded floor coop on grass, covering the floor with a dry, clean bag for warmth, and frequently change the bag for at least a fortnight, according to weather conditions. The first feed should be hard-boiled eggs, soaked chicken meal, and chopped green onions. Feeding the last, green chives are a good substitute. The chicks should be fed four times daily, just a little at a time. For the first fortnight they should be confined to a wire run in front of the coop on grass, changing the site daily. Stale ground and stale food are against success. As the pullets increase in size the coop should be moved on to a new site at least twice daily.

STIMULATING THE CORN CROP.

Among cereals no crop responds to a little stimulant quicker or with more advantage to the yield than Oats. When the seed is sown on land not in good heart—which at times cannot be avoided because of a shortage of manure—the Oats come up weakly and require stimulating to ensure a full crop. Where wireworm is prevalent, certain fields will be found to be more infested with the pest than others, and weakly growing plants suffer the most. One hundredweight of sulphate of ammonia, or even half that quantity, sown evenly over the plot will give the necessary impetus to growth, thus combating the wireworm. It will add several sacks per acre to the crop, and give a corresponding increase in the bulk of straw, which is a valuable asset, and will be specially useful next winter as food for store cattle. Early may be treated in a similar manner, but the stimulant should be applied more cautiously, as this crop is more liable to be "flood" by high winds and heavy

rauns when the ears are large and the straw long as ripening draws near.

What that requires a filip should be treated with superphosphate, especially when a root crop is to follow. Harrowing and rolling wheat does much to make it grow sturdily. The stirring of the soil admits air to the roots, and the roller following close behind consolidates the soil about them, encouraging the plant to thier, increasing the number of growths and ultimately the ears of Corn.

If a few plants are pulled up in the harrowing, they will not be missed, whilst the benefit gained by an increase in vigour of the existing plants will more than compensate for the slight loss in numbers.

SHEEP'S FOOD.

Providing food for sheep is one of the most difficult problems the farmer has to deal with. The recent severe weather demoralized the fields of Swedes and Turnips, and delayed the growth of Kale and Rape, leaving the sheep almost unprovided for until they could be fed on grass. I know from experience how difficult it is to provide for a flock of 900 sheep, for if they eat grass, it will be at the expense of the hay crop.

PITTED SWEDES.

Last autumn, owing mainly to a shortage of labour and the experience of mild winters, the pitting of Swedes was almost entirely omitted. The method of pitting the roots in the field is to put them into heaps, say, of 6 bushels, without interfering with the roots or tops. They are then covered with 6 inches of soil, which does much to protect the roots from frost. The Swedes are spread over the ground a few days before the sheep are fed to them to allow the blanched tops to wilt a little, for the tops might produce savour in the lambs.

MANGOLDS.

Many large farmers who in the past did not favour the Mangold, are sowing several acres of this crop. In my opinion no root crop on the farm is more useful—the roots are always salable, and this season are worth £2 per ton. They are suitable for sheep, cows, pigs, horses and poultry, and as a crop they produce a huge quantity of food. Varieties of the Globe section give the heaviest yield. The Tankard variety are superior for sows in milk, and for fattening, as they contain most saccharine matter.

EARLY POTATOS.

Potatoes planted early in light soil where weeds are showing should be harrowed over to check the growth of the weeds, and render easier the earthing up of the plants later.

STORE CATTLE.

Store cattle wintered in yards would now be better in fields where there is even a small bite of grass. Their appearance will quickly be improved, and the shedding of their old coats expedited. If the grass is not plentiful, they may be given a few Mangolds, E. Medwynae.

THE CORN CROPS.

The condition of Wheat in France, Italy, Switzerland, and Egypt is reported to be average, and in Great Britain and the United States rather under average, while that of Rice in France, Italy, Switzerland and the United States is average. Barley in France, Italy, Switzerland and Egypt is in average condition; while Oats are average in Italy and the United States, but under average in France and Ireland.

The probable yield of Winter Wheat in the United States has been estimated at 230,365,000 cwt., or 10.7 per cent. below the corresponding production last year.

The total production of Wheat in Argentina, Australia, and New Zealand in 1916-1917 is estimated at 121,991,000 cwt., and that of Oats at 16,960,000 cwt., while the yield of Maize in Argentina and Australia is estimated at 53,670,000 cwt.

TRADE NOTE.

MESSRS. J. WEEKS AND CO. (Chelsea), having had their offices at 72, Victoria Street, commandeered by the War Office for the period of the war, have taken temporary offices at 92, Victoria Street, S. W. 1.

MARKETS.

FOREIGN GARDEN. May 5.

Plants in Pots, &c: Average Wholesale Prices.

Table listing various plants in pots and their prices, including Araalia Sieboldii, Asparagus plumosus nanus, Aspidistra, Beronia, Cacti, Cocos Weddelliana, Cyclamen, Eranthis, Ferns in thumous, Geraniums, Liliolum longiflorum, and others.

Cut Flowers, &c: Average Wholesale Prices

Table listing various cut flowers and their prices, including Anemone fulgens, Arums, Azalea, Camellias, Carnations, Carrots, Daffodils, Gladioli, Lilies, Tulips, and others.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their prices, including Adiantum, Asparagus, Begonia, Brunfelsia, Calceolarias, and others.

stammets were received from Guiney and from the Sicily Isles last week-end. It is some years since such large quantities of flowers arrived in Covent Garden from the Channel Islands. There is an abundant supply of Roses this week, and also of Darwin Tulips. These blooms arrive in excellent condition. Spanish Iris (blue) is getting more plentiful. Other colours have yet to arrive. French Gypsophila is one of the newest arrivals, but flowers from France are practically over for this season. A few bunches of Sweet Peas are arriving in very fine condition. A small quantity of Stephanotis is also reaching the market, finding a ready sale. Gardenias are more plentiful, and lower in price.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices, including Artichokes, Broad Beans, Broccoli, Cabbages, Carrots, Cauliflowers, Celery, Cichory, Endive, Green Beans, Herbs, and others.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices, including Almonds, Apples, Apricots, Bananas, Blackberries, Dates, Figs, Grapes, and others.

ANSWERS TO CORRESPONDENTS.

CROSSLIT PLANT BOXES: F. L. I. You are right in suspecting crocodile to be harmful to plant life, and you should not use the boxes you have credited for growing Tomatoes until you have charred the whole inside of the wood-work, preferably with a blow-lamp. This will serve a double purpose—it will destroy the crocodile and preserve the wood from decay. NAMES OF PLANTS: G. W. Luzula campestris (Field Hair Rush). To rid your lawn of this weed, remove as many of the plants as possible by weeding, and then give the turf a light dressing of nitrogenous manure, which will increase the vigour of the natural grasses, and in time suppress the Luzula—E. T. Matton. Aegopodium Podagraria (Goutweed). Dig up the stoloniferous root-stocks and burn them.

Communications Received.—W (Guthrie)—E. E. C.—H. C.

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Gardening, School Cottage, and Allotment, A Practical Guide to. By John Worthers. 2s. 10d.
- Glass, The Garden Under. By W. F. Rowles. Illustrated. 6s. 6d.
- Grafting and Budding, Art of. By Charles Baltet. With Illustrations. 2s. 9d.
- Grafting and Budding, The Handy Book of. By James Udell. 7d.
- Grape Growing for Amateurs. A thoroughly practical book. 1s. 5d.
- Grape, The Book of the. Together with a Chapter on the History and Development of the Value of Vines. By H. W. Ward. Illustrated. 2s. 9d.
- Greenhouse and Conservatory, Construction and Heating. By Paul N. Haddock. With 23 Illustrations. 2s. 4d.
- Greenhouse, The Amateur's. By T. W. Sanders. 416 pages, 154 Illustrations. 5s. 5d.
- Greenhouse Management, Pictorial. Edited by Walter P. Wright. Illustrated. Paper. 1s. 5d.; cloth, 1s. 9d.
- Greenhouse, The Book of the. By J. C. Tallant. Head Gardener at Sleafly Hall. Illustrated. 2s. 10d.
- Hardy Flower Book, The. By E. H. Jenkins. A descriptive and practical Guide to the Cultivation of Hardy Flowers. Illustrated. Cloth, 2s. 11d.
- Hardy Trees, Flowering Shrubs, Conifers and Evergreens. By Geo. Bancroft. A Popular Handbook of 160 pages, 50 Illustrations. Useful hints. English and Latin names. 5s. 10d.
- Herb Garden. By Francis A. Bardswell. 16 Full page Illustrations in Colour. 3s. 11d.
- Herbs, The Book of. By Lady Rosalind Northcote. 2s. 10d.
- Heredity in the Light of Recent Research. By L. Dancaster. 1s. 2s.
- Holly, Yew and Box. By W. Dillimore. 2/0 pages. 175 Illustrations. Contains the Illustrations of Hollies published in the monograph by the late Thomas Moore in the *Gardener's Chronicle*. 7s.
- Horticultural Directory, Almanac and Address Book for present year. See *Gardener's Chronicle* Horticultural Directory.
- Horticulture, A Primer of Practical. By J. Wright. 1s. 11d.
- Insect and Allied Pests of Orchard Bush and Hothouse Fruits. By F. W. Theobald, M.A. etc. 723 Illustrations. 70s. 6d.
- Insects, Injurious and Useful. An Introduction to the Study of Economic Entomology. By L. C. Miall, F.R.S. 100 Illustrations. 3s. 9d.
- Intensive Culture of Vegetables on the French System. By P. Aquinas. Illustrated. 5s. 11d.
- Iris, the Book of the. Illustrated. By R. Irwin Lynch. 2s. 10d.
- Iris, By W. R. Dykes, M.A. With Preface by Prof. Bayley Balfour, F.R.S. Contains 8 full page Coloured Plates. 1s. 10d.
- Johnson's Gardener's Dictionary. New Edition. 9s. 6d.
- Judging, Rules for. Issued by the Royal Horticultural Society. Latest Edition. 7s. 6d.
- Land of the Blue Poppy, The. By F. Kingston Wood. With Illustrations and Maps. 12s. 6d.
- Landscape Architecture, The Art of. By Samuel Parsons. A practical and authoritative work. Illustrated. 15s.
- Lawns. By Sutton and Sons. Reading. In paper cover. Well Illustrated. 1s. 5d.
- Lawns and Greens. By T. W. Sanders. A complete Guide to the Formation and Management of Lawns, Tennis Courts, etc. Illustrated. Paper. 1s. 5d.
- Lilies. By A. Grove. With Preface by H. J. Elwes, F.R.S. Contains 1 Coloured Plate. 1s. 10d.
- Lily, Book of the. By W. Goldring. Illustrated. 2s. 9d.
- Little Gardens and How to Make the Most of Them. By H. H. Thomas. A handy and useful work for the Amateur. Paper. 1s. 5d.; cloth, 1s. 9d.
- Mango, The. By G. Marshall Woodhouse. An account of its Culture and Varieties. 1s. 10d.
- Manners and the Principles of Manuring. By C. M. Atkins. 1s. 3d.
- Manures for Garden and Farm Crops. By W. Dyke. Cloth, 1s. 9d.
- Manuring, The Science and Practice of. By W. Dyke, with Introduction by J. Wright. A most practical work for the Amateur, Market and Professional Gardener. 7s. 6d.
- Manuring of Market Garden Crops, The. By Bernard Dyer and F. W. L. Shuttle. New Edition. 1s. 5d.
- Market Gardening, The Book of. By R. Lewis. Cloth. Illustrated. 2s. 9d.
- Mendelsin. By R. C. Punnett, F.R.S. New and Enlarged Edition. 7s. 6d.
- Mendel's Principles of Heredity. By W. Bateson, F.R.S. 12s. 6d.
- Mushroom Culture for Amateurs. By W. J. May. New Edition. Thoroughly revised. Illustrated. 1s. 2d.
- Mushrooms and How to Grow Them. By John F. Barty. An excellent Treatise. Illustrated. 1s. 2d.
- My Garden in Spring. By F. A. Bowles, M.A., Chairman of Scientific Committee of Royal Horticultural Society. With Preface by Reginald Farrer. "Mr. Bowles has the time to be his own gardener, and has thereby gained that first-hand knowledge of plants without which any writer on horticultural subjects is bound to be neither interesting nor informing." Price 5s. 6d.
- My Garden in Summer. By the same author. Price 5s. 6d.
- My Garden in Autumn and Winter. By the same author. 5s. 6d.
- Orchids and their Cultivation. By James O'Brien, V.M.H., Hon. Sec. of the R.H.S. Orchid Committee. Contains 3 full page Coloured Plates from colour photography. 1s. 10d.
- Orchids; Their Culture and Management. By W. Watson. Curator, Royal Botanic Gardens, Kew, and H. J. Chapman. Illustrated with 120 Engravings and 20 Coloured Plates. 25s. 8d.
- Orchids for Everyone. By C. D. Curtis. With 55 Coloured, and 45 Black and White Illustrations. 21s. 3d.
- Orchids, Fertilisation of. By Chris Darwin. Illustrated. 3s. 11d.
- Orchid Grower's Manual, The. By the late B. S. Williams. 300 pages. Numerous Illustrations. 10s. 6d.
- Pansies, Violas and Violets. By W. Cutbush and R. Hooper Pearson. With 8 full page Coloured Plates from colour photography. 1s. 10d.
- Pansies and Violets. By D. B. Crane. Paper. 1s. 2d.; cloth, 1s. 9d.
- Peach, The Book of the. By H. W. Ward. A Practical Handbook on the Cultivation of Peaches and Nectarines under Glass and Out of doors. 2s. 10d.
- Pears and Plums, The Book of. By the Rev. E. Bartram, D.D. Illustrated. 2s. 9d.
- Pines, The Genus. By George Russell Shaw. Price 2/2 1/2 6d.
- Plant Breeding, Being Five Lectures upon the Amelioration of Domestic Plants. By Prof. L. H. Bailey. Illustrated. 3s. 11d.
- Plant Life. By C. A. Hall. £1/8s. 6d.
- Practical Plant Physiology. By Frederick Koehle, F.R.S. Illustrated. 5s. 10d.
- Practical Tree Repair. By Elbert Peets. The Physical Repair of Trees, Pruning and the Treatment of Wounds and Cavities. Illustrated. 7s. 11d.
- Plants and Trees, Diseases of Cultivated. By George Massee. Well Illustrated. 7s. 11d.
- Plants, A Popular Treatise on the Physiology of. By Dr. Paul Sargant. Translated by F. E. Woods, D.Sc. With 53 Illustrations. 9s. 6d.
- PRESIDENT DAY GARDENING. Edited by R. Hooper Pearson, Managing Editor of the *Gardener's Chronicle*. Each of the seven (seven) volumes following contains 8 full page Coloured Plates. 1s. 10d. each.
1. Sweet Peas. (Second and Revised Edition, 1914). By Horace J. Wright, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition." by Thos. Stevenson.
 2. Pansies, Violas, and Violets. By William Cutbush and R. Hooper Pearson.
 3. Daffodils. By the Rev. J. Jacob. With Preface by the Rev. W. Wilks, M.A.
 4. Orchids. By James O'Brien, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.
 5. Root and Stem Vegetables. By the late Alexander Dean.
 6. Carnations and Pinks. By T. J. Cook, Head Gardener at Sandringham; James Douglas, V.M.H.; and J. F. McLeod, Head Gardener to the late Mr. Pierpont Morgan.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

To the Trade.

NOVELTIES IN CYCLAMENS.

St. GEORGE'S STRAIN.

Four New Varieties to be Sent Out in 1917.

QUEEN MARY.

Large salmon coloured flower.
Very fine growth.

ST. GEORGE.

The best Ornamental Leaved Variety.
Flowers salmon pink. R.H.S. Award of Merit.

MRS. L. M. GRAVES.

Salmon Scarlet.
R.H.S. Award of Merit.

CRIMSON ST. GEORGE.

(See Illustration.)

We also offer the following favourite varieties:—

BRILLIANT.

Extra Dark Crimson. Rich Colour, very free.

BRILLIANT—

GIGANTEUM (NEW).

A superb novelty. Very robust grower. Fiery crimson flowers of much greater size than any other of its colour.

BARONESS

BURDETT-COUTTS.

Pure White. Short broad Petals. Very free Flowering Variety. Certificated R.H.S.

CRIMSON KING.

Bright Crimson. Certificated R.H.S.

DAME BLANCH—

GIGANTEUM.

Pure White. Large broad Petals.

DUKE OF CONNAUGHT.

Giganteum Variety. Purplish Crimson.

DUKE OF FIFE.

Giganteum Variety. Dark Rose.

EXCELSIOR.

Giganteum Variety. White, with Purple Base. Extra large Flowers.

GRANDIFLORA ALBA—

GIGANTEUM.

The largest White grown. Enormous Flowers. Splendid grower. Certificated.

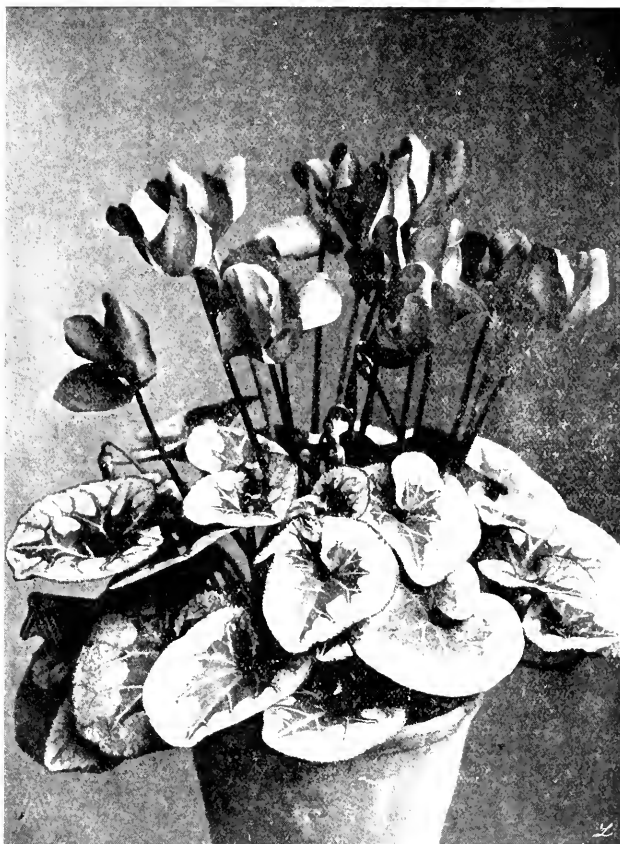
MONT BLANC—

GIGANTEUM.

Pure White. Large Flower. A Mountain of Snow. Certificated R.H.S.

MAUVE QUEEN.

Giganteum Variety. Delicate Mauve shade.



CRIMSON ST. GEORGE.

The sensational variety of 1917, and a grand acquisition, having the magnificent decorative foliage of St. George, with vivid crimson flower, which are produced in abundance well above the foliage. The effect is very telling, and the combination of flower and foliage will make this variety pre-eminently a favourite for table decoration, sick room, etc. Award of Merit, R.H.S.

PRINCE OF WALES.

Giganteum Variety. Bright Red, large Flowers. Award of Merit, R.H.S.

PRINCESS OF WALES.

Giganteum Variety. Deep Pink. Very free.

PAPILIO.

A charming new break. Popularly termed Butterfly Cyclamen. Mixed colours.

PICTURATUM.

Giganteum Variety. Light Rose tinted. Claret Base. Certificated R.B.S. and R.H.S.

PRINCESS MAY.

Pale Pink. Award of Merit, R.H.S.

ROSY MORN.

Giganteum Variety. Delicate Rose tinted. Claret Base. Certificated R.B.S. and R.H.S.

SALMON QUEEN.

Soft Salmon Pink.

SUNRAY.

Giganteum Variety. Deep Pink, with Claret Base. One of the Best.

SALMON KING

"OUR-OWN."

Vastly superior to any other salmon in the market.

MRS. BUCKSTON.

The Salmon Cyclamen with frilled petals.

CALCEOLARIA—

HERBACEOUS.

St. George's Giant Flowered.

SCHIZANTHUS

GRANDIFLORA

HYBRIDA.

Veitch's Strain.

ST. GEORGE'S NURSERY CO., HARLINGTON, Middlesex.

SALES BY AUCTION.

SOUTHGATE, N.

MESSRS. PROTHEROE & MORRIS will sell by auction on the premises, Southgate, Essex, by order of the Executors of the late Mr. C. H. Peeling.

On **Tuesday and Wednesday, May 15th and 16th, 1917, at 12.30 o'clock precisely,** the GREENHOUSE, BEDDING PLANTS, and Orchids, FARMING IMPLEMENTS, Horse, Cart, Rick, Clogs and Poles, Hay Rake, BROOMHAM, Harness, Rugs, Food Sheds, Fences, and Sundries.

Catalogues of the Auctioneers, 67, Cheapside, London, E.C. 2.

Teakwood Garden Furniture, comprising seats, chairs, tables, &c.; Garden Ornaments, Old and Modern; Japanese Prætor; Manufacture Gardens.

MESSRS. PROTHEROE & MORRIS will sell the above at their Central Auction Rooms, 67 and 68, Cheapside, London, E.C. 2.

On **Friday, May 18th, at 1 o'clock,** on view two days prior and morning of sale. Catalogues on application to the Auctioneers.

BUSINESSES FOR SALE.

FOR Immediate Disposal as a Going Concern, the old-established Business of SEEDSMEN and NURSERYMEN carried on by R. P. Kot & Sons at Bassett Street, Liverpool, and the Nursery, Grassendale. Offers will be received for either the whole or separate portions of the business, and for the produce stocks of Amaranth, Cyclamen, &c.

Offers to be sent in not later than the 17th inst. For particulars and orders to view apply to the trustees, HAROLD SADDLER, of Messrs. Finney, Son & Sadler, Chartered Accountants, 31, North John Street, Liverpool.

SMALL Nursery and Florist; main road, S.E. Five self-watering Greenhouses, heated, front show house, stable, &c.; 7-roomed house. Price for Greenhouses and stock, £100. Rent £32 per annum. A. Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

PROPERTY TO LET.

GLASSHOUSES to Let at cheap terms moderate, also good Ground, in large or small lots. Residence, with excellent rooms, available on the premises. Close to station and easy distance from London. Each college student professor. HORTON, Box 20, 41, Wellington Street, Covent Garden W.C. 2.

PUBLISHERS' NOTICE.

SCIENTIFIC BOOKS AND SERIALS. **JOHN WHELDON & CO.** have the largest stock in the country of Books in all departments of Science and Natural History, also Transactions and Journals of Learned Societies, &c., in sets, runs, and single volumes or numbers. Libraries or small parcels purchased for cash. SPECIAL CATALOGUES: Gardening, Botanical, Agricultural, Ornithological, Entomological, Geological, Chemical, Meteorological, &c., gratis on application. 39, GREAT OFFICE STREET, KING'SWAY, LONDON, W.C. 2. Telephone: Gerrard 132.

NOTICE.

WILL JACK LUCAS, formerly a Gardener at Holly Comf, Highgate, kindly commends at once with Mrs. Pearson, Hotel Russell-Russell Square, W.C. 1.

MISCELLANEOUS.

B. EDDY & SONS, Torleven Works, Southfleet, Greenwich.—The largest manufacturers of GARDEN NETTING in the KINGDOM. NEW STOUT and specially strong SQUARE MESH NETTING, half-inch and one-inch mesh, at 4d. per square yard. LIGHT NEW square mesh, suitable for Strawberry Beds, at 3d. per square yard.

These Nets are bound all round with stout cord, and cover their measured length and width. Any length or width supplied.

Repaired Nettings in all sizes in stock. State your requirements, and we will quote lowest prices.

Also makes of TENNIS NETTINGS, RICK COVERS, GREENHOUSE SHADINGS, WASP NETTINGS, PACKING and TARKED TWINES of all kinds.

All Goods sent by PASSENGER TRAIN, CARRIAGE PAID, on receipt of order.

FOR SALE, 8 volumes Nicholson's Dictionary at Thompson's Assistant, 6 volumes in good condition. What offers.—Reply to E. W. LEFF, Shakenham Hall Gardens, Chesham, Mariner, Salop.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than **WEDNESDAY, 5 p.m.**

Ordinary Positions	£	s.	d.
Facing matter and Back Page	10	10	0
Half and quarter pages, column and half column spaces, pro rata.			
4 line space not exceeding 20 words	3	0	0
Per inch, single column	7	0	0
Per inch across 2 columns	14	0	0
Per inch, across 3 columns	1	1	0

Front page (no display allowed) 1/- per line space. [Headline counted as two lines]

For discounts apply to address below.

SITUATIONS WANTED.

2/- words 1s. 6d., and 4d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM	15/-	per annum.
ABROAD	17/6	.. .. .

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telegrams: 1543 "GARDENERS," RASD, LONDON." Telephone: 1543 GERRARD.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

WANTED, HEAD GARDENER (WORKING). Lady, or ineligible Man, skilled in Vegetables and Houses. R., Berkhamstead Place, Berkhamstead.

WANTED, a thoroughly competent working HEAD GARDENER, normal staff 3, temporarily reduced owing to the war, must be active, willing, and obliging, excellent cottage on the premises, preference given to a married couple without children, or with son or daughter old enough to help in the garden, a knowledge of rough carpentry, painting, or glazing would be an advantage.—Apply, giving full particulars as to wages required, and details of previous situation, to A. F. CHARRINGTON, Esq., East Hill, Oxted, Surrey.

WANTED, GARDENER (HEAD WORKING), over 10 years military age, or exempt service; very little Glass. Also second, able to drive.—Apply, giving full particulars, to MRS. ALEXANDER, Rowhill Grange, Walmington, Kent.

WANTED, HEAD WORKING GARDENER; must be thoroughly experienced in all up-to-date Gardening Inside and Out; reference to last employer indispensable.—Write, stating age, wages, and full particulars, to MRS. NORMAN DUGDALE, Dulton Manor, Longridge, Preston.

WANTED, FOREMAN for Houses; married or single; ineligible; thorough knowledge of Fruit and Plant culture essential; cottage or Bothy. State wages.—Apply, CHARLES BLICK, Gardener, Warren House, Hayes, Kent.

WANTED, FOREMAN for Inside; private establishment, not eligible; 28s. per week; good Bothy, milk, and vegetables; 3s. per week war bonus. Full particulars as to age, experience, references, and when at liberty, to FISHER, SON & STRAY, LTD., Royal Nurseries, Handsworth, Sheffield.

FOREMAN—Wanted, at once, FOREMAN for Greenhouses; must thoroughly understand the propagation and cultivation of Orchids, Ferns, and miscellaneous flowering plants. State age, experience and wages required.—Send copies of references and all particulars to THE CURATOR, Botanical Gardens, Birmingham.

REQUIRED, a Single-handed, good all-round GARDENER, with help; ineligible; married; cottage. State wages.—MRS. SEVERNE, The Lodge, Theotford, Banbury.

GARDENER (SINGLE-HANDED) wanted for simple ground, little Glass, no Kitchen Garden; led kept.—Write or apply after 6 p.m., stating age and experience, also wages required (without cottage), to MRS. LEWIS, Spelton Towers, Bramch Hill, Hamstead Heath.

WANTED, a Good SINGLE-HANDED GARDENER—OWEN POWELL, Esq., Harner Green, Welwyn, Herts.

WANTED, Good JOURNEYMAN, also IMPROVER (INSIDE), to take duty, wages £1 and 18s., with Bothy, &c.; Sunday duty and overtime paid.—W. WENMAN, Hickleton Gardens, Doncaster.

TWO JOURNEYMEN WANTED for Glass, also one for Kitchen Garden and one for Flower Garden, &c.; must be willing and not afraid of work.—Apply, stating wages required, with Bothy, to GEO. KENT, Brocket Gardens, Hatfield, Herts.

WANTED, GARDENER, ineligible, married, no family; cottage, 4 small rooms and outhouse; wages 28s., vegetables; permanency.—WHITTING, Tillington, Gosmore, Hitchin, Herts.

WANTED, UNDER-GARDENER; non-eligible, small lodge and garden.—State age, wages, and length of character, to MRS. CHARLES SMITH, Ravenswood, Wokingham.

WANTED, MAN, for Pleasure Ground and Kitchen Garden, ineligible; single; to live in Bothy; £1 a week. Also an Improver for the Houses; 12s. per week, with Bothy, &c.—HEAD GARDENER, Long Park Gardens, Havant, Hants.

WANTED, MAN; experienced Inside; wages 7s. per week and cottage.—Apply, with full particulars, to W. GROOM, The Gardens, Upper Gatton Park, Merstham, Surrey.

WANTED, a SINGLE MAN, ineligible for the Forest, to work horse for carting, &c.; must be able to handle haystacks and build same; wages 25s. per week, with 2s. war bonus; leave at 1 on Saturdays during long days.—Apply, G. KENT, Brocket Gardens, Hatfield.

WANTED, ineligible MAN or YOUTH, to work under Gardener; a married man would be considered.—Apply, GIBBINS, Swalecote Park, Banbury.

MR. J. B. ROWELL, of "The Duffant," Sevenoaks, requires the services of a CHAUFFEUR-GARDENER (male or female). Applicants should state age, experience, and wages required.

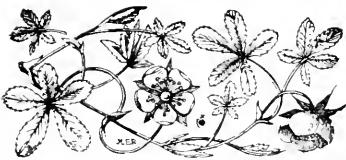
WANTED, Discharged Soldier or Woman GARDENER, must have experience of Indoor and Outdoor work.—Send full particulars to H. S. PHILLIPS, The Gardens, Leighton Hall, Iron Bridge, Shropshire.

WANTED, strong YOUTH, age 16 to 17, for Pleasure Grounds. State wages required, with full particulars, to L. CRODOWN, Framwood Gardens, Stoke Poges, Slough, Bucks.

WANTED, YOUTH for Inside, age about 16 to 17 years. State experience to C. BARRING, Rachey Gardens, Meeter.

WANTED, strong YOUTH, 16 to 17, as Improver for Houses and Pleasure Grounds; wages 15s. and Bothy; duty and overtime paid.—STEVENSON, Woburn Place, Aylesbury.

WANTED, several YOUTHS, 16 to 17; Inside and Outside, wages 18s. per week, Bothy, &c.; Sunday duty and overtime paid; 1 o'clock Saturdays; travelling expenses paid.—C. GARRATT, Canwell Hall Gardens, Sutton Coldfield, Birmingham.



THE Gardeners' Chronicle

No. 1687.—SATURDAY, MAY 12, 1917.

CONTENTS.

Allotment holders and the cinematograph ..	194
Allotment notes ..	194
Campanula Ephesia ..	190
Copped Hill destroyed ..	191
By fire ..	191
Farm, crops and stock on the home ..	197
Food production, in-cropeed ..	191
Butter beans ..	191
Celery ..	191
Celery ..	191
Crop for farmers ..	191
Fruit prospects and marketing ..	191
Potatoes under glass ..	191
Potato-wart disease in Edinburgh ..	191
Hinton Admiral, spring flowers at ..	19
Kew, interesting plants at ..	191
Market fruit garden, the 18 ..	191

ILLUSTRATIONS

Campanula Ephesia ..	190
Copped Hill, Essex. (Supplementary illustration.) ..	191
Solanum, specimen plant of ..	191
Prunus serotina, flowering shoot of ..	191

THE MARKET FRUIT GARDEN.

NO rain of any consequence fell in my district in the latter half of April, while there was absolute drought in the last twelve days of the month. Although there were fourteen days on which rain was measurable, the quantities were very small, on only one day being as much as a quarter of an inch. The total was 1.45 inch, including melted snow. Sunshine was abundant on most days, but it was not until the 15th that the temperature became warm by day, and the nights remained cold until after the 25th, when there was a slight frost. We did not get rid of cold wind from one of the northern quarters, in which it had remained nearly all the month, until the 28th.

A SPEECH IN VEGETATION.

More progress in vegetation was noticeable in the last week of April than had taken place during all the preceding part of the spring. Garden crops from seed that had remained below the surface for weeks came up suddenly, and full plants were gladly seen where there had been but little hope of them. Fruit buds on Pears, Apples, and early Cherries were also sudden in opening, so that compact clusters of blossom buds were to be seen on most varieties by the last day of April. This, however, is very late. During sixteen preceding seasons spent at my present place the cluster stage of Apples has only once been as late as April 20, while it was once as early as March 18, and has been common at or before the end of March. This year the earliest cases were noticed on April 23. The comparison is similar with Pears. As to early Cherries, they have usually been in full bloom before the end of April. The latest of fruits this season, however, is the Plum. No buds had burst, even on Black Diamond or Monarch, the earliest bloomers grown by me, by the end of April, while never before during the sixteen seasons that they failed to show full blossom about that date. One record

is as early as March 22, and there are three notices of full blossom on March 31. May Day without a Plum blossom is really phenomenal. A blossom here and there showed on May 3. Gooseberries and Red and Black Currants did not show blossom at all commonly until April 30. This is late, but not so much behind the normal conditions as are the instances of tardy fruit development given above.

FRUIT PROSPECTS.

There is a great promise of fruit here on all the varieties of Pears, and a tremendous one of most of them. Many a time nearly as fine a presentation has failed to insure good crops, but the extraordinary lateness of this year's blossoming will be a great safeguard. Moreover, the trusses of blossom buds have a bold and sturdy appearance. Nearly all varieties of Apples are also full of promise, the exceptions being chiefly cases of alternate-year fruiterers, which gave good crops last season. This year, however, is preponderantly the "on" season for such varieties, as well as for others which are not absolutely alternate-year fruiterers. Last year was an "off" season for Lane's Prince Albert, which is now densely studded with opening fruit-buds. Bramley's Seedling did fairly well with me last year, though the crop was a light one in the country at large, but the present promise is far beyond that of last season. Cox's Orange Pippin gave a light crop in 1916, but promises well at present. One orchard of Apples planted in 1909 is showing a general promise of fair fruiting for the first time, as previously only a few varieties have yielded fruit to any considerable extent. I do not expect a good crop of Plums, as some varieties give only a passable promise. Czar, Victoria, and Pot's Seedling yielded abundantly last season, but will yield less plentifully this year. Early Rivers gave a fair crop in 1916, and promises to do about as well this season. President planted in 1909 has only just recovered from having been allowed to crop too much three years ago, besides which it has suffered from brown rot. Belle de Louvain, planted a year later, has not cropped yet, and still is almost devoid of fruit-buds. It is a pity that this variety is so slow in coming into bearing, as it is wanted to replace Victoria, now discredited by its inability to silver-leaf. Monarch is the only Plum which promises to exceed its usually modest production in my orchards. Birds have hardly touched its fruit-buds, which are much more numerous than usual. Nearly all my Gooseberries have been grubbed up, in consequence of an attack of American mildew, but a small lot left are full of blossom-buds. Both Red and Black Currants look like bearing well.

It is hardly necessary to say that good shows of fruit do not necessarily lead up to good crops. We cannot have plenty of fruit without a fair abundance of blossom, but we can have the latter without being blessed with the former. Our fruit trees and bushes have all the possible troubles of the season before them, and their performance may prove far below their present promise.

BEGINNING OF THE INSECT SEASON.

Knowing that three varieties of young Apples in my oldest orchard, planted to replace some grubbed up a few years ago, included a few trees infested with aphid eggs, I made a systematic search for eggs among the mature trees on one side of them on April 6. There are eleven varieties, and I did not find a single aphid egg on any one of them. As the first row is 324 feet from the first row of the young trees containing cases of aphid egg infestation, an aphid attack upon it would be mysterious. Even if it be true that ants carry aphides from one tree to another, of which I have never seen or read any direct evidence, it can hardly be supposed that this conveyance, even by easy stages, from one row of trees to the next, would cover 324 feet. Up to the end of April no live aphid had been found on any of

the eleven varieties of mature trees, though an object resembling a dead insect was found on one burst fruit-bud. Smoker eggs, more or less, were found on all. The first aphides were found on one of the egg-infested young trees on April 21, masses of them outside the bursting fruit buds, and on wood buds right up the new shoots. They were obviously just hatched by the warm sunshine. As the trees were to be lime-sprayed on April 23, consequences were awaited with keen interest. The spraying was done, and on the 24th the infested trees were examined. All the young insects were found to be dead, and at first it was supposed that the lime-wash had killed them. Fortunately, however, two infested trees had been left unsprayed, as tests, and when those were examined it was found that the aphides on them were also dead. Now, on the night of April 25 there was a slight frost. It was only 2° as tested on three thermometers side by side, 4 feet from the ground, on a wall of my house facing the north. Possibly there might have been 3° in the orchard, as more open to the north east wind then prevailing, though the orchard adjoins my garden, and the level is no lower where the infested trees stand than the site of my house is.

The result is interesting as showing that a very slight frost is sufficient to kill newly hatched aphides. This may be taken to explain why we are nearly or quite exempt from aphid attack in some seasons, as we were last year, or at least as I was, except on a few of the young trees referred to above. There is also another point worth notice. If it had not been for test trees having been left unsprayed, the killing of the aphides would have been attributed to the lime, and probably many cases of supposed success from lime spraying are as fallacious as my supposition was, before examining those test trees. The fatality of slight frost to the newly-hatched aphides in this instance covers two species, as Mr. Theobald, of Wye College, found both *Aphis mali* and *A. pyri* (commonly called *A. sorbi*) among the dead insects sent to him.

The first Apple suckers of the season were found on April 29, on Warner's King, Beauty of Bath, and Mr. Gladstone. They were extremely small, and probably just hatched. A few thrips and two tiny caterpillars were also found.

LATE TOP GRAFTING.

In consequence of the lateness of the season it was not deemed advisable to begin the top-grafting of Apples until April 20, although there were over 200 trees of Gascoyne's Scarlet Seedling to operate upon. Even then, and up to May 2, the bark did not slip as easily as was to be desired.

SOILING LUCERNE IN ORCHARDS.

This work has been done in one Apple orchard and in part of another, in both of which bottom fruit has been grubbed up for some time. The start was on April 20 in an orchard planted in the autumn of 1900. There the trees are too much overgrown to allow of horse cultivation, and the seed, 30 lb. per acre, was sown broadcast and hoed in at once by a gang of women and two men. It is unfortunate that drought has prevailed since the sowing. Still, the seed has germinated quickly where the surface is not rough. In the other orchard the land was cultivated and harrowed up and down and across before the sowing, and harrowed after the seed was sown, women having to hoe it in only around the trees where the horse cultivation left squares. As there are two rows of Cordons down the middle of this orchard, stopping the cross cultivation at that place, only one half could be done at a time, and when the second half was cultivated the land had become so hard that it turned up in a very rough condition, and cannot be finished until rain softens the clods. This is unfortunate, as it was desired to sow the seed and get it growing as early as possible, because the start of the crop would be much more favourable before the land was partly shaded by the foliage of the trees than afterwards. *Southern Grower.*

CAMPANULA EPHESIA.

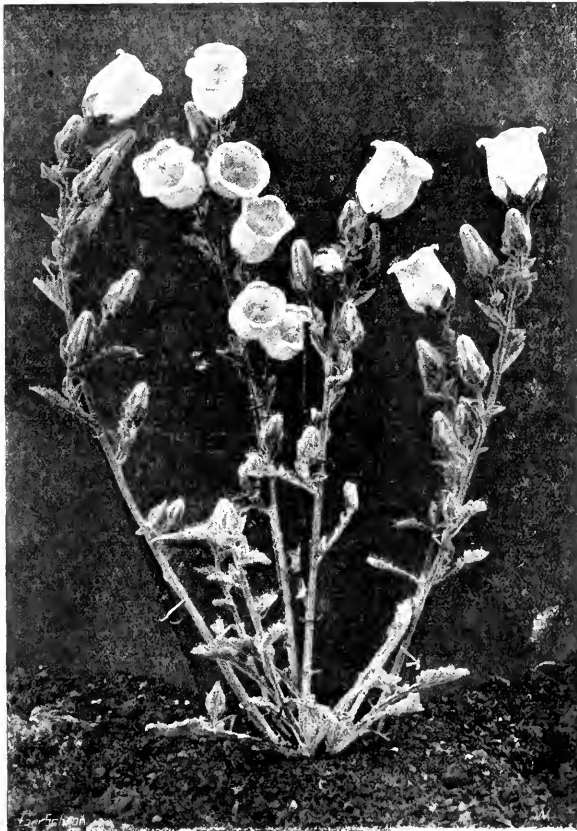
CERTAIN Campanulas are found in South-Eastern Europe and Asia Minor that have white, woolly foliage, the best known being *C. tomentosa* and *C. lanata*. *C. Ephesia* (see fig. 69) belongs to this group, and is found on Mount Ephesi in Lydia, a district of Asia Minor. The species was introduced into cultivation by Sir John Barran, Bart., of Sawley Hall, Ripon, and it flowered for the first time in this country in July of last year. The plant grows naturally in crevices on rock faces, and forms large, bushy plants, which are evidently perennial. The tomentose, silvery leaves, with sinuate margins,

charis × *nobile*) and *D. regium*, and named it *D. Alpha* in 1910. *D. endocharis* was obtained from a cross between *D. moniliforme* and *D. aureum*. The interesting point is that *D. regium*, crossed with other varieties whose ancestors bore either smaller or only equally large flowers, has, in this case, resulted in increasing the size of the flower while practically retaining intact its form and colouring. The flower is rather more than 4 inches across, the petals being $1\frac{1}{2}$ inch wide. The ground is white, tinged and veined with rosy-mauve. The lip, which has the form of *D. regium*, is sulphur-yellow in the tube, the front being coloured like the petals, but rather darker.

C. Walkeriana, unlike most other *Cattleyas*, flowers from a sheathed rudimentary process from the rhizome, which does not develop into an ordinary pseudo-bulb.

CYPRIPEDIUM HELICE.—A hybrid between *C. bellatulum* and *C. Psyche* (*bellatulum* × *niveum*) is also sent by Mr. F. C. Puddle, the raiser. As might be expected, the primary and secondary influence of *C. bellatulum* predominates, but the introduction of the soft, white *C. niveum* has made clearer the white ground, and enlarged the petals in a remarkable manner, their outline being almost perfectly orbicular, and their width ($1\frac{1}{2}$ inch) slightly exceeding the dorsal sepal. The sepals and petals are white, the upper sepal having feathered lines of claret-coloured blotches. The petals are closely spotted with the same colour, and the lip and staminode with very small, claret-red spotting. The lower sepals, hidden behind the broad petals, are white, with purple spotting at the back, and several thin, purple lines on the surface. As a flower it is much better than the spotted forms of *C. Godfreyae*.

CATTLEYA EILEEN.—Messrs. Stuart Low and Co. send a fine flower of a hybrid raised between *C. Dowiana* and *C. Carmen* (*Luddemanniana* and *Warszewiczii*). The flower is six inches across, has petals two inches wide, and a proportionately large and well-displayed labellum. The sepals are rose-purple, with a yellowish band down the two lateral ones. The petals are darker rose-purple, and the tube of the lip is of a still deeper shade. The front of the lip is deep ruby-crimson, and a series of yellow lines run from the base indicative of *C. Dowiana*, the lines being shaded with yellow on each side in a manner to be traced to *C. Warszewiczii*.



[Photograph by W. Irving.]

FIG. 69.—*CAMPANULA EPHESIA*: COLOUR OF FLOWERS PALE LILAC.

are produced in rosettes, from which spring numerous branching stems, 1 foot to 2 feet high, covered for most of their length with large, pale lilac-coloured flowers. The plant illustrated was a side shoot taken from the original plant and presented to Kew. The old plant made a fine bushy specimen with some twenty or thirty stems abundantly furnished with flowers. W. I.

ORCHID NOTES AND CLEANINGS.

DENDROBIUM ALPHA VAR. ELEANOR.

A FLOWER from a plant of this handsome and interesting hybrid is sent by Sir Jeremiah Colman, Bart., Catton Park, Surrey, who first flowered the cross between *D. euosium* (endo-

NEW HYBRIDS.

BRASSO-CATTLEYA CYNTHIA.—A flower of a new hybrid raised between *Cattleya Walkeriana* and *Brassavola Digbyana* is sent us by Mr. F. C. Puddle, gardener to W. H. St. Quintin, Esq., Scampston Hall, Rillington, Yorkshire. The flower is of medium size for a *Brasso-Cattleya*, and light rose in colour, with a darker rose veining, the disc of the lip being greenish-yellow, and delicately fragrant. The distinctly three-lobed lip of *Cattleya Walkeriana* brings about a narrowing of the middle of the lip of the hybrid which does not improve it florally, but is interesting as showing the conflict between the diverse features of the parents. *C. Walkeriana* is shown strongly in the broad, winged column. Another dissimilarity which has had to be accommodated in the hybrid is that

PLANT NOTE.

LESCHENAULTIA BILoba MAJOR.

I WAS interested to read on p. 176 that this beautiful blue-flowered *Leschenaultia* was shown at the meeting of the Royal Horticultural Society on April 24 last. Introduced from the Swan River district of Australia in 1839, the typical *Leschenaultia biloba* soon became popular as a hard-wood specimen plant, such as were at that time so generally cultivated. In the *Floricultural Cabinet* for 1845, it is frequently referred to as a feature in the groups of hard-wooded plants shown at the exhibitions at Chiswick and Regent's Park. Mention is made in the same work of a specimen 4 feet by 4 feet in Mrs. Lawrence's garden at Ealing Park, which was at that time famous for its hard-wooded plants. The improved *L. biloba major* seems to have been introduced soon afterwards, and in time to have superseded the typical form. At the International Horticultural Exhibition held in 1866, it was shown in several of the competing groups. After this date it would appear to have almost dropped out of cultivation till about 35 years ago it was brought prominently forward by Messrs. Balchin, of Brighton. Plants were grown in their branch nursery at Hantsocks that were remarkable not only for their robust health, but also for their richly-coloured blossoms. The disposal of the nursery led to the *Leschenaultia* in question almost disappearing from public notice. Another species, also extensively grown in the 40's of the last century, was *L. formosa*, with blossoms of salmon-scarlet tint. It is a weaker grower than *L. biloba*, though a specimen 2 feet high and 4 feet in diameter is referred to in the work quoted above in the notes from Ealing Park. It must, however, have gradually declined in favour, probably owing to the difficulties attending its successful cultivation.

Another species is *L. splendens*, which is stated in the *Dictionary of Gardening* to be synonymous with *L. hircina*. The flowers of this species are bright scarlet. W. T.

PRUNUS SERRULATA.

Is the wonderful succession of flowering trees that beautify the pleasures of England from April until the end of June, there are none with richer attractions than the many forms of *Prunus serrulata* which have come to us from Japan. In his recent work on the Cherries of that country, Mr. E. H. Wilson has distinguished about two dozen of these Cherries. *Prunus serrulata* was originally described and named by Lindley in 1850, in the Horticultural Society's *Transactions*, but his type specimen, now preserved at Cambridge, has no flowers. The type is, however, no doubt the low tree with a short trunk, wide-spreading branches, and double white flowers, not uncommon in gardens. Of late years many charming varieties have been imported from Japan, the flowers varying from single to double and from pure white to pink and rose. There is also a pleasing pendulous variety of recent introduction. The finest flowered forms, such as the one named after the late James H. Veitch, have blossoms quite two inches across. This variety, which has lately been reintroduced under the Japanese name "Benifugen," has rich, rosy pink flowers.

The variety illustrated in fig. 70 is one of the single-flowered forms in the collection at Kew. As may be judged from the picture, it carries a remarkable wealth of blossom, sometimes followed by a few black Cherries. The wild form of *Prunus serrulata* (as distinct from the type, which is Lindley's tree) may not be in cultivation, but, according to Mr. Wilson, it is common in Japan, south of the Nikko region, and in thickets in Western Hupoh, China.

The flowering season of the various forms ordinarily extends over four or five weeks, beginning late in April. This year when all vegetation is backward, we have not had them in April, and the season will probably be curtailed. One or more of them should be in every garden, even the smallest. The trees bloom with great regularity—one may say, indeed, that they never fail, and the flowers are rarely injured by frost. The plant thrives in a good bamy soil and a sunny situation. *B.*

ON INCREASED FOOD PRODUCTION.

FRUIT PROSPECTS AND MULCHING

J. E. asks (see p. 175): "In what way does the early mulching of Strawberries increase the risk of damage by frost?"

Because the temperature is lower *over* a mulching than over vacant dug land. This may be proved by the fact that frost shows earlier and later on the mulching than on the neighbouring ground not mulched. The same thing occurs on a lawn or grass field, and the time is visible for a longer time. Therefore the flower-spikes have to contend with more frost when the ground is mulched. Why is this? Because there is always a certain amount of warmth rising from the earth; mulching hinders this process, therefore the frost has more power.

I have often seen Rhubarb which was showing *above* the litter (most market gardeners cover Rhubarb with littery manure as far as possible) cut to pieces by the frost, while that on adjoining ground not littered suffered no damage. *Wm. Poupert, Marsh Farm, Turickenham.*

BUTTER BEANS

BUTTER BEANS are likely to be much more cultivated this season than has hitherto been the case in this country. Almost any variety of the Dwarf Bean may be utilized for the purpose; the Wax Bean, or Butter Bean, is excellent, and so is *Magnum Bonum*. The seeds of these beans should be sown at once in a sunny position. The ripe seeds should be harvested at the end of September or beginning of October, pulling up the plants and hanging them up to dry. After

drying is thoroughly assured, the Beans should be shelled and kept in a dry position. They will keep good for a long time.

CELERIAC OR TURNIP-ROOTED CELERY.

CELERIAC is one of our most useful winter vegetables, but the plant is not nearly so much grown in this country as its merits deserve. Previous to the war, Celeriac was imported in very large quantities, and realized high prices.



[Photograph by C. P. Raffin]
FIG. 70.—FLOWERING SHOOT OF PRUNUS SERRULATA.

The crop is very simple to grow, but if it is to be at its best it requires a long season of growth, and should be planted at once, on the flat, on rich ground, 2 feet from row to row and 1 foot 6 inches from plant to plant. An abundance of water should be given all through the growing season, and the surface soil stirred frequently with the Dutch hoe. The roots should be lifted and stored in sand in a shed on the approach of frost, where they will keep sound

all the winter. A trial of this vegetable was conducted in the Royal Horticultural Society's Gardens at Wisley last summer, and some very fine stocks were seen there.

CELERY.

THOUGH it is the usual custom, and a very commendable one, to prepare and plant Celery in trenches, especially for the mid-winter and spring crops, the plant can be grown successfully with much less trouble for early and late autumn supplies on the flat. The ground should be enriched with manure and deeply worked, setting the plants in beds of six or eight rows each. The roots should be well supplied with water, and fed with liquid manure. Dosing the growth frequently with fresh soot is beneficial. The stems may be blanched entirely by means of rough brown paper, thus saving an enormous amount of labour in earthing-up. The quality also is improved when the plants are blanched in this way, the "sticks" being cleaner, and seldom attacked by slugs. A further advantage is that the roots can be easily supplied with water in dry weather. *Edwin Roberts.*

POTATOS UNDER GLASS

WE have been lifting new Potatoes here for the past fortnight grown under glass in Cucumber and Melon houses. The varieties are Early Queen and Dumottar Castle. Many of the tubers weigh over half a pound each. About February 9 the houses were cleared of pot plants, and a layer of leaves was placed over the galvanised iron sheets, under which are hot-water pipes. On the leaves was put leaf-mould to the depth of four inches, and the sprouted tubers planted in this. As the plants progressed, mouldings were given with only the lead soil from the woodland, but just prior to each moulding Potato manure was applied, and the soil watered. The depth of soil when we finished moulding was about eight inches. Both varieties made remarkable growth. Early Queen averaging three feet in height, with beautiful dark-green foliage. This variety should have plenty of room, as some of the best tubers are produced at the end of roots which are sometimes a foot long.

Dumottar Castle will undoubtedly become a popular variety for culture under glass, as it is of dwarf habit, with strong stems. Another large house, 120 feet by 15 feet, is almost wholly devoted to Potatoes, which are nearly ready for lifting, the majority in the ground, others in large pots. Judging by the growth those have made, a good crop should be obtained. *T. Wilkins, Coedparhydylyn Gardens, Cardiff.*

POTATO WART DISEASE AND EDINBURGH ALLOTMENTS.

MUCH anxiety has been roused by the discovery that some Potatoes affected by the wart disease had been planted in some of the new Edinburgh allotments. The discovery was made through a woman presenting seed Potatoes, of the appearance of which she was suspicious, at the Edinburgh office of the Board of Agriculture. Investigation showed that there was no doubt of the place of origin of the affected tubers, and that about seven tons had been sold locally for seed. From this stock a portion was sold to allotment holders by an agent. It is believed that the names of all the Edinburgh purchasers have been obtained. Some of these were secretaries of allotment associations, and holders of plots who have purchased from these sources have been instructed to lift their seed Potatoes and have them examined. *S. J.*

CREDIT FOR FARMERS.

THE Board of Agriculture has authorised War Agricultural Executive Committees to arrange with various banks for loans to farmers who cannot pay cash. Practically all the leading joint stock banks have agreed to assist the scheme.



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

TURNIPS.—The earliest Turnips are ready for thinning, which should be done on a damp morning. Allow a space of 8 or 9 inches between the plants in the row. When the thinning has been done stir the ground with the Dutch hoe, and again on subsequent occasions to encourage quick growth. If wood ashes are available the plants will benefit by frequent dustings; soot may also be applied with benefit during damp, dull weather. Sow again for succession, choosing rich ground, allowing 15 inches between the rows. White Model and Snowball are good varieties for present sowing.

BROAD BEANS.—Longpod Beans may be sown in rich soil with a view to continuing the supply of pods as far into the season as possible. Choose a cool part of the garden, and allow plenty of space between the rows.

FRENCH BEANS.—This crop may be sown on warm, south borders where the soil is light and rich. Make the drills about 2 inches deep. When the plants show through the surface protection from frost and cold winds may be necessary, and for this purpose a quantity of light, dry material should be kept in readiness. French Beans sown in small pots now and raised in gentle warmth will be useful for planting in the open early in June.

ONIONS.—Spring sown Onions should be thinned as soon as the plants are advanced sufficiently, but do not thin them severely unless extra large bulbs are required. After thinning stir the soil lightly with the Dutch hoe, and hoe it again frequently during the growing season. Dust the plants on several occasions with soot, selecting dull days.

CUCUMBERS.—Cucumber plants in bearing will be greatly benefited by top-dressings of light, rich soil applied at intervals, first sprinkling the surface with bone-meal. Give particular attention to stopping and tying the young growths, which should never be allowed to become crowded, for the removal of large quantities of foliage at one time would result in a severe check to growth, and affect the supply of fruit. Syringe the plants twice daily, and close the ventilators early in the afternoons. A night temperature of 70° or 75° is suitable. Make another sowing to provide plants for successional fruiting; it is better to make a new plantation than to retain old plants when they are past their best condition.

TOMATOES.—Gather Tomato fruits before they become over-ripe and place them in a cool store room. Stimulate the plants with liquid manure to assist them to develop the remainder of the crop. Successional plants should be top-dressed with fine soil mixed with concentrated fertiliser, pressing the soil on the surface of the bed. Remove the side shoots. Tap the trellis several times daily in order to distribute the pollen. Plants in beds may be allowed plenty of head room, but pot plants should be stopped after a sufficient number of trusses has formed, for only a limited number of fruits will ripen before the food contents of the pot become exhausted. Young plants should be potted up and grown in a well ventilated house.

POTATOES IN PITS.—Early Potatoes growing in pits should be ventilated freely, and never allowed to suffer from want of water at the roots. Open the lights a little at night in order to secure stocky growth; on mild days the lights may be removed altogether, replacing them at night. Late Potatoes should be planted as quickly as possible, allowing plenty of space for the plants to develop. Tubers intended for extra late planting should be laid out singly in a well-ventilated shed.

PARSLEY.—Make a good sowing of Parsley in drills 16 inches apart and thin the seedlings to 6 inches in the row, choosing well-prepared ground. Parsley is a deep-rooting plant, and requires rich soil. Old Parsley beds should be hoed and the soil sprinkled with soot.

THE FLOWER GARDEN.

By W. J. GRISB, Gardener to Mrs. DEMPSTER, Keele Hall, Staffordshire

YEW HEDGES.—The present is a suitable time to clip Yew hedges or specimen Yews. Plants in hedges sometimes die, causing bare patches, and this is due in most cases to lack of nourishment. A liberal mulching of decayed manure is essential to keep the trees in a healthy condition, as Yews are gross feeders, and soon show signs of exhaustion in poor soil.

BEGONIA.—Tuberous rooted Begonias started in boxes earlier in the season are ready for transplantation to 5-inch pots. If the stock is limited divide the larger tubers with a sharp knife. Place the plants in a close frame until they are established, but later admit air, increasing the amount of ventilation gradually.

WALLFLOWERS AND OTHER SPRING FLOWERS.—To obtain sturdy Wallflower plants in October the seed should be sown in rows made 1 foot apart. Certain varieties, including Ivory White, Orange Bedder, Faerie Queen and Rosy Gem germinate more readily when sown in a cold frame. A list of the best varieties includes Cloth of Gold, Fire King (orange), Giant Vulcan (crimson), Purple Queen, Eastern Queen (apricot), and Blood Red. In dry weather spray the seed bed in the evenings. The early-flowering varieties are quite hardy, and require similar treatment to the ordinary sorts. Other seeds for spring bedding to be sown at the present time include Erysimum (Golden West a capital plant for edging), E. pulchellum (a charming rock garden plant), Silene, Anemita, Double Daisies, and Sweet Williams. The Daisies and the choicer varieties of Dianthus should be sown in boxes or a cold frame. Polyanthus also are suitable for spring bedding, the Munstead being an exceptionally fine strain. Sow the seed in boxes in a compost consisting of loam, leaf mould and sand. Pansies may have similar treatment. Shade the frame until the seed has germinated, and on no account allow the soil to get dry.

PENTSTEMON.—Garden Pentstemons give flowers of a variety of colours, and may be used freely in the flower garden in place of more tender bedding plants. A liberal dressing of decayed manure and leaf mould forked into the soil will give good results. A space of 18 inches between each plant is sufficient. The variety Newbury Gem may be employed as an edging. Pentstemons require plenty of moisture.

BROMPTON STOCKS.—Plants of Brompton Stocks in pots or boxes should be transferred to their flowering quarters without delay. A distance of 18 inches between the plants will suffice. Finely ground mortar rubble or a little fine lime forked into the soil prevails to planting will be beneficial. Water around the base of each plant to settle the soil about the roots.

LILIUM.—Plants of *L. auratum*, *L. longiflorum*, and *L. speciosum* grown in pots should be in capital condition for planting out-of-doors. It is not advisable to delay their planting, or growth may receive a check when they are shifted from the pots later. Take the necessary precautions against snails.

TREES AND SHRUBS.—Let recently-planted trees and shrubs have liberal supplies of water until the roots are well established. To conserve the moisture present in the soil apply mulchings of decayed leaves and litter. Rhododendrons must not be allowed to become dry at the roots. A liberal mulching of farmyard manure will soon alter the appearance of any that do not appear to be prospering. Ribes, Jasminum nudiflorum, Forsythia and other spring flowering shrubs should have the weak growths removed immediately after flowering.

HERBACEOUS BORDERS.—Some of the early-flowering herbaceous plants will need staking and thinning. Pyrethrums should receive attention before they become twisted or broken by the wind. Such plants as Chrysanthemum maximum, Asters, Phloxes, Heleniums and Helianthus will require to be thinned, removing the weaker shoots. If these weak growths are pulled out and not cut off they will give no further trouble. The severe frost this winter has killed all the Tree Lupins at Keele; their vacant spaces will be filled with Dahlias.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR DAVEY, Abbots Wood, Godalming, Surrey.

WATERING NEWLY PLANTED TREES.—Newly planted trees, and especially those against south and south-west walls, will require watering in dry weather. Newly planted trees in other positions are also liable to suffer at this season from an insufficient supply of moisture. The rainfall this spring has been much below the average, and most of the rain and snow has come from the north, so that trees in south aspects may be dry at the roots. Most kinds of fruit trees are showing well for blossom.

RASPBERRIES.—Remove all stray suckers from Raspberries by means of a fork, and only retain those in close proximity to the stools. By pushing a fork under the sucker it may be removed easily without disturbing or damaging the main roots. Tread the ground firm after the operation. If the plants have not been mulched this should be done forthwith. If manure is not available sprinkle bone meal and Clay's Fertiliser along the rows. A little stimulant applied now will enable the buds to develop into vigorous growths that will bear good fruits.

STRAWBERRIES.—Use the hoe freely between the rows of Strawberries on fine days to destroy seedling weeds, which at this season increase rapidly, and more especially on light, sandy soils. When the soil is clear of weeds scatter a little fresh slaked lime or soot, or both, on the soil to destroy slugs and other insects. Get ready a quantity of clean straw for placing along the rows to keep the berries clear of the soil. Examine the netting and poles used against birds, and make what repairs are necessary.

HARDY VINES.—Vines out-of-doors are breaking freely, and should be regularly disbudded, leaving only one strong shoot to a spur. The Vine is now generally grown in this country for its fruit, but the plant is exceedingly ornamental, and the foliage gives fine autumnal colourings. In warm seasons crops of very good fruit can be obtained provided the requisite attention is paid to thinning the bunches and stopping the laterals. The roots should be afforded rich top-dressings and plentiful supplies of water and liquid manure.

CHERRY TREES.—Keep a sharp watch on Cherry trees for insect pests, as the season is late and the trees will undoubtedly grow quickly. The early shoots are very liable to attacks of aphid, which spreads rapidly. As soon as the flowers are over spray with Quassia Extract, wetting every portion of the tree. If the pest appears before the flowers are over there need be no hesitation in spraying, but it must be done gently. The liquid should be used in a luke-warm condition, and if the weather is favourable can be applied twice in one day, for a second spraying quickly following the first gives the pest no time to recover.

PEACHES AND NECTARINES.—These fruit trees are passing out of bloom and need care and prompt attention in the removal of all useless growths. At this season growth is often stunted by green and black aphid, which should be destroyed quickly. Remove all frontal shoots and those ill-placed; on no account leave a greater number of shoots than is required for next year's cropping. There has been no rain for 16 days, and trees trained on south walls and growing in sandy soils may need moisture.



(Photographs by H. N. King.)

COPPED HALL, ESSEN, THE RESIDENCE OF E. J. WYTHES, ESQ.

PLANTS UNDER GLASS.

By J. G. WERTON, Gardener to Lady Northcott, Eastwall Park, Kent.

RICHARDIA ELLIOTIANA and **R. ANGSTILOBA PENTLANDII**.—These yellow-flowered Arums provide a pleasing change to the usual flowering plants in the greenhouse and conservatory. They need somewhat different cultivation to that given to *Richardia africana*, commonly known as the White Arum. The foliage dies away in the autumn, and water is not required by the plants during the winter, merely storing the dried corns in a warm house, as is usually done with *Caladium*. In the spring, before growth starts, the old soil should be shaken away and the roots re-potted in $\frac{1}{2}$ or 6 inch pots, according to their size. Grow the plants in a warm house, merely damping them lightly to supply moisture until the roots become active, when water should be given. Let the plants have a little stimulant when the spathe appears, and when the flowers are fully open remove the plants to a cooler and drier house to preserve the blooms.

IVY-LEAVED PELARGONIUMS.—Few plants are superior to the Ivy-leaved Pelargonium for giving a succession of flowers over a long period in the greenhouse. The plants are making rapid growth after their winter rest. If large specimens are desired, select a number of the best plants, pot them on, and grow them steadily in a light house. After the plants are re-established, let the plants have an abundance of air, and grow them in full sunshine. Pinch out the blossoms and the joints of the shoots for a few weeks, in order to obtain good specimens. The plants may be trained in various shapes, for instance, as loose pyramids or standards.

VENTILATING AND SHADING.—The majority of plants in the glass houses are making new growth, and the ventilation and shading of the plant houses calls for unremitting care and attention. Brilliant sunshine is often accompanied by cold winds, and extreme caution is required when ventilating plants of tender growth. The inexperienced often allow the temperature to rise too high before ventilating, then, taking alarm, throw the ventilators wide open, thereby causing an influx of cold air. The cold draught checks the growth of the plants, and often lays the foundation of ill health; it may also favour attacks of mildew. Speaking generally, ventilation at this season should be afforded as soon as the temperature commences to rise in the morning. Start by admitting a very small amount of air, and increase the quantity gradually as the temperature rises.

THE PLANT STOVE.—The temperature of the plant stove should range between 65 and 70 at night. Ventilate the house slightly when the temperature reaches 75 to 80, increasing the amount of fresh air a little if it rises beyond 80. The blinds should be lowered as required for the particular occupants of the house, but not unless the temperature will maintain itself at 75 to 80. The house should be closed at a point in the afternoon so that the temperature will reach 85 with sunlight, thus keeping the house warm until late in the evening and economising fuel. At the time of closing the houses syringe the plants overhead and damp the walls, floor, and the space under stages, as a damp atmosphere favours a healthy growth and restricts insect pests. Always prevent an arid condition in the plant houses.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Ganton Park, Reigate.

MAXILLARIA.—Plants of *Maxillaria venusta*, *M. candida*, *M. picta*, *M. Turneri*, *M. Mooreana*, *M. striata* and others that are rooting freely should be re-potted if they need larger pots. If repotting is not necessary, remove some of the old soil and replace it with fresh compost. *Maxillarias* develop numerous small roots, and require plenty of surface space. Pots or pans are the most suitable receptacles for those mentioned, and they should be half filled with drainage material surfaced with a layer of Sphagnum moss. The compost should consist of equal parts Osmunda

fibre and Sphagnum-moss, divided into small portions, with sufficient crushed crocks to render the soil porous. *Maxillarias* require an abundance of water while in active growth, but the roots soon decay in a close, stagnant soil. *Maxillaria Sanderiana* and *M. Lindenii* are best grown in oak-wood baskets, as the flower-spikes sometimes push through the bottom of the receptacle. For this reason Fern rhizomes should be employed instead of crocks for drainage purposes. These two species, together with *M. fuscata*, *M. Hubschii* and *M. varinata*, should not be re-potted until after they have finished flowering. All the species mentioned require an intermediate house temperature.

LYCASTE.—The flowering of *Lycaste Skinneri* and its variety *alba*; *L. Billiae*, *L. Lucanii*, *L. Gutturiae*, *L. leucantha*, *L. Costata* and others, is finishing, and roots are growing from the base of the young shoots. At this stage of their development the plants should be either top-dressed or re-potted. Healthy specimens that have become pot-bound should be afforded larger receptacles that will accommodate the roots for at least two years. Those in a bad condition with sour compost should be taken out of their pots, the roots cleaned of all the old materials by washing, and re-potted in comparatively small pots. Plants that have sufficient rooting space, and compost in good condition, should not be re-potted, but portions of the old soil removed from the surface and replaced with fresh compost. In re-potting, the pots should be filled to one-third their depth with material for drainage. Make the soil firm and arrange it to within half an inch of the rim of the pot. Water the roots sparingly for a time, but later, when the receptacles are filled with roots, they will require more moisture. When growth is completed, only sufficient water is needed to maintain the pseudobulbs in a plump, rigid condition. At that stage the plants should receive an increased amount of sunlight to ripen and consolidate the pseudobulbs, and then kept on the dry side until the flowers begin to develop. During their growing season, *Lycastes* should be syringed overhead on frequent occasions. Scale insects are sometimes troublesome, and must be kept in check. A suitable compost for *Lycastes* consists of two parts rich fibrous loam, removing the smaller particles, and the remaining part a mixture of fibrous peat or Osmund fibre, half decayed Oak leaves, and Sphagnum moss, cut into rather short portions, adding sufficient crushed crocks and silver sand to keep the mixture porous. During the summer the plants grow well in a shady position in the Odontoglossum house, but they should be removed to the intermediate house for the winter.

FRUITS UNDER GLASS.

By JAS. HUNTER, Gardener to Mr. EDWARD DE ROTHSCHILD, C.V.O., Gunnersbury House, Acton, W.

NEWLY PLANTED VINES.—Young Vines that were planted a month or so ago are commencing to grow freely, and with more genial weather it will be safe to increase the temperature of the house both by night and by day. Make a point of closing the ventilators early in the afternoon to take advantage of the sun's heat, and thus economise fuel. Should the temperature fall to 60° or thereabouts in the morning no harm will result. Syringe the Vines freely, both in the morning and afternoon, with water that has stood in the house for a few hours. If there is no water tank in the house use a tub, and place in the tank or tub a sack bag or old stocking leg filled with soot, weighted so that it falls to the bottom. Do not disturb the bag of soot; all that is needed is that the water should taste somewhat bitter, and be of a cloudy appearance. On one occasion my Vines dropped their leaves at the points of the shoots when the foliage was quite small. This was caused by a very minute spider, not the red kind, but the use of soft-water soon destroyed the pest. Keep the young leading growths tied to the wires sufficiently to keep them straight, and pinch the laterals at the first joint. If this is done, the force of the syringe will not harm the tender growths. The latest Vines

are in active growth, or approaching that condition. See that the shoots are disbudded in good time, but do not tie them to the wires until the danger of them breaking at the base is over. After midday the shoots become a little wilted, and that is the best time to tie them. The shoots will stiffen in the night and morning, sometimes causing them to be forced from the stem at the base. This often happens in the variety Black Alicante and other strong growers. If in the mornings the young leaves are besprinkled with dewdrops, tap the rods to cause the moisture to drop, for with a few dull days, and little or no fire-heat, the tips of the leaves of Lady Downie's and Black Alicante would be disfigured. Vines intended for fruiting in pots next year should be placed in their final pots forthwith. Make the soil firm, and use similar compost to that recommended for Vine borders. Vines raised from eyes this spring should be re-potted before they become pot-bound.

POT FRUIT TREES IN COLD HOUSES.—Our pot trees that are fruited in cold houses are plunged in winter in a bed of coal ashes in a cold house with about 6 inches of the ashes over the pots. The pots are perfectly safe from damage by frost, and with wire covering the ventilators there is no danger of damage to the buds by birds. The trees are plunged closely together in winter to economise space, but now we are standing them apart for the season. Nearly every tree is well furnished with fruit buds, and the earliest flowers are expanded. We place a hive of bees in close proximity to the house, and I notice to-day that the bees are already busy amongst the trees. Close attention must be given to watering, and a keen watch kept for the presence of aphid.

POT TREES WITH FRUITS SWELLING.—The fruits on the earlier Cherry, Peach, Nectarine, and Plum trees have set abundantly, and require thinning freely. For Cherries and Plums I prefer to use a pair of Vine scissors. Leave a margin above what will be required for a crop in case some of the fruits fall. Cherries sometimes turn yellow and drop, but almost all danger from this cause is now past. As a precaution against damage by extra bright sunshine a thin shading is necessary; we use No. 3 blind, which is drawn over the roof when necessary. This blind also serves a good purpose in keeping ripe fruit from shrivelling. Fire heat is not needed now for Cherries, and the valves of the water pipes have been turned off for a fortnight. The house is ventilated both at the sides and top, for a cool night temperature is in accord with the requirements of the Cherry. The earliest fruits are already showing colour. Plums, too, are looking very well. These fruits receive similar treatment as regards temperature and ventilation to Peaches and Nectarines. We have a full crop, especially of Early Transparent Gage. I noticed a little Plum aphid recently, but the pest has been checked. The crops of both Peaches and Nectarines require much thinning. We shall now expedite the work of top dressing the trees in every instance. A little warmth is still maintained in the water pipes, but it will soon be dispensed with unless the weather turns wet.

FIGS IN POTS.—Our pot Figs are still crowded, and not until the earliest fruits are ripe and the trees cleared outside will more room be available. The Cherry house will, as usual, be the first compartment to afford relief, early in June.

INARCHING VINES.—Inarching is better than grafting with the old wood in the case of the Vine. The operation is easily performed, and almost always with certain success. Select a suitable spur at the base of the Vine as the stock and choose the best possible shoot from the variety to be inarched. This will most likely be of a Vine in a pot. Bring the two young shoots into contact, first cutting away about half of the shoot in each instance, and about 3 inches or a little more in length, cutting it to the pith in each case. The two shoots should be of nearly the same diameter. Having thus fitted the two shoots together bind them together tightly with soft raffia. Stop the leading growth of the stock and after a month or so, if the raffia is seen to be too tight, let it be loosened.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary Department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication.—As well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 52.8°.

ACTUAL TEMPERATURE:—Gardener's Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, May 10, 10 a.m.: Bar, 53.5, temp. 61.0. Weather—Cloudy.

SALES FOR THE ENSUING WEEK.

TUESDAY AND WEDNESDAY.—Greenhouse, Bedding Plants and Orchids, Farming Implements and Sundry Effects at Southgate House, Southgate, by Proberts and Morris, at 12.30.

FRIDAY.—Teakwood Garden Furniture, Garden Ornaments and Japanese Dwarf Trees, at 67, Chesepide, E.C., by Frodshere and Morris, at 1 o'clock.

Under the War Lands Cultivation Order, large areas of land have been brought under spade cultivation in this country for the production of food crops, and the land has been divided into allotments usually of ten rods each. Where suitable land existed and could not be obtained in the ordinary course, the local authorities were given the power to take possession and mark out the plots to meet the demand.

But the tenancy under this Order is for less than two years, and therefore differs entirely from holdings under the Allotments Act. Such a tenancy is far too short to enable the cultivator or the nation to obtain the best results from the allotments. Much of the land was formerly old pasture, and the holders have had to work hard to reduce it to a condition of reasonable fertility. It is felt that as the work is being done in the first place on behalf of the nation, and in the second place on behalf of the allotment holders themselves, they deserve better conditions of tenancy, so that during the third and fourth years they may produce abundant crops without the enormous physical effort expended in the first year.

The rent generally charged appears to be fairly good, consequently the landlords will not suffer any material loss if the tenancy was extended to three years, or

until two years after the declaration of Peace, with due consideration to the acquisition of the land under the Allotments Act at the expiration of that period. A report has appeared to the effect that cultivators of small allotments are guaranteed occupation until January 1, 1919. This is good news so far as it goes, and, if true, it provides the thin edge of the wedge, so that a little hammering should secure the larger and more reasonable extension desired.

The causes which have combined to create the present shortage of food need not be detailed here further than to state that the war has withdrawn a very large proportion of the labour from farms, market gardens, and private gardens. The conveyance of men, munitions, and material to the various theatres of war is a severe tax upon our shipping, causing a reduction of food imports, which is accentuated by the U-boat piracy. However soon the war may end, the release of shipping for food importation and the release of labour for food production at home will not put matters right at once, nor, indeed, for a long time to come. Many nations are engaged in the war, and have not produced foodstuffs at the pre-war rate for a long time, consequently plentiful importations of food cannot be expected until two or three harvests after the war.

It follows, therefore, that everyone who produces food by cultivating land during spare time will be contributing to the re-establishment of prosperity after the war ceases. Other pleas might be put forward for the extension of the tenancy of war-time allotments, such as the healthfulness of gardening, the advantage of fresh vegetables, cheaper food, and the opportunity it would afford for an extension of intensive cultivation to supplement the crops resulting from farming.

It seems desirable, therefore, to bring pressure to bear, if pressure is needed, upon the Government to secure an extension of the lease which will give security of tenure for three years, or until two years after the war ceases. Such pressure can be exerted through local horticultural and allotment societies, and by writing to members of Parliament drawing their attention to the subject. The Royal Horticultural Society, the Royal Caledonian Horticultural Society, and the Royal Horticultural Society of Ireland could exert a powerful influence in the right direction; and, finally, the Horticultural Department of the Board of Agriculture might, without pressure from outside, bring its influence to bear upon what is undoubtedly an important matter, and one which is greatly exercising the minds of thousands of war-time gardeners.

SUPPLEMENTARY ILLUSTRATION.—Those of our readers who have had the privilege of visiting the beautiful gardens at Copp'd Hall, Epping, the residence of E. J. WYTHES, Esq., will be grieved to learn that the mansion was completely destroyed by fire on the 6th inst. The outbreak was discovered early in

the morning, and though fire engines quickly arrived on the spot, the conflagration became uncontrollable. A large proportion of the contents of the mansion was saved, but the building itself was destroyed. We publish with the present issue a supplementary illustration of the building recently destroyed, and of a portion of the grounds, including part of the formal gardens, for which Copp'd Hall is famous. Though the mansion is not of great antiquity, the garden is that of a former residence, built on the same site as the present one, for Sir T. HENEAGE, in the reign of QUEEN ELIZABETH.

TRIAL OF FLOWERING STOCKS AT WISLEY.—On the 4th inst. a deputation from the Floral Committee of the Royal Horticultural Society visited Wisley to make an inspection of flowering stocks. There were something like 180 lots, and twelve plants of each lot, all in pots. The plants evidence of first-class cultivation, great credit being due to Mr. WILSON, in whose care the plants have been from the first. A further inspection will be made on the 17th inst., and on the same day a trial of *Myosotis* will also come before the Committee for award.

ALLOTMENT HOLDERS AND THE CINEMATOGRAPH.—A day or two ago we had the privilege of inspecting a series of cinematograph pictures representing some of the principal operations in the cultivation of the popular vegetable crops. It appears that the Topical Press Agency applied to the Horticultural Director of the Food Production Department, for facilities to obtain a film which would be of educational value. The Director recommended them to go to Wisley, where they found the R.H.S. most willing to afford them every opportunity for taking the photographs. The film is very satisfactory, especially the first picture, which shows a man digging the soil—a cleaner digger one would not wish to see. Following this are pictures representing the planting of Potatoes, the spraying of the haulms against disease, earthing-up the plants with the draw hoe, and finally, the lifting of the new tubers. Of these pictures perhaps the weakest is that representing the spraying, as the leaves are sprayed merely on the upper surface. The hint should have been conveyed that the underside is in no less need of treatment. The remaining pictures include the preparation of a trench for Celery, the drawing of drills for Cabbages, and the planting of the Cabbages. It is proposed to get the film into as many theatres as possible, and we are quite sure that many allotment holders who are cultivating ground for the first time will obtain many useful hints. The exhibition of the whole film occupies about seven minutes.

KEW GUILD.—The annual general meeting of the members of the Kew Guild will be held in the Lecture Room, Royal Gardens, Kew, on Saturday, June 2, at 5 p.m.

INTERESTING PLANTS AT KEW.—The *Baffodils* and early flowering trees and shrubs at the Royal Gardens, Kew, are now very attractive. During the recent bright days, visitors have been numerous, and we understand that on each of the last two Sundays a sum of about £50 has been taken at the turnstiles. The beautiful colouring of the unfolding Beech leaves, with the springing Blue-bells as a carpet, furnish a most charming effect. In the Temperate House a tall tree of *Davidia involucreata* is covered with the large pendulous bracts which form the conspicuous part of its inflorescence. A large plant of *Puya coerulea* at the Mexican end of the house carries four spikes of expanded flowers, erect, campanulate, deep peacock blue, each holding a large quantity of nectar. *Strelitzia Reginae*, the gorgeous Pelican Flower, is in full bloom. A close neighbour is *Yucca Tree-leaved*, a paniculate, holding erect its densely-branched spike of creamy-green tinted blossoms. The *Franciscas*, of which there are numerous

examples in full bloom, add their rich blue colouring to the general effect.

RHUBARB LEAVES AS SPINACH.—*The Times* of the 9th inst. gives a report of the inquest held at Enfield on the body of the Rev. WILLIAM ROBERT COLVILLE, Enfield. The coroner said there was reason to fear that Mr. COLVILLE'S death had been caused or accelerated by eating Rhubarb leaves cooked as a vegetable. There had been statements in the Press recommending the use of Rhubarb leaves in the same way as Cabbage or Spinach. So far as he could find out, there was not at present available any note of the analysis of Rhubarb leaves. An exhaustive analysis was to be made by the Home Office analyst, and until the result was made public he would advise people to leave Rhubarb leaves alone. It was stated in evidence that the Rhubarb was eaten by Mr. COLVILLE'S family for Sunday's dinner, and in the evening all the family complained of sickness and abdominal pains. Mr. COLVILLE suffered the most, complaining of violent abdominal pains whenever he moved. He was treated by his own doctor for three days, but not improving, he was taken to the hospital, where he died. The inquest was adjourned until the 26th inst. for the report of the Home Office analyst. It is interesting to note that exactly seventy years ago, namely, in May, 1847, a shortage in green vegetables led to a discussion of the question whether the leaves of Rhubarb could not be used to supply the deficiencies in Cabbage and Spinach. A correspondent in *The Lancashire Chronicle* of May 8, 1847, states: "I have several times eaten the young leaves of the Rhubarb plant dressed as Spinach, and also the flower buds plainly boiled as a vegetable, without experiencing therefrom any sensible ill-effects. This, however, affords no criterion by which to judge of the results produced on others." Another correspondent testifies to having "cooked some (i.e., buds) and eaten of it without the least ill-effect, . . . cooked as Broccoli." However, in view of the results which ensued in Mr. COLVILLE'S case, we think our readers will be well advised to await the Home Office report before indulging in this particular form of economy. In any case, very young leaves would be less likely to cause trouble than those more mature.

HISTORIC TREE.—Under the heading of "Trees with a History," Signor ETORIO MONTINI contributes an interesting article to the *Domenico del Corriere*. Paris possesses a living record of the proclamation of Italian unity. At the de Vilhiers Gate, between the Customs office on the left side pavement, a superb Elm raises itself towards the sky. It was planted 56 years ago, in March, 1861, when VICTOR EMMANUEL, King of Sardinia, became King of Italy, after the battle of Solferino. Seriously wounded during the battle, he was constrained to remain some length of time in Lombardy. On departing he took with him, as a memento, an Elm plant. This was re-planted at Paris and carefully tended.

WAR ITEMS. We regret to announce the death from wounds received in action of THOMAS YOUNG, eldest son of Mr. JAMES YOUNG, superintendent of the Royal Zoological Society's Gardens, Regent's Park. Deceased was a member of the staff of Messrs. HENNER AND SONS, Houndsditch, for almost twenty years. Death took place on the 18th ult. Mr. YOUNG'S youngest son is also serving with the Colours in France, where he went in August, 1915.

The following letter has been received from the Rahlleben Horticultural Society, acknowledging a consignment of vegetable seeds recently sent to the Rahlleben Prisoners' Camp by the Royal Horticultural Society: "Your consignment of vegetable and flower seeds sent through the Central Prisoners of War Committee has arrived here in good condition, and I wish to thank you, and through you the donors, for these acceptable gifts. You will be in-

terested to know that our arrangements for the renting of the ground for the vegetable garden have been satisfactorily concluded, and that we hope very soon to commence trenching the ground, which, owing to very severe frost, we have not yet been able to do. In the meantime, work continues in our nursery, where we already have a large stock of seedlings nearly ready for planting out. Again accept our warmest thanks for your gifts.—**RHLLEBEN HORTICULTURAL SOCIETY.** (Signed) T. HOWAT, Hon. Sec."

News has been received that Private WILLIAM M'LAHLAN has been killed in France. He was a gardener in the employment of the Right Hon. A. J. BALFOUR, M.P., at Whitting, home. Private M'LAHLAN leaves a widow and two children.

Lance-Corporal A. DOUGLAS has been wounded in the fighting at Gaza. He served his apprenticeship as a seedman with Messrs. T. KENNEDY AND CO., Dumfries.

We regret to record the death of RILEY GEORGE CHARLES PRATT CUTHBERT, F.R.S., eldest son of GEORGE and ELY CUTHBERT, "Ashleigh," Southgate, N., aged 27. Deceased died on May 2 from wounds received in action.

PUBLICATIONS RECEIVED.—*The Pruning Manual*, by L. H. BAILEY. Revised edition. (New York: The Macmillan Co.) Price 8s. 6d. net.—*Food, Fruit, and Flowers*. By Walter P. WRIGHT. (London: J. M. Dent & Sons, Ltd.) Price 5s. net.—*A Census of New South Wales Plants*. By J. H. MAIDEN and the late ERIC BETHGE. Supplement I. Fresh-water Algae. By G. J. PLAYFAIR. (Sydney: W. A. Gullick, Government Printer).—*Vegetable Culture for All*. By "Eva". (London: Herbert Jenkins, Ltd.) Price 2s. net.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

BOTTLING GREEN PEAS.—I enclose a recipe for bottling Green Peas which I copied from a weekly newspaper. "Shell the Peas, and give them a slight boil. Drain on a sieve, and pound the peas in a little of the water in which the Peas were boiled. Strain the puree which comes from the pods, and boil it with as much water as will cover the Peas when bottled, adding a little salt. Put the Peas into bottles or screw-top jars, pour the water over them, and when cold tie down." I have always understood that the bottling of Green Peas was a difficult operation, yet this recipe seems simple. It would be interesting to know if any reader has tried this method with success. D. C.

SPRING FLOWERS AT HINTON ADMIRAL.—At the present time there is one of the most displays of bulbs naturalised in grass that one could wish to see at the seat of Sir G. MEYRICK, Bart., Hinton Admiral House, Christchurch, Hampshire. The pleasure grounds being very undulating, are most suitable for this style of planting. The Daffodils are magnificent, and their colours well blended. The blue Anemone apennina is planted in masses at the foot of a large tree, and there are large clumps of Erythronium Dens canis (rose), Fritillaria Mel egris in variety, and Muscari botryoides in the dells. The rock garden adjoining is becoming bright with masses of Primula denticulata, P. rosea, and various Aubrietias. The severe winter has destroyed some of the choice plants in this lovely rock garden. In the glasshouses is a collection of extremely healthy and vigorous Perpetual-flowering Carnations, and one plant house is devoted to Pelargonium Florinda grown in pyramid form in 3 inch pots, and magnificently flowered. Well-flowered Cyclamen giganteum and a fine batch of Primula obconica grandiflora in various colours, are other good features. Visitor.

SIGNS OF SUMMER.—The cuckoo arrived here on Monday, April 30, which is much later than usual, and swallows on Wednesday, May 2. J. Batters, Gillingham, Norfolk.

SOCIETIES.

ROYAL HORTICULTURAL

MAY 8.—The fortnightly meeting of the Royal Horticultural Society on Tuesday last was by far the most successful held in the Drill Hall this year. The building was filled with exhibits of a miscellaneous character, and the attendance was the largest for many months past. Collections of Daffodils constituted the chief feature of the show, and clearly demonstrated the success which has attended the efforts of hybridisers to obtain improved form, more brilliant colouring, and other desirable qualities. The Narcissus Committee recommended four Awards of Merit to novelties and awarded six Medals to collections.

The groups before the Floral Committee were very numerous, and the general standard of quality good. The principal subjects were Roses, Carnations, Calceolarias, Auriculas, Schizanthuses, Ferns and hardy plants. As at the last meeting, Mr. ELSHA J. HICKS contributed some exceptionally well-grown Roses, chiefly varieties of his own raising. Those who have complained that some of the modern Roses completely lack the sweet scent of the older varieties will appreciate the varieties Mrs. G. C. NORWOOD and Mrs. ELSHA HICKS, both of which are well perfumed, as well as possessing first-rate colour and form. The white cluster Rose *Sunningdown*, which was included in the exhibit, is also sweetly scented. Messrs. B. R. CART AND SONS' exhibit of these flowers, and Mr. GEO. PRINCE'S exhibit of these flowers, included a mass of the yellow Banker Rose and specially good blooms of the new Flame of Fire. Messrs. W. PAUL AND SONS showed their novelty *Scarlet Rambler*, which is so suitable for pot cultivation. The group was a large one, and provided a mass of brilliant colouring. Mr. MOX'S Calceolarias were much admired; the collection was especially rich in yellow shades, although most other colours were represented. Some of the plants carried a great wealth of bloom, and looked like large posies. Another fine florist's flower, the Schizanthus, was shown by Messrs. DOBIE AND CO. in an improved form, the two chief points of the strain being the superior colour and size of the flowers and the compact habit of growth.

No flower of modern times has made greater progress than the Perpetual-flowering Carnation. It has become a standing feature of the fortnightly meetings, and the Carnation groups contribute some of the finest colour effects. Messrs. ALLWOOD BROS.' group was composed of fine blooms of the choicest and newer varieties, and Messrs. STUART LOW AND CO. and Mr. J. C. JENNER showed also very commendable collections Auriculas, which are very late this season, were shown well by Mr. JAMES DOUGLAS, Mr. J. C. ALLGROVE, and Mr. CHARLES TURNER. Messrs. H. B. MAY AND SONS' Ferns were of their usual high quality. Mr. G. KEESWELL'S flowers of *Gentiana acuminata* attracted considerable notice, this beautiful Alpine being, as usual, in its best form. A more miscellaneous exhibit was the group of pot shrubs and climbers shown by Messrs. PIPERS, the chief feature of which was *Rosa Hugonis*, shown as weeping standard and climbing pillar Rose. Messrs. W. CRUSH AND SONS showed finely flowered plants of *Azaleas*, in addition to boxes of hardy plants. Hardy plants were also shown by Mr. G. REITH. Messrs. H. CANNELL AND SONS showed Zonal Pelargoniums.

The exhibits of Orchids still form an interesting feature of the show, and although the groups are not so large as they used to be at Vincent Square, they still represent all that is best and choicest of these beautiful flowers. Good novelties are usually forthcoming in fair numbers, and on this occasion three new varieties received Awards of Merit and one a Preliminary Commendation. In this section four Medals were awarded to groups.

There were not so many exhibits before the Fruit and Vegetable Committee, but they included one of great merit, namely, a collection of vegetables shown by Messrs. SUTTON AND SONS. The group was a very representative one, and included Broccoli Satisfaction and Snow

White, Cabbages Harbinger and April, Lettuces Ideal and Golden Ball, Potatos May Queen and Ringleader, Green Bush Marrows, fine Cucumbers, Chicory, Asparagus, Mushrooms, Radishes and Seakale.

Another interesting exhibit was that of Mr. R. STAYMAN, Panshanger Gardens, consisting of excellent heads of Cabbage Red Braes Early from a sowing made on July 15, 1916, being the earliest-heading of ten varieties sown on the same day. Mr. J. C. ALLEGROVE, showed well-kept tubs of Apples Ontario, Lord Burleigh, Northern Greening, and King of Tompkins County. Messrs. DOBBIE and Co. showed a number of varieties of Potatoes, rather an unusual exhibit in May, but appropriate in the circumstances.

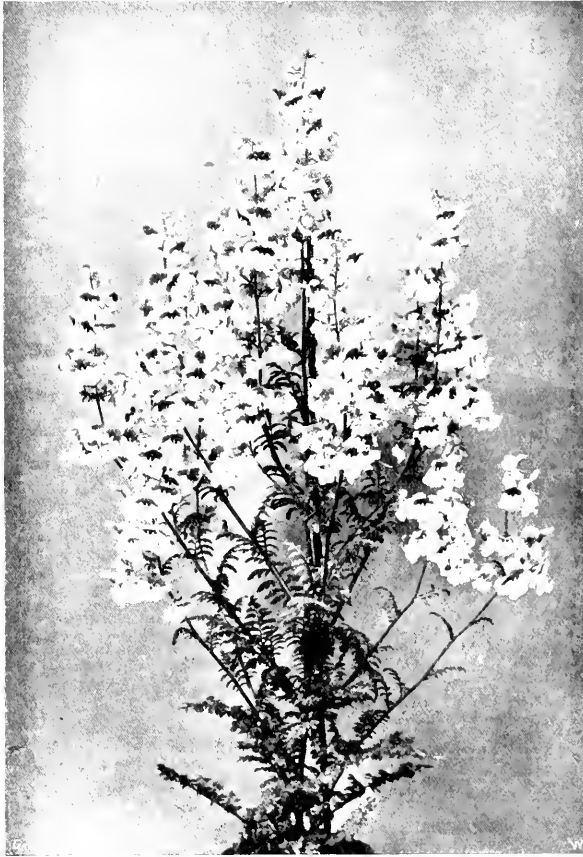


FIG. 71.—SCHIZANTHUS, EXHIBITED BY MESSRS. DOBBIE AND CO.

Floral Committee.

Present: Messrs. H. B. MAY (chairman), J. F. McLeod, J. W. Mootman, J. Dickson, J. Heal, E. H. Jenkins, W. Cuthbertson, W. Howe, C. E. Pearson, C. E. Shea, A. Turner, C. Dixon, C. Elliott, T. Stevenson, H. Cowley, S. Morris, R. C. Notcutt, G. Harrow, W. J. Bean, G. Bouthie, J. Green, A. G. Jackman, and R. Hooper Pearson.

AWARDS OF MERIT.

Primula obconica Eureka. This variety is stated by the exhibitor to be a hybrid between *P. obconica* and *P. sinensis*. There is little evidence of the *sinensis* parent, although the leaf is rather more elongated than in the true *obconica*, and the foliage has a crimped edge. The flowers are of extraordinary vigour, and resemble those of *P. obconica*. They are rose

purple shaded with carmine, the best tone being developed in blooms which have been expanded for a few days; at a very early stage, and also when passing off, they are of paler hue. The eye of yellow, with a ring of purple, serves as a foil to the ground-colour of the petals. Shown by ADRIENE DRECHSS of BEDFORD, Woodside, Chimes.

Rosa Hugonis.—This is stated by Mr. E. H. Wilson to be the only yellow Rose introduced from Western China. It was first collected in the province of Szechuan by Father Hugh Scallan, who sent seeds to Kew in 1899. The plant is now fairly common in cultivation, and has frequently been exhibited. The flowers are sulphur-yellow, and very freely produced. The specimen which received the Award of Merit

GROUPS.

The following awards were made to collectors:—

Silver-gilt Banksian Medals to Mr. ELISHA J. HICKS, Hurst, Twyford, for Roses, and R. L. MOND, Esq., Sevenoaks, for Calceolarias. *Silver Flora Medals* to Messrs. B. R. CANT and Co., Colchester, for Roses, and Messrs. STUART LOW and Co., Bush Hill Park, Enfield, for Carnations. *Silver Banksian Medals* to Mr. J. C. ALLEGROVE, Slough, for Auriculas; Messrs. ALLWOOD, Bross, Wivelstield, Haywards Heath, for Carnations; Messrs. CUTBUSH and Sons, Highgate, for miscellaneous plants; Messrs. DOBBIE and Co., Edinburgh, for Schizanthus; Mr. JAMES DOUGLAS, Edenside, Great Bookham, for Auriculas; Mr. J. C. JENNER, Rayleigh, for Carnations; Messrs. H. B. MAY and Sons, Edmondton, for Ferns; Mr. G. W. MILLER, Wisbech, for hardy plants; Messrs. W. PAUL and SON (WALTHAM CROSS), LTD., for Roses; and Messrs. PIPERS, Bishops Road, Bayswater, for Clematis and shrubs. *Bronze Flora Medals* to Messrs. H. CANNELL and Sons, Eynsford, for Pelargoniums; Messrs. FRANK CANT and Co., Baiswick, Colchester, for Roses; Mr. G. KERSEWELL, Exeter, for Gentians; Mr. GEORGE PRISCE, Longworth, Oxford, for hardy plants; Mr. G. RUTHE, Fox Hill, Keston, for hardy plants; and Mr. CHARLES TURNER, Slough, for Auriculas.

Orchid Committee.

Present: Sir Harry J. Veitch (in the chair), Messrs. Jas. O'Brien (hon. secretary), W. Bolton, Gurney Wilson, R. A. Rolfe, T. Armstrong, Walter Cobb, J. E. Shill, R. Brooman-White, Frederick J. Hanbury, C. J. Lucas, W. H. Hatcher, J. Charlesworth, Pantia Ralli, Stuart Low, and J. Wilson Potter.

AWARDS OF MERIT.

Dendrobium illustre var. Florence Bartels (Daihousteianum - chrysotoxum), from Sir JEREMIAH COLMAN, Bart., Gatten Park, Surrey (gr. Mr. Collier). This is a handsome hybrid with large flowers bearing a near resemblance to *D. Daihousteianum*, but with the yellow colour imparted by *D. chrysotoxum*, which has also altered the form of the labellum. The flowers are Cowslip-yellow, with a claret-coloured blotch with radiating lines on each side of the lip, which is densely pilose in front. The spike bore seven handsome flowers. The cross was first raised by Messrs. Jas. Veitch and Sons, who gained a First-class Certificate for it in 1895. It has always been rare.

Selenipedium caudatum Sanderæ, from Messrs. SANDER and Sons, St. Albans. A fine form, nearest to *S. caudatum Wallisii* in colour, and said to be identical with typical *Cypripedium (Selenipedium) caudatum*, which is not represented in gardens. The long, dorsal sepal and lower sepals are emerald green, with cream-white blotches between the veining. The narrow petals, 2 feet in length, are also green tinged and veined with purple. The infolded lobes of the lip are white with a ring of dark spots, the pouch being greenish tinged with purple.

Ontodiada Cardinal (parentage unrecorded), from Mr. J. E. SHILL, The Dell Gardens, Englefield Green. A showy form of the *O. Coronation* class. The branched spike bore 41 flowers of good size and shape, the inner two-thirds of the segments bearing large, bright red blotches and the margins tinted with rose colour. The front of the lip is pure white and the crest yellow.

PRELIMINARY COMMENDATION.

Odontoglossum crispum President Wilson, from Messrs. ARMSTRONG and BROWN, Tunbridge Wells. A seedling form of rich colour, the inner two-thirds of the broad sepals and petals being claret-red; the margins and tips are white.

GROUPS.

Sir JEREMIAH COLMAN, BART., showed *Dendrobium illustre Bartelsianum*, lighter in the tint of the markings on the lip than the companion plant (which received an Award of Merit), and bearing a spike of ten flowers, also *Odontoglossum Thompsonianum pallidum*, with a fine spike of white flowers bearing

was grown as a pillar plant, and in the same group were plants of the same species trained as weeping standards; either form seems to suit it equally well. Shown by Messrs. PIPERS.

Schizanthus Dr. Badger's Hybrids (see fig. 71).—This is a specially fine strain of greenhouse Schizanthus, with large flowers of brilliant colouring and good habit of growth. Shown by Messrs. DOBBIE and Co.

Primula sinopurpurea. This new Chinese species has smooth, spatulate leaves 4 to 5 inches long, dark green above, with a golden farina on the under surface. The heads of six or seven blooms are borne on mealy stalks about 6 inches high. The purple colour of the flowers varies in intensity in different plants, the one which obtained the Award of Merit bore blossoms of a rich shade of violet. Shown by R. WALLACE and Co.

sparsely-distributed plum-coloured blotches of varying size.

LEONARD DIXON, Esq., Pitlochrie, St. Albans, showed *Odontia Charlesworthii* Pitlochrie variety, a fine dark red form of good shape. The well-grown specimen bore two spikes of eighteen and nineteen flowers respectively.

WILLIAM BOLTON, Esq., Wilderspool, Warrington, showed a cut spike of a form of *Dendrobium Wandium* giganteum taken from a plant of a good strain imported three years ago.

Messrs. ARMSTRONG AND BROWN, Orchard-hurst, Turbridge Wells, were awarded a Silver Flora Medal for a group of new and rare hybrid *Odontoglossums*, *Odontias*, and *Miltonias*. Specially fine were the new *Laelio-Cattleya Cudmaniana splendens*, a pure white flower having an intense violet-coloured lip with white margin; *Odontoglossum Rex var. exquistum*, white, with the greater part of the surface coloured reddish-claret and a plant of the pure white *Cattleya Skinneri alba*, with fourteen flowers.

Messrs. CHARLESWORTH AND CO., Haywards Heath, were awarded a Silver Flora Medal for a group of handsome hybrids, including a fine form of the rare *Odontia Zenobia*; the new and distinct *Odontonia Norma* (*M. Warscewiczii* × *Odm. eximium*), with handsome flowers heavily marked with claret colour, the almost circular lip being white blotched with claret-red at the base.

Messrs. SANDER AND SONS, St. Albans, were awarded a Silver Banksian Medal for a group of hybrids and rare species, specially interesting being *Maxillaria Fletcheriana* and *Lycostes Janet Ross*, a fine primrose-yellow flower with minute rose spotting.

Mr. C. F. WATERS, Balcombe, was awarded a Silver Banksian Medal for a group of *Dendrobiums*, including white and coloured varieties of *D. nobile* and showy hybrids.

Messrs. SEVANT LOW AND CO., Jarvis Brook, Sussex, sent *Brassia Cattleya speciosa grandis*, a large fls. tinted flower, and *Cymbidium Debra flava*.

Narcissus Committee.

Present, Mr. E. A. Bowles, in the chair, Miss Willmott, Mr. R. O. Backhouse, Rev. J. Jacob, and Messrs. W. Poupard, J. Dun in Pearson, W. F. M. Crawford, J. T. Bennett, Pog, F. Herbert Chapman, Herbert Smith, Henry Backhouse, R. W. Wallace, W. B. Cranfield, G. W. Leak, P. R. Barr, Geo. Monro, jun., and Chas. H. Curtis (hon. secretary).

AWARDS OF MERIT

Narcissus Queen of Dawn. A very shapely Bellini variety (3b), with overlapping perianth segments of a soft creamy shade with a tinge of pink, and a brilliant orange-red cup that is exquisitely frilled. The award was made as a show variety. From Messrs. BARR AND SONS.

Narcissus Vintage. A splendid hybrid derived from the variety King Alfred and *Narcissus velutinus*, the former being the seed parent. The colour is wholy rich citron yellow; the perianth is flat and shapely, and the large trumpet is very slightly frilled at the margin. The flowers are large and drooping, so that in form, habit and colour it is particularly graceful. The award was made as a show variety. Shown by Messrs. H. CHAPMAN, LTD., Rye.

Narcissus Helios. A giant flower, even among the newer giant *Loddii* varieties. The cream white flowers measure 5 in. in diameter, the overlapping segments of the perianth, while the bold trumpet is of similar colour, frilled at the mouth, and with a green base. Award made for show purposes. Shown by Mr. W. B. CRANFIELD, Earfield Church, Middlesex.

Narcissus polyanthus crantus plenus. From a descriptive point of view there is little to be said about this *Daffodil* beyond that it is pure white, scented, and the double form of compact. But to market growers and others the variety will be of special interest, because it flowers so much earlier than the old double poetics. The growth appears robust and free. Award for show purposes, too few flowers to secure an award for market use. Shown by Messrs. J. CURTIS AND SONS.

Groups.

Mr. J. K. RAMSBOTTOM displayed a series of specimens and photographs prepared by him at

the R.H.S. Gardens, Wisley, illustrative of a disease of *Daffodils*. Mr. Ramsbottom has produced badly diseased bulbs in eight weeks after inoculation by *celworm* on both flower-stem and leaves. One little tube contained about 3,000 *celworms*, and these looked like the fine atoms of dust to be seen floating in a beam of sunlight when it enters a darkened room. (Silver-gilt Banksian Medal.)

Messrs. R. H. BARR, LTD., Wisbech, were awarded a Silver-gilt Flora Medal for a representative collection of *Narcissus* arranged in the style. Good seedlings were shown in considerable numbers in addition to named varieties. Of the seedlings an improved *Lord Roberts* won a great deal of admiration, while a neat white flower with a pinky-green eye looked like a new type of poetics.

A large and beautiful exhibit of *Daffodils* from Messrs. J. R. PEARSON AND SONS, Loddham, Notts., was remarkable for the large number of white varieties it contained. (Silver-gilt Banksian Medal.)

Messrs. BARR AND SONS, King Street, Covent Garden, were again large exhibitors of *Daffodils*, and presented a wide selection of varieties, although poetics and *Loddii* forms appeared to predominate. (Silver-gilt Banksian Medal.)

Messrs. H. CHAPMAN, LTD., Rye, had a small but very select group of dainty *Daffodils*. The outstanding flower was *Vintage*, which received an Award of Merit. (Silver Flora Medal.)

Mr. GEORGE CREBER, Woodcote, Alver-stoke, contributed a selection of modern varieties and seedlings. (Silver Banksian Medal.)

A few beautiful flowers were sent by MARTIN H. F. SUTTON, Esq., Earfield Park, Reading, and Mont d'Or, a golden Trumpet, was the outstanding variety. Mr. C. A. JARDIN, Richmond Road, Balham, showed his method of raising seedling *Daffodils* in boxes.

Fruit and Vegetable Committee

Present, Messrs. J. Cheal, vice chairman, W. Wilks, E. A. Binyard, P. D. Tuckett, J. C. Allgrove, E. Harriss, G. P. Berry, A. Bullock, P. C. M. Vetch, J. Harrison, W. H. DIVERS and W. Bates.

Groups.

Silver-gilt Knighthood Medal to Messrs. SUTTON AND SONS, Reading, for vegetables; *Silver Bank medal* to Messrs. DORRIS AND CO., Edinburgh, for Potatoes.

Obituary.

CAPTAIN HARRY SANDERSON. News of the death of this well-known lover of Alpine plants, and very gallant soldier, has just been received with the deepest regret by all who knew him. He was before the war a partner in the firm of P. and B. SANDERSON, two old manufacturers of Galahels, and, though over military age and married, enlisted as a private in the Horse Artillery attached to Lord Lovat's Brigade. Owing to his ability, character, and devotion to duty, he rapidly rose to the position of captain in the Royal Field Artillery. He commanded his battery in the battle of the Somme, where he was wounded, and returned to the Front some months ago, where he was killed recently in action. His garden at Galahels was full of rare Alpine plants, many of which he had collected himself in the Italian Alps, Benia, and Montenegro, and I am personally indebted to him for many gifts of rare and interesting plants, of which he was a most successful cultivator. He was a member of the Edinburgh Botanical Society, and took an active part in the public life of his native town and in all matters connected with the tweed trade, of which Galahels is the centre. When Professor Ewart, of the Edinburgh University, first introduced him to me as a man whose technical knowledge of Scotch wood might be most helpful to us in breeding Shetland sheep, I found him ready and willing to do for us what very few manufacturers would have taken so much trouble to do; and the very beautifully woven fine wools, which he has now derived from the wool we sent him were considered by the many ladies who have worn them as unrivalled for their lightness, texture, and beauty. *H. J. Elwes, Colchester.*

CROPS AND STOCK ON THE HOME FARM.

WHEAT FOR 1918.

FARMERS, large and small, have to look ahead, sometimes for two years, in regulating and arranging their crops. On some farms producing mainly corn, hay and cattle, but with no regular sheep flock, a system of strict course cropping leaves but little alternative as to the choice of crops. If sheep are a main object on farms where the soil is of a light character, a four or other course method is not always practicable; it is mainly a question of circumstances as they affect the regulation of the food supply.

It behoves all farmers to make arrangements for a full supply of Wheat for next year, and now is the time to make plans. There are four main, or regular, preparations for the Wheat crop: 1st, following second crop Clover, either sheep fed or manured, at the rate of fifteen to twenty tons of manure per acre; 2nd, after Rape and Turnips, sheep fed; 3rd, summer fallow and manured; 4th, winter Vetches, sheep fed in July, and sown after with Mustard ploughed in, or sheep again fed.

All these methods will give good results with proper cultural conditions. No. 1 will follow in the normal way as to clearance of crop and ploughing preparation in September or October, as the case may be. For No. 2 no time should be lost in drilling a mixture of Pomeranian or Early Globe Turnips, 1 lb. of the former to 3 lb. of the latter per acre. Some persons sow the seed broadcast; this I do not approve, as no opportunity is thus given to remove Charlock or other weeds, which, if allowed to grow unchecked, may ruin the crop.

No. 3 The land should be continuously ploughed when the weather is favourable—that is, dry. No implement on the farm is equal to the plough in manipulating the soil. Cultivators, scarifiers, drags and harrows are useful in stirring the surface quickly for the removal of Couch, but the plough more effectively turns over and disintegrates the soil. Couch should be destroyed during the summer preparation, and no method answers better than burning it on the land in small heaps, which not only results in a saving of labour, but the ash returned evenly over the land gives a dressing of potash. The manure is put on the last time before finally ploughing in September or October if very early sowing is anticipated.

No. 4 preparation does not take effect until the Vetches are cleared at the end of July, in time to plough and sow Mustard by the middle of August.

These are what I term the main Wheat preparations. Of course there are other preceding crops that of necessity have to be utilised at times, such as Mangold and Potatoes, neither of which is ideal for Wheat, as both draw freely on the manure in the land. This, however, can be rectified by applying more manure, or by ploughing in a top-dressing of superphosphate at sowing time or sulphate of ammonia in February.

When a good preparation for Wheat can be made as fallow well manured, it has the advantage that a good crop of Oats is assured after the Wheat, and with but little preparation, as the land being fallow there should not be any Couch or other weeds. All that is needed then is to plough up the stubble in good time in the autumn and sow the Oats early—February or March, as the case may be, according to weather conditions.

WHEAT IS CORN. No time should be lost in removing Docks and Thistles from all Corn crops. If the farmer are allowed to seed the land quickly becomes foul. Carefully digging them up without disturbing the Corn is a safe way of dealing with Docks, whilst cutting the Thistles with a weed hook will prevent seeding. Straw is spoilt by the presence of either of these weeds at harvest time. This is work well suited to women. Payment for the Dock roots by the hundred or thousand is a good method. The common Chamomile, known locally as "Morzan," is a most noxious weed among Clover or Trifolium. The plant grows vigorously; if allowed to seed it spoils the flavour of the Hay, and smothering much of the Clover and grass. *E. Molyneux.*

MARKETS.

COVENT GARDEN, May 9.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing various plants in pots and their prices, including Aralia Sieboldii, Asparagus plumosus, Aspidistra, and others.

Remarks: Business is more brisk in this department just now and there is a good demand.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices, including Anemone fulgens, Arums, Azalea, and others.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their prices, including Cycas leaves, Fern, and others.

Last week, Spanish Iris is now arriving in larger quantities, and white and yellow varieties are on sale.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices, including Artichokes, Asparagus, Beans, and others.

Fruit: Average Wholesale Prices.

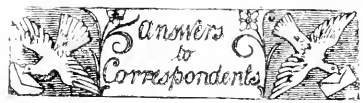
Table listing various fruits and their prices, including Almonds, Apples, Apricots, and others.

GARDENING APPOINTMENTS

- List of gardening appointments including Mr Charles William Fowell, Mr H Ford, and Mr A W Perkins.

CATALOGUES RECEIVED.

Stuart Low and Co., Bush Hill Park, Enfield; Carringtons; C. J. Lambros, Glenbrook Nurseries, Emerald, Victoria.



Corrections: In the note on Chionodoxa (see p. 186) C. Tiniosi should read C. Tiniosi, and C. Tinoli, C. Tinoli.

Dutch Bees: B. T. We advise you to obtain a swarm of Italian bees in preference to Dutch. The latter are given to excessive swarming.

Gardeners' Holidays: D. B. S. Your employer is under no obligation to grant you a holiday unless an arrangement to that effect was made in writing at the time of your appointment.

Names of Plants: M. F. The blue flower is a form of Xiphidium montanum, the reddish spike Aloe succodrina.

Spraying Potatoes: Question—Your correspondent H. makes some excellent remarks on p. 186 on the spraying of Potatoes. Since receiving the circular issued from the Food Production Department of the Board of Agriculture and Fisheries, I have spoken to several allotment holders about the spraying of their Potato crops, and all, so far, are ready to do what they can.

Answer—Your best plan would be to find out how many allotment holders in your immediate neighbourhood wish to have their Potatoes sprayed. Measure up the area of their Potatoes (in rods). Allowing that, when separate plots have to be sprayed, a man can do from 1/2 to 3/4 acre in an 8-hour day, calculate the time required to spray your plots. Get the nurseryman to fix the price for the hire of the sprayer he is willing to lend. If you have among you a competent man accustomed to spraying, arrange with him to do all the spraying and also to prepare the wash. The price of the chemicals required to make 40 gallons of spraying mixture is 3s., and this quantity will spray about 50 rods once. You can then reckon the amount of the chemicals required to spray your area twice. Having done so, place your order for the chemicals with the Food Production Department. If you have no experienced sprayer in your neighbourhood, the above-mentioned Department will send an expert to show you or one of your friends willing to do the work how to set about it. You will, of course, require a barrel or cask for mixing the specific, and a supply of water.

Communications Received—W. H. A. T. H., Birmingham; G. H. C., Miss D. S. C. H. C. R. I. L. W. W. D. E. H. E. J. Harrison D., New York; R. T. W. E. H. St. Herbert M. J. R. C. J. C. J. Y. J. H. J. A. P. C. C. J. B. T. W. A. R. G.

SELECT LIST OF BOOKS ON GARDENING.

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Publisher.
Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Primula, Handbook of the Hardy.** By H. M. Paul. An Illustrated Work on the Culture, Mode of Growth and Utility of Primulas. 1s. 12d.
- Pruning.** A Compendium of Outdoor Work, with special chapter for Small Holders. Reprinted from the "Fruit Trades' Journal." Illustrated. 1s. 1d.
- Pruning, The Handy Book of.** With Chapters on Grafting and Budding. By James Udale, with introduction by the Right Hon. Viscount Cobham. New Edition. Illustrated. 1s. 9d.
- Rhododendrons and Azaleas.** By W. Watson. With preface by Sir. F. W. Moore, F.L.S. (The first popular volume published on this subject.) 3 full-page Coloured Plates. 1s. 10d.
- Rock and Alpine Gardening.** By H. Hensley, rockwork expert. A practical guide to the making of Rock, Alpine, Wall and Water Gardens. Profusely Illustrated. 1s. 3d.
- Rock Gardens.** By Reginald Farrer. With Preface by Dr. J. Brettland Farmer, F.R.S. Contains 3 Coloured Plates. 1s. 10d.
- Rock Garden, The English.** By Reginald Farrer. A complete dictionary of Hardy Plants suitable for Rock Garden Culture. Contains 500,000 words and 300 Illustrations. In 2 Vols. Price, £2 2s. 10d. post free in the press.
- Root and Stem Vegetables.** By the late Alexander Dean. Contains 3 full-page Coloured Plates. 1s. 10d.
- Rose, The Book of the.** By Rev. A. Foster Moller, M.A. Illustrated. New Edition. 5s. 5d.
- Roses.** By H. R. Durlington. Contains 3 full-page Coloured Plates. 2s. 11d.
- Roses for the Garden and Greenhouse.** By John Weathers. Description, Culture, Propagation, Manures, etc. Coloured Illustrations. 5s. 4d.
- Roses in Pots.** By Wm. Paul. Ninth Edition. An invaluable Guide to the Cultivation of Roses in Pots, whether for forcing or other uses. 2s. 2d.
- Salads and their Cultivation.** By T. W. Sanders. How to grow them in the Open, in Hot Beds, and Under Glass, etc. Freely Illustrated. Paper, 1s. 2d.; cloth, 1s. 9d.
- Saxifrages or Rocklois.** By W. Irving and R. A. Malby. A practical work on the Culture of Saxifrages. Well Illustrated in Colour and Half-tones. 2s. 10d.
- Soil, The.** By A. D. Hall, F.R.S. An introduction to the scientific Study of the Growth of Crops. New Edition. 5s. 5d.
- Species and Varieties, their Origin by Mutation.** By Prof. Hugo De Vries. Second Edition. 21s. 6d.
- Strawberry Cultivist, The Illustrated.** A Book worthy of the attention of Raisers of New Varieties as of the General Cultivator. 1s. 7d.
- Strawberry, The Book of the.** With Chapters on the Raspberry, Blackberry, Loganberry, Japanese Wineberry, and Allied Fruits. By Edwin Beckett. Illustrated. 2s. 9d.
- Sweet Peas.** (Second and Revised Edition.) By Horace J. Wright. Contains 3 Coloured full-page Plates. With Chapter on Sweet Peas for Exhibition by St. Stevenson. 1s. 10d.
- Sweet Peas and Antirrhinums.** By William Cuthbertson. 1s. 3d.
- Sweet Peas, The Modern Culture of.** By Thomas Stevenson. Fully described and illustrated. 1s. 3d. Cloth, with Coloured Plates. 5s. 4d.
- Teratology, The Principles of Plant.** By W. C. Worsdell, F.L.S. Containing a large amount of new and interesting information. Illustrated. Price 25s. 8d.
- Tomato Culture for Amateurs.** By B. C. Ravenscroft. Illustrated. New Edition. In paper, 1s. 3d.
- Tomato Culture for Market.** By J. Stoddart. 1s. 1d.
- Topiary, The Book of.** By C. H. Curtis and W. Gibson, of Levens Hall. 2s. 10d.
- Trapping of Vermin and Birds, Practical.** By W. Carnegie. 1s. 3d.
- Trees: A Woodland Notebook.** By the Rt. Hon. Sir Herbert Maxwell, Bart., F.R.S., LL.D. 22s.
- Trees and Shrubs, Beautiful Flowering, for British and Irish Gardens.** By John Weathers. Description, Culture, Planting, Pruning, Propagation, etc. Coloured Illustrations. 5s. 10d.
- Trees and Shrubs Hardy in the British Isles.** By W. J. Bean, Asst. Curator of Kew Botanic Gardens. In two volumes, with Illustrations and Index. 35s.
- Trees and Shrubs, Hardy, Ornamental Flowering.** By A. D. Webster. Third Revised and greatly Enlarged Edition. 5s. 10d.
- Tropical Gardening and Planting.** By H. F. MacMillan. Second Edition, Revised and Enlarged, with many new features added. 13s. 11d.
- Tulips.** By the Rev. Joseph Jacoby. Illustrated with 4 Coloured Plates. 1s. 10d.
- Variation, Heredity and Evolution.** By R. H. Lock. 7s. 3d.
- Vegetable Culture for Amateurs.** By Trevor Mooney. Arranged alphabetically with a calendar of operations for the year. New Edition. Illustrated. 1s. 3d.
- Vegetable Garden, The.** By Henry de Villmorin and W. Robinson. New Edition. 15s. 7d.
- Vegetable Gardening, The Principles of.** By Prof. L. H. Bailey. 6s. 11d.
- Vegetables for Home Consumption and Exhibition.** By E. Beckett, V.M.H. Useful for every Gardener, and indispensable to Exhibitors. New Edition. 5s. 6d.
- Vegetables and Flowers, The Culture of, from Seeds and Roots.** By Sutton and Sons. Reading. New Edition. 5s. 6d.
- Vegetables and Flowers, The Culture of, from Seeds in Tropical, Semi-Tropical, and Temperate Climates.** By Sutton and Sons. Reading. 320 pages. With numerous Illustrations. 5s. 6d. England; 5s. 9d. Abroad.
- Vegetables, The Book of.** By George Wythes, V.M.H. 2s. 9d.
- Villa Garden, My.** By S. Graveson. Illustrated. 2s. 10d.
- Vines and Vine Culture.** By the late Archibald F. Barron, V.M.H. New Edition. Revised and Enlarged. Illustrated. 5s. 5d.
- Vine, On the Cultivation of the Grape.** By W. Thomson. 5s. 4d.
- Wall and Water Garden.** By Gertrude Jekyll. Illustrated. 12s. 11d.
- Weeds, Common, of the Farm and Garden.** By Harold C. Long, B.Sc., in collaboration with John Percival, M.A. Illustrated. 6s. 6d.
- Wild Garden, The Book of the.** By S. W. Fitzherbert. 2s. 9d.
- Woodland Notebook, A.** By Rt. Hon. Sir Herbert Maxwell, Bt. Illustrated. 21s. 6d.

Complete New Catalogue sent Post Free on application to

**THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2.**



Sample CRET Pot
FREE with Booklet
will convince you that the
Practical Propagator. Beautiful-
ness of CRETS would help
your plants. Write:
FETER BAILEY & SONS, Ltd.
2 Heaton Mersey Pottery,
near MANCHESTER.

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

NOW READY

THE HORTICULTURAL

DIRECTORY

AND

YEAR BOOK FOR 1917.

Owing to the paper shortage, an unlimited number of copies of this work cannot be guaranteed, and purchasers are advised to order AT ONCE to avoid disappointment.

The 1917 edition contains no name or address which has not been verified. The information given is therefore absolutely trustworthy.

Apply, enclosing 1/4 for each
copy required, to:—

**GARDENERS' CHRONICLE,
LTD.,**

41, WELLINGTON ST., COVENT GARDEN,
LONDON, W.C. 2.

By Special Appointment to



His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

SALES BY AUCTION.

WEDNESDAY NEXT, at 1 o'clock.
MESSRS. PROTHEROE & MORRIS
 will sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 4.

On Wednesday, May 23rd at 1 o'clock,
 a choice assortment of Rhododendrons, named varieties of Carnations and Proteses, Begonias, Gloxinias, Gladiolus, and other Bulbs; Japanese Lilies and Bidding Plants in lots to suit all buyers.
 On view morning of sale and catalogues had.

BUSINESSES WANTED.

WANTED. Small **NURSERY** in good neighbourhood, doing fair trade in Tomatoes, Cucumbers, &c., within 10 miles of Charing Cross; income not to exceed £150; rent, including house, about £35.—H. F., Box 23, 41, Wellington Street, Covent Garden, W.C. 2

BUSINESSES FOR SALE.

PROTHEROE & MORRIS, HORTICULTURAL, MARKET GARDEN, and ESTATE AGENT, AND VALUERS, 67 and 68, Cheapside, London, E.C. 4, and at Leytonstone, E. Monthly Horticultural Register had on application.

BUSINESSES TO LET.

HAMPSHIRE.—To Let, immediate possession, compact and easily worked Nursery, for Tomatoes and Cucumbers; 280 feet run of Glass; 3½ acres of land; small part Fruit; convenient modern cottage and buildings; no stock.—Particulars of PROTHEROE & MORRIS, 67 and 68, Cheapside, E.C. 2.

PUBLISHERS' NOTICE.

NOW READY. Crown 8vo. 3s. 6d. net.

JOTTINGS OF A GENTLEMAN GARDENER

A practical guide to Flower Gardening for Amateur Gardeners; to which is added some suggestions on growing food plants during the war. By E. T. ELLIS, F.R.H.S.

ABSTRACT OF CONTENTS:

Starting a Garden—Annuals, Biennials, and Perennials—Colour Borders—Rock Gardens—Paths, Weeds, Pests, and Diseases—Propagation of Plants—Soils and Manures and their Management—Experiment in Gardening—Picturesque Vegetable Gardening—Flower and Vegetable Calendars.

"His enthusiasm for the garden is as great as his knowledge of the subject, as many of the new allotment workers round about Evesham have reason to know. They will owe much of their success to the careful guidance they have received from Mr. Ellis. The same kind of care is shown in this book. . . His observations on gardens generally will be helpful to the allotment workers."

Sheffield Daily Telegraph.

London: L. REEVE & Co., Ltd.,
 6, Henrietta Street, W.C. 2

PLANTS, &c., FOR SALE.

VERBENAS.—Miss Willmott (pink), King of Scarlets, Queen of Whites, Lovely Blue (lavender blue), Princess of Wales (purple); strong, clean, well-rooted stuff from boxes, 50 for 5s.; 8s. per 100; carriage paid for cash.—H. DUDDERIDGE, The Dorset Nurseries, Blandford.

FERNS! FERNS!—Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns; catalogues free—J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

100,000 LARGE GARDEN FERNS.
 20s. 100; Palms, Begonias, Crotons, Draconas, Roses, Ericas, Gloxinias, Lilies, Hydrangeas, &c.; catalogues free—J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

MESSRS. ROBERT GREEN (1911) LTD. have a limited number of Standard and Pyramid Bay Trees to offer; in fine condition—28, Crawford Street, London, W.

MISCELLANEOUS.

B. EDDY & SONS, Torleven Works, Porthleven, Cornwall.—The largest manufacturers of **GARDEN NETTING** in the KINGDOM. **NEW STOUT** and specially strong **SQUARE MESH NETTING**, half-inch and one-inch mesh, at 4d. per square yard. **LIGHT NEW** square mesh, suitable for Strawberry Beds, at 3d. per square yard.

These Nets are bound all round with stout cord, and cover their measured length and width. Any length or width supplied.

Repaired Nettings in all sizes in stock. State your requirements, and we will quote lowest prices.

Also makers of **TENNIS NETTINGS, RICK COVERS, GREENHOUSE SHADINGS, WASP NETTINGS, PACKING and TARRED TWINES** of all kinds.

All Goods sent by **PASSENGER Train, CARRIAGE PAID**, on receipt of order.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two),
 6d. for each succeeding line.

PRIVATE.

WANTED, a competent WORKING HEAD GARDENER, 3 usually kept and when obtainable, applicant must be active, willing, and obliging; preference to married man (no family), good cottage provided. Apply, giving age, experience, and details of previous situations, and wages required, to **GEORGE PERKINS, Thoise Lee, Egham, Surrey**

WANTED, HEAD GARDENER for Glenage, Fofarshire, May 26, ineligibile.—Write particulars and send references to **MRS. STEPHEN WILLIAMSON, Pump House Hotel, Lan druded Wells, Wales.**

WANTED, HEAD WORKING GARDENER, experienced, some knowledge estate work desirable. State age, wages, &c.—**R. L. KNIGHT, Esq., Tythegston Court, Bridgend, Glam.**

WANTED, a good all-round energetic HEAD WORKING GARDENER: Vinery, Peach, Stove, and Greenhouses, Fruit, Flowers, Shrubs, Vegetables, and Tennis Lawns; 4-room cottage, with gas-bath; wages 40s. Apply, with full particulars, age, if married, any children, when disengaged, when previously employed, cause of leaving.—Also **SECOND GARDENER,** wages 30s. and BOY, 12s.—**C. TAINE, Hillfield, Hampstead, N.W. 3.**

HEAD WORKING GARDENER, ineligibile, wanted immediately for Fruit, Vegetable, and Flower Garden; wages 32s.; no cottage.—**MRS. REID, The Oaks, Hounslow, Middlesex.**

GARDENER-BAILIFF required for an estate of 450 acres; must be high class Gardener in all branches and capable of superintending Home Farm, Glass Land, Woods, Roads, &c.; good wages to really competent man.—N. W., Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

FOREMAN.—Wanted, at once, **FOREMAN** for Greenhouses; must thoroughly understand the propagation and cultivation of Orchids, Ferns, and miscellaneous flowering plants. State age, experience, and wages required. Also a **JOURNEYMAN** required for the Houses—Send copies of references and all particulars to **THE CURATOR, Botanical Gardens, Birmingham.**

WANTED, FOREMAN (INSIDE); 30s. per week, Bothy, &c.; also **IMPROVER, 18s.** and **Bothy,** duty and overtime paid.—**E. BRISTOW, Leywood Gardens, Grosbridge, Tunbridge Wells.**

WANTED, at once, JOURNEYMAN-FOREMAN, ineligibile; single; furnished Bothy; able to take full control of Houses.—Apply, **DOXAT, Woodgreen Park, Chesham, Herts.**

WANTED, GARDENER; good all-round man; no grapes; age about 40 or in the 30s; wages 30s.; house and vegetables.—Apply, **B. DAVIES, Woodside Grange, North Finchley, N.**

WANTED, GARDENER (ineligibile); experienced Pleasure Garden and Glass. State references, age, and wages.—**C. T. DICKINS, Esq., 52, Putney Hill, S.W.**

WANTED, Experienced GARDENER as Head of 2; principally Vegetables and Herbaceous borders; little Glass; preference to man with knowledge of penkiter and pique, or one who has son to take second place; house, coal, wood, and vegetables found.—Experience, age, wages, and family, to **PRESCOTT, High lands, Woldingham, Surrey.**

GARDENER.—Experienced **MAN** wanted; live out; good wages; or write, S. C., Moleside, East Molesey, Surrey

WANTED, a Single-handed Man as **GARDENER,** who understands the work in all its branches.—**The Hollies, Elphinstone Road, Hastings.**

WANTED, capable all-round GARDENER, single-handed; cottage, 25s. per week, with 5s. war bonus; must be well recommended.—**RECTOR, Holme Pierrepont, Nottingham.**

WANTED, a good MAN for Kitchen (Garden); wages 24s.; comfortable Bothy, &c.; overtime paid; 1 o'clock Saturday.—Apply, **F. NORWOOD, Wislows Wood Gardens, Woldingham, Surrey.**

WANTED, ineligibile MAN or YOUTH; inside and out. State experience and wages required.—**W. DIXON, Waverley Park Gardens, near Sandy, Beds.**

WANTED, SECOND GARDENER; ineligibile.—Apply, **H. SYMONDS, Kneesworth Hall, Royston, Herts.**

UNDER-GARDENER required at Dulwich; Vegetables and Lawns.—Write, giving particulars of experience, age, if exempt from military service, and wages required, **MUDGE, 14, Bartholomew Close, E.C.**

WANTED, UNDER-GARDENER for Inside and Out; comfortable Bothy and usual allowances; good wages to capable man.—**A BRADBURY, Bryn Lupin, Llandudno.**

WANTED, strong, able, willing Man, as **THIRD GARDENER** over military age; 50s. per week.—**FENSTANTON, Christchurch Road, Stratham Hill.**

WANTED, Discharged Soldiers or **Woman GARDENERS,** with experience, Outside and Inside.—Send full particulars to **ALLISON, Nostell Priory Gardens, Wakefield.**

GARDENERS WANTED; all suited free, whether married or single. (1) Bucks, 30s., good lodging in village, very good Under Gardener kept, not much Glass. (2) Derby, 30s. and very good cottage only 1 mile from school, mostly Vegetables; boy kept. (3) Hants, good wages, cottage provided, no Glass, nearly all Vegetables. (4) Hants, 25s. and cottage, 2 acres, small Greenhouse, last Gardener there 4 years. (5) Herts, 35s., live out, Greenhouse work and Vegetables. (6) Kent, good wages, cottage, and vegetables provided. (7) Oxon, 27s. and cottage, about 2 acres, 2 Houses, Vines, Frames, &c. (8) Staffs, good wages, help 3 days a week. (9) Surrey, 25s. and 4 roomed cottage, small garden, must be useful. Also many other excellent places. Call or write, sending full particulars, to **MRS. HUNT, LTD., 36, High Street, Marylebone, W. 1.** No engagement, no fee. Tele. Mayfair 6500.

WANTED, strong YOUTH, 16 to 17; Vegetable Garden and assist in Pleasure Grounds; room in cottage found; wages 18s. State experience.—**F. COPEMAN, Cliven, Shenfield, Essex.**

WANTED, a WOMAN GARDENER, with some inside experience; good wages.—**ESTATE OFFICE, Capenot, Nutfield, Surrey**

WANTED, WOMAN GARDENER, with experience of Greenhouses, Vinery, Peach Houses, &c.; to work with temporary Head Gardener, who has been on the place many years; 15s. a week and board, lodging and laundry.—Apply, stating full particulars, to **MRS. INGHAM WHITAKER, Grayshill Hall, Hindhead, Surrey.**

WANTED, LADY GARDENER, some experience, for Inside and Out.—Apply, stating salary, &c., **MRS. GIMOND, Carbot Castle, Broughty Ferry, Forfarshire, N.B.**

WANTED, LADY GARDENER for duration of war; able to take charge if Head Gardener is called out on National Service; no Bothy.—State wages and experience to **R. ALLDAY, Chancelor House, Tunbridge Wells.**

WANTED, LADY GARDENER, experienced in Vegetables and Greenhouse; some help given; no rooms.—Apply, **W., 66, West Hill, Putney, S.W. 15.**

WANTED, 4 young WOMEN GARDENERS, for Fruit and Plant Houses; take turn on duty.—Apply, stating age, wages required, and experience, with excellent Bothy, coal, lights, milk, and vegetables, resident women attendants, to **ARTHUR AVERY, Enville Gardens, near Stourbridge.**

LADY GARDENERS wanting posts as HEAD or SINGLE-HANDED GARDENERS should apply to THE WOMEN'S FARM AND GARDEN UNION, 25 (sixth floor), Queen Anne's Chambers, Westminster, S.W.

LADY GARDENERS WANTED; all suited entirely free of charge. HEADS—Hints (also Under wanted), garden about 3/4 acre, some glass, man and boy kept; Head can take pupils, or do some market gardening. Near Liverpool, 25s. and cottage also. Under 5 to 8 guineas kept, must have good training, age over 30. Sussex (also Under), garden, 3 acres, 30s. Vegetables, furnished cottage, and coal, 50p. 30s., cottage, coal, and vegetables. Large Garden, Glass, man and boy kept. Under, 2 boys, and 2 men. Also FOREWOMAN for Berks, 6 Under kept and good Head Man, Garden, Fruit, Orchids, & UNDEHS. Essay, as shown in Charge, good Head Man kept and other PUPILS, must be near for interview. Nottingham, Head Man, 2, three and boy kept. York, Head Lady Gardener kept and 2 others; need not have much experience. Two wanted (under Head Man), Berks; must be experienced. Cheshire, Vegetables, Fruit, Flowers, some glass, pond, and horses. Hants, Head, good all round knowledge Glass, &c. knowledge of horses an advantage—MRS HUNT, LTD., 86, High Street, Marylebone, London, W.1

TRADE.

WANTED, thoroughly capable Man as WORKING MANAGER for Nursery, based near good Greenhouse and Tomatoes. Apply, H. WHARF LEY, Spring Gardens, Kentworth.

WANTED, FOREMAN GROWER for general Nurseries, Bocking Plants, Ferns, Pea Shoot, Tomatoes, and Cucumbers, nice house and 1/2 garden in market. Wages, 4s. to 5s. KAVILLIE, MESSERS CO., Hove.

WANTED, FOREMAN; good all round propagator, able to produce large quantities for postal trade, also Tomatoes and 20 plants. Wages and post paid to CLARK & MESSERS, Hampton, Middlesex. Previous applicants please report.

WANTED, at once, an Intelligent, Practical GARDENER, an elderly man with good knowledge of all Hardy Perennial and Hardy Kewey Plants. Apply with references stating age and wages required, to JAS. BOLDNER & SON, Covent Nurseries, Reading.

WANTED, an experienced married MAN, over military age, to take charge of the Fruit and Vegetable department, able to grow good fruit, packing and to teach students. Charge from 1 to 4 per hour. Apply, stating age, experience, and other points of reference, to the DIRECTOR, SUPERINTENDENT Horticultural College, Sandley Road.

WANTED, WORKING FOREMAN PROPAGATOR BARK & SONS, Dept. 1, Boreham.

WANTED, TOMATO and CUCUMBER GROWER BARK & SONS, Dept. 1, Boreham.

WANTED, GROWER; able to take charge, Bocking Plant and Ferns. Please state wages required. B. L., Box 36, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, Experienced CUCUMBER GROWER for North East London intelligible, wages 50s. K.S., Box 26, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, in the Midlands, a reliable MAN, under Part-time, to grow Plants for direct Application with references. P. N., Box 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, FERN RAISER, for Market Nursery man. L. P., Box 31, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, for Farm Seed Warehouse, a capable FOREMAN; must be able to superintend cleaning and dispatch of orders for a wide trade, also Warehouse man, neat, such self-reliant and free independently; also for Garden Seed Department, in experienced Hand, must be able to take entire charge. 14s. wages offered. All applicants must be intelligible. A. B., Box 18, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, Young Lady as FLORIST; one with slight knowledge of Seeds and Bulbs preferred. BARNWELL, BROS., Florists, Worthing.

WANTED, AUDIT or CHECKING CLERK, experienced, over military age, quick and accurate. THOUGHT & SONS, The King's Seed men, Southampton.

WANTED, LADY GARDENERS, to work in London Florist's business, furnishing department. Apply, WILLS & SEGAR, Royal Exotic Nursery, Exmouth Green, South Kensington, S.W.

WANTED, Experienced LADY INVOICE CLERK, typist, with knowledge of the trade, to acquire immediately, 10 hours 9 to 5.30, good salary paid to competent person—ARTER PAGE & CO., LTD., 53, London Wall, London, E.C.

SITUATIONS WANTED.

Twenty-six words for 1s. and 6d. for each succeeding Eight words or less

PRIVATE.

GARDENER (HEAD), 30 years' practical experience, Indoor and Outdoor Gardening, 1/2 acre, immediate, 1912-16. — R. FLINN, Crawford Hill, Gables, Hounslow.

GARDENER (HEAD), where 2 or more are kept in small houses, thoroughly experienced in all fruit trees and shrubs, Vegetables, Fruit, speciality in peaches, muscatels, and 10 years, age 45, daughter could help in household. B. Box 27, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD), First-class, practical experience, every branch of Horticulture, general knowledge of 2 gardens. Wages, A. W., Box 25, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING), where 2 or more are kept, 25 years' experience in all branches, 20 years' experience in 40, married, 40 years, A. SMITH, Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING), where 2 or more are kept in small houses, age 40, married, 25 years' experience in all fruit trees and shrubs, and vegetables, highly intelligent, M. Mansfield, Cottage, Ashbury, Bucks, Bucks.

GARDENER (HEAD WORKING), where 2 or more are kept, 25 years' experience in all branches, 20 years' experience in 40, married, 40 years, L. GARDNER, Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING), where 2 or more are kept, 25 years' experience in all branches, 20 years' experience in 40, married, 40 years, L. GARDNER, Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING), where 2 or more are kept, 25 years' experience in all branches, 20 years' experience in 40, married, 40 years, L. GARDNER, Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

HEAD GARDENER, Mr. M. G. TAYLOR, 25 years' experience in all branches, 20 years' experience in 40, married, 40 years, L. GARDNER, Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

HEAD WORKING GARDENER or SINGLE HANDED, 25 years' experience in all branches, 20 years' experience in 40, married, 40 years, L. GARDNER, Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD or good SINGLE HANDED), 25 years' experience in all branches, 20 years' experience in 40, married, 40 years, L. GARDNER, Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

FOREMAN (INDOOR), age 28, intelligible, 25 years' experience in all branches, 20 years' experience in 40, married, 40 years, L. GARDNER, Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (private or institution), experienced Fruit, Flowers, and Veg. also, experience in 1/2 acre, immediate, F. T., Box 33, 41, Wellington Street, Covent Garden, W.C. 2.

TWO LADY GARDENERS require posts together, under Head, chiefly outside, 14 months' experience in General Gardening, Inside and Out. — Appl., CLARK, 126, Grosvenor Road, Akeley 30.

YOUNG LADY requires experience in training and spraying given in return for hospitality and board of a good kind of May. — MRS. JEFFRIES, 2, Ashdon Road, Streatham.

YOUNG LADY (21) would like to help in the poultry and garden work, 6 months' experience on land, Salary required KEPTLE, 125, Blenheim Road, Streatham, London.

YOUNG WOMAN (Danish) require post in garden hand, under experienced Head Gardener, chiefly outside, but willing to help where required, no training. Please state particulars to MISS HANSEN, c/o Mrs. Prothero, 3, Chaynoe Walk, S.W. 3.

PLENTY of Good Home Grown Vegetables and Tomatoes will greatly ease the Nation's Food Problem. VEGETABLES. Book your orders now for plants of Vegetables as best last week for planting in the open. Delivery May 22nd and onwards, whether postpaid or not, we badly need trade. VEGETABLES. TOMATOES, FOR COLD HOUSES AND THE OPEN. (If a full advertisement is desired, advertisement.) SWEET PEA PLANTS. Don't be without them all the season for the sake of spending a few shillings. NO. SEND FOR OUR NEW LIST OF 90 VARIETIES. (See also various orders during the last few weeks.) MIXTURES. Spencers—Waxed Large Flowering ... 3d. 3/6 The Popular ... 3d. 2/4 Red, White and Blue ... 3d. 2/4 Collections, this selection from our total collection of 7 varieties, 12 plants each 12 varieties 2/3 12 varieties 5/6. TERMS.—C.W.O. Please remit extra for postage or rail. DON'T OMIT THIS OR IT WILL CAUSE HETELAY. ST. JOHN'S, BUCKS, IPSWICH.

TURF LOAM.

Very Fibrous Yellow Turf Loam For VINE BORDERS, CARBATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUIT UNDER GLASS, etc., etc. Quotations Carriage Paid or Delivered.

A. B. JOHNSTON, New Park, Cranleigh, SURREY.

The Gardeners' Chronicle SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table with 2 columns: Description of ad placement and Price. Ordinary Positions per page 10 10 0. Evening matter and Back Page 12 12 0. Half and quarter pages, column and half column spaces, pro rata. 4 line space not exceeding 20 words 3 0. Per inch, single column 7 0. Per inch across 2 columns 14 0. Per inch, across 3 columns 1 1 0.

Front page (no display allowed) 1/4 per line space. (Headline counted as two lines)

For discounts apply to address below.

SITUATIONS WANTED. 26 words 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS. THE UNITED KINGDOM 15/- per annum. ABROAD 17/- " "

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telegrams: 1513 "GARDENERS, RAND, LONDON." Telephone: 1643 GERRARD.

THE
Gardeners' Chronicle

No. 1686.—SATURDAY, MAY 19, 1917

CONTENTS.

Books, notices of—	Mammes, "mystery"	296
Early Poinis	Narcissus disease	294
The "Makina" and	Orchid notes and glean-	
Management of all	ings—	
All-treatment	"Mastevallia O'Brien-	
Frussels sprouts	iana	293
Chionodoxa	(Odontoglossum) seed-	
Crusoe's Island	lings	295
Fernandez	Savifages, mossy	295
Farm, crops and stock	societies—	
on the home	Horticultural Club	297
Food production, on in-	Manchester and North	
creased—	of England Orchard	296
Alfalfas	National Kirtland and	
Beans and Peas for	Primula	297
drying	Royal Horticultural	296
Beans, Dutch Haricot	"sparrows and rats	294
Butter Beans	spraying demonstration	296
Crops for refuse heaps	sun heat, the value of	296
Fool conservation	Weeks, planting	296
Mint, a hybrid	Week's work, the	298
Potatoes		

ILLUSTRATIONS.

Juan Fernandez, map of, 199	Alexis of	299
Sanferson, Captain Harry, portrait of the late		297
Savifages, mossy, on the rocky at Rew		296

CRUSOE'S ISLAND: JUAN FERNANDEZ.

"I am monarch of all I survey,
My right there is none to dispute,
From the centre all round to the sea,
I am lord of the fow, and the brute."
—Cooper.

AS long as life lasts the enchanted island of Robinson Crusoe will not cease to fill the fancy. In youth one dreams of that wonderful spot, with its tiny creek, its talking parrot, its goats, its solitary inhabitant, and, above all, its horrible savages. Not one of us but has dwelled there with Robinson, helped him provision his island from the wreck, loaded his guns, discovered those terrifying footprints in the sand, and started up to find oneself awake. Had the enemy his way to-day, we should all be Crusoes, sowing the last scrap of corn, and watching its germination with reverent eyes. While it is true that many of us now carry the spade as Crusoe carried it, and a great number have been glad of his goat skins, and particularly his old clothes, it seems unlikely that we shall ever be reduced to such straits as poor Robinson.

The story of the actual island upon which Alexander Selkirk, a humble sailor from Largo in Fife, and the supposed prototype of Crusoe, was marooned, is full of interest to the people of these islands. In regard to Selkirk one recalls the controversy regarding Defoe and his hero. Just as there are Baconites, so there are anti-Selkirkites, who contend that Defoe's masterly example of English narrative was not founded on Selkirk's experience; whilst others believe that the author of the book was not Defoe but Lord Oxford, a discussion which need not trouble us here. The bother is that Defoe placed his island off the mouth of the Orinoco, whilst Selkirk's, known to us as Juan Fernandez, is some 400 miles west of the Chilean coast on the other side of the South American Continent.

As Moseley, the naturalist on the voyage of H.M.S. "Challenger," remarks, Defoe was obliged to lay the scene of his story in the West Indies in order to bring in the Catharine on Friday. He thus gained the parrot, but he lost the sea elephants and fur seals of Juan Fernandez, one of the latter of which would have made a capital pet for Crusoe.

Defoe, describing his approach to the island, makes the following interesting remarks: "It was with the liveliest interest that we approached the scene of Alexander Selkirk's life of seclusion and hardship, and an island with the existence of which, in the case of most of us, the very fact that we were at sea on a long voyage was more or less distantly connected. The story

of Robinson Crusoe certainly first gave me a desire to go to sea, and Darwin's Journal 'settled the matter.' So it was with most of us in our youthful days."

"But thou, Defoe, over that lone isle hast thrown

A spell so potent, who hath felt it not?"

Unto my boyhood 'twas a fairy spot;

Yet to my fancy so familiar made,

I seem'd as well to know creek, cave, and grot,

Its open beach, its tangled greenwood shade,

As if I there had dwelt and Crusoe's part had play'd"—Barton.

Assuming that Alexander Selkirk, then, was the prototype of Robinson Crusoe, it will be of interest to trace the history of the island upon which he was marooned for about four and a half years, and to glance at its remarkable fauna and flora, both of which are in many ways of great interest. The natural history of these isolated spots of land in the South Pacific and Indian Oceans, the relics maybe of a one-time vast Antarctic continent, has a special fascination for the botanist, geologist, and zoologist, who can respectively, from a consideration of their flora, the record of the rocks and a study of the animal life,

pigs on the island. In 1624 the Nassau fleet, under Admiral Jacob l'Hermitte, anchored in Cumberland Bay. They observed a large number of fur seals and sea elephants, and many were killed. The goats were difficult to approach. It is recorded that sandal-wood was then present on the island in great quantity. Three soldiers and three gunners of the Vice-Admiral's ship remained, for what reason is not stated; but their fate is unknown, for from 1624 to 1680 little or nothing is known of the island.

On Christmas Day, 1680, the rover Sharp anchored off Juan Fernandez. The goats had then become so numerous that as many as 100 were salted down for further use. Whilst retreating his ship, Sharp was surprised by the sudden appearance of three Spanish war vessels. He hurriedly left the island, inadvertently leaving behind one of his crew, a Mosquito Indian named William, who had only the clothes on his back, a musket, a knife, a small horn of gunpowder, and a few shot. Dampier states that William at first could procure scarcely any food but seals, which he found very ordinary eating; some other food he obtained by means of his powder and shot, but these were soon expended. He contrived by notching his knife to saw the

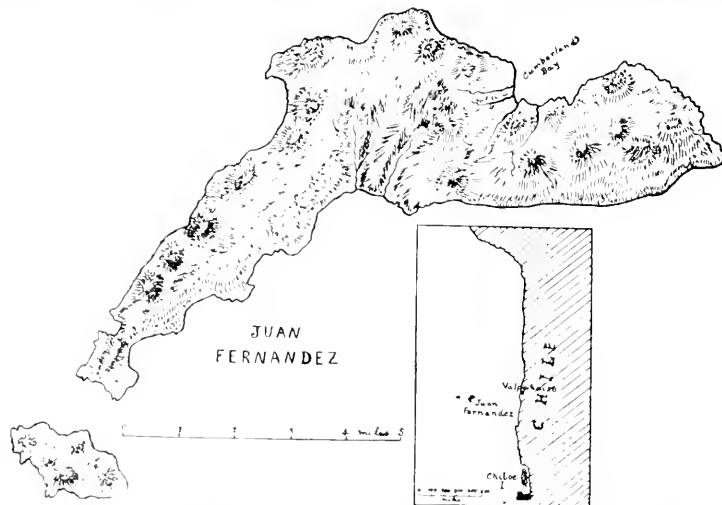


FIG. 72. MAP OF JUAN FERNANDEZ AND SANTA CLARA, OR GOAT ISLAND; INSET, SKETCH MAP SHOWING THE POSITION OF THE ISLANDS OFF THE COAST OF CHILE.

speculate on the probable past history of this vanished area.

Juan Fernandez is the largest of a group of three islands in the South Pacific, between 30° and 51° S., and 80° W., that is, about as far to the south of the equator as Madeira is to the north. The group now belongs to Chile, and is included in the province of Valparaiso. That upon which Selkirk was marooned, and which we name Juan Fernandez, is called by the Spaniards, Mas a Tierra (more to land); the second, Mas a Fuera (more to sea), 100 miles further west. To the south-west of Mas a Tierra is the islet of Santa Clara. Juan Fernandez is named after a bold Spanish sailor of that name, who discovered it in 1605. He, like his celebrated successor, Selkirk, lived for some time as "monarch of all he surveyed," but he soon wearied of the "charms of solitude," leaving behind him a herd of goats and pigs which he had imported. Subsequently, the island was the haunt of Spanish rovers and fishermen from the coast of Peru, the surrounding seas being well stocked with fish of many kinds. In 1616 Le Maire and Schouten, on their voyage round the world, called at the island, watered their ships, and obtained a supply of fish. They found numerous goats and

barrel of the gun into small pieces, no light task, which he made into harpoons, lances, hooks, and a long knife, by heating the iron and beating it out with stones. With these he obtained a plentiful supply of goats, birds, and fish. When his clothes had worn out he clad himself with a skin around the waist, and from the skins of seals he made fishing lines. Half a mile from the shore he built a hut lined with goat skins. When Spanish vessels visited the island he always contrived to hide himself and escape their notice. He was rescued in March, 1684, by Dampier and Cook, who called for supplies. In the vessels were several men who had formerly served with Sharp, one of whom was a country man of William, named Robin. In order to give his rescuers a hearty welcome, he caught and killed three goats, and dressed them with the Cabbage Palm (*Juana australis*). The meeting of the two Indians is thus described by Dampier: "Robin, who was the first that leaped on shore, ran to his brother Mosquito man, threw himself at on his face at his feet, who, helping him up and embracing him, fell in turn on his face at Robin's feet, and was by him taken up also. We stood with pleasure beholding this meeting, which was exceedingly affect-

trionate on both sides, and when their ceremonies of civility were over, we also, that stood gazing at them, drew near. Each of us embraced him we had found there, who was overjoyed to see so many of his friends come hither, as he thought, purposely to fetch him." Probably this incident was in Defoe's mind when describing the touching meeting of Friday and his aged father.

we called lion baiting, usually seven or eight or more of us would go, each with a handspike in his hand, and so prick him to death, which commonly would be a sport for two or three hours before we could conquer him, and oftentimes he would find us weak enough, but he being an unweildy creature, and we assaulting him both behind, before, and all round, we must needs

Thomson aptly describes his plight in the following lines:

"These ruffians left me—yet believe me, Arcas,
Such is the rooted love we bear mankind,
All ruffians as they were, I never heard
A sound so dismal as their parting oars."
J. Hutchinson, Kew.

(To be continued.)



FIG. 75. COAST OF JUAN FERNANDEZ, SHOWING THE RAGGED CHARACTER OF THE ISLAND.

The "Bachelor's Delight," Captain Davies, was the next vessel on record to visit the island in 1636 and 1657. Towards the end of the latter year nine of the crew, five seamen and four negro boys, through poverty caused by gambling, chose to stay on the island. They planted Indian Corn, and tamed a number of goats, which supplied them with milk and meat. There were plenty of Turnips and other wild vegetables, great numbers of sea fowl (Partridges), producing palatable eggs, and abundance of fish. They remained on the island until taken off by Captain Strong in 1690.

Then came the celebrated Alexander Selkirk, in February, 1704. His story may not be familiar to many readers, so his principal experiences may be recalled. He left England on September 11, 1703, with Captain Dampier's expedition to the South Seas, as sailing master of the "Cinque Ports" galley, with Charles Pickering, captain, and Thomas Stradling, lieutenant. Captain Pickering died off the Brazilian coast, and Stradling took command of the vessel. He anchored in Cumberland Bay, Juan Fernandez, on February 10, 1704, where the "St. George" (Captain Dampier) joined him the next day. Whilst engaged in watering and refitting their vessels, a mutiny of the crew of the "Cinque Ports" galley broke out, and forty-two men went on shore, where they remained two days, after which they were persuaded by Dampier to return to their duty. It is recorded that they caught goats, and considered a joint of one roasted with about half a foot of boiled Cabbage a very good meal. They killed several sea elephants, and from their fat made a ton of oil for their lamps. But they seem to have had rather cruel sport with these poor creatures. According to Funnell, a member of the party, "one which they killed was 23 feet long and 14½ round, and cut 17 inches deep in fat. When they were hard pressed they would turn about, raise their bodies up, and face their pursuers, standing with their mouths wide open, upon their guard, on which occasion if they wished to kill one, they would clap a pistol to its mouth and fire down its throat; but if we had a mind to have some sport with him, which

conquer yet often he put us to the run, and sometimes he would run himself, but knew not which way, for we commonly got between the water and him." Afterwards Stradling and "honour" Alexander Selkirk quarrelled irreconcilably, and Selkirk determined to part company at the first opportunity. Towards the end of August Stradling again anchored at



FIG. 76. INTERIOR OF THE ISLAND OF JUAN FERNANDEZ, SHOWING THE WELL-WOODED VALLEYS.

Juan Fernandez, and took off two men who had been left behind on the previous visit. Selkirk there and then decided to carry out his project, and obtained leave to land with his effects, but as soon as the vessel was under weigh he regretted his action, and asked in vain to be taken on board again; but Stradling was obstinate, and chose to construe his behaviour into mutiny.

and growth of Orchid seedlings is known to be present in different plants in varying degree, and it may be that *Odontoglossum Edwardii*, being a well-marked species, furnishes the best medium, and whether preference and useful to know whether other raisers have noted similar results, and whether preference for any special plants in this direction has been observed.

ORCHID NOTES AND CLEANINGS.

MASDEVALLIA O'BRIENIANA.

A FINE tuft of this remarkable little species is in flower, with other *Masdevallias*, in the gardens of Mrs. Berghem, Belsize Court, Hampstead. Mr. Page, the gardener, states that the plant is almost perpetual flowering, the pretty yellow flowers spotted with maroon lasting a long time individually and following each other in regular succession. This very interesting species originated with the late R. L. Measures, of Cumberland, from South America. Its habitat, however, has always been doubtful, and as no other specimen seems to have been imported, it could never be verified. The species, which is only 2 or 3 inches in height, was described in *Gard. Chron.*, November 3, 1890, and is worthy of note in support of the argument that even frail Orchids do not decline and pass away if carefully tended.

ODONTOGLOSSUM SEEDLINGS.

SEEDS of *Odontoglossum* sown in the pots of other *Odontoglossum* in the cool Orchid house at The Warren House, Stanmore, are germinating freely. Mr. Haddon, the Orchid grower, states that his experience, extending over some years, points to the fact that the best results are obtained, both in the germination of the seed and the development of the seedlings, by sowing on the surface of the material in which an *Odontoglossum Edwardii* hybrid is growing. The micro-fungus necessary for the successful germination

ON INCREASED FOOD PRODUCTION.

BUTTER BEANS.

SURELY it is a slip of the pen that is responsible for Mr. Beckett's statement on page 191 that "almost any variety of Dwarf Bean may be utilised for the purpose"—*i.e.*, producing Butter Beans. The Butter Bean of commerce and the restaurants is totally different from the seeds of most varieties of French Bean, and much more nearly resembles the seeds of the Broad Bean in size and shape, while, except for colouring, almost all the French Beans are practically identical with the Haricots of commerce. Such varieties of French or Dwarf Bean as Canadian Wonder, Early Favourite, Reliance, and Negro Largo could not, by any stretch of imagination, be considered as substitutes for the Butter Bean, which seems to be a climbing variety attaining an average height of 6 feet; the European variety nearest it appears to be Mont d'Or Waxy pod.

Except for our fastidiousness, there is no reason why the seeds of all or any Beans—French, Runner or Broad—should not be eaten, but most people ban the coloured varieties, though some epicures declare them to be of superior flavour. Those who are now using Haricots and Butter Beans for the first time will find that they cook better and are more tender if boiling water is poured over them overnight.

Now that Beans are so largely used as substitutes for animal food it may be interesting to mention that in the West of England Broad Beans have long been known to the cottager as "Meat Beans" in fact, in some parts of North Cornwall they are known by no other name.

The best way to grow Haricots and Butter Beans is to treat them purely as seed crops, and not to gather any in a green state. A light and relatively poor soil will give better results than a rich staple, and a sunny, sheltered position is best. The white-seeded Dwarf Beans should be sown 4 to 5 inches apart in 2 inch drills drawn 25 inches asunder, while 2 inches or 3 inches more in the rows should be allowed for the Butter Beans and correspondingly increased distances from row to row. *J. C. Burdett*

There is some confusion about the name Butter Bean. Those who are not gardeners think of the white seeds sold by grocers. The large-seeded kind is most often named Butter Bean; the small, white-seeded one is the Haricot, or Haricot Bean. I understand that these are sometimes, if not always, kiln-dried, and in that case would not be reliable for sowing. The Butter Beans of the seedmen are the dwarf and runner Golden Wax Pods. This is the race, I presume, to which Mr. Beckett (p. 191) alludes. The seeds of the runner form, or Mont d'Or, of this are very dark purple, almost black, and many who would be most benefited by drying Dwarf Beans or Scarlet Runners for winter use are prejudiced against any colour except white. This idea, of course, has been fostered by the white-seeded varieties supplied by the grocer. I have had many inquiries whether Scarlet Runners were eatable in the dried state, or, indeed, any other than the White Haricot. The White Haricot is listed by some of our seedsmen; and the White Dutch, rarely listed by them, has white seeds. This is a climbing variety or Runner Bean. Those who object to colour would find Green Gem and Green Haricot very useful in the dried state. The last-named can be boiled quite tender in one hour, and makes very delicate eating. Other Dwarf Beans worth drying are Excelsior (pale to deep yellow, often tinted pale fawn) and Fillbasket (more decidedly fawn). In any case, they are paler in colour than the brown Beans of the grocer's shop. If the prejudice of colour were laid aside, any Dwarf Bean or Scarlet Runner might be dried for winter use. Magnum Bonum, as stated, is

a good one, because productive. Canadian Wonder is another. *J. F.*

CROPS FOR GARDEN REFUSE HEAPS.

GARDEN refuse heaps may be planted with Vegetable Marrows, New Zealand Spinach, and similar crops, as has been regularly done here. Tomatos also may be planted on the heaps, their fruit being kept clean by old Pea sticks, or something of the kind, laid on the heap, upon which to train the plants. Soil fit for the requirements of these plants is usually to be found amongst the heap, and if not, it is an easy matter to make suitable strata for them.

SNAP CROPS OF POTATOS

THE remarks recently made with reference to the spaces apart that Potatos should be planted reminds me of the exceptionally good crops that were grown at Crimmoesgate, Aberdeenshire, by the late Mr. James Esson, who was gardener and forester for many years on that estate, and from whom I gained my earliest experience in gardening. When making preparations for the planting of forest trees, the land was trenched sufficiently deep to break a "pan," which was invariably found underlying the surface. Small trees were used for planting, those intended to form the permanent plantations being placed at distances from each other, that were considered essential to their ultimate requirements, while the spaces between them were filled by "nurses"—usually Larch Potatos were subsequently planted in places where there was sufficient room for the plants to develop. The plantations, at least, for the first year, were kept free of weeds by hoeing, and in due time, as this work proceeded, the Potatos were entiled up. That the land was suitable for the growth of the Potato, and the plants fully exposed to the sun, and not robbed by neighbouring plants, favoured the crop. *Thos. Chamber, The Healds, Monmouth.*

BEANS AND PEAS FOR DRYING

ALL the white-seeded varieties of both Dwarf and Runner Beans are suitable for winter use as Haricots, as also are Excelsior (a golden brown-seeded Dwarf Bean) and the Dwarf Green Horn cut. In the case of the Dwarf varieties all the pods should be allowed to remain on the plants and ripen naturally in the sun. About the end of September the whole plant should be pulled up and the haulms hung in a dry, airy shed or spare room. In the case of Runner Beans a first picking green is sometimes taken off by growers, but it is perhaps safer to let the whole crop ripen; the plants may be punched back after a good crop has set. As the haulms of Runner Beans are large for hanging up, the individual pods may be gathered in autumn and placed in an airy place to complete their drying.

The best variety of Pea to sow now is Little Marvel; it not only cooks well during the winter, but has the further advantage of maturing early, and being a dwarf growing variety it does not need staking and is easily handled. The treatment in harvesting is the same as for Haricot Beans, a full crop being allowed to develop on the plants and ripen entirely out of doors if the weather is favourable, or the whole plant may be pulled up in autumn and suspended in a dry, airy shed or spare room. A most important point for amateurs to bear in mind is that the Beans or Peas must be thoroughly dry and the seeds quite hard before they are stored for the winter. Last autumn, owing to the continued wet weather, it was necessary for many seed growers to finish the drying of both Beans and Peas in trays before they could be safely bagged. Like most other things, however, it is only ordinary care that is required to ensure success, and in view of the prospective shortage of food for next year it is "up to all" to do what is possible to produce a reserve of food by their own endeavours. *Barr and Sons.*

ALLOTMENTS.

THOSE of us who have been in direct contact with allotment holders in different parts of the country must agree that there is a distinct and insistent demand that the allotments shall, in the great majority of cases, continue in perpetuity. The individual advantages—productive, physical, and social—are so apparent as to need no reference, and these will increase. The great stumbling block in the way of the realisation of the allotment holders' wishes is naturally the landowner, and too often his agent. Most allotment holders are ready and willing to pay a reasonable annual rent for their plots, and at first sight it would seem that this would satisfy the owner of the land. But it must be remembered that most of the recent allotments are parcelled out on land which, in auctioneer's parlance, is "ripe for building," and which, soon after the war is over, the owner hopes will be used for that purpose. In this case the ground rents would produce a greater income, with less attendant expense, than the 6d. or 1s. per rod which is the customary allotment rental, and is as much as most holders can afford to pay. The ideal remedy is not clear. It has been contended that in a matter of such national importance the Government should either assist the holders by paying part rent, or should exercise powers to ensure the retention of the allotments at customary rents. While the latter would be manifestly unjust to the landowner, the former would be unfair to taxpayers generally, and would tend to pauperise the individual workers. In a few instances no doubt the landowner would, out of public spirit, meet the workers, and allow the land to remain as allotments at a low rental, but this would not be possible in all cases. *A. C. Bartlett.*

POTATO SPRAYING

I WAS much interested in your reply to a correspondent on p. 193. Having in view the fact that the inquirer appears to be a novice in the preparation of washes, I should advise him to use Bordeaux in preference to an ordinary, home-prepared Bordeaux mixture. The paste recommended is made from the Woburn formula, and is exceedingly easy to handle and absolutely reliable, provided, of course, that it is correctly applied through a suitable apparatus. In very small quantities it comes out rather more expensive than Bordeaux mixture, but if a bulk purchase can be arranged by co-operation the costs are almost exactly equal, and one is saved the not inconsiderable labour attached to the mixing of the raw materials. My committee is endeavouring to persuade all cottagers, allotment holders, small holders and farmers to spray this season, and the response to date is excellent, although no spraying has been done here in the past. *Horace J. Wright, Ludington, Amptill.*

PLANTING POTATOS.

I AM surprised to read on p. 181 Mr. W. H. Dyers' statement that he has always planted all varieties of Potatos at the same distance apart, both in the rows and between the sets, *viz.*, 2 feet from row to row and 1 foot from plant to plant. If strong-growing varieties require only that distance, surely such varieties as May Queen and Sharpe's Victor should be planted closer, as all early varieties, many of which produce much less haulm than later ones, have the benefit of maturing earlier in the summer, which, anyhow during my experience, is a great factor in escaping disease.

I notice also on p. 182 the writer of your calendar on the "Kitchen Garden," Mr. J. Dunn, who is certainly one of our most skilful and experienced vegetable growers, states that maincrop and late varieties should be allowed plenty of room for the plants to develop. "Strong-growing varieties require a space of 3 feet between the rows, and at least 15 inches between the sets in the row." With these remarks I am entirely in agreement. I also

agree with many of the remarks made by J. F. in the same issue, that one should be guided to a great extent "by the nature of the soil and surroundings, as to the distance between the rows and sets." If he will carefully read my notes on the question he will observe that I stated that if "the soil is very high, light and poor in quality, then "the distance may be slightly decreased" E. Beckett.

DUTCH HARIOT BEANS.

The consignment of brown Haricot Beans ordered by the Royal Horticultural Society from Holland for distribution among the Fellows of the Society has now arrived, and is being distributed. Those who desire to grow a small breadth of this Bean, the flavour of which is excellent, should apply to the Secretary, Royal Horticultural Society, Vincent Square, Westminster. The price at which the Beans may be obtained is 1s. per pint, plus postage, 7d.

SPRAYING DEMONSTRATION AT WISLEY.

We learn that through the courtesy of the Council of the R.H.S. a spraying demonstration for officers of the Army Canteens Committee was held by the Horticultural Section of the Food Production Department at Wisley on Monday, the 14th inst. The demonstration was attended by 50 officers, who displayed the greatest interest in the work of spraying, the construction of the different types of Knapsack sprayers, and the mixing of Burgundy mixture. Inasmuch as the Army Canteens Committee is Potato farming to the extent of several thousands of acres, the whole of which area is to be sprayed, the demonstration had a severely practical character. Among others who shouldered the Knapsack sprayer was a Brigadier-General. The Army is vying with the Western Counties of England in the organisation of Potato spraying.

FOOD CONSERVATION.

In association with the Horticultural Section (Food Production Department), the Agricultural Organisation Society (chairman, Mr. Leslie Scott, K.C., M.P.) is giving attention to the question of fruit and vegetable conservation. A permit has been obtained for the manufacture in England of a modified form of the American Home Canner, an apparatus which is extremely popular in the United States and in Canada. Mr. R. A. Yerburch, the late president of the society, presented several canners to Englishwomen's institutes, and there is a consensus of opinion that these machines can be made of great service for preserving surplus fruit and vegetables. However, a difficulty has arisen in connection with the supply of tin for cans. In the course of an interview this week the member for the Exchange Division of Liverpool explained the situation.

"Judging by the reports from all parts of the country," said Mr. Scott, "there is a strong probability of especially large crops of fruit this season, and it is desirable that better use should be made of the surplus than in past years. In every district there should be facilities for the conservation in particular of fruit that otherwise would be allowed to rot. I know the difficulties of the Ministry of Munitions; that the demands of our own Army and the allied Armies in the matter of tin must have a prior claim, but I submit to the Government that if they insist that tin must be found for fruit preservation purposes, it can and will be found.

"Another matter hardly less important," went on Mr. Scott, "is the necessity for some method by which the produce of the thousands of new allotments and small holdings can be stored for the autumn or winter use of their growers. Probably the majority of these men and women who have taken land and are endeavouring to assist in food production have no storage space to speak of. I suggest that the Board of Agriculture, the Food Controller, and others who may be held responsible in this con-

nection should approach the local authorities throughout the country and try to arrange for the provision of suitable centres where roots and other storable produce of the little man could be deposited. The details must be worked out, but it seems to me quite practicable that a warrant should be given to each depositor for the quantity and quality of goods handed in, and that on the production of this warrant at a later date the goods deposited or their equivalent should be delivered to the depositor."

A HYBRID MINT.

From the time of Linnaeus to the present day a spicate form of Mint has been making its appearance on the Continent and in this country. Dr. afterwards Sir, James Edward Smith, in 1799, described three varieties besides the typical *Mentha* hybrids. One of the varieties is still grown in Surrey gardens and used for making Mint cake. I have no doubt all three were hybrids—namely, *M. rotundifolia* × *viridis*, and that the hybrids continue to be made in the wild state, for I have seen several of them collected by botanists. Dr. Smith described a fourth, of which he had dried specimens, quoting LINNÆUS, *Horius cliffortianus* 306, No. 5, with the description, "*Mentha floribus spicatis, foliis cordatis dentatis undulatis sessilibus*." It had not then been observed in Britain. Since then it has been gathered on the banks of the Tay, and this was identified by Mr. J. G. Baker as *Mentha hibernica*, Koch. I have also seen specimens from Switzerland. A few years ago I had it sent me from waste ground at Swanage. Last year it grew 3 feet high in pots plunged in soil, and this spring the rhizomes had almost filled the pots to the exclusion of most of the soil. One stem bore leaves in whorls of three, indicating the vigour of the hybrid. For Mint sauce it is strong in flavour, but not more so than the hybrid in Surrey gardens. It is nearest to *M. rotundifolia* of any of the hybrids I have seen, but is nearly glabrous. The best known of these hybrids, recognised as such, is *M. crispa*, Linn., but that is merely a monstrous form with the venation of the leaves arising from the base and spreading like a fan. There is a similar form attached to *M. sylvestris*, with very large leaves. J. F.

PRICES OF VEGETABLES NEARLY EIGHTY YEARS AGO.

Is looking over a volume of *The Gardener's Magazine* for 1839, I was much interested in the prices of vegetable compared with those of to-day. Here is a report from Covent Garden Market, dated March 22, on the same lines as that given weekly in *The Gardener's Chronicle*. The price of Potatoes per ton was £5 10s. to £5, or 1s. 6d. to 3s. per bushel, while Jerusalem Artichokes were 1s. per half-sieve, Carrots 6s. to 6d. per bunch, and Parsnips, then split Parsnips, 9d. to 1s. 7d. per dozen, and Turnips 2d. to 5d. a bunch. Of green vegetables, Cabbage at 4s. to 5s. per dozen cannot be regarded as cheap, but the price of a dozen Savoys was only 1s. to 1s. 6d., with Brussels Sprouts 1s. 6d. to 2s. 6d. per half-sieve, Spinach at 1s. 6d. to 2s. per sieve would have been appreciated this year of abnormal prices, and so would old Onions at 5s. 6d. per bushel. Green or Spring Onions, referred to by their French name of *Oignons verts* 5d. to 6d. a bunch. Seakale at 1s. to 2s. a punnet was certainly not expensive, while Cose Lettuce at 1s. 6d. a score and Cabbage Lettuce at 6d. for the same number could not be looked upon as dear. A bundle of Celery consisting of 12 to 15 heads was quoted at from 1s. to 2s. Mushrooms realised 2s. to 4s. per pottle, while Brocks were quoted at 14s. a lb., and Truffles at about the same. These last two items are now but rarely priced in market lists. Of fruits, forced Strawberries were 7s. per ounce, Pineapples 8s. to 12s. per pound, Hothouse Grapes £1 10s. to £2 per pound, and Cucumbers 6s. to 10s. per brace if 7



THE KITCHEN GARDEN.

By J. DUNN, Foreman Royal Gardens, Windsor.

EARLY CARROTS.—The first-sown Carrots will soon be ready for thinning, and this work should be taken in hand at the earliest opportunity, as numerous small weeds make their appearance now which, if not destroyed, will soon render the thinning of the crop a tedious operation. In the case of stump-rooted varieties intended for early supplies no severe thinning will be necessary; a space of 3 or 4 inches between the plants will be sufficient. Hoe the ground frequently and dust the plants freely with soot during moist weather. A sowing of intermediate, or some other freely growing variety, should be made at once, the ground being first thoroughly pulverised and the surface sowed with fine and level as possible. Sow the seeds thinly and cover them lightly. If damp weather sets in slugs may prove troublesome, and should be destroyed by frequent applications of soot and lime.

BEET.—The present is a good time to sow a good breadth of Beet. This crop also requires fine, rich soil to induce quick growth. Leave a space of 18 inches between the rows, and when the plants are about 2 inches high thin them to 9 inches apart in the rows. Keep the hoe freely at work amongst the plants during fine weather, so that the bed may be kept free from weeds. Turnip-rooted Beet may be sown until July 1 with a view to producing tender young specimens throughout the autumn. Young Beet in frames must be allowed plenty of ventilation; remove the lights during warm days, and replace them again at night if the weather is cold. Beetroot in store should be frequently examined, and all young growth carefully removed. The roots may be kept in good condition for some time by placing them behind a north wall and covering them with material that will protect them from drying winds.

VEGETABLE MARROWS.—These plants should not be allowed to remain in the pots too long, or they may become stunted and fail to start freely into growth. Where large supplies are desired they may be planted on a plot of good soil into which a quantity of decayed manure has been dug. Allow plenty of space between the plants and keep the growths regulated and thinned. When the plants are put out some protection from cold winds should be provided; a large pot placed over each plant at night will answer the purpose, but all pots must be removed early in the morning; they can then be protected from the wind by placing evergreen branches around them. If dry weather continues the plants will require careful attention with regard to water.

CHICORY.—The principal sowing of Chicory should be made with as little delay as possible. A space of 16 inches should be allowed between the rows, and the plants thinned to 9 inches apart as soon as they are of sufficient size. Slugs are sometimes troublesome, and must be destroyed by dusting the plants with lime in the early morning. Chicory roots may still be placed in a dark chamber with a view to producing black-headed for salad or for cooking purposes. Perfect darkness is necessary, and a fairly dry atmosphere.

CELERY.—Continue to prick out young plants in nursery beds, and allow a space of 9 inches between the plants, so that they may be lifted with good balls of soil when removed for planting in the trenches. Give plenty of water at the roots, and syringe overhead during dry weather in order to keep them from becoming hard and stunted. The trenches should be prepared and a good quantity of decayed manure applied with as little delay as possible.

MINT.—The present is the best time to make new plantations of mint. Light, rich soil should be selected and a sufficient number of sturdy

young shoots planted 1 foot apart with an ordinary dibber. Allow 1 foot each way between the plants; these should be about 4 inches high at the time of planting. Water them well, and keep the ground free from weeds during the summer.

SAGE should also be planted now. The cuttings may be taken with a heel, planted 2 feet apart each way, and the soil made firm. Water well while the weather is dry, and keep the ground lightly stirred with a hoe.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR DAVEN, Abbots Wood, Godalming, Surrey.

PEACHES AND NECTARINES.—Examine Peach and Nectarine trees closely to see that they are free from aphid and mildew. If necessary continue to spray the foliage with Quassia Extract, or weak paraffin emulsion may be used instead. I have found the latter specific most reliable provided it is not used too strong. For tender foliage it is wise to apply it at a slightly less strength than recommended in the directions supplied by the makers. For mildew apply flowers of sulphur or spray with sulphide of potassium. Continue to disbud the trees, removing all irregular growths, and severely thinning the remainder as advised in former calendars.

APRICOTS.—Apricot trees should be carefully watched for the maggot, which attacks the young growths. The trees may be sprayed as in the case of the Peach, but they are not so liable to attacks of aphid as Peaches and Nectarines. The roots must be watered if the soil is dry; there is a great danger from drought in light, freely drained soils seeing that no rain has fallen for 22 days.

CHERRY TREES.—Keep a sharp watch for black aphid on Cherry trees. The cold nights and warm days are all in favour of the pest, which, if not checked, will cause much trouble. The trees are full of flower, and immediately the fruit is set a good spraying, such as recommended for Peaches, should be given. The fruits on the earlier trees should be thinned as early as possible.

GOOSEBERRIES.—Gooseberry bushes are fruiting freely, and it is advisable to spray them with a strong solution of Quassia Extract to prevent attacks of the caterpillar, which strips the plants of their foliage. By the use of a garden engine and a good length of hose attached a large plantation may be sprayed in a little time. The thinning of the fruits may, with advantage be proceeded with as soon as possible, and the Gooseberries used both for bottling and the making of tart.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcott, Eastwell Park, Kent.

ASPARAGUS. Few foliage plants have a greater decorative value than the various species of Asparagus, which are grown in pots or baskets, and for use as cut foliage. A Sprengeri and A. decumbens are especially suitable as basket plants, and as such their grace and beauty are seen to the best advantage. Plants raised from seed sown early in the present year, and duly potted in 60-sized pots, are suitable for transferring to wire baskets. For large and conservatory baskets of the largest size should be used. Prepare a rich compost consisting of four parts good turfy loam, one part well-decayed manure, and one part leaf-mould, adding a 6-inch potful of bone-meal and seed to each bushful of the mixture. Line the baskets with moss, following this with a second lining of turfy loam, and the rougher parts of the compost. Plant five or six strong plants in the larger baskets, down to a single plant in a small basket. Individual plants in receptacles of moderate size are suitable for small conservatories or plant houses, where they give lightness and grace to their surroundings when suspended from the roof rafters. A decumbens is the better species for small houses; it does not

make such strong growth as A. Sprengeri, and is more graceful. A. Sprengeri is seen at its best in lofty houses, and when well cultivated adds greatly to the general decorative effect. Make the soil firm in the baskets and return them to a warm house till the plants become re-established in the soil. When growing freely the plants should be removed to their permanent positions in the conservatory or plant house. Well-established specimens need an abundance of water, and if given regular supplies of concentrated manure thrive in the same receptacle for several years. A. Sprengeri compacta is, as its name denotes, of dwarf and compact habit. The shoots of A. plumosus, and its dwarf variety minus are largely employed with cut blooms in vases, and the plants associated with flowering plants in pots. Of the other species A. tenuis minus is especially light and graceful. A. dolobrus is a lesser known species, but well worth including in a collection of plants. They all thrive in a warm greenhouse.

FRUITS UNDER GLASS.

By JAS. HINSON, Gardener to Mr. LEOPOLD DE ROTHSCHILD, C.V.O., Gunnersbury House, Acton, W.

STRAWBERRIES IN POTS.—The fruits on pot Strawberries will now develop rapidly, and fruit houses other than late or cold houses are unsuited for them at this season. Only plants with berries ripening should be left in the forcing houses. Attacks by red spider and even mildew must be guarded against. Full exposure to the sunlight is essential. The berries may not set so readily as hitherto, as sudden outbreaks of heat are not helpful in this respect.

VINE MILDEW. My experience is that mildew often attacks Vines during May, and more particularly when easterly winds prevail, causing a current of cold air in the house. On no account should the roof ventilators be opened in vinerys where the Grapes have recently been thinned or are approaching the stage when thinning is necessary. Sometimes for the purpose of retarding the Vines, the temperature is kept rather too low at night time. In such circumstances attacks of mildew may result and the disease spread rapidly. If the berries have reached the size of Peas there will be no danger of applying flowers of sulphur, provided the black land, as it is not so conspicuous as the yellow to the water pipes, mixing it with skim milk, so as to adhere. Then for one night immerse the vinery in the pipes and the mildew will be checked. In an earlier stage the better plan is to puff the sulphur on to the bunches that are attacked, as this is less liable to cause rust on the berries.

GRAPES ON THE POINT OF COLOURING. Vines with Grapes approaching ripening need extra careful management in ventilating. The temperature may be a little lower at night than hitherto. A period of five weeks is a suitable time to allow for berries on the point of colouring to perfect finish. When it is necessary to damp down it should be done when an is admitted in the morning. Never close the vinery at nightfall if it can possibly be avoided; rather leave both top and bottom ventilators open slightly.

THE ORCHID HOUSES.

By J. COLEBY, Gardener to Sir JEREMIAH COLEMAN, Bart., Garton Park, Reigate.

PHALAENOPSIS.—Plants of Phalaenopsis should be afforded fresh potting material each year, and P. amabilis, P. Stuartiana, P. Sandiana, and P. Schilleriana should be attended to at once. The plants are most frequently grown in teakwood cylinders or baskets, and when the receptacles show signs of decay new ones should be substituted. During the process of removing the plants take care not to injure the healthy roots. By immersing the basket for a short time in tepid water the roots will be more easily detached from the wood. The wires that hold the basket together should be cut and the bark removed singly. Detach

the roots carefully, using a thin knife-blade, wash all the old compost from them, and cut away all decayed portions. The new receptacle should be well drained, first placing a clean, flat crock over the bottom, and half-filling the basket with portions of Fern rhizomes. A suitable rooting medium consists of short portions of Osununda-fibre and Sphagnum-moss in equal proportions, mixed with finely-rubbed crocks. The roots should be woven between the bars of the basket, working the compost firmly between them until it is level with the top of the basket receptacle. Surface the basket with a layer of leaf heads of Sphagnum-moss. Plants that are growing in sound receptacles should have the old compost removed from between the roots by means of a pointed stick, and the dusty particles washed from between the drainage. Fill the receptacle with some of the fresh compost. These Orchids may also be grown successively in shallow pans, preferably those without side holes. Use clean crocks for drainage, and fill the pans with the compost a little above the rim. P. Emeraldia, P. violacea, and P. Lindemanniana are best grown in pans. Phalaenopsis should be grown in the warmest house, where there is a constant circulation of warm air, and shade is necessary from the sun's rays during spring and summer. They may be either suspended from the roof rafters or stood on the stage near the roof-glass on inverted pots in saucers of water. Keep the atmosphere moist during spring and summer by damping the walls and paths frequently during the day; in bright weather the plants are benefited by syringing between the pots and wetting the undersides of the leaves. Water the surface of the compost sparingly with a fine rose until the young roots have grown freely in the new soil, after which they may be afforded more liberal supplies of moisture. Plant of P. Rimstadiana are developing flowers, and should not be disturbed at the roots until after flowering is over. Phalaenopsis are large, strong, vigorous plants, producing large sprays of bloom, but the inflorescences should not be allowed to remain on the plants for too long a period; it is best to remove them as soon as the last bud has expanded. If flower spikes appear on weak plants, reduce the number of flower buds to two or three.

THE FLOWER GARDEN.

By W. J. GRISSE, Gardener to Mrs. DEMESTER, Keele Hall, Staffordshire.

SPRING FLOWERING PLANTS.—Certain spring flowering plants require to be propagated at this date. Arabis, may be pulled in pieces and the portions planted in rows on a partially-shaded border. Those of the choicer varieties should be inserted in boxes filled with a sandy compost and rooted in a clove frame. Clumps of Polyanthuses and Daisies should be divided and replanted in the reserve garden. As soon as single and double flowering Arabis have finished flowering they may be increased by division, retaining the roots when possible. This same method may be adopted to propagate Wiseman saxatile, although better plants are obtained from seed. Mosses, carefully lifted and replanted in the reserve garden, will give an abundance of young plants. Fancies should be sown in boxes or cold frames, and the seedlings transplanted at an early stage on a shady border, at a distance of 9 inches apart and 12 inches between the rows. Water young plants and seeds through a fine rose, and protect them from strong sunshine by light shadings. Bulls may be lifted directly the flowers are over and replanted in a reserve border. Water the root occasionally until the foliage turns yellow.

PLANTING BAMBOOS.—Where it is necessary to divide old plants of Bamboo, or to increase the stock, suitable pieces should be detached directly new growths appear. Dig the soil at least 2 feet deep, and enrich it with manure, leaf-mould, or decayed vegetable matter. Give copious watering to settle the soil about the roots. Topdress established plants with a compost consisting of loam and decayed manure and give occasional waterings with liquid manure.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary Department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under our notice of horticultural interest.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 54.5°.

ACTUAL TEMPERATURE.—Office, 41, Wellington Street, Covent Garden, London, Thursday, May 17, 10 a.m.: Bar, 29.3; temp, 49.5. Weather, Wet.

Narcissus Disease.

Disease in Narcissus has become so serious that a year or so ago the Narcissus Committee of the Royal Horticultural Society suggested that an investigation into the cause of disease and its remedy should be undertaken at the Wisley Research Station. The Council welcomed the suggestion, and appointed Mr. Ramsbottom an old student of Wisley—to carry out the investigation. After Mr. Ramsbottom's appointment it was found that disease of Narcissus was already being investigated by Miss Welsford at the Imperial College of Science, and it was known also that Mr. Barr was carrying out experiments with a view to discovering a remedy for the disease. It appeared desirable, therefore, that the several investigators should, so far as possible, join forces and work in co-operation with one another. It soon appeared, however, that the first thing for both Miss Welsford and Mr. Ramsbottom to do was to discover the real agent of the disease. This they set about doing, and it is interesting to record that both these investigators have arrived independently at a similar conclusion. Miss Welsford's results are in course of publication; but those obtained by Mr. Ramsbottom will not be published in full until certain further investigations now in progress have been completed.

The essential fact arrived at both by Miss Welsford and by Mr. Ramsbottom is that, as already suggested by Hewitt, the well-known disease of Narcissus is not, as

has been commonly supposed, due to a species of *Fusarium*, but is due to attack by a parasitic eelworm, *Tylenchus devastatrix*. Fusarium disease, as the malady of Narcissus has been commonly called, is, therefore, a misnomer, and the disease should in future be denoted as Eelworm Disease. An account of Mr. Ramsbottom's experiments was given by the author at a meeting of the Horticultural Club on the 8th inst.

In his opening remarks Mr. Ramsbottom acknowledged the generous assistance which he had received from Narcissus growers during the course of his investigations. Thanks to them he had had the opportunity of examining many hundreds of diseased Narcissus bulbs, and had also been able to visit numerous nurseries and bulb farms and make observations and conduct experiments in the field.

From these observations and experiments it was soon evident to Mr. Ramsbottom that the common view—that the disease is due to *Fusarium*—is erroneous. Examination of large numbers of diseased bulbs pointed conclusively to the culprit being a parasitic eelworm, which was identified with *Tylenchus devastatrix*, Kuhn. The disease may show itself in the bulbs or in the foliage, or in both bulbs and foliage. One or more of the fleshy scale leaves become of a distinct brownish or blackish colour, and when a diseased bulb is cut horizontally, the discoloured scale leaf or leaves appear as one or more dark rings—hence the name Ring disease, suggested by Mr. Ramsbottom. Microscopic examination of the tissue of a discoloured scale leaf reveals the presence of eelworm. In a diseased bulb the malady may appear not only in the scale leaves, but also in the embryo flower. When planted, such a bulb, if it grow at all throws up sickly yellow and twisted foliage. The individual leaves are silky and spongy, and are marked by elongated brownish areas which at times run along the whole edge of the leaf. Whitish, irregular irruptions of the leaf may also appear. Plants exhibiting these symptoms bear stunted flowers, and the flowers appear some time after those borne by healthy bulbs of the same species. Unfortunately, not every diseased bulb reveals its malady by such manifest symptoms. Bulbs which are lightly attacked may bear foliage which appears to be quite normal. Hence, although it is most desirable that bulbs bearing yellowish foliage should be dug up and destroyed, this procedure by no means guarantees that all diseased bulbs are removed.

Having obtained strong presumptive evidence that the disease is due to eelworm, Mr. Ramsbottom proceeded to seek for definite proof of this provisional conclusion. He succeeded in isolating eelworms, in growing them in pure culture, and in inoculating healthy Narcissus bulbs with them. This was done by taking some of the minute animals on the point of a sterilised needle and pricking them into the necks of healthy bulbs. The bulbs were planted in steam-sterilised soil in pots. The pots, together with others containing

uninoculated bulbs similarly planted, were placed in a cold frame on September 7. About five months afterwards (February 19th), when the inoculated bulbs were lifted they were found to be richly infested with eelworms, which had travelled down from the neck along the fleshy scales and had entered the basal plate, leaving in their track the brown stain characteristic of the diseased bulbs. All the twelve or more inoculated bulbs showed the presence of eelworm, and the symptoms of the disease, whereas none of the originally healthy uninoculated bulbs showed either eelworm or symptoms of disease.

In other experiments inoculation was effected in different ways, by introduction into the wound in the flower stalk made when the developed flowers are picked, by pricking the leaves four inches above the neck, and by placing eelworm on *uninjured leaves* at a few inches from the neck.

The results were remarkable. In less than a week inoculation by the first of these methods had led to rotting of the flower stalk, which assumed a wrinkled and distorted appearance. Inoculation of the pricked and of the intact leaf was also successful. In either case the leaves lost their natural rigidity, lay prone on the sides of the pot, and presented a wrinkled and deformed appearance.

It is evident, therefore, that not only is *Tylenchus devastatrix* the agent of the disease, but also that this eelworm behaves as a true—and not merely as a wound—parasite. It is an active and not only a passive agent of disease, and is able to gain access to the tissues of its victim both through wounds and by piercing the intact outer tissues of the leaf. Having regard to the importance of eelworm, we publish in full on page 207 Mr. Ramsbottom's summary of previous investigations into this pest, with other matter relative to the disease.

AN ALLOTMENT MANUAL.—This little brochure* on allotments is issued by the University of Leeds for growers in York shire. The cultural remarks are lucidly written, and most of them are orthodox. But when the cropping tables and the table of quantities are compared with each other, and these with the preceding remarks, there appears a want of co-ordination. How large some of these quantities are may be illustrated by mentioning the 1 oz. of seed of Brussels Sprouts marked as required to produce plants to furnish a run of rows extending to about 37 yards! Then, while such a valuable summer and winter food as the Broad Bean might have been given a larger extent of ground, the Celery, Spinach, Cauliflower, and Salsafy recommended are vegetables of such slight food value that they might well be excluded altogether. It would have been useful in a work of this kind had the expedients all experienced small cultivators use been described—*e.g.*, Broad Beans sown with Early Peas or singly alongside the alley between rows of other vegetables, or securing a full crop of Lettuces from one piece of ground by setting a young plant in the place of every one that is taken for use.

SPARROWS AND RATS.—The Board of Agriculture has lately recommended the destruction

* *The Making and Management of an Allotment.* By A. S. Galt. Price 3d.

of the house sparrow as being a large consumer of grain. Farmers, however, should be careful not to conduct a campaign against the lodge sparrow, which, in common with many other small birds, is valuable for keeping down insect pests. In countries where small birds have been destroyed indiscriminately disastrous results have followed.

EARLY POEMA.—This is a book of verse, by Mr. T. G. Henslow, and it includes some three hundred poems, some of them, however, consisting only of a single verse. The author tells us in the preface that he does not approve of poets limiting their published verses to what they themselves consider to be their best efforts, but on the contrary, prefers to publish them all and let the public select those of which they

MOSSY SAXIFRAGES.

THE genus *Saxifraga* includes some of the most valuable plants for the rock garden, and consists of several distinct groups. For example, some species are adapted for planting on hot, sunny ledges, others for cool, shady banks, whilst a few succeed only in boggy places, or even with their roots in running water. They vary in habit to a remarkable degree, such extremely small species as the diminutive *S. ciliaris*, with its tiny rosettes of leaves and corresponding sprays of flowers, differs so much from the larger species of which the Californian giant *S. peatata* may be cited, as to appear at first sight to have little in common.

As a whole the Rockfoils are easy to grow, and

burn in drier places much exposed to the sun. The illustration in fig. 75 shows a growth of these Rockfoils in the rock garden at Kew, and includes most of the species and varieties described below.

S. CARPETOSA. This plant is a native of the Northern and Arctic regions, and is very variable in habit. Many names have been given to the different forms of this species, among which may be mentioned *S. depiciens* and *S. spionhemii*, but, although the extreme forms may be quite distinct, they are linked by a chain of intermediates which makes it difficult to draw a line between the various so-called species and varieties. One of the most marked varieties is *S. c. var. hirta* with very hairy foliage. The wild plant has white flowers, the red colour seen in the newer forms of *S. carpetosa* being due to



FIG. 75. MOSSY SAXIFRAGES IN THE ROCK-GARDEN AT KEW.

(Photograph by C. P. Ruffell)

most approve. Thus there is great diversity of subject in the volume before us, and inequality of style and expression, at the same time those interested in gardens, birds, and natural history generally, will doubtless find many of the poems of great interest. Miss HARTLEY'S sketches are occasionally very appetising, and they should add much to the value of the book.

PUBLICATIONS RECEIVED.—*Enquiry into Plants, and Minor Works on Odours and Weather Signs.* By Theophrastus. With an English translation by Sir Arthur Hort, Bart., M.A. In two volumes. (London: William Heinemann, New York: G. P. Putnam's Sons) (Series, *The Loeb Classical Library*.) Price 5s.

• *Early Poema.* By T. Geoffrey Henslow, M.A. With illustrations by Miss D. Hartley. (London: *The Gentlewoman*.) Price 5s.

or need to be planted in suitable situations. A good general rule for planting is, sunshine for those with hard, crusted, and leathery leaves, although there are a few exceptions, and shade or half shade for those of the mossy or soft-leaved section. Many of the latter group form lovely carpets or mounds of deep emerald green foliage, very beautiful in winter, and covered in spring and early summer with masses of pure white or rose-pink flowers.

The mossy Saxifrage crosses freely, and hybridists have given us many fine varieties. Certain of the taller hybrids are of a rather woody character, evidently due to the influence of *S. granulata*, which has tended to develop a taller and less graceful habit.

Rich, moist, and well-drained soil is essential for Mossy Saxifrages, many of which tend to

the influence of *S. muscoides* var. *atropurpurea*, a charming little plant with bright red flowers. One of the first hybrids was Guildford Seedling, a very dwarf carpeting plant with bright crimson flowers. *S. Chiriana* is of rather stronger habit, with red flowers, while *S. bathonensis* grows nearly 1 foot high, with much-branched stems, and has large, brilliantly red flowers. *S. sanguinea superba* is of neat habit, and has rich ruby scarlet flowers that retain their colour well for some time.

S. EXARVIA. A distinct and beautiful Saxifrage from the Pyrenees, forming close, compact tufts of bright green foliage that is completely covered by a mantle of white flowers in summer. The plant grows only two or three inches high, the thin, waxy stems being rigid and freely branched.

S. GLOBULIFERA.—A free-blooming species from the Western Mediterranean region. It is somewhat similar in general habit to *S. Wallacei*, and produces white flowers in May and June.

S. HYPNOIDES.—The "Dove-tale Moss," with its emerald green carpet, is a well-known plant in gardens. During the winter it is one of the chief attractions in the rock garden, clothing otherwise bare places with a permanent mat of beautiful green. The white flowers appear in profusion in spring and early summer. Named varieties of this species are numerous, one of the closest and most compact being *gemmifera*; *variagata* has foliage prettily variegated white and green.

S. MUSCUIDES.—This is a dwarf, dense, carpeting species, with yellowish flowers in the type, forming a moss-like turf. *S. m. var. atripurpurea*, with bright red flowers, is the source of all the fine red hybrids that we possess.

S. TRIFURCATA.—An elegant species from Northern Spain, forming a carpet of rosettes with three parted leaves that are stiffer in texture than most in this section. The pure white flowers are borne on stems two or three inches high, in graceful sprays. The variety *ceratophylla*, which is known as the "Stag-horn Rockfoil," has more deeply parted leaves of a still more rigid character than in the type.

S. WALLACEI.—This species is one of the best of this group, with distinct foliage of a light green colour, and large, white flowers that are sweetly scented. For spring bedding or for borders, it is a very attractive plant, producing flowers freely, and lasting for a long time in perfection. *S. Wallacei* is of garden origin, but was considered at one time to be synonymous with *S. Camposita*, a Spanish plant with less hairy leaves and stems. **H. L.**

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE VALUE OF SUN HEAT (see p. 185).—I have grown Tomatoes successfully for many years by means of bottled-up sun-heat, and, as in the present year, have had other crops part of the time in the same houses. Young Onions, Carrots, and Cauliflowers are benefited by the heat as well as the Tomatoes. But French Beans planted in one house as an edging slightly wilted during the recent intense heat, when the temperature in the house for several hours daily ranged above 100°; otherwise they showed no bad effects, and the flagging was only temporary, just as Turnips and other vegetables will in very hot sunshine. Lettuces grow to abnormal bulk in late spring. Plants of *Primula obconica* have been badly touched by the flowers, not the leaves. There is a limit at which the Grape Vine shows resentment. Heat can be saved by keeping vineries close till the growths have developed an inch or two, but the Vines must have air when in full growth. The chief point to remember in growing these with a limited fire-heat is to ventilate very early in the day, but not enough to lower the temperature, and, unless in very hot weather, that will suffice for the whole time; there is danger from the sun. My experience leads me to disagree with the advice to increase moisture with increase of temperature. Provided the roots are properly moist, a saturated atmosphere is not essential; on the contrary, it leads to etiolated growth. I wonder if many of your readers have noticed that red spider breeds in just such an atmosphere as that recommended. **R. P. B.**

CHIONODOXAS (see pp. 169, 186).—I am glad to observe Mr. William Cuthbertson calling attention to *Chionodoxa Tmolii*. It is the latest of the *Chionodoxas*, and merits all the praise given it by your correspondent. May I ask, however, if Mr. Cuthbertson has tried Boissier's variety of *C. Luciferae*? It approaches more closely in its colouring to *C. Tmolii*, but has perhaps more of a red blue tone than is apparent in *C. Tmolii*, which has a shade of purple about it. It was interesting to read in Sir Herbert Maxwell's article that he had picked up *C. sa* in Asia Minor. *C. sardensis* varies, but I believe that the first records of *C. sardensis* in this country spoke of it as blue to the centre, and most of my plants of this species are so coloured. Mr. Edward Whittall informed me that both the white-eyed and other forms were found. *C. gigantea* is, as Sir Herbert Maxwell states, inappropriately named *gigantea*; *grandiflora* would have been better, but the claims of priority appear to have decided in favour of *gigantea*. *C. Allenii* apparently runs into *C. gigantea*, but Allenii, as described by Mr. Whittall and Mr. Allen, should have more than one flower on a scape. I have collected bulbs of Allenii and *gigantea*, which vary greatly, and some are exceedingly fine and worthy of propagation. I have also here *C. nana*, the smallest and least attractive of the *Chionodoxas*, and now a rare plant. *C. Tmolii* seeds with me occasionally. **S. Annett, Sunningdale, Maidenhead, Dumfriesshire.**

BRUSSELS SPROUTS.—I presume the majority of gardeners will agree that all winter vegetables, Brussels Sprouts are the most profitable, notwithstanding the fact that Savoys may give a larger gross weight. We are still using Sprouts that commenced to yield seven months ago, and have the greater portion of the crop for 1917-8 planted between the rows of the present crop. No vegetable is so easy to produce, given time and sufficient space for each plant to develop, and the plant is perfectly hardy. **R. P. Hetherington, East Lothian.**

PLANTING VIOLETS.—Mr. Guise has advised on two occasions recently (see pp. 135 and 163) the planting of runners from the old plants of Violets "with roots adhering if possible." May I point out that this method of propagating Violets from practically exhausted stock has been for many years superseded by that of propagating from young runners at framing time in autumn. At that time use can be made of the superfluous growths when trimming the plants, and these inserted as cuttings and rooted, and need not only a four or five months' start over those advised by Mr. Guise, in April, they have youth and vigour also in their favour, and are free from the weakening effects that follow frame culture for a period of months. One of the plants I recommend is ample to put out in any station, whereas Mr. Guise finds it necessary to put "two or three crowns together." On March 27 last Mr. James C. House gave an address on "Violets and Violet Growing," before the Fellows of the Royal Horticultural Society, and one of the points on which he laid strong emphasis was autumn propagation of the plants to ensure the best results. As I practised this method myself for many years and knew its worth, I gave it my hearty support. **E. H. Jenkins.**

— I have frequently practised the method described by Mr. Jenkins, but can see very little difference in the quantity or quality of the flowers than are obtained from the method I advocate, apart from the extra work entailed (a very important item during the present scarcity of labour). However, these "exhausted" and "weakened" runners, planted in the manner described, gave an abundance of flowers of superior quality during the past season. The results were so satisfactory that I have adopted the same method this year, making the third year in succession. **W. J. Guise.**

"MYSTERY MANURES" (see p. 115). I read with much interest Dr. H. E. Durham's remarks on his trials with manures. Some experiments came under my notice in connection with these manures, and I have obtained from the experimenter, Mr. C. Cutts, The Gardens, Benchams, Harford, Devon, the following particulars of the same: Six pots of dwarf Beans were planted January 17, 1916: Set 1, two pots untreated; set 2, two pots bacterised peat (1 part in 8 of soil); set 3, two pots Bito (1 part in 8 of soil). Crop picked from April 2 to 9, 1916, as follows: Set 1, 1 lb. 2 oz.; set 2, 1 lb. 12 oz.; set 3, 2 lb. 1 oz. Three 14 in. pots of climbing French Beans were also planted January, 1916. Six Beans in a pot: 1, untreated; 2, bacterised peat (one part in 8 of soil); 3, Bito (1 part in 8 of soil). Crop picked from April 2 to 14, 1916. 1, 1 lb. 4 oz.; 2, 10 oz.; 3, 1 lb. 9 oz. **L. L. Smith, Houthfield, Sudmouth.**

SOCIETIES.

ROYAL HORTICULTURAL

Scientific Committee.

May 8.—*Present*. Mr. H. J. Elwes (in the chair), Sir Everard in Thurn, Messrs. W. Fawcett, J. Fraser, W. Hales, J. Odell, G. Wilson, E. A. Bowles, F. J. Chittenden (hon. sec.) and R. Farrer (visitor).

Prunus spinosa forms.—Mr. J. Fraser showed dried specimens of a number of forms of *Prunus spinosa*, including the variety *macrocarpa*, which he regarded as a hybrid between *P. spinosa* and *P. communis*.

Narcissi.—Mr. Bowles showed flowers of the uncommon *Narcissus dubius* and the rare white form of *N. muticus*, which seems so difficult to grow and establish in this country.

Various Plants.—Mr. Elwes showed *Iris Wattii* grown in a cold house, where, like *I. fibriolata*, it succeeds much better than outdoors, good flowering being apparently necessary before a good flowering spike can be developed; *Fritillaria gracilis*, which Mr. Bowles introduced from Montenegro; *Habenanthis pratensis*; *Alpinia Elwesii*, from Formosa; *Arundina bambusaefolia*, from India, an Orchid rarely grown well now; *Rehmannia elatior* and R. Henryi, both cold-house plants; and *Cymbidium devoniensis*.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

April 16.—*Committee present*: The Rev. J. Crombholme (in the chair), Messrs. R. Ashworth, D. A. Cowan, J. C. Cowan, Dr. Craven Moore, A. G. Ellwood, J. Evans, P. Foster, J. Lupton, D. McLeod, W. Shackleton, and H. Arthur (secretary).

AWARDS.

FIRST-CLASS CERTIFICATES.

Odontioda Bradshawiae var. *Columbia*, *O. Lambearianum* var. *Ruby* (*C. Noeliano* × *Odm. Lambearianum*); *Cymbidium Alexandri* var. *Celeste* (*eburneo-Lovii* concolor × *insigne*), and *C. Murs* (*eburneo-Lovii* × *insigne roseum*), all from Dr. Craven Moore.

Cattleya Cowanior alba and *Miltonia Bleania* var. *Primo*, both from R. Ashworth, Esq. *Odontoglossum Mirum Haddon House* var. (*Wilckeanum* × *crispum Lucianum*), from P. Smith, Esq.

AWARDS OF MERIT.

Odontioda aurea var. *Beauty* (*Odm. luteo purpureum Fyulsteeki* × *Oda. Charlesworthii*), *O. Tigris* (*Charlesworthii* × *harvestensis*); *Odontoglossum Zoe* (*Fyulsteeki* × *Crawshayana*); *Cattleya Schröderiae* var. *Mauve*; and *Cypripedium Gregii magnificum* (*niveum* × *Godefroyae*), all from P. Smith, Esq.

Odontioda Zenobia var. *Hamilton*; *O. Lambearianum* var. *Hazel*, both from Dr. Craven Moore.

Odontioda Madeline var. *Oporto*, from R. Ashworth, Esq.

AWARDS OF APPRECIATION.

FIRST-CLASS.

Odontioda Bradshawiae var. *Anglia*, *O. Madeline* var. *Diadem*, and *Odontoglossum illustissimum* var. *K. of K.*, from R. Ashworth, Esq.

Odontoglossum Lady Mounds (*crispum* × *lochritense*), and *O. President Wilson*, from S. Gratrix, Esq.

Odontioda Elaine (*Odm. Lambearianum* × *Oda Charlesworthii*), from Dr. Craven Moore.

CULTURAL CERTIFICATES.

Mr. J. Lupton, for a plant of *Cymbidium Parishii Beardwood* var., carrying four spikes of flowers.

Mr. E. Rogers, for a specimen *Eulophiella Elizabethae*, with two flower-spikes from one pseudo-bulb.

GROTES.

Large Silver Medals were awarded to R. Ashworth, Esq., Newchurch (gr. Mr. Daynport), and Dr. Craven Moore, Victoria Park, Manchester (gr. Mr. T. Arran), and a *Silver Medal* to Messrs. Cypher and Sons, Cheltenham.

NATIONAL AURICULA AND PRIMULA (Midland Section).

MAY 4, 5.—This society's eighteenth annual exhibition was held in the Birmingham Botanical Gardens on the above dates. There were fewer exhibits than usual, and the quality of the flowers was inferior to that of previous years. The weather was beautifully fine on both days, and there was an unusually good company present. It is gratifying to note that the "gate" constituted a record.

The premier Show Auricula Shirley Hibberd (green edged) was shown by Mrs. CHARLES WINN, who also had the premier Alpine Auricula Muriel (gold centre). The premier seedling Show Auricula Susie (self), came from Mr. C. S. YEOMANS, and Mr. J. D. WILLIAMS sent the premier Alpine seedling Auricula Kathleen Mary (gold centre).

The Silver and Bronze Medals offered to the most successful exhibitors were won by Mrs. CHARLES WINN and Mr. A. J. WADLEY respectively.

The Ludford Silver Medals for (1) Show Auricula and (2) Alpine Auricula, were won by Mr. J. D. WILLIAMS. The James T'dale Silver Medal was secured by Mr. E. KENWRIGHT.

There were four honorary exhibits, to which the following awards were made:—*Gold Medal* to Miss POPE for 200 vases of Daffodils; *Silver Medal* to Mrs. CHARLES WINN for Schizanthus and Stocks; *Bronze Medals* to Mr. C. S. YEOMANS for Polyanthus; and Mrs. CREED KEELING for Daffodils.

HORTICULTURAL CLUB.

LECTURE ON NARCISSUS DISEASE
(See also p. 204.)

MAY 8.—On the occasion of the usual monthly dinner of the Horticultural Club, at the Hotel Windsor, on Tuesday, May 8, Mr. J. K. RAMSBOTTOM gave the results of his investigations of Wisley of a disease of Narcissus which has been attributed by some authorities to the fungus Fusarium.

The chair was occupied by Mr. H. R. DARDINGTON. There was a large attendance, including many specially interested in the cultivation of Daffodils, both traders and others. Mr. RAMSBOTTOM'S remarks were illustrated by lantern slides. As will be seen from the article on p. 204, Mr. RAMSBOTTOM has been forced to the conclusion that the malady is due to *colwurm*, *Tylenchus devastatrix*. He stated that *Tylenchus devastatrix* was first described by Julius Kuhn in 1858 as being the cause of a disease in *Dipsacus fullonum*, the fuller's Tansy, under the name *Anguillula Dipsaci*; but as Kuhn afterwards found that the same *colwurm* could attack Oats, Buckwheat, and other plants, he considered the name *Anguillula Dipsaci* too restricted, and disregarding the customary rules of priority, changed it to *Anguillula devastatrix*. Botanists who did important work on the classification of *colwurms* about 1860, incorporated the *Anguillula devastatrix* with several other *colwurms* in the new genus *Tylenchus*, and the *colwurm* with which we are now dealing became known as *Tylenchus devastatrix*, Kuhn. In 1881 Prillieux worked on the *colwurm* malady of Hyacinths. To this *colwurm* he gave the name of *Tylenchus hyacinthi*, while in 1903 Beijerinck published a paper on the *colwurm* malady of Onions, which at that time was spreading rapidly throughout Holland, and which he attributed to *Tylenchus Aili*.

In 1908 Ritzema Bos definitely proved that *Tylenchus hyacinthi*, *Tylenchus Aili*, and *Tylenchus devastatrix* were one and the same species. The same worker in the valuable contribution, *L'Inguille de la Tige*, gives a list of some forty plants which are susceptible to the attacks of *Tylenchus devastatrix*. This list includes, among our principal food crops, Rye, Oats, Onions, and Clover, and in a less degree Barley and Wheat. Among flowering plants, Hyacinths, Scillas, and Galtonia candicans are included in the list. Narcissus is not, however, mentioned. Some of our commonest weeds, such as Sweet Vernal Grass, Meadow Soft Grass, Annual Meadow Grass, Buttercup, Daisy, and Plantain are also liable to infection.

In 1900 Ritzema Bos put forward the bio-

logical strain theory, which, in brief, is that *Tylenchus devastatrix* becomes so adapted to a particular species of host plant after growing on it for several generations that it will not attack with any severity any other species. Further, taken from such a second species, it will not attack the original host with severity until after several generations have passed. For instance, the Narcissus strain will not affect Onions with any severity, and *vice versa*, although the two strains are absolutely indistinguishable from a morphological standpoint. In like manner it has been suggested by several investigators that the root-knot *colwurm* *Heterodera radicola* may show similar biological strains with no apparent morphological differences.

In conjunction with the series of inoculation experiments performed last September, and to which reference has been made, Mr. RAMSBOTTOM carried out experiments to test the truth of this theory. Healthy bulbs were planted in sterilised soil and Onion seed sown on the surface. The pots were watered twice with *colwurm* cultures, the *colwurms* being originally taken from Narcissus bulbs at the interval of a fortnight. The *colwurms* had their original diet to feed upon, but in contribution to the biological strain theory, all the seedling Onions were attacked. Another similar experiment was made

tions that the disease commences in the neck of the bulb. The leaves at the surface and below the ground level become a decayed, squashy mass, and in consequence they lose their elasticity and topple over in all directions. These leaves do not show the twisting characteristics of the diseased foliage from a diseased bulb. This decay in the neck is usually evident in late May and early June, at a time when the foliage is withering, and the symptom is sometimes confounded with the natural decay of the leaves. Many growers are of the opinion that moist, dull, warm weather favours the spread of the disease at this stage, and such conditions possibly aid the development of *colwurms* and render them more active. Exactly how the *colwurms* gain an entrance has yet to be shown. It is generally believed that foliage injured by frost and other external agencies offers a ready means of access. This may be so, but the best inoculation experiments prove that *colwurm* is capable of itself gaining an entrance owing to its possession of a spearing apparatus—a needle-like structure present in its gullet. In the case of a healthy bulb planted in infected soil, the hard, brittle outer scales would afford natural resistance to the entrance of the *colwurm*, and in preference it would attack the soft-growing foliage. In any case, the *colwurms* usually attack the leaves at the neck, and this is a possible explanation of the decaying of the foliage at this point. Once inside the leaves, the *Tylenchus* makes rapid downward progress to the basal plate, where it appears to find better conditions of growth. Here the *colwurms* propagate most freely, the basal plate splits away from the bulb, and often the *colwurms* are to be seen in masses resembling cotton-wool hanging from the base. At this stage the *colwurms* leave the bulb by way of the broken basal plate, enter the soil, attack other bulbs, and so spread the disease. The bulb rot and fungi, possibly including *Fusarium*, then gain an entrance.

Where the flowers are gathered as in the case in the Daffodil flower industry, where the flowers are picked in the bud stage and opened indoors, the wound so left affords a ready means of entry for *colwurms* from the soil. In order to obtain a long flower stem, the stalks are picked as far into the neck as possible, sometimes below the ground level, and an ugly wound results. No bulb treated in this manner can be expected to remain free from disease in an infertile soil, and the practice doubtless helps to spread *Tylenchus*. Wherever it is practicable, the flower stalks should be cut an inch or so above the ground.

When bulbs are in a dormant state, it is a very difficult matter to distinguish a healthy bulb from one which is slightly diseased; in fact, it seems impossible without cutting open the bulb. Bulbs have been carefully hand-picked, and those passed as apparently sound have been "trayed" within a fortnight. They have then been re-examined and numbers have been destroyed as unsaleable. This goes on and on, so that it is not surprising to hear the remark that the disease spreads rapidly in storage. In all probability, this is not a case of a diseased bulb affecting its neighbours, but rather that the bulbs passed as sound were slightly diseased, and after a week or more the *colwurms* had made their efforts recognizable. That such seems likely is seen from the following: Healthy bulbs have been placed in trays among diseased ones and left over a period of three months, at the end of which time those affected were a decayed and rotten mass and the healthy bulbs still plump and hard, but probably not free from *colwurms* on their outer scales. No trace of *colwurms* could be found inside the healthy bulbs. It is not to be implied that no harm will result by storing the bulbs in bad conditions. Certain factors, such as humidity of atmosphere and variations of temperature may help to bring about the decay of bulbs very rapidly.

(To be continued.)

ENQUIRY

CARP AND TENOR.—I am much troubled with blanket weed in my pools. Copper sulphate checks it for a time, but afterwards the weed is as troublesome as ever. Where can I buy carp or tench to put in the pools?—I G.



THE LATE CAPTAIN HARRY SANDERSON.
(See note on p. 100 in last issue, p. 197.)

by sowing Onion seeds in sterilised soil in pots and watered once before germination with the Narcissus strain of *colwurm*. Six weeks after sowing, although the seed showed a moderate germinative capacity, practically none of the seedlings carried the seed back at their tip, and abnormal twisting or bending was very noticeable. The young plants were of a lighter green colour than those in the control pots. The seedlings in the infected soil gradually died off, and on examination were found to contain *Tylenchus* in numbers.

Scilla nutans has also been successfully inoculated with the Narcissus strain of *Tylenchus*, and other crops are under observation. This phase of the subject was treated in detail because it opens up a very wide field, and of great economic importance on account of its bearing on the rotation of crops. For instance, in parts of the country where bulbs are grown in rotation with agricultural crops, it will be of little use in attempting to control Narcissus disease to grow crops liable to infection, and in which *colwurm* can tide over until the ground is again occupied by bulbs.

An important question under consideration is to ascertain in what manner bulbs become affected. It would appear from field observa-

CROPS AND STOCK ON THE HOME FARM.

ROOKS AND THE CORN CROPS.

At times there is much contention as to the good and harm rooks do on the land. I have always been an enemy of these birds, knowing well the damage they do to the corn crops and roots at certain periods as compared to the small amount of good they do in clearing the land of gnats of insect pests. Rooks have been more troublesome this season than ever in my experience, especially where much Wheat was sown late owing to unfavourable weather. The seed lay dormant in the soil for a long time owing to frost, and the rooks had a fine time; even during frosty weather, after the soil became powder dry, they were able to find the seeds. I have seen acres of Wheat this year with a bad promise of a crop owing entirely to these birds taking the seed. Under the Defence of the Realm Act, Agricultural War Committees have power to reduce the number of rookeries in districts where it is known the birds do harm to crops.

VETCHES FOR HORSES.

No time should be lost in sowing two bushels of Vetches per acre with half a bushel of Oats broadcast for green food for horses during August and September. This is an excellent change for the cattle, and is economical, reducing the Oat supply at a time when this grain may be required for other purposes.

SUNFLOWERS FOR POULTRY.

The common Sunflower (*Helianthus annuus*) will give good returns in hot summers to poultry keepers, as the heads produce a quantity of seed which contains much oil. The plant grows freely in well manured, deeply ploughed land, often reaching a height of 8 feet, and bearing large heads. Sow in drills 2 feet apart.

MAIZE

Maize should be sown during the second or third week in May. Well ploughed and fairly manured land, as a suitable preparation; a slight scattering of superphosphate with the seed will act as a substitute for farmyard manure. Sow the seed about 8 inches apart in each plough furrow, burying it about 4 inches deep, which is better than drilling, as when nearer the surface rooks are troublesome, and once they find the seed they quickly clear large patches.

TRIFOLIUM HYMENEUM.

This Clover should be grown more extensively, as it forms valuable food in May and June for cattle, and if not required as green food, may be made into good hay. The rolling of all cereal crops, Vetches, Sainfoin, Clover and Grass, should be done at once, not purely for the purpose of solidifying the fodder and Hay crops, but for the pressing down of stones which might otherwise inconvenience cutting operations.

DESTRUCTION OF MOLES.

Moles are very troublesome in some districts, although some would have us believe they are useful. The hillocks of soil which they throw up are very dangerous to the operator on the grasscutter, hidden as they are sometimes in a thick Clover crop. Trapping should be rigorously carried out to exterminate the animal.

ITALIAN RYE GRASS.

This crop should be sown now, using 1 bushel of seed per acre, as spring food for sheep, to be ploughed up afterwards and the ground sown with Turnips. The plant grows quickly, and cold weather does not affect it. The stems are succulent, and provide a diable food for lambs and cows. Sown among Oats or Barley early in May, with the hand-sown barrow, harrowed in and rolled, Italian Rye-grass germinates quickly and grows rapidly. *E. Moloney*.

LATE SPRING SOWING.

Spring sowing is late this year, and in some cases there may be difficulty in the choice of a crop. As no guarantee of a minimum price has been given for Barley, an impression seems to

be abroad that it is a less desirable crop than Oats. This is quite wrong. Without any guarantee, farmers can rely on the price of Barley being nearer to that of Wheat than to that of Oats; and, in the national interest, on suitable land, Barley is to be preferred. It is better for mixing with Wheat, both as flour and, since they can be milled together, as grain. Hence farmers, as far as possible, should sow Barley instead of Oats. Any of the ordinary varieties, except Archer's Stiff Straw, can be sown as late as the middle of May.

When it is too late to sow the usual spring corn crops, one of the following may be found useful:—

(1) Linseed on medium or rather heavy soils. It does well after old grass, and can be sown up to the end of May. If seed cannot be obtained locally, it can be supplied by the British Flax and Hemp Growers' Association, 14, Victoria Street, London, S.W. 1.

(2) Buckwheat, on fen land and thin sandy soils, can be sown in late May or early June. Buckwheat flour may be mixed with Wheat flour for bread-making.

(3) Besides the more usual crops, mixed Oats and Vetches, or Oats and Peas, if sown before the end of May, will prove useful either in late summer as green food, or for making into hay or silage. In the Eastern and Southern Counties another useful succulent forage crop is Maize, especially when the pastures fail in autumn. Sowing may be carried on till fairly late in June. It is desirable to take special precautions against rooks and other birds.

Further particulars about these crops may be seen in a leaflet which can be obtained from the Food Production Department of the Board of Agriculture.

TOP DRESSING OATS.

The President of the Board of Agriculture and Fisheries urges upon farmers the importance of top-dressing Oats and "seed" hay. The wet autumn and cold spring have impoverished most soils. Production is needed, and at present prices fertilisers will be amply paid for by the increased yield. The hay crop, where it consists largely of Rye-grass, should receive a dressing of $\frac{1}{2}$ cwt. of sulphate of ammonia per acre. If, however, it consists chiefly or entirely of Clover it should not be top-dressed. Top-dressings for hay should be applied now in the earlier districts, and before the 20th inst. in the latest districts. On all land which is not already in high condition a dressing of $\frac{1}{2}$ cwt. sulphate of ammonia to Oats is likely to prove very profitable this season. Oats which received no sulphate of ammonia when the crop was sown may be top-dressed at any time until the leaf is 4 to 5 inches long. The President also reminds farmers that Barley may be sown with success during the whole month of May. Either as bread-corn, or as concentrated food for live stock, the grain will be invaluable. Farmers are therefore urged to sow the largest possible acreage of Barley on any land that is available, even though by so doing the acreage they propose to allot to roots is reduced.

CIVILIAN PRISONERS AS FARM LABOURERS.

Among the sources of labour now open to farmers, civilian prisoners of war should not be overlooked.

There are many Austro-Hungarian and Turkish subjects in the various internment camps with a practical knowledge of farm work. The conditions governing their release have now been amended, and they can be employed almost anywhere, except in the neighbourhood of the East Coast. When employed they have almost always given satisfaction. Forms of application can be obtained from the Secretary of the Agricultural Executive Committee for the county.

SCHEDULE RECEIVED.

National Dahlia Society's Annual Floral Meeting, to be held in conjunction with the Royal Horticultural Society's meeting on Tuesday, September 11, 1917, in the Drill Hall, Buckingham Gate, Westminster. Hon. secretary, Mr. Jas. B. Riding, Forest Side, Chingford.

ANSWERS TO CORRESPONDENTS.

LIVES INFESTED WITH ISLE OF WIGHT DISEASE: *J. B.* The best method of treating the hives that are infested with Isle of Wight disease is to char the insides thoroughly by means of a blow-lamp. Let the flame penetrate into all the crevices, even if the wood work is scorched in so doing. You must treat the frames, sections, racks, and other parts in the same manner, and burn the old wax. Choose a fresh site for the apiary, as the disease may be harboured in the soil.

NAME OF PLANT: *J. A.* *Dendrobium chryso-toxinum*, a native of Barmah.

PEAS EATEN BY INSECTS: *C. B.* The insect is that known as the Pea and Clover weevil (*Sitona lineatus*, Linn.). It is very injurious to the foliage of Peas, Beans, and other Leguminous crops. As you will have perceived, it begins its work at the edges of the leaves, and gradually eat its way inwards towards the rib. It is difficult to advise you as to means of curing the attack, or preventing its recurrence. It may assist you, however, to know that the eggs of the weevils are laid, during the summer, at the roots of the Peas; during the winter the eggs become chrysalids and the chrysalids maggots, which become at the approach of warm weather perfect beetles. The beetles usually feed at night, and one good way of destroying large numbers is to go out after dark with a lantern and knock or brush them off the leaves into a pail of insecticide. Further, they do most mischief in dry weather, which makes it probable that damping the foliage, especially with some disagreeable liquid, would prevent their attacks. The same purpose would be served by a layer of soot spread over the ground beneath the Peas. It should also be remembered that the best protection any plant has against the attacks of any sort of pest is free, healthy, rapid growth. Any treatment which secures this will be of advantage.

POTATOS - *Shm* The tubers are slightly affected with dry scab disease (*Sponylobolium atro-virens*). The disease is not a serious one, and the tubers may be used for planting.

SUGAR BEET AND BOTTLED PEAS: *E. T.* Sugar Beet as a crop is not so useful as ordinary garden Beet, which is rich in sugar and other valuable food, not difficult to grow, and perfectly simple to cook. Most people spoil cooked Beetroot by immersing it in vinegar; but simply boiled and cut in fairly thick slices, if desired with white sauce (un-flavoured), it makes a delicious vegetable or supper dish. As regards making jam with Sugar Beet, this has been tried by many of our readers with varying results. The general opinion is, firstly, that the Beet takes eight or nine hours' steady boiling before it is really soft; and, secondly, that when it is finally in a state of pulp, nearly all the sugar has been boiled out into the water. Fruit can be preserved without any sugar at all by means of air-tight bottles, filled with the fruit and water, and, after sterilising by heating, sealed with mutton fat. Peas will keep very well as a rule when bottled, and we are surprised at your want of success. The method usually recommended is as follows:—Place the Peas in dry, wide-mouthed bottles, shaking them down until they are tightly packed. Wind some Hay round the lower part of each bottle, and place them all upright in a large sauceman with cold water enough to reach to the necks. Bring the water to the boil, and keep it boiling for two hours. Cork the bottles, and leave them in the water until it is cold. Then remove the bottles, cover the corks with sealing wax to exclude all air, and store the bottles in a cool, dry place; a good plan is to bury them completely in a dry part of the garden. If all air is excluded the Peas will keep for about five months.

Communications Received—*W. R. Wright* (Thanks for 4s. sent for R.G.O.F.); *T. H. W. Smith*—*Prof. E. S. S. Arnold* (Aberdeen, U.S.A.—R. T. W. (May 4th); we will send it possible).

MARKETS.

COVENT GARDEN, MAY 19.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing various plants in pots and their prices, including Aralia Sieboldii, Asparagus plumosus nanus, Aspidistra, Beronia, Cacti, Cineraria, Cocos Weddelliana, Erica, Ferns, and Cut Flowers.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices, including Arums, Carnations, Dahodis, Heather, Iris, Lily of the Valley, Narcissus, and Orchids.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices, including Artichokes, Beans, Broccoli, Broad Beans, Cabbage, Carrots, Cauliflowers, Celery, Chicory, Cucumbers, Endive, Green Beans, Garlic, Herbs, and Horseradish.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices, including Almonds, Apples, Bananas, Cranberries, Dates, Figs, Grapes, and Nuts.

Remarks: A few boxes of Apples are still available, the chief varieties being Oregon and Winesap. Supply of grapes are increasing daily mostly Muscat, Black and Blue. Beans and Peas are fairly plentiful but French Asparagus is almost gone. English Asparagus from Worcester, Devonshire, Middlesex and Cambridge is plentiful. Cabbage and the Lettices are scarce and other ordinary vegetables are sufficient for the demand.

THE WEATHER.

THE WEATHER IN SCOTLAND. The week ending 1916-17 has been in the lap of spring that even till mid-April its severity was but temporary. Snow fell frequently, while the temperature in the screen seldom fell as low as 18°. On the whole the month was a dry one, the total rainfall being only 1.28 inch. There were thirteen days of precipitation, and nine rainy days, 12.5 days on which the rain gauge collected 0.04 inch or more. The heaviest fall was 0.26 inch, on the 15th of June, when there were in all 12.86 hours, being an average of 4.3 hours per day, and a percentage of 30. There were only two days on which the sun did not appear. With a mean of 29.818 inches the barometric pressure varied from 30.536 inches on the 22nd to 29.152 inches on the 14th. The highest temperature for the month was 63° on the 22nd, and the lowest 38° on the 1st, giving an absolute range of 25°. The lowest maximum was 37° on the 1st and 2nd, and the highest minimum 47° on the 26th. The means for the maximum and minimum were 48° and 33° respectively giving a mean range of 15° and a mean temperature of 50.5°. On fifteen days the temperature fell below the freezing point. On the grass the mean minimum was 28° the lowest of 17° being recorded on the 1st. There were seventeen nights of ground-frost. At 1 foot deep the soil temperature fell from 38° to 37° and then rose to 46°. Snow fell on seven days. The prevailing winds were from the north-west. James Malloch, St Andrews Training College Gardens, Kirkton of Warr, near Dundee.

GARDENING APPOINTMENT.

Mr Thomas Williams, for over 25 years Foreman in the Nursery, Garden, Flower, and Fruit Department, is now Gardener to Lord Clonsilla, Clonsilla, Clonsilla, Co. Galway.

THE ONLY DIRECTORY OF GARDENS AND GARDENERS.

The Horticultural Directory and Year Book for 1917 is the ONLY Directory that exists of gardens and gardeners in the British Isles.

If you want a list of all Nurserymen and Seedsmen, Sundriesmen, Hot-house Builders and other traders closely connected with horticulture, consult the ONLY Horticultural Directory.

Should you desire to trace the whereabouts of the young men you associated with in the Botany you have no other means of finding out their present addresses than by turning to the ONLY Directory of British Gardeners.

Obtain a copy and see if your own name is there, and if it is not, then send us particulars for inclusion in the edition for 1918.

The Year Book part of this unique volume contains descriptions of all the new plants, flowers and fruits certificated in 1916, notes on the principal gardeners who died during that period, and much additional information of great value to all amateur and professional horticulturists.

We are still able to offer some few copies of the current number. Readers are advised to send their orders early, before the work is out of print.

Apply, enclosing 1/4 for each copy required, to:—

GARDENERS' CHRONICLE, LTD., 41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Alpine Flora:** for Tourists and Amateur Botanists. By Dr. Julius Hoffmann. Translated by E. S. Barton (Mrs A. Gepp). 7s. 11d.
- Alpine Flowers for Gardens.** By W. Robinson. Revised Edition. With Illustrations. 11s.
- Alpine Plants, Dictionary of** (see "The English Rock Garden," by Reginald Farrer).
- Alpine Plants of Europe.** By H. Stuart Thompson. With Cultural Notes. Price 7s. 10d.
- Alpine Plants, Sub.** By H. Stuart Thompson Including Coloured Plates by G. Flenwall. Price 8s. 6d.
- Annals, Hardy and Half Hardy.** By Charles H. Curtis. Contains 3 Coloured Plates. 1s. 10d.
- Apples and Pears.** By George Bunyard, V.M.H. With 3 Coloured Plates. 1s. 10d.
- Asparagus, The Book of.** By Chas. Holt. With sections on Celery, Salsify, Scorzenera, and Sea-kale. Illustrated. 2s. 10d.
- Bacteriology, Agricultural.** By J. Percival, M.A. 7s. 11d.
- Banana, The: Its Cultivation, Distribution, and Commercial Uses.** By W. Fawcett. With Preface by Sir Daniel Morris. 7s. 11d.
- Bee Keeping, Book of.** A Practical Manual on the Proper Management of Bees, especially written for Beginners. By W. B. Webster. Illustrated. 1s. 3d.
- Bees, for Pleasure and Profit.** By G. Gordon S. Mason. With chapter on "Bee keeping in Hot Climates." Illustrated. 1s. 2d.
- Botanic Terms, Glossary of.** By B. D. Jackson. 7. 11d.
- Botanist, The Young.** By W. Percival Weston and C. S. Cooper. Excellent for young people commencing to botanise. 3s. 10d.
- Botany, Agricultural.** By J. Percival, M.A. 7s. 11d.
- Botany, A Practical Introduction to the Study of (Flowering Plants).** By J. Breckland Farmer, F.R.S. 121 Illustrations. 2s. 10d.
- Botany, A Primer of.** By Sir J. D. Hooker, F.R.S. 1s. 2d.
- Botany, A Text book of.** By Dr. E. Strasburger. Translated by H. C. Porter, Ph.D. Revised. Fifth Edition. 779 Illustrations. 15s. 6d.
- Botany, A Year's.** Adapted to Home and School Use. By Frances A. Kitchener. With 195 Illustrations. 5s. 4d.
- Botany, Elementary.** By Dr. E. Drabbe. 2s. 10d.
- Botany, First Course of Practical.** By G. F. Scott Elliott. Illustrated. 3s. 10d.
- Botany, Lectures on Plant Physiology.** By Dr. Ludwig Jost. Translated by J. Harvey Gibson. Morocco back, gilt top, 24s. 6d.; cloth, 21s. 6d.
- Botany, Practical Plant Physiology.** By Frederick Keeble, Sc.D., F.R.S. Recommended for use in colleges and schools. 3s. 10d.
- Botany, Structural.** By D. H. Scott, M.A. 2 Vols.
PART I.—FLOWERING PLANTS. 3s. 11d.
PART II.—FLOWERLESS PLANTS. 3s. 11d.
An excellent introduction to the Anatomy and Life Histories of Plants.
- British Plants, List of.** By G. C. Druce, M.A. A detailed list of Species and Varieties. 2s. 9d.
- British Plants, The Uses of.** By Prof. Henslow. 4s. 9d.
- Bulb Book, The.** A Practical Work on Cultivation, Propagation, etc. By John Weathers. Illustrated. 15s. 7d.
- Bulbous Plants, Beautiful.** By Jno. Weathers. 5s. 4d.
- Bulbs and their Cultivation.** By T. W. Sanders. 2s. 10d.
- Bulbs, The Book of.** By S. Arnott. Illustrated. 2s. 9d.
- Calendar of Garden Operation, The.** Based on the original work compiled by the late Sir Joseph Paxton, M.P. Adapted to the requirements of Cottage Gardeners, Allotment Holders, and Amateur Gardeners, by members of the staff of the GARDENERS' CHRONICLE. Illustrated. (New edition in the Press.) 1s. 3d.
- Cambridge Manuals of Science.** Cloth edition, 1s. 4d. each, post free.
- Plant Animals: A Study in Symbiosis.** By Frederick Keeble, Sc.D., F.R.S.
- Plant Life on Land.** By Prof. F. O. Bower, F.R.S., Sc.D.
- Earthworms and their Allies.** By F. E. Bedford, F.R.S.
- The Earth.** By Prof. J. H. Poynting, F.R.S.
- The Atmosphere.** By A. J. Berry, M.A.
- The Story of a Loaf of Bread.** By Prof. T. B. Wood, M.A.
- Bees and Wasps.** By O. H. Latter, M.A.
- Soil, The Fertility of.** By E. J. Russell, D.Sc.
- Insects, The Life Story of.** By Prof. G. H. Carpenter.
- Carnation Culture, Commercial.** Edited by J. Harrison Dick. A collection of treatises by the best modern cultivators. Illustrated. 7s. 4d., \$1.50.
- Carnations, Perpetual Flowering.** By Laurence J. Cook. A Practical Manual with Details of Cultivation. Illustrated. Paper, 1s. 3d.; cloth, 1s. 9d.
- Carnations and Pinks.** By T. H. Cook, Head Gardener at Sandringham; James Douglas, V.M.H.; and J. F. McLeod. Contains 3 Coloured Plates, reproduced from colour photographs. 1s. 10d.
- Carnations, Picotees and Pinks.** By John Fraser. Fully Illustrated. 8d.
- Chemistry of the Garden.** By D. R. Edwards-Ker. A course of practical work designed for the use of Teachers and Students of Gardening. 1s. 8d.
- China, A Naturalist in Western.** By Ernest Henry Wilson. Illustrated in Two Volumes. 21 10s. 6d.
- Chrysanthemums.** By Thomas Stevenson. With Chapters by Charles E. Shea and C. Harman Payne. Contains 3 Coloured Plates. 1s. 10d.
- Climbing Plants.** By W. Watson, A.L.S. With Introduction by W. Robinson, author of "The English Flower Garden." 2s. 10d. and 3s. 10d.
- Coco nut, The.** By Edwin Bingham Copeland. 10s. 6d.
- Cottage Gardening; or, Flowers, Fruits and Vegetables for Small Gardens.** By E. Hobbay. 1s. 9d.
- Cucumber Culture for Profit.** By W. Dyke. A Practical Guide to the Cultivation in Frames and in the Open. 1s. 2d.
- Cyclopadia of Botanical Drugs, Potters.** By R. C. Wren, with additions by E. M. Holmes. Containing the Names and Properties of all the Herbs employed medicinally in this country. 3s. 10d.
- Cyclopadia of Horticulture, The Standard.** By L. H. Bailey. In 6 vols. Fully Illustrated in colour and half tone. A valuable book of reference. Each part, 26s.
- Daffodils.** By the Rev. Joseph Jacob. With Preface by the Rev. W. Wilks, M.A. A full treatise on their culture for private and Exhibition purposes. With 3 Coloured Plates. 1s. 10d.
- Dahlia and their Cultivation.** By J. B. Wroe. 1s. 2d.; cloth, 1s. 8d.
- Dahlia.** By George Gordon, late President of the National Dahlia Society. Contains 8 Coloured Plates. 1s. 10d.
- Date Growing in the Old World and the New.** By Paul P. Popenoe. Illustrated. 9s. 6d.
- Dictionary of Hardy Flowering Plants** (see "The English Rock Garden," by R. Farrer).
- Directory, Horticultural** (see *Gardeners' Chronicle Horticultural Directory*).
- Diseases and Garden Pests, Book of Plant.** By R. Hooper Pearson. 214 pages. Over 65 Illustrations. (Cloth, 2s. 11d.)
- Diseases of Cultivated Plants and Trees.** By George Masseur. 7s. 11d.
- English Rock Garden.** By Reginald Farrer, author of "My Rock Garden," "Among the Hills," etc. This work contains up-to-date monographs of the Plants suitable for cultivation in the Rock Garden. The text consists of 500,000 words. 300 Plants are illustrated in Half-tone Plates. In 2 Vols. Price £2 2s. 10d. (in the Press)

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

THE GARDENERS' CHRONICLE

ESTABLISHED 1841.

No. 3987

No. 1587. Vol. LXI. (THIRD) (SERIES)

SATURDAY, MAY 26, 1917.

{Registered as a Newspaper. {PRICE 3d.
POST-FREE, 3½d.

SUBSCRIPTION—Inland, 15 s; Foreign, 17 6 22s; 10s. {54 26s per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden W.C. 2.

Telegraphic Address—"Gardchron, Rand, London."

Telephone—Gerrard 1543.

For CONTENTS see page 209

LATEST TIME FOR ADVERTISEMENTS.

Advertisements will please note the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will most likely be held over until the following week.

GISHURST COMPOUND—Insecticide and Fungicide. Over 50 years' experience. Commanded R.H.S. Silver Medal, London, 1903. Weyles, 1914-15. Sold by dealers in London, S.W. Wholesale: **PERLES PATENT CANDLE CO. LTD.**, Battersea, London, S.W. 11.

ROSES—Wm. Paul and Son, Waltham Cross, Essex, Ltd., beg to offer a fine stock of all the best varieties, new and old, for present planting. Free catalogue on application. **PAULS ROYAL NURSERY SERIES**, Waltham Cross, Essex.

VEGETABLE PLANTS—Barr's Selected Strains, now ready for planting. Summer Cabbage, Small Head Cabbage, Brussels Sprouts, Cauliflower (early and late), Kale (Aspatagus and Scotch), Hardy plants, 3s. 6d. per 100, carriage paid. Potatoes, London, selected seed for late planting, 50 lbs. 14s. 6d., 110s. 3s. carriage extra. **BARR & SONS, LTD.**, King Street, Covent Garden, London.

DICKSON'S HORTICULTURAL, MANURE and other high-class Fertilisers, also Dickson's Improved Mushroom spawn. Free circulars on application to **DICKSON'S, Royal Soil Ware House and Nurseries**, Chester.

WALLACE'S WATER LILIES and other plants for the Aquatic Garden should be planted now. Catalogues free. **R. WALLACE & CO. LTD.**, Kilburn, London, W. 8.

MACKENZIE and MONCUR, Limited, 11, Holthouse, Builders and Heating Engineers, London, Edinburgh and Glasgow. By special Appointment to H.M. the King. London Office, 8, Landon Road, N.W.

SANDERS, Orchid Growers, St. Albans.

J. GRAY, LTD., Builder of Conservatories, Greenhouses, Acs., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wire, 201, Western, London. Telephone, 201, Western.

BLACKMORE & LANGDON, Bath, will have pleasure in sending a copy of their 1917 Catalogue of Begonias and Delphiniums, &c., &c., free, if this paper is mentioned. Magnificent strong roots of our unequalled Delphiniums, in superb variety.

GREENHOUSE PAINTING & GLAZING—"Vitrolite," superior to White Lead Paint. "Platino" super-resolve putty. Full particulars from **W. J. ARSON & SONS, Glass Works, Battersea, Agents** throughout the country.

SUTTON'S VEGETABLE SEEDS
SUTTON'S FLOWER SEEDS
The Best.

SUTTON & SONS, The King's Seedsmen, READING.

BUSINESS METHODS—Experience in the way of a business shows that there are two ways of conducting a business, the one being to charge a high price for what is sold, exacting a high price for the customer, and a low price from another. The first method is to be condemned from a business point of view, mainly because it pains the customer's feelings, and he is ready to pay what he can get for what he is sold, exacting a high price for the customer, and a low price from another. The *Gardeners' Chronicle* adopts the alternative business method, that a business man's rates are based on the value of his goods, and he is ready to pay what he can get for what he is sold, exacting a high price for the customer, and a low price from another. It is not possible to grant concession, but the privilege of the paper to be in the position of a business advertiser that he pays no more than a fair price.

FOUR NEW PRIMULAS, collected by me in 1917: **P. hybrida** A.M., R.H.S., 3s. 6d. per 100; **A.M. R.H.S.**, 7s. 6d.; **P. yuccifolia** A.M., R.H.S., 1s. 6d.; **P. yuccifolia** A.M., R.H.S., 5s. The set of four (total value) 10s. 6d. Full descriptive catalogue of these and other plants sent free on application. **R. WALLACE & CO. LTD.**, Colche, Essex.

WATERER'S LINES, HERBACEOUS PLANTS and WATER LILIES—Large stocks of the best and most popular varieties. Descriptive Catalogue free. **JOHN WATERER, SONS & CO. LTD.**, The Nurseries, Twickenham, Berks.

SOW NOW BATH'S EMPRESS PAN—SHE is a gem for the Royal Gardens at Frogmore. Her best and largest-flowered strain of Panacea. Plant her in pots, 6d. and 1s. 6d., post free for each with label. Dept. **A. R. H. BATH, LTD.**, The Floral Farms, Wichech.

STEEL HAND PLOUGH and TRENCH—Has a wonderful little tool. A woman can do more detail work with it than two men with spades. Gets in the ground every day. Many repeat orders received, including Royal Key Gardens. Price 3s., carriage paid, including tools of all varieties. Good time in these days, and getting. Please mention requirements. See catalogue this season. **LAND TOOL CO.**, Alstep Street, Eder Street, London.

LAWN BOWLS—50s. Association set. Lawn bowls, 4 pairs superior full size selected lignum, medium bias, with 2 packs, complete, in strong box, unwood, price 29s. 6d., also 2 new pairs (most Standard Match Bowls, absolutely accurate, 3 lbs., officially tested and stamped, 15s. 6d. pair, or whole lot for 49s. 6d. Approval. Box 707, Gildard's, Darley Street, Bradford.

CANES, 6H., 30s., 1.000. JOHN SON, Trafford Road, Salford.

FERNS' FERNS!—Tree Ferns, Climbing Ferns, Basket Ferns, Snow and Greenhouse Ferns, Hardy Garden Ferns, catalogues free. **J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

For Advertisement Charges see page iii.

NOW IS THE TIME TO PLANT AT REDUCED PRICES.

KELWAY'S New and Choice Hardy Perennial Plants of all kinds. **KELWAY'S Famous Gladiolus, KELWAY'S many coloured Pyrethrums, KELWAY'S gay Coloureds.** Write for Reduced Price Lists to **KELWAY & SON, Retail Plant Department, Langport, Somerset.**

VIOLAS, finest Scotch, 12 Bedding Varieties, correctly named, 2s. 3d., post free. Early City-sandwiches, 12 very fine varieties, 3s. 6d., post free. Strong plants. **DOBIE & CO., Florists, Edinburgh.**

WM. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham. Consecrations, Winter Gardens, Varieties, Peach-houses, Portable Buildings, &c. Catalogue gratis.

J. WEEKS & CO'S Offices, 72, Victoria Street, S.W. 1, are commandeered for War purposes. They are now at No. 92.

100,000 LARGE GARDEN FERNS, 20s., 100, Palms, Begonias, Crotons, Ficus, Roses, Ericas, Gloriosa, Lilacs, Hydrangeas, &c., catalogues free. **J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.**

ORCHID PEAT, 6s. and 7s. 6d. per sack; Brown Peat, 10s. 6d. per sack in trucks; in bags 2s. 6d. each, 20s. dozen, Oak and Beech Leaf Mould, Yellow Loam, Stacked and Fresh Cut, Silver Sand, 4 lbs. 10s., 100 lbs., 1s. 6d., 2s. 6d., dozen bags, 1st free. **J. HANSDEN & CO., FRITHS, Feltham, Middlesex.**

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipsaw! Tread! wear his leather, shoo-croquet, 7 yards for 17s. 6d., Patterns free. **BRADFORD WOOLLEN CO., 71, Bradford.**

GERANIUMS, strong autumn-rooted, all leading kinds, **Verbas, Fuchsias, Heliotropes, Salvia, Zinnia, Petunias, Tomatoes**, from 60s., 15s. 100, from stores, 1st, carriage paid. **PARMENTIER, Basildon, Essex.**

BEGONIAS, Gloire de Lorraine, Turnford Hall and Rothschild variety of Lorraine, well rooted cuttings, 2s. 6d., doz., 50 for 6s. 6d., 100, 6d., 100. The King, 4s. doz., 50 for 12s., 20s., 100. **H. DODDERIDGE, The Dorset Nurseries, Blandford.**

BEGONIAS and GLOMERIAS—MORLE & CO. can now supply their celebrated strain, in large 60 pots, in flower and bud. Early inquiries, as stock is limited this season. 150 150, Finchley Road, N.W. 3.

SEED POTATOS, Scotch-grown, and once grown in Lancashire from Scotch Seed; King Edwards, Up-to-Dates, Dalhousie, Evergoods, Queen Mary, and other good varieties, 14s. per 50 lb., carriage paid. Prompt despatch. **FRED PARKES, Wyberton Boston.**

BUSINESSES FOR SALE.

FOR SALE, as a going concern, NURSERY business, 600 trees, 15 acres, 1 mile South-east of W. E. Box 9, 43, Wellington Street, Covent Garden, W.C. 2.

FRUIT and Flower Farm or Market Garden, of 5 acres, with house, main line, good markets, owner retiring after 15 years' successful occupation. Price £1,500.—RUSSELL, BATHURST, Reading.

BUSINESS TO LET.

NURSERY, to be Let or Sold; old established house and shop, main road; 2000, Glass-houses heated; very good land, having to join ARMY W. PARSONS, Brantson Road, Cheltenham Spa.

BOOKSELLERS' NOTICE.

SCIENTIFIC BOOKS AND SERIALS.

JOHN WHELDON & CO. have the largest stock in the country of Books in all departments of Science and Natural History, also Transactions and Journals of Learned Societies, &c., in sets, runs, and single volumes or numbers.

Literary or small parcels purchased for cash. SPECIAL CATALOGUES: Gardening, Botanical, Agricultural, Ornithological, Entomological, Geological, Chemical, Microscopical, &c., gratis on application. 38, GREAT QUEEN STREET, KINGSWAY, LONDON, W. 1. Telephone: Gerrard 1412.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

PLANTS, &c., FOR SALE.

JAPANESE MAPLES.—Anyone who grows Shrubs at all should include some of the best of the Japanese Maples. They are among the most attractive plants for the edging of a shrubbery, for the border, and for planting in beds in the glass of a neatly kept lawn. Their chief characteristics are diversity of colour in many varieties; the tints are most brilliant and the attractive appearance of the leaves, which are dissected to such a degree that they attain a lightness and delicacy unapproached by the foliage of any other plant. They are perfectly hardy, most varieties having been known to withstand 30 degrees of frost (Fahrenheit) without injury. I have two thousand specimens of the beautiful genus, from 1 foot to 5 feet high, to be cleared at low prices in September and October next. They include the following varieties: *Aver palmatum purpureum*, *Aver palmatum dissectum*, *Aver palmatum lineatolobum*, *Aver palmatum lineatolobum* (Crippen's variety), *Aver palmatum sanguinatum* (various), *Aver palmatum rotundatum* (not dissected), *Aver japonica*, *Aver palmatum palmatum*, &c. The collection can be viewed at the address given below at any time before the autumn. **WILLIAM HANE**, Hawksworthy, Tunbridge Wells, Kent.

VERBENAS—Miss Willmott (pink), King of Scarlet's Queen of Whites, Lovely Blue (Lavender blue), Princess of Wales (purple), strong, clean, well-rooted stuff from boxes, 50 for 5s.; 9s. per 100; carriage paid for cash.—H. DUBBERIDGE, The Dorset Nurseries, Blandford.

ATROPA BELLADONNA plants, well rooted, 15s. per 100; 50 for 7s. 6d.; carriage paid.—JOHN CARLISLE, Barbon, Kirkby Lonsdale.

MISCELLANEOUS.

B. EDDY & SONS, Torleven Works, Porthleven, Cornwall.—The largest manufacturers of GARDEN NETTING in the KINGDOM. NEW STOUT and specially strong SQUARE MESH NETTING, half-inch and one-inch mesh, at 4d. per square yard. LIGHT NEW square mesh, suitable for Strawberry Beds, at 3d. per square yard.

These Nets are bound all round with stout cord, and cover their measured length and width. Any length or width supplied.

Repaired Nettings in all sizes in stock. State your requirements, and we will quote lowest prices.

Also makers of TENNIS NETTINGS, RICK COVERS, GREENHOUSE SHADINGS, WASP NETTINGS, PACKING and TARKED TWINES of all kinds.

All Goods sent by PASSENGER Train, CARRIAGE PAID, on receipt of order.

HOthouse FOR SALE, pipes and boiler in working order, complete, glass sheets, about 80, size 18in x 20in. What offers where it stands, or taken down?—WILLIAMSON, Market Place, Peterborough.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

PRIVATE.

HEAD GARDENER—Wanted, experienced man, must understand Orchids, waxes, cuttings and grafts. Write, Z. H. J. A., care Dawson's, Leadenhall Street, London, E.C.

WANTED, HEAD GARDENER—Orchid Grower (Mr. W. T. Stables being "called up"); Outside Garden easy, principally *Odontoglossum* collection; can soon reach intelligent man, with some knowledge of Orchids. DE B. CRAWSHAY, Rosedale, Sevenoaks, Kent.

WANTED, at once, HEAD GARDENER, male or female, must understand Vines, Tomatoes, Vegetables, good cottage and wages.—MRS. ALFRED SWINGLER, Smalley, Derby.

WANTED, GARDENER (HEAD WORKING), good all-round energetic man, over military age, must be thoroughly experienced, economical, willing, and obliging.—HONBLE. MRS. F. COLBOURNE, Non such Park, Chesh., Surrey.

WANTED (middle June), HEAD WORKING GARDENER, good at Vines, Fruit, and Vegetables, good cottage. State wages and pattern bus.—G. KNOWLES, Esq., Stockton, Cobbold, Wills.

WANTED, HEAD WORKING GARDENER; normal staff of 4 at present; must be willing and obliging, and be well recommended; a knowledge of forestry would be an advantage; cottage provided.—Apply, giving full particulars and wages asked, to MAJOR E. UPTON, Copthold Hall, Ingatestone, Essex.

WANTED.—Can any gentleman recommend good WORKING HEAD GARDENER for house in Hampshire? Staff before Oct 3 next and boy; suitable cottage for married man; must be over age or ineligible; best references essential; must be experienced in Vegetables; poultry kept.—Write, stating full particulars, PARSONS, Clarke's Hotel, London.

WANTED, WORKING GARDENER—Head of 3, good knowledge Inside and Out; single man preferred. MRS. TYNDALE, Meadowcroft, Christchurch.

WANTED, FOREMAN (INSIDE), little over 40, (see JOHNSONMAN, 6s. 6d. wages, Sunday duty, and overtime paid). Apply, A. NEWMAN, Parkfield Gardens, Fitzroy Park, Highgate, N. 6.

WANTED, FOREMAN (INSIDE); 30s. per week, Bothy, &c., also IMPROVER, 18s. and Bothy, duty and overtime paid. E. BINSTOW, Leywood Gardens, Greenbridge, Tunbridge Wells.

WANTED, FOREMAN (INSIDE)—Apply, giving full particulars and wages expected to REES, Gardens, Llanover, Aberystwyth.

WANTED, FOREMAN GARDENER (under Butch), with general knowledge of Inside and Outside work—Apply to MESSRS RYLANDS & MASTER, Land Agents, 47, Diver Street, Chichester.

WANTED, capable all-round GARDENER, single handed, cottage, 25s. per week, with 5s. war bonus, must be well recommended.—RECTOR, Holme Portpout, N-tungham.

WANTED, GARDENER by a Gentleman. Full-time SINGLE-HANDED GARDENER; low kept, good wages, with charming cottage in grounds; must understand Vines, Peaches, Citruses, & Kitchen Garden, and take an interest in his work; permanent and comfortable situation; good Easton might suit. L. M., Box 5, 41, Wellington Street, Covent Garden, W. C. 2.

WANTED, SINGLE-HANDED GARDENER, wages 20s., with excellent 5 roomed cottage and vegetables; must be well recommended; small amount of Glass.—Write, stating age and experience, to H. C. TRIMMELL, Whitehall, Wokingham, Surrey.

WANTED, immediately, good GARDENER, especially with Vegetables; household of 30; state wages, length of reference, if married or in married. POWELL, St. Michaels, Grove Park, Lew. S.E.

WANTED, GARDENER; experienced; live out; wages £2 to suitable man. Apply, R. CORRY, Esq., Ivanhoe, Redgate.

GARDENER (married or single) required June 1 for institution in North London; good experience and references essential; no children.—Apply by letter, giving full particulars, stating wages required, and sending copies of testimonials, to MRS. PARKER, 10, Westbourne Terrace, London, W. 2. If married, and wife able to assist with needlework or in laundry, please state.

WANTED, GARDENER (all-round); 2 cows and pigs, help given; ineligible; if can drive a motor preferred; cottage and garden provided. State wages.—Write, F. GOSLING, Rushmore, Brighton Buzzard.

WANTED, MAN; experienced Inside; wages 35s. per week and cottage.—Apply, with full particulars, to W. GROOM, The Gardens, Upper Gatton Park, Mertonham, Surrey.

WANTED, married MAN, with some experience for food producing; good cottage and garden; late age and wages to MR. LOW, Low Court Gardens, Faversham, Kent.

WANTED, young GARDENER; under experienced Head, age 16-17 or ineligible. W. PEARCE, The Gardens, Portsmouth House, Portsmouth, Hampshire.

WANTED, SECOND GARDENER; Inside and Out; Vegetables and Fruit; wages 30s. and cottage. Apply, DAVISON, Gardens, West Woodley House, Newbury.

WANTED, SECOND GARDENER; married, good all-round experience necessary; 10-12 hours, wages 30s., good home, garden, post, 10 minutes' train; every third week.—E. HURST, Stapleford Park, Melton Mowbray.

WANTED, married UNDER GARDENER for house 5 miles from Haywards Heath, wife to look after the house and do occasional cooking. Write, Box C 702, Strapps Advertising Office, 13, South Molton Street, W.

WANTED, GARDENER (UNDER); good all-round man, take turn with duty.—State age, wages required, with good cottage and garden, to HEAD GARDENER, Baron's Chiffel Gardens, Fifehead.

WANTED, ASSISTANT GARDENER; not eligible for military service; Northern district, London, 4 roomed cottage provided; water laid on; penny slot gas meter. Apply, stating experience on 10 wages required, to A. R. C., Box 7, 31, Wellington Street, Covent Garden, W.C. 2.

WANTED, strong YOUTH for the House; wages 1's. per week, Bothy, milk, and vegetables. G. HUNT, Ashford Park Gardens, Epwim, Surrey.

WANTED, a MAN and WIFE, without children, to live in cottage on place; man as experienced Gardener and wife to help a few hours daily in house.—STEVENS, Adleshore Lodge, Addlestone, Surrey.

URGENTLY WANTED—Capable Lady or Woman GARDENER or single-handed Man GARDENER, understands Vines, Cumbrous, and usual branches Gardening; good references; 30s. weekly, to include board and lodging.—Apply, LADY M., Kilowr, Leicestershire.

WANTED, 2 good WOMEN GARDENERS for the Glass Department, under Forewoman, comfortable Bothy, with the usual perquisites. Apply, stating age and experience, to C. COMBE, Esq., Pains Hill, Cobham, Surrey.

WANTED, 2 WOMEN GARDENERS, as Head Working and Under, boy kept; furnished rooms, coal and light.—E. SCHLESIER, Esq., The Hill, Bray, Berks.

WANTED, WOMAN GARDENER; with some experience outside, live in furnished cottage with other two; take turn on duty.—THE GARDENER, Hurdwood House, Salisbury.

WANTED, LADY GARDENER; skilled in Vegetables, for 10-12 hours only. Under men kept; cottage, state experience and full particulars. MRS. PARRY, Peasegreen, Rhineland, Flint.

LADY GARDENERS wanting posts as HEAD or SINGLE-HANDED GARDENERS should apply to THE WOMEN'S FARM AND GARDEN UNION, 45 (south floor), Queen Anne's Chambers, Westminster, S.W.

WANTED, WOMAN GARDENER, with knowledge of work; under Head—Apply, with particulars, wages, &c., to Tildenham House, near Chelmslow, Mon.

WANTED, experienced young WOMEN for Garden, share rooms with Mother, Vegetables, &c., share wages, A TRV, The Court Gardens, Handale, Co. Linc.

WANTED, LADY UNDER GARDENER for Youth about 20, able to look after 2 ows, or willing to learn. STEVENS, Adlestone Lodge, Adlestone, Surrey.

WANTED, Female UNDER GARDENER, to take charge of Glass, from provided in Head Gardener's cottage. Apply with full particulars and wages required, J. A. JOHNSON, The Grove Gardens, Cussham, Surrey.

LADY GARDENERS wanted; all suited to entirely free of charge. Berks, as Forewoman very good Head Man, 5 Under, and all kept. Glass, Fruit, & Orchid, Garden, Bucks, under good Head Man, would take 2, another man and boy kept, furnished cottage given. Cheshire, 2 wanted, accommodation, with gas and bath provided. Vegetables, Fruit, and Flowers, some Glass, poultry, and horses. Herts, 1st Head, Under kept; comfortable cottage, with coal and gas. Garden, 1 job. N. or, 3 wanted, to work under Head Man, one with experience of Vineyard, 2 more, and 2 boys, also kept, nice furnished cottage, with milk and vegetables, Sussex, simple gardening, not much experience necessary. 1st, and gentleman both good in garden, 2 men kept, interview in town. MES. HUNT, LTD., 59, H. B. Street, Warrington, W. 1.

TRADE.

WANTED, FOREMAN, to undertake a full year's cultivation on 600 rods, etc. 1st job, who must be intelligible. Salary, 50s. per week, and 2 boys, also kept, nice furnished cottage, with milk and vegetables, Sussex, simple gardening, not much experience necessary. 1st, and gentleman both good in garden, 2 men kept, interview in town. MES. HUNT, LTD., 59, H. B. Street, Warrington, W. 1.

WANTED, FOREMAN GROWER for general Nursery, Bedding Plants, Ferns, for South, Tomatoes, and Cucumbers, in a house of 1 garden in nursery. Wages, &c., to SACKVILLE NURSERY CO. Have.

WANTED for Farm Seed Warehouse, a capable FOREMAN, must be able to superintend planting and dispatch of orders for a wide trade. Also Warehouseman, neat sack-stitcher, and an indispensable also for Garden Seed Department, an experienced hand, must be able to take entire charge of 40 sages offered. All applicants must be intelligible. A. B., Box 19, 41, Wellington Street, Covent Garden, W. C. 2.

WANTED, at once, an Intelligible, Practical GARDENER, an elderly man with good knowledge of all Hardy Perennials and Hardy Rockery Plants. Apply with references, stating age and wages required, to JAS. HOLDEN & SON, Crown Nursery, Reading.

CASHIER and BOOK KEEPER required for North of England firm. Seat Merchant. Applicants must have knowledge of Garden and Farm Seed trades and be capable of doing entire charge on office in absence of principals. Permanent situation, good salary, and war bonus to prospective successful man. Write, stating age, experience, salary expected, and enclose copies of recent testimonials, to S. N., Box 5, 41, Wellington Street, Covent Garden, W. C. 2.

WANTED, AUDIT or CHECKING CLERK, experienced, over military age, quick and accurate. TOUGOOD & SONS, The King's Seedsmen, Southampton.

WANTED, in the Midlands, a reliable MAN, under Foreman, to grow Plants for market. Application with particulars, P. N., Box 41, Wellington Street, Covent Garden, W. C. 2.

WANTED, a CUCUMBER and TOMATO GROWER, good wages and overtime. Apply to J. M. LEATHER, Fair Fields, Mitcham.

WANTED, Experienced CUCUMBER GROWER for North East London, intelligible, wages 50s. K. S., Box 26, 41, Wellington Street, Covent Garden, W. C. 2.

WANTED, MEN; intelligible; Cucumber and Tomato growers, good prospects. Apply, COCKBELL, Bosham, Essex.

FLORISTS—Young Lady Assistant required, with some experience. Apply, letter, NURSERY, 307, Upper Richmond Road, Putney, S.W. 26.

WANTED, Smart LADS, to learn Fruit and Flower Grafting. Apply, JOHN WATERER, SONS & CO. LTD., Hatfield, Herts.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

GARDENER (HEAD), 30 years' practical experience, Indoor and Outdoor Gardening, also recommended, intelligible. R. FLANN, Cranford House gardens, Hounslow.

GARDENER (HEAD WORKING); 6 of many years' experience in all branches of Gardening, also 20 years' experience in all branches of Horticulture, and previous employment B.M.L. New Cottage, Elmwood, Newport, Mon.

GARDENER (SINGLE-HANDED) or with help, married, age 22 years, no children, intelligible. Please to the Manager, Address, GARDENER, Gardener's Cottage, Arkleston, Gwent, Sussex.

GENTLE-WOMAN desires post as UNDER GARDENER, under Head, some practical knowledge, and strong aged worker. Apply, Mr. WOODS, Chiswick House, near Westm. N. Hwy.

TRADE.

MANAGER or FOREMAN; life experience in all branches of Gardening, also 20 years' experience in all branches of Horticulture, and previous employment B.M.L. New Cottage, Elmwood, Newport, Mon.

OPEN for Engagement as HEAD SHOP MAN or MANAGER upwards of 30 years' experience in all branches of the trade, over military age. Write, G. C., Box 9, 41, Wellington Street, Covent Garden.

The Gardeners' Chronicle
SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Ordinary Positions	per page	10 10 0
Facing matter and Back Page	.. .. .	12 12 0
Half and quarter pages, ordinary and half column spaces, pro rata.	.. .. .	.. .. .
1 line space not exceeding 20 words	.. .. .	3 0
Per inch, single column	.. .. .	7 0
Per inch across 2 columns	.. .. .	14 0
Per inch, across 3 columns	.. .. .	1 1 0

Front page (not display allowed) 1s per line space, (headline counted as two lines.)

For discounts apply to address below.

SITUATIONS WANTED.
26 words 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS' &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.
THE UNITED KINGDOM 15s. per annum.
ABROAD 17 6

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.
Telegrams: 1515 "GARDENERS, RAND, LONDON."
Telephone: 1513 GERRARD.

Phytobroma
Barr's New Plant Food
For Flowers, Vegetables and Fruit
Of highest quality & guaranteed analysis

Phytobroma Greatly Increases all Vegetable Crops.

Guaranteed Analysis: 3.50% Nitrogen; 16.93% Soluble Phosphates; 13.50% Insoluble Phosphates, 3% Pure Potash

7lb. 2 9; 14lb. 5 6; 28lb. 8 -; 56lb. 15 -; 1 cwt. 28 -.

Prepaid Orders for 28lb. and upwards, carriage paid. Circular, with full particulars, on application.

BARR and SONS,
King Street, Covent Garden, LONDON

ORCHIDS,
Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE and GREENHOUSE PLANTS of ALL KINDS. Kindly send for Catalogue.
AMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

PERPETUAL CARNATIONS
Flowering plants in 5in. pots.
Standard varieties, 1s. per dozen, 10s. per 100
Novelties, 2s.6d. per dozen, 15s. per 100.

BORDER CARNATIONS
Strong plants in 3in. pots,
7/6 per dozen, 50s. per 100.
All plants CARR. PAID and packed free for cash.

A. F. DUTTON'S NOTED CARNATIONS.
IVER, BUCKS.

FOOD PRODUCTION.
SOW NOW—Chimney White Harvest Beans. Just arrived from France in special packets. Half pint, 1s.; pint, 2s. 6d. per lb. Grown the same as sugar Runners. Height, 5ft., and can be used as a green vegetable or allowed to ripen for winter use and can only be supplied by.
S. BIDE & SONS, Ltd.,
Seedsmen, FARNHAM, SURREY.
We shall at all times be pleased to send you our Illustrated Seed Catalogue, or various Plant Catalogues on application.

'MY GARDEN' SERIES
MY GARDEN IN SPRING.
By E. A. BOWLES, M.A.

Acting Chairman of the Scientific Committee of the Royal Horticultural Society.

MY GARDEN IN SUMMER.
By the Same Author.

MY GARDEN IN AUTUMN AND WINTER.
By the Same Author.

Price 5/6 each post free from—
THE LIBRARIAN,
THE "GARDENERS' CHRONICLE," LTD.,
41, WELLINGTON ST., COVENT GARDEN, LONDON, W. C. 2.

**"Sav
Bill's"**
THE FOOD FOR PLANTS

ONLY MEDAL
INTERNATIONAL EXHIBITION EDINBURGH-1886
ONLY GOLD MEDAL EDINBURGH-1891

**THOMSON'S
CELEBRATED
MANURES**

PERFECT
PLANT FOODS.
Unrivalled for all garden
crops Peas, Vines, Plant
and Vegetable Marrow, 1 cwt.
4s. 7 1/2 lbs. 2s. 6 d. The 2, 1, and 5d.
Carriage paid everywhere on 26 lbs.
and up. Special Christmas
and New Year Presents. 26 lbs.
2s. 6 d. 11, 14 lbs. 6 d. 7 lbs.
3s. 6 d. This is Carriage paid
anywhere on 5 lbs. and up.
Sold by all Stationers and
masks Wm. Thomson
& Sons, Ltd. Clowen
ford, N.E.

**BENTLEY'S
WEED DESTROYERS :**

Liquid : Concentrated Strength 1 to 80.
Double Strength 1 to 50.
Patent Powder : 1 to 25.

- BENTLEY'S DAISY KILLER
(LAWN SAND).
- BENTLEY'S INSECTICIDES.
- BENTLEY'S FUNGICIDES.
- BENTLEY'S FUMIGANTS.
- BENTLEY'S MANURES.

Catalogue on application.
JOSEPH BENTLEY, Ltd.,
Chemical Works,
Barrow-on-Humber, HULL.

MANY YEARS REPUTATION
EUREKA WEED
KILLER
LASTING RESULTS - NO NEW EXPERIMENT

LABOUR SAVERS. "EUREKA" LAWN SAND,
SOLFUME NICOTINE INSECTICIDES, FUMERS,
SPRAYS AND OTHER CHEMICALS & SUNDRIES.
SEE LIST PLEASE A.S.K. YOUR AGENT FOR THE EUREKA
ARTICLES - THEY ARE ALWAYS SATISFACTORY IF ANY
DIFFICULTY IN OBTAINING WE SEND DRAFT CARRIAGE PAID

Sole Address: TOMLINSON & HAYWARD LTD. LINCOLN.

**✓ SLUGS
SLUGS**

"SANITAS" POWDER
will rid your Garden of Slugs and
protect your Seeds and Plants from
other pests such as Worms, Rats,
Mice, Sparrows, Cats, &c.

Leaflet and Free Sample
with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (for London)
of all Chemists, Stores and Nurserymen,
THE "SANITAS" CO., Ltd.
Limehouse, London, E.
Awarded Medal at Royal Horticultural
Exhibition, 1911.

Sample **CRET** Pot
FREE with Booklet
will convince you that the
Drainage, Porosity, Healthful-
ness of CRETS would help
your plants. Writes
PETER BAILEY & SONS, Ltd.
2, Heathley Morsey Pottery,
near MANCHESTER.

Save our Food
Ravages of Rats and Mice in our Farm
LIVERPOOL VIRUS
exterminates
RATS & MICE

Thous. rd. of
tons wasted
through the
Store & Home.
Use the mouse
with 1 drop of Virus
into ready pre-
pared solution for Rat
2s. 6 d. for Mice 1s. 6
d. all details
**EVANS' SONS
LEICHER & WEBB
Ltd., Liverpool.**

SALE OF SURPLUS STOCK.
We still hold certain small stocks of
Garden Seats, Garden Engines and Pumps, also
Garden Rollers, Water Carts, Garden Arches
and Hand Lights,
which we shall be pleased to clear at special prices, subject
to being unsold.
Particulars on application,
BOULTON & PAUL, Ltd., ROSE LANE WORKS
NORWICH.

LETHORION ::
VAPOUR
CONE **Fumigator**

Introduced 1885.
The marvellous effect of this
simple and cheap method of
Fumigating Greenhouses is
fully borne out by the
enormous increase of sales
year by year.
Only a match required
for starting the Cone. Full
directions for use on each
Cone.
Thousands of testimonials
received from all parts.

Registered Trade Mark 62587.
Prices. - No. 1, 500 to 1,000 cubic ft., 6d.; No. 2, 1,500
cubic ft., 8d.; No. 3, for 2,000 to 2,500 cubic ft., 1/-.

**"TENAX" THE NEW
AND MOST
SUCCESSFUL
Grafting Wax**

It is a much required "HOME-MADE" article
to meet the requirements of all Nurserymen and
Gardeners.
It is rapidly taking the place of all Foreign and
other preparations for all Grafting and Budding
Purposes.

In Tins, each 6d., 1/-, 2/-, 4/-, 6/-. Also in bulk at
reduced rates.
To be obtained through the Nursery and Seed
Trade generally.

CORRY & CO., Ltd.,
Bonded Chemical Works, Shad Thames,
LONDON, S.E.

**SANKEY'S FAMOUS
GARDEN POTS**
The **BEST** and **Cheapest**.
"safe quantity of each size required and have "retrograde"
inflation ("Carriage" frequently amounts to half value of
goods) or write for Price List free.
17, 131, POTTS of all descriptions. Both Bowls and Fern
Pots from 2d. each.
RICHARD SANKEY & SON, LTD.
Dalwell Potteries, NOTTINGHAM.

Ammanford and Pontyberem Collieries.
SOLE AGENT :
T. T. PASCOE,
York Chambers,
SWANSEA.

Telephone
grams : : : : 1045 Central,
Pascoe, Swansea.

Best Anthracite Large Coal for Horticultural
purposes and Cobbles for House Furnaces.

Quick Despatch. Best Quality.
Lowest Prices.

THE
Gardeners' Chronicle

No. 1687.—SATURDAY, MAY 26, 1917.

CONTENTS.

Alpine garden, the—	Peanes and Neotarnes .. 215
Alpines without a rock garden .. 211	Pompon or Pom-pone .. 215
Anemone Pulsatilla .. 209	Poultry and food .. 215
Asparagus, rust-resistant .. 214	Rabbit manure .. 218
Crusoe's Island, Juan Fernandez .. 209	Rhubarb leaves as spinach .. 215
Fairchild lecture, the .. 214	Societies—
Farm, crops and stock on the home .. 218	Horticultural Club .. 217
Fruit production, an increase—	Royal Horticultural .. 215
Allocation holders, the .. 211	Sw heat, the value of .. 215
Broccoli, hardness of .. 212	Twenty-five years with the Gardeners' Chronicle .. 214
Brussels sprouts .. 212	Viocets, the propagation of .. 211
Butter Beans .. 212	War items .. 212
Parsnip seed, germination of .. 212	Watering allotments .. 214
Squashes, a few .. 211	Week's work, the .. 213
Sugar for man .. 212	Flower garden, the .. 213
France, vegetable-growing in .. 215	Fruits under glass .. 213
	Hardy fruit garden, the .. 211
	Kitchen garden, the .. 212
	Ornamental masses, the .. 213
	Plants under glass .. 213

ILLUSTRATIONS.

Anemone Pulsatilla .. 209
Juania australis on Juan Fernandez .. 219
Mecynopsis pulcherrima .. 216
Tree Ferns of Juan Fernandez .. 219

ANEMONE PULSATILLA.

THE long winter which we have recently endured seems to have stirred Anemone Pulsatilla, for it has flowered with the utmost profusion. It seems to revel in light sand, which becomes hot and dry in summer. Indeed, it is one of the few plants that can remain in this sand year after year and increase in beauty as it grows older. Experience has shown that in the case of most plants no amount of top-dressing can compensate on this sand for the lack of nutriment distributed through the soil, and that most plants no sooner get established and grow to be reasonable specimens than they begin to dwindle because they have exhausted the soil within reach of their roots. However, Anemone Pulsatilla seems quite satisfied with a yearly top-dressing of old leaf soil and chalk or lime. A well-grown plant bears as many as 40 or 50 blooms, which are followed by the 2 large heads of long-plumed seeds. The latter should be gathered as soon as they can be readily detached, and sown at once in pots or boxes. This is important for stale seeds either germinate very irregularly and scantily or fail entirely to germinate at all. When the seeds are sown at once, the seedlings appear in early autumn, and in some cases grow so rapidly in favourable seasons that they are ready by the following April to be planted out in their permanent positions. Sometimes, as, for instance, after a cold, damp autumn and hard winter, such as we have just experienced, the seedlings are better left in the seed pots, sunk to the rim in the open, until the following year. Plants and seedlings are best moved just when active growth begins in April, and there is then no great check, so that flowers may be expected in the following spring.

A few years ago I found on Monte Maiztotepe, near Fiume, a number of plants of a dark purple-flowered Anemone, to which several botanists give the name of montana. In the wild state, the plants seemed rarely to produce more than one flower, but one of the three plants which I dug up and brought back now has more than 20 flowers and the others each have several. The foliage is practically identical with that of Anemone Pulsatilla, and the flowers are covered with the same silky down that forms one of the charms of that flower. The colour of the flowers was always dark purple so far as I could see when I examined a number of plants in the wild state.

Some gardeners are content to admire the mere beauty of their plants and flowers, while

others are troubled by a desire to know where they come from and how they differ from their nearest neighbours. It was some such desire as this which led me to look up literature dealing with Anemones in the hope of finding the difference between montana and Pulsatilla, for though the flowers of the latter are usually pale purple, or even lilac, they are sometimes almost as dark as those of montana. Moreover, colour alone is hardly ever a true guide to specific difference. I found that the differences between the two species, as described in botanical literature, are somewhat vague. Some botanists hold that the leaves are differently divided, but seedlings vary in this respect, and the only real difference seems to be that, while

lilacs, for Pulsatilla. Anemones in a whole range of colour would be some compensation for the antipathy which many Anemones show for this hot and sandy soil. W. B. Pyles, Charleston, South Carolina.

A coloured plate of Anemone Pulsatilla rosea Mrs Van der Elst was issued as a supplement to this journal, January 25, 1915. (Enc.)

CRUSOE'S ISLAND: JUAN FERNANDEZ.

(Continued from page 208.)

STURKIE had the following effects: A tin stock of clothes, bedding, a musket, a pound of gunpowder, a quantity of bullets, a hatchet,



FIG. 70. ANEMONE PULSATILLA.

Pulsatilla turns its flowers up to the sun almost invariably and opens them out almost flat, the buds of montana droop, and the bell-shaped flowers continue to droop even when fully expanded. The stems only become erect as the petals fall off and the seeds begin to develop into the characteristic globular heads.

There is a beautiful variety of A. montana with flowers of what I can only describe as a bright chocolate colour. When it first flowered here, I could not resist the temptation to try whether it would cross with Pulsatilla, and the first seedling has just produced a first small flower of a colour which approaches nearly to a rich crimson purple. I shall await with interest the development of this batch of seed-

a knife, a kettle, a few pounds of tobacco, a flip-top, a Bible, and some books on navigation and mathematics, with his mathematical instruments and food sufficient for two meals. So he was much better provided for than poor William, the Indian. His grief was great at first, and for a considerable time he scarcely ate anything, nor did he go to bed until he could watch no longer. His melancholy remained for some months, but at last gradually wore off. "Contentual running and climbing about the rocks made him so fleet that the most nimble goats could not outstep him." He knew all the byways and paths on the mountains, could trip from one crag to another, and let himself down the most dreadful precipices." He built him-



FIG. 77. TREE FERNS IN THE VIRGIN FOREST OF JUAN FERNANDEZ.

self two huts with the wood of Pimento trees (*Pimento officinalis*), covering them with long grass, and lining them with the skins of goats. His Pimento bedroom was at first infested by cats and rats in great numbers, which had got on shore from ships that had put in for wood and water. The rats actually gnawed his feet and other parts of his body whilst he was asleep. In time he tamed the young cats, so that they kept off the rats, and it is related that they—the cats—used to lie about him in hundreds. So he had plenty of company in the night as well as the day time. When not hunting for food he employed some of his time in reading, singing Psalms, and praying, so that, as Rogers relates, "he was a better Christian while in this solitude than ever he was before, or than, he was afraid, he should ever be again." The Pimento wood, which burned with a clear light, served for both fuel and candle, and refreshed him with its fragrant smell. Whenever he had time to reflect on his condition, which was during the intervals of obtaining food, he yearned for the society of his fellow men. The monsters of the deep, the fur seals and sea elephants, with their terrible howlings, seemed to add to the terrors of his solitude. In the month of November the seals came on shore in such numbers in order to breed, that Selkirk could not pass through them to the shore, so thick were they. And if he approached them, they would not move out of his way, but run at him like angry dogs, so that it was dangerous for him to go near them.

Selkirk obtained plenty of "Cabbages," the young central part of an interesting endemic species of Palm (*Juania australis*; see fig. 78). It was most abundant towards the tops of the lowest mountains, and was somewhat difficult to collect, owing to the looseness of the soil, which is very shallow every where on the island on account of the volcanic origin of the land. Like most Palm trees, the Cabbage tree or "Chonta" of the Chilians has a straight trunk, with a bunch of leaves at

the top. The young heart is white, tender, and palatable. But in order to obtain the Cabbage it was necessary to destroy the tree. Rogers states that there were then great quantities of Pimento trees, some about 60ft high and bit, through. There was plenty of Turnips, the seed of which had probably been brought to the island by the Spaniards. He had also Parsnips and Watercress. Rogers says, "By degrees, by the force of reason, and a frequent reading of the Scriptures, and turning his thoughts on the study of navigation, after a space of eighteen months he grew thoroughly reconciled to his condition. When he had made this conquest, the vigour of his health, disengagement from the world, a constant cheerful, serene sky, and a temperate air, made his life one continual feast, and his being much more joyful than it had before been irksome. He now, taking delight in everything, made the hut in which he lay, by ornaments which he cut down from a spacious wood, on the side of which it was situated, the most delicious bower, famed with continual breezes and gentle aspirations of wind, that made his repose after the chase equal to the greatest pleasures."

Like his predecessor, William, the Indian, Selkirk hid himself when Spanish ships entered the bay. On one occasion he was seen and chased, but escaped by climbing a tall tree. His pursuers came to the base of the tree, but, not finding him, gave up the chase. One day he had a narrow escape from death when chasing a goat. He pursued it to the brink of a precipice, and in attempting to capture it, goat and man fell over. He lay unconscious for a considerable time, some accounts say twenty four hours, others three days, and when he recovered his senses he found the goat lying dead under him. He crawled painfully to his hut, and it was ten days before he was well enough to get about again. After his recovery he took the precaution, in case of further illness, of taming kids when very young, so that they recovered their health but not their agility. He slit the ears of a large number of goats, and as evidence of the great age of these animals it is recorded that on Anson's visit thirty-two years later several of these venerable creatures were still alive. Walter, who published an account of Anson's voyages, describes the capture of the goats as follows:—"Now it happened that the first goat that was killed by our people at their landing had his ears slit, when we concluded that he had doubtless been formerly under the power of Selkirk. This was, indeed, an animal of a most venerable aspect, dignified with an exceedingly majestic beard, and with many other symptoms of antiquity. During our stay on the island we met with others marked in the same manner, all the males being distinguished by an exuberance of beard, and every other characteristic of extreme age."

On January 31, 1709, Selkirk sighted two vessels, the "Duke" and "Duchess," under the command of Captains Woodes Rogers and Thomas Dover, with Dampier as pilot, on a privateering trip in the South Seas. In the evening Selkirk lighted a fire as a signal, and next day once more beheld the faces of his countrymen.

In Rogers' published account of the circumstances we are told that Selkirk had so far forgotten his language for want of use that there was some difficulty in understanding him. It was some time before he could wear shoes, his feet swelling when he first put them on. The food on board ship, too, did not suit him.

Thus Selkirk abdicated his dominion, where he had been monarch of one of the most delightful islands in the world. He arrived in England, as master of the "Duke," on October 13, 1711. His story was the chief topic of conversation in London, where "it was matter of great curiosity to hear him, as he is a man of good sense, give an account of the different revolutions in his own mind in that solitude" (Steele). According to Wright, the writer of *The Life of Daniel Defoe*, the famous author met Selkirk in a house at Bristol, where he heard the wonderful tale from the hero himself, and whence it was supposed he got the idea of writing *Robinson Crusoe*. Who can estimate the tremendous influence that Defoe and the humble Largo sailor have had on the careers of our young men? May not even the efficiency of our mighty fleet at the present day be due in some small part to these two celebrated men?

Clipperton was the next to visit the island in September, 1719, in the "Success." Harris relates that "the beauty and fertility of the island, compared with the dangers and difficulties they were sure to meet with in the South Seas, tempted four of his crew to enter into a scheme of remaining in possession of so valuable a country. In pursuance of this they actually ran away from the ship, and hid themselves to the mountains. For the first five days they were hard put to it, being forced to subsist wholly on Cabbage trees, of which they found a great quantity, but having, by good fortune, one night found some fire, which had been left by the goat hunters from their own vessel, it served them in good stead, for they were now able to dress their fish and



FIG. 78. *JUANIA AUSTRALIS* (THE CABBAGE PALM) ENEMIC TO THE ISLAND OF JUAN FERNANDEZ.

satisfy their hunger." Two of the men were eventually captured by the goat hunters, who found them more difficult to secure than the goats, and they were fired at several times before they would surrender. The other two men remained a couple of months after Clipperton's departure, when they surrendered themselves to the Spaniards. Captain Shelvocke arrived in the following January, and returned in May, when his ship was wrecked on the island. They were able to land and build a boat out of the wreck, but as was much discontent among the crew, considerable delay occurred before the boat was launched. During the making of the boat a party of the men, eleven in number, decided "that they were not yet prepared for the other world;" and when Shelvocke and his adherents departed, the eleven men remained on the island, together with thirteen black and Indians.

(To be continued.)

THE ALPINE GARDEN.

ALPINES WITHOUT A ROCK GARDEN

At the present time rock gardens are so much under a cloud that it needs a good deal of mental hardihood to write about them. Their owners seem inclined to regard them with that air of disavowing aloofness that a man assumes when his dog has disgraced himself at the butcher's.

Yet even in normal times it is surprising how many people have a rooted objection to rock gardens, and I have heard many curious reasons given why rock gardens should not be. The perpetrator of a lamentable outbreak of villa, in aggressively good taste, laid it down to me that rock did not occur naturally in the neighbourhood, and that therefore a rock garden would be incongruous. Such reasons as this are of course insincere. All gardening, good and bad, is more or less of a compromise, half nature and half art, and the rock garden is just as legitimate a branch of gardening as the cultivation of the most expensive Orchids or the most hectic Ramblers. Given a fondness for Alpine plants I know of only two good reasons for not having a rock garden: lack of space, and the initial expense. But lack of space is not, after all, a very good reason, for it is possible to have a practical and a perfectly charming rock garden, exactly one foot square, and to grow upon it a surprising number of the loveliest and the best Alpine plants. I have done it. A garden of well-laid rocks and suitable soils is undoubtedly the best possible setting one can have for Alpine plants, but, if these are not available, that is no reason for not growing Alpine plants. The late Canon Ellacombe's rock garden proper was a comparatively small affair, yet he grew Alpine plants successfully, and always charmingly, in almost every part of his garden. They were grown as unconventional edgings to the borders, and one came upon them in all sorts of unexpected, odd corners. An excellent example of rock plants grown without a rock garden is to be seen at Aldenham House. Here, low, simple edgings of small pieces of rock, well sunk in the soil, have been laid as edgings to hand-sown herbaceous borders on either side of a central path in the kitchen garden. These rock edgings are little more than a couple of feet wide, and they are planted with many kinds of showy and low-growing rock plants, Saxifrages, both silver and mossy, Alpine Phloxes, Aubrietias, silvery Achilleas, Alyssums, Rock Roses, Veronicas, Gentians, Arenarias, Thrift, and many others. Rock plants are too seldom used in this way, yet there is endless scope for ingenuity in grouping the plants. The arrangement of the stone should be quite simple: the simpler the better; or one can do without

it altogether. In grouping the plants it is a very good plan to run certain sorts into each other, so that they mix and put up a good fight for existence. A single plant of *Arenaria montana* placed among several plants of *Lithospermum prostratum*, for instance, makes a lovely show of pure white and vivid blue. Dwarf Campanulas, like the varieties of *C. pusilla*, alba, Miss Willmott and pallida, are far prettier if planted in mixed colonies than when carefully shepherded, and the outliers of such a mixed colony might run into and mingle with some of the dwarf-habited Pinks such as *Dianthus caesus* (the Cheddar Pink) and varieties of *D. plumarius*. A splendid mixture which I came across as a self-ranged accident, and duly noted, was a special deep rich purple form of *Campanula unifolia* which I collected at Mr. Coles, growing with the ruby-red *Dianthus deltoides superbus*. To avoid bare spaces in winter, the lighter growing deciduous plants, such as the small Campanulas, may be planted among evergreen tufted plants like Saxifrages, Pinks, and Alpine Phloxes. Spangled patches of rose and lavender or lavender and white may be made by interplanting different varieties of *Phlox subulata*; deep rose and violet with *Phlox reptans* and *Viola gracilis*, and for real barbarism during mixture *Aubrietia Dr. Mules* and *Aubrietias Fire King*, *Royal Purple* and *Magenta Crimson*. The scope for this sort of thing is endless, and experimenting is a great pleasure. Such an edging as that at Aldenham is surely a better foreground to a herbaceous border, and much more interesting, than either Box or a mown turf verge. The effect of a well kept grass edging is certainly pleasing, but from the practical point of view the difficulty is that directly the foremost plants begin to stretch out and enjoy themselves they get mutilated by the mowing machine. The labour of keeping grass verges in good condition is an item that must be taken into consideration.

Then, of course, any old wall can be made a joyous home for Alpine plants. Seeds may be sown, and young plants tucked into crevices. Many good things will grow and thrive without any special attention. *Ranuncula pyrenaica* is a plant which is usually treated with a good deal of respect, and for which special, cool, perpendicular crevices are constructed in the rock garden. But some of the finest and healthiest plants I have seen in cultivation are growing without any fuss at all on a ledge of a mossy terrace wall overlooking a pond. The aspect is north or north-east. It is pleasant to lean over from the terrace and see this thriving, increasing colony, especially in May, when it is covered with large violet, moon-faced flowers.

I have said that it is not necessary to have a rock garden in order to grow Alpine plants. I will go further, and assert that it is not even necessary to have a garden at all to grow them. You can grow them on other people's roadside garden walls. All you need do is to scatter the seeds of Alpine and rock plants in the rotten mortar and crevices on the top of the wall as you pass, though I warn you that someone is almost sure to come along the road just when you are going to throw the seed up. You will then shrink guiltily from the perfectly innocent deed and sow another time. I enjoy several colonies of wall plants in this way, at other people's expense. But, of course, there are failures. I had a lovely Cheddar Pink and several Wallflowers doing splendidly on a certain old lady's garden wall. She discovered them, had them destroyed, and the wall pointed. Fortunately, the man who did the work was a bad workman and used bad mortar. The Cheddar Pink had only been cut off at the neck. Its roots had quested deep among the old bricks, and the stock actually sprouted and pushed aside the ill set pointing mortar, with the result that it is alive and flourishing to this day. *Charles Elliott, Stevenage.*

ON INCREASED FOOD PRODUCTION.

A FEW QUERIES.

SINCE more space has been allotted in the *Gardeners' Chronicle* to vegetable items, many interesting and helpful hints have appeared from different writers, though occasionally a puzzling contribution excites the surprise of the reader. For instance, Mr. Divers, late of Belyof (see page 181), says he planted all Potatoes the same distance apart, and apparently with good results. Mr. Divers' remarks are a great challenge to the experience and practice of gardeners. Either they are deceived, or Mr. Divers could have had still better results by giving robust haulm producers more space than weak growers. Surely the teaching of the majority must be the sounder, otherwise there is no reason why tall and short, or bulky and slim-growing greenstuffs should not be spaced at one distance for the lot, with equal likelihood of success. Another unusual and, I think, questionable practice comes from the pen of another great gardener, Mr. Brotherton. He tells us he has planted Brussels Sprouts between Brussels Sprouts. Perhaps this is only a war-time expediency, but *R. P. B.* should have added such a hint if it were so, and also have said whether the ground thus occupied two years in succession with the same long season vegetable had special preparation before the first crop was planted. Yet another note seemed to me strange; it was on Beetroot (see page 128). The writer stated that this vegetable withstood the severe winter in the South of England though left in the ground. To what county or counties does this apply? I have always followed the teaching that it is best to take up and store Beetroot, and have never tested what degree of cold it could safely bear. One or two of our recognised works on gardening, notably Thompson's *Gardeners' Assistant*, say that Frost is fatal to Beetroot. Perhaps someone who has tested the hardihood of the Beet will tell us his experience, as undoubtedly it would be a boon to those gardeners lacking storage room to be able to leave the roots longer in the ground. *C. Turner, Amphill Park.*

The books, it appears, are not always right. Beetroot at Wisley remained perfectly sound in the open garden during the past severe winter. See *Gardeners' Chronicle*, March 31, 1917, p. 157. *Eds.]*

THE RIGHTS OF ALLOTMENT HOLDERS.

At the beginning of February this year, the Bretham Horticultural Society was authorised by the Borough Surveyor of Ealing, under the Defence of the Realm Regulations (Cultivation of Lands Order), to occupy the grass land (some 1½ acre in extent) at Didden House, Hanger Lane, Ealing, for the purpose of "war" allotments. Thirty-three allotments were pegged out, and cultivation proceeded as rapidly as the weather would permit. Some of the allotments were shared by the holders, and about fifty men in all were working upon them.

Just before Easter, the work of erecting two sheds was put in hand without any notification whatever to the society, for the purpose of test ing smoke-bombs. The attention of the Borough Surveyor was called to the buildings by the Horticultural Society, but as the sheds did not encroach upon the allotment ground, and it was assumed that they were serving some national purpose, it was not considered worth while to press for their removal.

On May 7, however, a notification was received from the Borough Surveyor that the construction of a factory on the allotments was under contemplation. Prompt and vigorous action was necessary if the land was to be retained for food production, and the circumstances were brought to the notice of the Ministry of Munitions, the Board of Agriculture, and the member for Ealing (Mr. H. Nield), who promptly placed questions upon the notice paper of the House of Commons.

As, however, the materials for the factory began to arrive, and no definite action had apparently been taken by any public body to retain the whole of the allotments for food production, the Horticultural Society called a protest meeting of allotment holders on Saturday, the 12th inst. A well-attended meeting, which included representatives of the North Ealing and the Ealing, Hanwell and District Societies, decided to make strong representations to the Board of Agriculture and the Town Council. A tentative proposal was made to the society that eight of the thirty-three allotments should be given up, and the remaining twenty-five fenced off, but the meeting was unanimously of opinion that on grounds of principle this proposal should not be entertained.

After the protest meeting was completed, a notification was received from the Ministry of Munitions that the London District Engineer would visit Didsden House on May 14, and the society asked the Borough Surveyor to attend, and the Board of Agriculture to send a representative. The estate agents acting for the factory proprietor were also present. After the facts had been recited and the position explained, the compromise by which for the present eight of the thirty-three allotments would be taken, coupled with compensation, was definitely refused by the allotment secretary, who represented the society. The stand taken up by the society was reported to the factory proprietor, who arrived at Didsden House just before the meeting broke up, and he decided to abandon the proposal to build upon the allotments and to seek a site elsewhere.

The Brentham Horticultural Society feels that as a matter of public duty the facts of the case ought to be placed on record for the benefit of other allotment holders.

The incident shows the very real danger to which allotment holders are exposed of having their "war" plots confiscated, and it also shows the great advantage of combination amongst allotment holders. Had not the tenants been members of a society which had the organisation for making an immediate and vigorous protest, there is but little doubt that some, if not all, of the plots would have been confiscated, and the food produced in the country would have been correspondingly decreased. *Correspondent.*

HARDINESS OF BROCCOLI.

UNIVERSAL Protecting Broccoli withstood the severe winter better than any other variety I have grown. I planted 4,000 plants of Broccoli in several varieties last year, but not more than 2 per cent. of any other variety survived the severe frost of February, whereas 75 per cent. of Universal Protecting survived, and I am now cutting good heads of this variety. These plants were grown in an exposed situation, where 55° of frost were registered. *W. Anton, Pyrford Court Gardens, near Woking.*

BRUSSELS SPROUTS.

My method of growing Brussels Sprouts is, I think, worthy of consideration by those who are persuaded that the plants occupy the ground too long in comparison with other green crops. My plan is as follows: The plants are put in lines 4 feet apart, with the usual amount of space in the rows. At the same time I plant Cauliflower or Cabbage between each row, these being cut as soon as ready and the stumps pulled up, leaving the Brussels Sprouts ample room for development. I also plant at the same time in lines between the Cauliflowers and Sprouts Cabbage Lettuce, and thus get three crops in continuation. I have proved Brussels Sprouts to be the most profitable crop of all vegetables. There is no reason why the plants should not eventually be lifted and laid in the ground close together in lines where they continue to give plenty of green shoots, and thus permit the ground they have occupied during the winter to be prepared for

the summer crops. *A. J. Elgar, Groggyn Hall Gardens, Newton.*

SUGAR FOR JAM.

A GREAT waste of valuable food in the form of fruit will be inevitable, unless some means of increasing the supply of sugar can be assured. It is not enough to supply the wholesale jam manufacturers with as much sugar as they had last year, which has been arranged, if the hundreds of thousands of housekeepers who usually make jam are almost entirely lacking in sugar. Strawberries will soon be ready, and Currants will follow early in July, with Plums a little later.

The importance of jam as a food for families of poor or comparatively poor people is not sufficiently appreciated. It is used very extensively for children instead of butter, even in years when the butter supply is ample, and will be more necessary than usual while the war lasts. Home-made jam can be produced at half the prices now charged at shops, and is at the same time vastly superior to the stuff consisting largely of Apple, or possibly Turnip, jelly. This is particularly the case in rural districts, where fruit is largely grown, as supplies for jam in those districts can be obtained cheaply. There are considerable quantities of fruit damaged for market, but still sound enough for jam, which pickers get free of charge, while they can obtain undamaged fruit at wholesale prices. To lose this advantage through lack of sugar will be a misfortune of serious character, and the authorities may well be urged to avert this disadvantage if they can possibly do so.

Without a fair supply of sugar it is probable that half the Plum crop will be wasted. *Southern Grower.*

THE GERMINATION OF PARSNIP SEED.

ALWAYS fickle, Parsnip seed appears to be much longer in germinating this year than usual. Seeds that were sown seven weeks ago have not yet shown above ground, though an examination of the seeds proves that the swelling embryo has burst the seed covering, and once this has occurred the seedlings will soon be visible. Considering the length of time Parsnip seed will remain in the ground apparently dormant, growth, once germination commences, is astonishingly rapid, for the seedlings become 3 inches high in a few days. Are the present stocks of Parsnip seed unusually poor, or have the times made one extra critical? For I notice that one advertiser guarantees 60 per cent germination. *A. C. Parrott.*

BUTTER BEANS.

I AM obliged to Mr Bartlett for his remarks on my note which appeared in your journal on May 12.

I believe the variety usually vended under the name of Butter Bean is the Lima, which rarely succeeds in this country, but from my experience many varieties of the Dwarf Beans are equal, if not superior, to the Lima in flavour, notably Magnum Bonum, Green Gem, Canadian Wonder, etc., and by removing the skins after cooking such varieties as Canadian Wonder become more palatable.

We are growing here, this year, for the first time, a small dwarf Bean, brown in colour, introduced from Holland, used extensively by the Dutch, and said to be a very easily-grown farinaceous food. The great point is to sow as early as possible in a sunny position, so that the seed may become thoroughly ripened before late autumn.

The Butter Bean, or Golden Waxpod, which is sold and grown by some in this country for producing a green food, should not be mistaken for the article of commerce generally known as the Butter Bean, the latter being a different variety entirely, with very much larger seed. *E. Beckitt, Altham House Gardens, Elstree.*



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

BRUSSELS SPROUTS.—The earliest plants of Brussels Sprouts are ready to plant permanently in ground that was dug and manured in winter. Loosen the surface soil carefully with a hoe to destroy small weeds. Exercise great care in lifting the plants from the nursery bed to retain a good quantity of soil on the roots. Water the plants before they are lifted, and again as soon as they are replanted. Make the rows 5 feet apart, and put the plants 2½ feet asunder in the rows. In dry weather give the roots plenty of soft water. Make successional plantings as soon as the seedlings are large enough for transplanting. This vegetable stands the winter well, and produces a supply of Greens over a long period.

SEAKALE.—Plantations of Seakale recently made require attention. Remove the worthless shoots as they appear through the surface, reduce the growths to one on each plant, and hoe the surface soil carefully. A dusting of soot along the rows previous to hoeing is beneficial to growth.

GLOBE ARTICHOKE.—There is still time to make plantations of Globe Artichokes. The old plants suffered seriously last winter, and new plantations will be necessary in many places. Low-lying, elegant ground is most suitable for the plants; they perish in such conditions. Allow a space of 4 feet between the plants each way. Mulch the ground with long manure to retain the moisture. Cauliflowers or French Beans may be planted between the rows for the first season.

CAULIFLOWERS. Cauliflower plants which were put out a month ago should be given liberal supplies of liquid manure from the farmyard. Hoe the ground deeply between the rows, and give the roots water whenever the plants need moisture. Make further plantations of spring-sown Cauliflowers to maintain an unbroken supply, and see that sufficient moisture is given to promote free growth. Half-grown Giant Cauliflower may yet be sown for late October supplies.

SPINACH. Make frequent sowings of Spinach in a position not fully exposed to the sun. Use the hoe freely amongst the plants during dry weather, and water them during the evening when moisture is necessary. New Zealand Spinach should be sown at once if not already done with a view to producing a supply when other varieties fail through dry weather. Winter Spinach should be removed from the ground before it runs to seed, and the land prepared for some other crop, such as late Carrots, choosing a stump-rooted variety.

PEAS.—Early-sown Peas should be staked. All Peas which are through the surface should receive a good mulching of farmyard manure. Main crop varieties may be sown in well-prepared trenches; some of the late sorts may also be sown now for autumn supplies, and the last sowing of Autocrat made about June 10. Mulching the ground between rows of Peas before the soil becomes very dry will repay for the trouble and expense.

FRENCH BEANS.—The Dwarf Bean may be sown in quantity now. Sow the seeds thinly in rich soil, and allow plenty of space between the rows in order to produce stocky plants which will give plenty of pods. The Belfast and Canadian Wonder are well suited for sowing now. Beans in pots should be well ventilated. The lights may be removed entirely during hot days.

MUSTARD AND CRESS AND RADISHES.—These salads may be sown weekly on a border shaded by a north wall. Radishes should be given plenty of moisture to favour a quick growth.

THE FLOWER GARDEN

By W. J. GUSE, Gardener to Mrs. DEMSTER, K. Hall, Staffordshire.

CAMPANULA.—In order to keep up the stocks, seeds of *Campanula Medium* (Canterbury Bell), *C. pyramidalis*, *C. persicifolia*, and a few others may be sown now in frames in light, rich soil, which should be kept moist. Apply a light shading until the seeds have germinated. Transplant the seedlings in the open directly they can be handled.

BORDER CHRYSANTHEMUMS.—Young plants of border chrysanthemums raised from cuttings rooted this spring should be placed in their flowering quarters forthwith. If the ground has been well prepared beforehand, little more will be required beyond raking at lightly to level the surface. Allow a space of 18 inches to 2 feet between the plants, according to the variety. Place a stake to each plant to the shoots, as they grow, and stop them once or twice to cause growth to be bushy, although this is not necessary with some of the older varieties. The old stools may be divided and replanted at a space of 3 feet apart.

SUMMER BEDDING PLANTS.—Those who are doing a certain amount of bedding this year may be reminded that all bedding plants should be finally hardened, taking care that they do not receive a sudden check from exposure to cold winds. Watering must be done carefully; examine each plant and, if moisture is necessary, use tepid water. The more hardy plants may be placed both with in their summer quarters, commencing with *Azalea*, *Prunus Californica*, *Fuchsia*, *Verbena*, *Portulaca*, *Geranium* (Golden Feather), *Ageratum*, and *Pantheoneum*. These may be followed by *Zinnia*, *Polka Dots*, *Impatiens*, and similar plants. Staked-out pots, sub-tropical plants, and others that are very tender should not be placed in their bedding quarters before June. The planting of the mixed borders, so often destroyed until the general bedding scheme is finished, will be found that the borders receive only the most treatments that are left over. Directly the flower beds are vacant a moderate amount of decayed manure should be dug into the soil, but not an excessive amount, or the plants will make a stony growth and produce but few flowers.

SEED SOWING.—Seeds of most perennials may be sown now in rich soil in cold frames. Prick out the seedlings as they are fit to handle. Another sowing of hardy annuals may be made to furnish plants for late flowering. Thin the plants at an early stage of growth.

FRUITS UNDER GLASS.

By J. D. GOSKIN, Gardener, The Victoria Rooms, 11, Cannon Street, London, E.C.

AUTUMN STRAWBERRIES IN POTS. Plants from which an early crop has been gathered will often give a very satisfactory second crop in September and early October. My plan is to stand the plants, not crowded together, in a little shade for a time, and give the roots only sufficient water to keep the foliage healthy. At the end of June the old useless foliage and runners are removed. At the same time one of the surface soil is taken away, and, after seeing that the drainage is satisfactory, a top dressing of fresh material applied. The plants are then treated as are newly planted ones. I have found as a rule, that 75 per cent. of the plants will respond to this treatment and fruit again in the autumn. The best varieties for second fruiting in one season are Royal Sovereign, George V., and the old well tried variety *Vicomtesse de Thury*.

MELONS.—The earliest Melon fruits, even in plants that have not been tied hard, will soon be showing signs of ripening. When that stage is reached a slightly less amount of water should be given, and manure stimulants withheld entirely. Let all the sunshine possible reach the fruits, and remove any unnecessary foliage. Do not keep the atmosphere too dry, as this would favour the spread of red spider. Melon nets should be used for the fruit, in preference to any other means of support. I have used both

raffia and boards, but have cast these aside in favour of the nets, for they both retain a little moisture, whereas in the case of the nets this is not so. Later plants should be given every encouragement to develop. Where the fruits are swelling, freely pinch the young growths frequently. Do not attempt to overburden the plants with an excess of fruit beyond what can be reasonably expected to ripen perfectly. Plants in flower, or nearing that stage, should be kept growing freely. Do not give an excess of water at the time the fruits are setting. Now is a suitable time for sowing seeds for what may be considered the latest crop that can be grown in normal conditions, that is, with but little help from fermenting material or artificial warmth. The fruits will ripen during September and be found extremely useful for dessert. Reliable varieties should be selected for this crop, well proven by the grower, for it is not a time for experimenting with novelties.

THE ORCHID HOUSES.

By F. F. WATSON, Gardener to Sir J. HAMILTON GOMY, Belmont Park, Belfast.

DENDROBIUM PHALAENOPSIS CHRODIERIANUM.—Young plants are developing on plants of *Dendrobium Phalaenopsis Chrodierianum*, and as soon as they appear at their bases fresh cutting material should be divided. The plants grow equally well suspended from the roof rafters or placed on stages, provided they are exposed to the sunlight. If suspended the plants should be grown in shallow pans, but pots are preferable to those grown on the stages. It is not advisable to repot plants which were potted last season in the compost, as still good, but some of the old material and replace it by fresh material. The receptacles should be the same size that will accommodate the roots, for old and young roots plenty of water they receive, but when the potting material dries out, the old roots, by retaining half the receptacle with their cork top drainage, and let the young roots be left with the time. Pack the compost firmly about the base of the plants, making them secure by tying the pseudo-bulbs to the stage. Those in pots may be secured to the receptacle. A suitable potting medium consists of three parts *Orchid* fibre and 1 of *Chlo*, with 1 part *Sphagnum* moss, the whole of the material being cut into short pieces. When the plants are grown freely in the compost they should be kept liberal supplies of water. The plants may be kept healthy and moisture in summer, and should be sprayed overhead at least twice a week, and during the sun's rays for three or four hours during the middle of the day. *Dendrobium bigibbum* and *D. superbum*, closely allied species, require similar treatment.

THE HARDY FRUIT GARDEN.

By W. A. WATSON, Gardener to His Honour DEVEREAUX, Esq., W. W. Castle, Dublin, Ireland.

WALL TREES. Fruit trees on walls should be inspected carefully at regular intervals. The young shoots will indicate by their degrees of elongation that portions of the tree most of the sap is flowing. Early attention is very necessary in the case of trees trained vertically, for if some of the gross shoots are not checked they will soon monopolise an undue share of the tree's energies. An equally vigorous growth should be encouraged all over the tree by stopping the stronger growths at about 6 inches, and if required, be training in two shoots instead of one. All unnecessary shoots should be removed as early as possible in order that the weaker ones may be strengthened. As a rule, horizontally trained trees do not grow unevenly, but sometimes the upper branches take a pronounced lead, and such shoots should be stopped at an early stage. Make secure the new shoots by tying or nailing early to prevent damage by winds and storms. Where the old spurs have been cut back on Plum and Pear trees, and the shoots are growing well, thin the latter to the required number and stop the remainder at the third or fourth leaf. Such treatment will result in spurs forming quite close to the main branches, and will possibly pro-

vide fruiting wood for another season. There is nothing to be gained by leaving numbers of strong growths on any tree, even if there be no fruit, as excessively vigorous wood is seldom productive. By constant stopping of the shoots fruit-buds form and the tree becomes fruitful.

WATERING NEWLY PLANTED TREES.—Rain has fallen freely in many parts of the country, but in some parts the ground may still be dry, and the newly planted fruit trees need watering. If a mulch of short manure is spread over the roots it will help to check evaporation and conserve the soil moisture.

STRAWBERRIES. Place litter along the rows of early Strawberries. Straw is scarce, and only sufficient to keep the fruit clean should be used. Thin the flower scapes as soon as it can be seen that the berries have set. Strawberries on borders should be sprayed with clear water, as this favours free setting of the fruits, for the roots need to be well supplied with moisture at that stage. A good soaking with manure water from the sewage tank will materially assist the plants, and especially the early varieties, on which the berries are swelling.

PLANTS UNDER GLASS.

By F. F. WATSON, Gardener to Lady NORTHGOTE, Eastwell Park, Kent.

THE CONSERVATORY AND FLOWERING HOUSE. Very little fire heat is needed in the conservatory and plant house at this season. Plants in bloom always last much longer in good condition in a house having a cool, dry, and atmospheric, stagnant humidity quickly setting up decay. A little ventilation should be permitted at night to allow superfluous moisture to escape, and the blinds should be lowered fairly early in the morning before the sun has much power. In dull, damp weather, after the daily watering, all water should be mopped up, and the house dried as soon as possible.

THE PALM HOUSE.—Where a collection of Palms is grown in a special house a heavy, permanent shading is best for the plants, and obscures the daily labour of lowering and pulling up blinds. Palms thrive in dense shade, and keep their colour much better than when exposed to the sunshine, especially under faulty glass. If growing in a mixed collection of plants, arrangements must be made for shading the Palms, otherwise the leaves will almost certainly receive injury. The Palm house should be kept fairly hot and damp; excessive ventilation is unnecessary. Close the house early in the afternoon and syringe the plants and house heavily. The temperature may be allowed to fall considerably at night without incurring any risk to ordinary Palms, such as *Kentias*.

BEGONIAS FOR HANGING BASKETS. The newer varieties of tuberous Begonias of pendulous habit are fine acquisitions for growing in baskets. The dormant tubers, having been started in boxes, should be transferred at a suitable stage direct to the baskets instead of to pots. Line the baskets with moss, and over the moss arrange some of the rougher portions of the compost. Select plants of similar strength and size for each basket to ensure evenness of growth. *Marie Bouchet* and *Fleur de Chrysanthemum* are two excellent varieties for large baskets. *Golden Shower*, *Lola*, *Mrs. Bilkley*, *Corallina* and *Ruby* are newer sorts of great merit.

RICHARDIA AFRICANA.—As plants of the white *Richardia* pass their best condition remove them from the greenhouse and place them in a cold frame, or, failing this, in the open on a bed of earth. Gradually reduce the amount of water at the roots, and after the foliage has died down place the pots on their side or put them in a glasshouse where they can be rested by withholding water. This treatment is recommended for plants that are required to flower early in the winter. Planting them out in shallow trenches in the reserve garden is equally successful for the later batches. In this case the old foliage dies off, and eventually new growth starts away very strongly. The plants should be carefully lifted in September and potted.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication.—as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich 56.5°.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, May 24, 10 a.m.: Bar. 29.5; temp. 63.5°. Weather—Cloudy.

**Twenty-five Years
with the
"Gardeners'
Chronicle."**

With the beginning of the present month Mr. R. Hooper Pearson, managing Editor of this journal, completed twenty-five years' service with the *Gardeners' Chronicle*. His many friends, both upon the staff and also among our readers, will congratulate him on having for so long a period rendered great service both to this journal and to horticulture in general. At the time when Mr. Pearson joined the editorial staff the late Dr. Masters had already been Editor for a quarter of a century, having succeeded Dr. Lindley, the first Editor, in 1865. For fifteen years Mr. Pearson assisted Dr. Masters, the relations between the two being of the closest description, the result being that as his chief grew old a larger share of responsibility naturally fell on Mr. Pearson's shoulders. But, as he is always eager to state, he owed no little of his capacity to undertake this responsibility to the admirable training which he had received at the hands of his chief. Masters possessed a knowledge of horticulture that was unique, and his unvarying courtesy, not ruffled even by the *contemptus* which arise inevitably even in the best-regulated office, served as an admirable model to his staff, and so long as he lived everybody connected with the paper realised that it is possible to be strenuous without being ill-tempered. The grace of urbanity descended from Dr. Masters to Mr. Pearson, and during the many years which the present writer has

enjoyed his friendship he can remember no occasion when Mr. Pearson found it necessary to lose his temper in order to gain his end.

Of the staff of the *Gardeners' Chronicle* as it existed when he joined the paper only Mr. Pearson is left. During that period of twenty-five years six members of the staff has passed away—one of whom has given his life for his country in the present war. Of the proprietors who, when Mr. Pearson first came to Wellington Street, were actively interested in the *Gardeners' Chronicle*, Mr. W. H. Bradbury died in 1892, and Sir Charles Dilke, chairman of the Board, died in 1911, but Lord Lindley, though prevented by increasing age from taking a part in the direction of the journal, still shows, whenever matters of importance are under discussion, the great interest which he takes in the journal of which his father was so distinguished an Editor.

During his long association with the *Chronicle* Mr. Pearson has seen many changes in the mode of production of newspapers and journals. When he began work on the staff the pages were printed by movable "compositors'" type, which had to be cleaned after printing and was used again week after week. The great disadvantage of this form of type is that it deteriorates with use owing to the "face" becoming battered, and hence an editor has to watch the pages week by week in order that the printers, when the impression begins to be blurred, shall be required to discontinue the use of the type, and send it to the foundry to be recast. The advent of the linotype machine did away with the need for the continuous use of the same type. With this process the metal is melted every week, and each issue is printed with freshly-made type. But like the old method which it superseded, the linotype has its defects. Thus, since the letters in a line of type are all joined together in a solid piece, if a meticulous editor inserts but a comma by way of correction in his proof the whole line has to be thrown out and recast, whilst if the alteration consists in the insertion of a word several lines may have to be sacrificed in order to gain the space necessary to let it in. Herein lies the opportunity for the compositor to make a new mistake in the course of setting an old one right, and this new mistake cannot be discovered till the paper is printed, when the error is detected no less quickly by readers than by editors. Fortunately, however, the linotype operators are so skilled that mishaps due to this cause but rarely occur.

As printing has changed, so has the method of illustrating journals. In 1892 wood-engraving was used almost exclusively, and anyone who turns to the pages of the *Gardeners' Chronicle* of that period will find examples of the admirable work of Mr. Worthington G. Smith, whose contributions to those pages extend over a period of forty years, and whose hand still retains its cunning. Wood engraving

has given place, for better or for worse, to the process block, and drawings have been largely superseded by photographs, whilst the advance in colour photography made it possible in 1909 to introduce illustrations in natural colours into the pages of the *Gardeners' Chronicle*.

In illustration of the variety of work which falls to editors and their staffs, Mr. Pearson is wont to recall with a certain amusement the part which was played by Dr. Masters and himself at the period when opinion was divided upon the alternatives which then appeared to confront the Royal Horticultural Society, of either building a Hall or securing a new garden in the place of Chiswick. The *Chronicle* was a warm advocate of the view that priority should be given to the Hall, and Mr. Pearson's rôle was to visit each site proposed by the champions of the garden idea, to discover why that particular site would never do for the purpose for which it was recommended, and to descant on its shortcomings in these pages. The curious will find in the issues of that time reason both to applaud the ingenuity with which the work was done and to appreciate the efforts put forward on behalf of the "Hall," which, when it was built, everyone recognised was essential to the prosperity of the Society.

After Dr. Masters' death in 1907 Professor Brethland Farmer became Editor of the *Gardeners' Chronicle*, and Mr. Pearson, by reason of his long experience, was able to smooth the path which besets the "commencing" editor. The call of other duties prevented Professor Farmer from remaining with the *Chronicle* for very long. His successor recognised, as Professor Farmer had done, the invaluable services which Mr. Pearson had rendered to the journal for so many years, and felt the burden of his duties lightened when his colleague consented to accept the title of Managing Editor, a part which, for all practical purposes, he had filled already for many years.

So in sign of friendship to the most loyal and clear-headed of men this brief record is written. May the service which Mr. Hooper Pearson renders to horticulture and to the *Gardeners' Chronicle* long endure.

RUST-RESISTANT ASPARAGUS.—A variety of *Asparagus* has been produced by the joint work of the U.S. Department of Agriculture and the Massachusetts Experiment Station, which is said to be resistant to rust. Seed of the new variety is being distributed by the U.S. Department of Agriculture.

WATERING ALLOTMENTS.—An announcement in the *American Florist* holds out as an encouragement to inhabitants of Tacoma, Washington, to grow more food or cultivate vacant plots that the City Commissioners "will make no charge for sprinkling."

THE FAIRCHILD LECTURE.—The Thomas Fairchild Lecture will be delivered at Shore ditch Parish Church by the Rev. W. H. THOMPSON, vicar of St. Stephen's, Eading, and Gresham Lecturer, on Wednesday, the 30th inst., at 6 p.m. The Worshipful Company of Gardeners will attend in state.

SOCIETIES.

ROYAL HORTICULTURAL.

MAY 22.—The fortnightly meeting of the Royal Horticultural Society on Tuesday last, in the Drill Hall, Buckingham Gate, was as successful as the previous one. The hall presented a very gay appearance, filled with a variety of spring flowers, in which Tulips predominated; the weather was warm and summerlike, and large numbers of visitors were present. Tulips are much later this year than usual, and this fact seems to have effected an improvement in the quality—probably in great measure because they have missed much of the inclement weather which usually causes a good deal of surface injury to the blooms.

The National Tulip Society's annual exhibition was timed to take place in conjunction with the R.H.S. meeting; but, as in the case of all the special floral societies in present circumstances, the response was much below that of normal times. The Florist's Tulip is a very specialised flower, and is only cultivated by enthusiasts, whose activities serve to perpetuate the efforts of the old raisers. Messrs. BARR AND SONS included several of the more notable sorts in their exhibit of cottage and May flowering varieties.

Several novelties were submitted to the Floral Committee for award, but only one received recognition, namely, *Eryochorda macrantha*, a hybrid raised by Messrs. V. LEMONNE AND SONS, of Nancy. The members of the Committee were much interested in a beautiful new *Primula*, raised from seed collected by Mr. R. Farrer in China. The plant was sent from the Society's gardens at Wisley. It is a very vigorous grower, producing a large tuft of dwarf, dark-green, palmate leaves and long scapes of deep-mauve or purple flowers. Another interesting plant from Wisley was *Meconopsis quinquefida*, with a solitary, drooping, dull purple flower (see fig. 79). It was put up for award, but as there was only one flower on the plant the Committee preferred to see the species again. Several good groups of Roses were exhibited, in which pillar varieties were given special prominence. Tall, weeping standards of White Dorothy in Messrs. FRANK CANN AND CO.'S exhibit were very ornamental. Messrs. R. R. CANN AND SONS showed arching sprays of the beautiful Fortune's Yellow variety, and also staged two large, showy single varieties, one of which was Silver Moon (white, with a prominent golden centre). Mr. ELSYB HICKS exhibited a good selection of Roses, including many of his own novelties. Roses were also shown by Messrs. W. PATE AND SON, including Scarlet Rambler. Messrs. PETERS' box group of pear trees and climbers was very imposing. As a centre piece they showed a fine, old, ragged *Wistaria* of the white variety, in a Japanese porcelain pot. The Clematis in this collection were also unusually fine, and another striking feature was the various coloured Asters in their new spring growth. Messrs. J. CHRY AND SONS exhibited sprays of flowering trees and shrubs, in which forms of *Pyrus Malus* and varieties of *Malus* predominated. Branches of *Eryochorda Albertii* were interesting, as this species formed one of the parents of the variety which received an Award of Merit. The species has broader petals and a darker eye than the variety, with stamens in groups of five. Carnations were shown extensively, among others by Messrs. ARMYEN EGOS, and Messrs. SIBBELL LOW AND CO. The latter firm had also fine *Aconites* and other greenhouse flowering plants. Messrs. JAS. CARRIE AND CO.'S strain of *Streptocarpus* was much admired, the flowers being of large size and the colours varied. Messrs. H. B. MAY AND SONS' usual exhibit of Ferns was noticed, besides which they showed *Hippocrepis* and *Veronica*. The YOKOHAMA NURSERY CO. showed fascinating little model gardens in small porcelain pans, in which were introduced all the typical features of the Japanese gardener's craft, with haidee, summer house, and stream complete. Messrs. W. CARRIS AND SONS showed forced shrubs and hardy flowers. The selection of Tulips shown by Mr. CANN'S FIRM comprised all the best and newest varieties, including Reanmur (the variety which gained an Award

extent, but the two above-named were the principal species in cultivation. The tall *Latanias* were more in demand than the shorter ones. In order to develop the plants as quickly as possible the houses were heavily syringed about three p.m., shut up close, and the blinds pulled up, even in the height of summer. The result was an intense, moist heat, which in no way injured the foliage of the Palms. Growth with this treatment was rapid, and the plants were suitably hardened before they were sold. *Hippocrepis* and *Gloxinias* may be subjected to similar treatment, though the frames in which they are grown should not be shut up so soon as the more lofty Palm houses. They may, however, be closed in time to receive a reasonable amount of direct sunshine. W. T.

RHUBARB LEAVES AS SPINACH (see p. 195).—Professor Church, in his admirable book *Food*, gives, on p. 153, the following analysis of Rhubarb stalks which had been grown in the open air.

	In 100 parts.	In 1 lb. oz. 21b.
Water	95.1	15.94
Albuminoids, etc.	0.9	0.63
Sugar, glucose and gum	2.1	0.147
Oxalic acid	0.5	0.21
Cellulose	1.1	0.77
Mineral matter	0.5	0.35

He states: "Its sour taste is due to oxalic acid, rather than to the acid oxalate of potash; oxalate of lime is also present. There are some conditions of the human body, the oxalic acid diathesis in which it is probably wiser to avoid eating Rhubarb and other plants, as Sorrel, in which oxalic compounds predominate. As 1 lb. of Rhubarb contains less than 1 ounce of solid matter, and even of this solid matter more than one-quarter is not nutritive, it is obvious that the food value of this vegetable is very small." No mention is made of the leaves, but they probably contain more poison than the stalks. As further cases of poisoning are reported, too much prominence cannot be given to the above warning of Professor Church. I am informed that cooking Rhubarb in bell-metal vessels causes them to brighten inside, thus showing the presence of oxalic or some other acid, and pointing to another source of danger from the metal dissolved. It is therefore safest to cook Rhubarb in earthenware vessels only. W. H. DODDS.

POMPON OR POMPONE?—The small double *Fuchsia*, hitherto properly called Pompon, is printed in all the National Fuchsia Society's publications "Pompone." Why this extraordinary innovation—and upon what authority?—Also "Callarott" instead of Callerott still prevails, a mongrel English word instead of a proper French one. W. H. P.

PROPAGATING VIOLETS (see p. 206).—The finest double Violets I have ever seen were those grown by Mr. Bandle, gardener at Tredeley, North Cornwall, and he was consistently successful. His method of propagation, which by the way, was also practised by most of the other Violet exhibitors in the West of England, was to take unrooted cuttings early in April. These were inserted in boxes of suitable soil, planted out in the open in due course, and placed in the frames in September. I cannot follow Mr. Jenkins' announcement that the spring cuttings are from an exhausted stock, for surely these fresh runners are Nature's method of rejuvenation, and are certainly much more robust than those produced in the autumn. The runners which have flowered may possibly have become exhausted, but being grown in the cool, dry conditions essential for success with frame Violets, grow freely in April, and show no signs of exhaustion. T. C. BARTHOLOMEW.

PEACHES AND NECTARINES.—Last year I recorded an almost total failure of the Peach and Nectarine crops here, owing to imperfect setting of the flowers in late houses, and, for some unexplained reason, poor crops were almost general throughout the British Isles. This naturally made one anxious this season, but I am glad to record that the blossoms on our trees in early, mid-season, and late houses, as well as on trees outside, have set remarkably well and promise fine crops. E. BECKETT.

NATIONAL CARNATION AND PIVOTEE SOCIETY.—Mr. J. J. KEEN, of 54, The Avenue, Southampton, has been appointed secretary and treasurer of this Society, in the place of Mr. CHAS. HENWOOD.

VEGETABLE-GROWING IN FRANCE.—We learn from the *Revue Horticole* that the French Minister of Agriculture has entrusted to the Société Nationale d'Horticulture de France the task of distributing seeds of various market garden crops among growers in the principal agricultural departments, with a view to increasing the cultivation of the most useful vegetables. M. VISCÉY, Director of Agricultural Services of the Seine, has been appointed to organise, with the assistance of the Market Growers' Syndicate of the Parisian Region, the production of a large number of plants of Cabbages and Leeks, which will be sold to anyone making application to the Ministry of Agriculture at a special market in the Halles de Paris. M. VISCÉY, at a recent meeting of the Société Nationale d'Horticulture de France, gave particulars of the present shortage of food, due chiefly to the failure of cereals. In order to meet this deficit, it is necessary to replace the cereals by Potatoes, Beans, Carrots, and other vegetables.

POULTRY AND FOOD.—A booklet has been issued by the Board of Agriculture drawing attention to the inadvisability of feeding poultry on food for human consumption. It is stated that now there is a shortage of Wheat, Barley, Rice, Maize, and other cereals, they should not be fed to poultry, as the results in eggs and meat do not warrant the utilisation, in present circumstances, of food grains. If, on the contrary, the birds, on a few scraps, waste, tail combs, or other materials not fit for human food, the result is to increase the food supply.

WAR ITEMS.—We learn with regret of the following casualties: Lieut. BERTRAM WATSON, killed in action on April 12 last. Before the war Mr. WATSON was engaged in gardening and fruit growing at Sedgemoor, near Evesham.

Sergt. JOHN W. PARSON, Oldswinford, near Stourbridge, employed before the war as gardener to Major G. H. GREEN, killed in action.

By drawing on May 4 in the Mediterranean, Mr. LEONARD CRAWSHAW, son of Mr. DR. RICHIE CRAWSHAW, Rosedale, Scarborough. Mr. CRAWSHAW had been selected as one of a batch of men to be transferred to active service in Egypt, where he was to take up a commission. He had studied the scientific side of plant life, and on several occasions brought interesting subjects before the Scientific Committee of the Royal Horticultural Society.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE VALUE OF SUN HEAT.—The remarks of R. P. B. on this subject on p. 209 are, considering the dearth of fuel and shortage of labour, particularly well timed. The value of economising fuel by making the most of the heat of the sun was brought forcibly home to me between forty and fifty years ago. At that time I was engaged in the nursery of Mr. Herbst at Richmond. He was the first to take up the culture of Palms for the supply of Covent Garden Market, and, having spent some years in Brazil, he was particularly well qualified to do so. At that time Kentias and *Cocos Weddelliana* were comparatively unknown to the general public. The most popular Palm of those days was *Latania borbonica*, now known as *Livistona chinensis*, though the older name is still in general use. The nearest approach to the Kentias of to-day was *Areca lutescens*, which, like most Palms, has also changed its name. It is now known as *Chrysalidocarpus lutescens*. Many others were grown to a greater or lesser

of Merit at the last Chelsea Show), Congo and Belle de Nancy. Hardy plants were well shown by Mr. G. W. MILLER, Mr. G. REUTHE, and Messrs. R. TUCKER AND SONS. Sweet Peas were exhibited by Mr. RONERT BOLTON, who showed some lovely bunches, including several new varieties. One of these was Orange King; another, a bluish variety—Valentine—was an improved Mrs. Hardcastle Sykes; and the lavender-coloured Victory gained an Award of Merit at the National Sweet Pea Society's trials in 1915. Mr. J. DOUGLAS showed a fine exhibit of Auriculas. Mr. CLARENCE ELLIOTT showed Alpines in pots, including some fine examples of Androsace Chamlyi. Messrs. WHITELEGG AND Co. exhibited their own strain of Schizanthus, and Messrs. R. TUCKER AND SONS, besides a number of Alpines, showed a tiny Juniper, *J. communis compressa*. Messrs. BAKER'S, Codsall, also showed Alpines, including the pretty rosy Saxifrage, Codsall Gem.



FIG. 79.—*MECONOPSIS QUINQUEFIDELIS*, PHOTOGRAPHED BY MR. E. FARRER IN ITS NATIVE HABITAT. (See p. 215.)

Floral Committee.

Present: Messrs. H. B. MAY (chairman), W. P. THOMSON, T. STEVENSON, G. PAUL, J. W. MOORMAN, J. DICKSON, C. DIXON, J. W. BAILEY, R. FLOOPER PEARSON, C. E. PEARSON, W. CUTHBERTSON, J. W. BLAKEY, J. F. McLEOD, J. BEAL, E. F. HAZELTON, G. HARROW, W. J. BEAN, G. BENTHE, S. MORRIS, J. HUDSON, CLARENCE ELLIOTT, E. H. JENKINS, and R. C. NOTCUTT.

AWARD OF MERIT.

Exochorda uncinata, a hybrid raised by M. Lemoine, of Nancy, from *Exochorda Albertii* crossed with *E. grandiflora*. The inflorescence is a short raceme of snowy white flowers, the blooms being about 1 inch in diameter. The plant is exceedingly floriferous, and a very ornamental shrub, flowering in April and May. Shown by Messrs. PAUL AND SONS, Chesham.

GRAPES

The following medals were awarded for red sections.

Silver-gilt Banksian Medals to Messrs. B. R. CANT AND SONS, Colchester, for Roscs, and

Messrs. PIPERS, Bayswater, for shrubs and chubers. *Silver Flora Medals* to Messrs. F. CANT AND Co., Colchester, for Roscs; Messrs. J. CHEAL AND SONS, Crawley, for flowering trees and shrubs; Mr. E. J. THICKS, Twyford, for Roscs; Messrs. STUART LOW AND Co., Enfield, for Carnations and Acaecias; and Mr. G. W. MILLER, Wisbech, for hardy plants.

Silver Banksian Medals to Messrs. J. CARTER AND Co., Raynes Park, for Streptocarpus; Messrs. H. B. MAY AND SONS, Edmonton, for Ferns and indoor-flowering plants; Messrs. W. PAUL AND SONS, Waltham Highgate, for forced shrubs and Alpines. *Bronze Banksian Medals* to Messrs. ALWOOD BROS., Weybridge, for Perpetual-flowering Carnations; and Messrs. W. CUPHER AND SON, Highgate, for forced shrubs and Alpines. *Bronze Banksian Medals* to Messrs. BAKERS, Ltd., Codsall, for hardy plants; Mr. R. BOLTON, Halstead, for Sweet Peas; Mr. J. DOUGLAS, Great Bookham, for Auriculas; THE YOKOHAMA NURSERY Co., Clayton House, Kingsway, London, for model Japanese gardens; and Messrs. R. TUCKER AND SONS, Oxford, for Alpines.

Orchid Committee.

Present: Sir Jeneimah Colman, Bart. (in the chair), Sir Harry J. Veitch, and Messrs. Jas. O'Brien (hon. secretary), W. Bolton, Arthur Day, R. G. Thwaites, Gurney Wilson, B. A. Rolfe, Frederick J. Hambury, Paulina Balli, E. R. Ashton, T. Armstrong, Stuart Low, J. J. Cypher, H. G. Alexander, J. E. Shill, A. McBean, J. Charlesworth, W. Colb, G. J. Lucas, S. W. Flary and R. Brooman White.

AWARD OF MERIT.

Odontodia General Hong (*Odm. Aglaon* × *Oda. Faghtskera*), from Messrs. ARMSTRONG AND BROWN, Orchidhurst, Tunbridge Wells. A beautiful new hybrid of large size and fine shape. The ground colour of the sepals and petals is creamy white, with numerous large and well-displayed, irregular red blotches, the margins being tinted with a shade of violet colour. The lip is blue colour in front with red blotches around the yellow crest, and the midlobe and margins on the reverse side of the flower are purple. The spike bore sixteen flowers.

PRELIMINARY COMMENDATION.

Odontoglossum Fabia splendens (*Aglaon* × *crumena*), from Messrs. ARMSTRONG AND BROWN. A fine representative of this famous strain. The plant, flowering for the first time, bore a large, broad-petalled flower of dark claret purple colour with a thin white margin and a small elongated white blotch on the tips of the petals.

GENERAL EXHIBITS.

Sir JENEIMAH COLMAN, Bart., Gattou Park, Surrey (gr. Mr. C. Cyber), staged a selection of fine scarlet *Odontodia*s splendidly grown and profusely flowered, the best being *Oda. Lady Colman*, scarlet *Oda. Bradshawian American Triumph*, of fine shape and bright orange-scarlet colour; *Oda. Bradshawian Fine King*, with a branched spike of very brightly coloured flowers; and the new *Oda. Ada* (*Oda. Bradshawian* × *Odm. Thompsonianum*), reddish claret colour, with prominent yellow crest.

G. W. BIRD, Esq., The Manor House, West Wickham, Kent (gr. Mr. H. Redden), showed a fine plant of *Odontodia. Gladys van Familie Rose* (*Odm. Pescatorei* × *Oda. Bradshawian*), with handsomely marked flowers. The original form received the R.H.S. Award of Merit on March 23, 1916.

MESSRS. CHARLESWORTH AND Co., Haywards Heath, were awarded a Silver-gilt Flora Medal for a fine group, one end of which was made up of the various forms of seedling *Miltonias* raised by the firm, varieties of *M. Charlesworthii*, *M. Bismam*, *M. Venus* and *M. vexillaria* Lyoth being conspicuously good. The rest of the group was of good *Odontoglossums*, *Odontodias*, *Laelio-Cattleyas* and others. Novelties flowering for the first time were *Odontoglossum Trentino* (*Harrayan-crispum* × *Alexanderi*), white, heavily blotched with deep purple; *Odm. Isonzo* (*filustrissimum* × *crispum*), rich claret-purple, with white margin and tips to the segments; *Odm. Gorizia* (*Jasper* × *President Polivare*), a finely marked flower; *Odm. Hybla* (*eximium* × *perculum*), dark reddish-purple with white margins; and *Odontodia Hiawatha* (*Charlesworthii* × *Coronation*), purplish-rose, with a yellow crest.

MESSRS. ARMSTRONG AND BROWN, Orchidhurst, Tunbridge Wells, were awarded a Silver Flora Medal for an excellent group in which a plant of *Coelogyne pandurata*, with a spike of thirteen flowers, white *Cattleyas*, and good *Laelio-Cattleyas*, showed well. Novelties included *Brasso-Cattleya Digbyano Mossiae* splendens, of a rich rosy mauve colour, and the darkest of the cross yet shown; *Odontodia Henri* Orchidhurst variety (*Odm. haavengtense* × *Cochlioda Noezliana*), bright orange-scarlet, with yellow crest; *Odontoglossum Fabia splendens* (see Awards); *Odm. Bullecoot* (*Wilkeanum* × *Mars*), a large, handsome flower, red, on a gold-coloured ground with white margin, the petals being finely fringed; *Odm. Aeglianum* (*Aglaon* × *Lambaniamum*), claret-red with white margin, the broad lip being white in front; and *Odontodia Madeline auriferum* (*Oda. Charlesworthii* × *Odm. crispum*), a large, clear yellow flower with red blotches on the sepals and petals.

MESSRS. J. CYPHER AND SONS, Exotic Nurseries, Cheltenham, were awarded a Silver Flora Medal for a well-arranged group containing over fifty distinct species, hybrids being included. The variously tinted *Masdevallias*, arranged with a selection of *Laelio-Cattleyas*, *Brasso-Cattleyas* and *Odontoglossums*, the last named having fine forms of *O. excellens*, *O. Jasper*, *O. Fascinator* and *O. ardentissimum*, *Brasso-Laelio-Cattleya Veitchii* and *B. L.C. Trine* were specially good; *Epidendrum gattonense* (*Bouddii* × *xanthinum*) bore numerous heads of reddish-yellow flowers, the plants having flowered continuously for the last eight months.

MESSRS. J. AND A. McBEAN, Cooksbridge, staged a group of scarlet *Odontodias*, showy *Odontoglossums*, and *Laelio-Cattleyas*, for which a Silver Flora Medal was awarded. Specially noteworthy were the new *Odontodia Brenda* (*Oda. Bradshawian* × *Cochlioda Noezliana*), a bright scarlet flower with well-defined yellow crest to the lip; *Odontodia Elaine* (*Oda. Charlesworthii* × *Cochlioda Noezliana*), a good red; blotched *Odontoglossum crispum*, and *Cattleya Mendelii striata*, with purple lines on the bluish white petals.

MESSRS. SANDER AND SONS, St. Albans, were awarded a Silver Banksian Medal for a varied group of *Laelio-Cattleya Fascinator*, the handsome *L.C. Hyeana* Sander's variety, good *Brasso-Cattleyas*, *Odontoglossums*, and an interesting selection of rare species.

MESSRS. STUART LOW AND Co., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for a group in which the *Laelio-Cattleyas* and forms of *Cattleya Mossiae* were very attractive. Mr. J. E. SHILL, The Dell Gardens, Englefield Green, showed fine cut spikes of *Laelia purpurata Schroderea*; *Laelio-Cattleya Anholite*, L.C. Anceuda, the new L.C. Monte Rosa (*L. purpurata Schroderea* × *C. Suzanne Hye de Crom*), white with purple front to the lip; and *Brasso-Laelio-Cattleya Schreglossa* (L.C. *callistoglossa* × *C. Schroderea Niobe*), a rose-coloured flower with yellow disc to the lip.

Messrs. FLOREY AND BLANK, Slough, again showed *Ochotinda* St. Quentin (Oda, Zephyr \times Odm, *Wiganianum*), with two spikes of clear yellow flowers with red blotches on the inner parts of the segments; also the new *Laelia-Cattleya* Cadorna (L.C. *Ceres superba* \times C. Mendelii), with bluish-white sepals and petals and ruby-purple front to the well-formed lip; and a large white form of *Miltonia Bleuana*.

Narcissus and Tulip Committee.

President: Mr. E. A. Bowles (in the chair), Miss Willmott, Rev. Joseph Jacoby, and Messrs. J. T. Bennett Poe, J. Duncan Pearson, F. Herbert Chapman, W. F. M. Copeland, Herbert Smith, Chas. H. Curtis (hon. secretary), and C. W. Needham (visitor).

AWARD OF MERIT.

Tulip Eclipse.—This is a large, handsome Darwin variety, with bold, rounded segments of fine form and substance. The base of the flower is exceptionally beautiful, being deeply glistening blue, outlined with dazzling white. In growth and general appearance this variety appears to be robust and vigorous, and it is a brighter and more attractive flower than *Harold*, with brownish-red colouring that is redder than bright mahogany. Exhibited by Messrs. DORRIS AND CO.

GROUPE.

Messrs. DORRIS AND CO., Edinburgh, put up an extraordinarily fine group of May-flowering and Darwin Tulips. The blooms were remarkably clean and fresh, and of large size. The staging of large stands of the different varieties was first-rate, none of the colours clashing. White Swan and Inglescombe Yellow were splendid, while *Norah Ware* was so well presented that a Cultural Commendation was awarded for these flowers. *Eclipse* and *Harold* were shown; the former proved the brighter and more attractive variety, and a fine addition to the deep red section. (Gold Medal.)

In point of variety the group of Tulips contributed by Messrs. BARR AND SONS, King Street, Covent Garden, was the most interesting, as Cottage, Darwin, Old English and Bombardier varieties were all represented. A bold effect was produced by grouping the mauve and lilac shaded varieties together, but we have seen the firm arrange their flowers more artistically than on this occasion. The Black Kepla and the glowing pink Duchess of Westminster were two outstanding varieties in this exhibit (Silver-gilt Florist Medal).

Tulips were shown in capital style by Messrs. SUTTON AND SONS, Reading. It was unfortunate that so many of the blooms showed the marks of hailstones; however, this did not detract from the general effect, which was fine. The deep yellow *Avis Kemford*, an American variety, was very noticeable in this collection. (Silver-gilt Bankian Medal.)

Clara Butt, the pale, creamy *Gertrude* and Orange King attracted attention in the display made by Messrs. R. WALTER AND CO., Goldchester (Silver-gilt Bankian Medal.)

Messrs. R. H. BARR, LTD., Wisbech, set in a large group of sturdy, stout-stemmed flowers, which were particularly fresh and erect; Darwin varieties were those mostly represented, but the late-flowering sections were also included in this comprehensive group. (Silver-gilt Bankian Medal.)

Fruit and Vegetable Committee.

President: Messrs. J. Cheal (vice-chairman), Owen Thomas, J. Harrison, W. H. Dwyers, J. G. Weston, A. Bullock, F. Jordan, Edwin Bockett, J. C. Allegro, A. W. McCallie, G. P. Berry, and W. Wilks.

Messrs. SUTTON AND SONS, Reading, were awarded a Silver Knightian Medal for remarkably fine tubers of this season's crop of Potatoes. The varieties were *Ashley*, *Harlinger*, *Carrisbrook Castle*, *May Queen*, *Kingleader*, *Dunmottar Castle* and *Gladstone*.

The Hon. Mrs. R. GREVILLE, Polsofen Lacey, Borking (gr. Mr. H. Prince), was awarded a Silver Knightian Medal for a collection of vegetables.

HORTICULTURAL CLUB, May 8.

LECTURE ON NARCISSUS DISEASE.

(Continued from p. 207.)

For experimental purposes, it was necessary to divide bulbs into two classes, viz., healthy and diseased, and a simple method was devised in order to distinguish them. As clean a sample as it was possible to obtain was classed as healthy, and a diseased stock was obtained of the same variety. Of the diseased stock, all bulbs which were evidently badly diseased and incapable of growth were discarded. The others were topped by cutting off a quarter of an inch or so of the bulb at the neck. After a little experience, it was possible to distinguish with confidence the brown scale affected with *elworm* from the brown scale resulting from natural decay and withering. The healthy bulbs were treated in the same manner. Topping is not detrimental, providing it is performed shortly after the bulbs are lifted. At such a time the growing part is not touched, and the bulb heals its wound before planting time arrives. As a precaution the cut neck should be dipped in sulphur as a preventive against other diseases. There is a point in connection with the topping of bulbs which must not be lost sight of, more particularly in compound bulbs. It sometimes happens that the *elworm* spreads from the neck of the parent bulb down to the basal plate, along which it travels to the offset. Should the disease originate in the offset, it may in like manner affect the parent bulb. The disease then spreads upwards from the base, usually attacking all the scale leaves. In such cases each nose of the bulb must be topped, as there may be no trace of the rot, but if one nose only is cut. Bulbs thus affected, however generally exhibit rotteness at the base.

It will be of interest to mention the fact that *Tylenchus* has been found in both the mature and immature carapels of the flower. In the mature carapels examined no seeds had formed, but it is quite possible that had seeds developed they would have contained *elworm*, *pedum*, from the analogous case of *Oats*, which when infected in the grain, presents an appearance as though attacked by rot. It has often been said that the disease never makes its appearance in seedlings until after the bulb flowers. This seems unlikely, and experiments to test it are being arranged. One raiser went so far as to say that as soon as he found a seedling he killed the bulb. On going into details of cultivation the writer was informed that the seedlings were pricked into beds in cold frames, where they remained until they were of flowering size, and then they were planted in the open ground. The bulbs flowered the first year, and those found desiring of a name obtained ground. The next year the disease made itself evident, and thus this hybrid is no doubt justified in making the above remark. If, however, the seedlings had been pricked out into beds in the open air instead of in cold frames, the results might have led him to a different conclusion. If *Onions* are affected as soon as they germinate, there is every reason to assume that *Narcissus* may be likewise attacked.

I am of opinion that *Fusarium* plays only a small part in causing disease. During the investigation at least two species of *Fusarium* have been isolated in pure cultures and plants have been inoculated in the following manner: (1) On the wound left by removing the flower stem; (2) on the injured foliage; and (3) on the uninjured foliage. The plants were grown under bell glasses in the greenhouse at a temperature of about 60° C. The experiments are at present in progress, but the fungus is of very slow growth, and any effect which it produces in a given time cannot be compared with that produced by *Tylenchus*. When healthy leaves are placed on moist blotting paper in Petri dishes, and kept at room temperature, the *Fusarium* makes rapid growth, both on injured and uninjured leaves.

Bulbs have also been revived affected by *Merodion* *Sclaria*, *Bulla* *Mite*, and *Emurcus*, while among fungi *Sclerotinia bulbosum*, *Phyllosticta Narcissi*, and *Stagonospora Narcissi* have been seen; the two latter appear on the leaves, and have not previously been recorded for this country. A quarter of a century ago there was

much controversy in the horticultural press regarding the mysterious disease known as "basal rot." It will be interesting to hear more of this disease from present-day cultivators, as it is not certain whether it is connected with the one under consideration. In an article written in 1894 by the late Rev. C. Wadley Dod on "basal rot," the word "*elworm*" is mentioned, but as to whether it was of a parasitic nature or a free-living form no remark was made. I have not seen a bulb affected with a basal rot other than that due to *elworm*.

A delicate method has been devised for testing soil for the presence or absence of *elworm*. Ten grams of soil are ground up in a mortar with 100 ccs. of water, and the muddy liquid poured into the cups of an electrical centrifuge. The centrifuge is then worked at a fairly high speed until the soil lies at the bottom of the cups. The opalescent liquid is then decanted off and spun a second time at a higher speed; the sediment now sinking to the bottom contains the *elworms*, together with other living organisms of the soil. This test is too delicate to apply to large areas of ground unless a number of samples are taken.

Tylenchus can remain for lengthened periods of desiccation as if dead, yet still retain the power of resuming vital functions on being moistened. As far back as 1744 this power possessed by *elworms* was investigated.

An experiment was performed last August by placing *elworms* on slides in a desiccator for eight weeks. On examination they were found curled up like catheine wheels, but on application of moisture a large percentage showed the eddike movement when examined three hours later. Dr. Ritzena Bos has investigated this power of *Tylenchus* with a thoroughness which stamps most of his work. He has shown that unsegmented eggs of *Tylenchus* might be safely dried for a period of two months, but if allowed to remain dry for a year only about one third recovered on being moistened; the other two thirds were dead. Eggs, however, of which the contents were divided into 2, 3, or 4 divisions, could not bear desiccation for even six days. Eggs further advanced and containing the *elworm* in embryonic condition could remain in a state of suspended animation for six months (possibly longer) without losing the power of re-animation on the application of moisture. The power of larvae to regain conditions of active life after desiccation was found to be very great, and the results of experiments carried out by Ritzena Bos showed that after suspended animation during a period of 2½ years they returned to the normal state.

The adult *Tylenchus* (that is, those in which difference in sex are discernible) could not survive under desiccation.

From the results gained it is possible to suggest some general principles which should guide the attempt to find effective and economical remedies and preventive measures. There seem to be four possible ways of this: 1, Rotation; 2, treatment of infected ground; 3, treatment of bulbs; 4, trap or "Cure" cropping.

Rotation is included among the measures of prevention. It is of importance to follow a crop susceptible to *elworm* with another that is immune. *Oats*, *Onions*, and *Chervil* are the crops which suffer most severely with us, but many other plants are liable to be attacked. When a field of *Oats*, for instance, is infected, it is a difficult matter to clear, and also to prevent the attack being carried in the manure, as some of the *elworms*, very possibly most of them, customarily leave the dying plants and go into the soil. Some are carried away with the cut crop, and being mixed up in the straw with farmyard manure are presently carried out again and spread quite unimpaired on clean fields, or perhaps in the very fields from which they came, in readiness to attack a susceptible crop. *Narcissus*, for example, if it is planted in such fields.

It should also be borne in mind that *elworms* can be conveyed in infested earth. They can be conveyed on wheels of carts and ploughs, in earth clinging to boots of workers and to farm implements, and from their power of propagation a small beginning makes much trouble. To carry out the rotation so as to starve out the *elworm*, the crops planted must be immune towards nematode attack, so that the larvae in the soil cannot find nourishment. The crop grown should

be economically profitable, and, if possible, it should be such as to enrich the land, or at least not impoverish it. It should also be one of vigorous growth so as to choke out all weeds or other plants which might harbour eelworms and permit of their development.

An ideal method of starving out the eelworm would be to allow the ground to be fallow for a long period, keeping it free from weeds by thorough cultivation. It is evident that by such a method the eelworms would be ultimately starved out, but the method would appear impracticable in the majority of cases because of its costliness.

Treatment of ground. Trenching can be applied in small areas, and to bury the eelworms as low as possible would do much to check their progress. On larger areas ploughing with a skin coultter attached will also bury the eelworms to a fairly low depth. To resort to ordinary ploughing or digging would only aid in distributing the eelworm over a larger area than previously. In the *Journal of Agriculture* for 1915 there appears a contribution on "Clover Sickness," in which it is stated that "it has been proved" in which it is stated that "it has been proved" that when eelworms are buried to a depth of 5 inches they are killed." I have, unfortunately, not yet succeeded in tracing a record of the experiments which led the writer to arrive at these conclusions. Bulls planted 8 inches deep have been found on lifting to be badly diseased.

Rich manuring, so long as there is no risk in bringing eelworms to the ground in infested manure, has been advised for other crops. One recipe found to answer well for attack in Oats and Onions was:

Sulphate of ammonia, 4 parts.
Steamed bones, 2 parts, and
Sulphate of potash, 1 part.

This was applied at the rate of 1½ cwt. to the acre, followed by a dressing of 2 cwt. of sulphate of ammonia to the acre. This mixture gave such a luxuriant growth that in a little more than a fortnight after the second dressing the unhealthy plants, if any remained, ceased to be noticeable. Sulphate of potash is also confidently recommended. Applied at the rate of 3 cwt. to the acre it answered admirably for infested Oats, and no doubt such a dressing applied to ground occupied by bulbs might definitely help the plants to resist the attacks of eelworm by increased luxuriance, and by reason of the potash hardening the leaves in texture and so impeding the entrance of the pests. It must be clearly understood that these experiments refer to the Clover crop alone. The eelworm exists equally well in heavy and light ground.

It has been seriously proposed to use steam to destroy eelworms in the field in view of the fact that this treatment has met with great success when used in the greenhouse for Cucumbers and Tomatoes attacked by the root knot eelworm. No experiments have been made in this direction owing to the expense of the undertaking. Small areas or beds, especially those to be occupied with seedlings, might be profitably steam sterilised by the inverted fan method. Sterilisation with chemicals, such as formaldehyde, toluol, carbon-bisulphide, or naphthaline, also offers possibilities of cleaning infested ground.

(To be continued.)

ENQUIRIES

WATERPROOFING.—Can any reader inform me how to render cotton sheeting and cartridge paper waterproof and transparent, as a substitute for glass, in making temporary shelters for Vegetable Marrow plants and others? *T. H.*

RABBIT MANURE. Is it advisable to use the droppings from domesticated rabbits for vegetable culture? There seems to be some deleterious property, for although grass around the stools of wild rabbits always grows luxuriantly, neither horses, cattle, nor the rabbits themselves will eat it, so it is possible that vegetables grown with the aid of rabbit manure may likewise be affected. *B.*

CROPS AND STOCK ON THE HOME FARM.

ROOT CROPS.

The preparation of the land for the root and forage crops intended as food for sheep and cows should now claim the attention of the farmer. Turnips are required for sheep in July and the following six months, and for cows in milk in October and November. The crop makes a good preparation of the soil for future crop crops. Swedes are valuable for cattle in small quantities in October and onwards, and for sheep from February until the end of May. Rape is mainly grown for sheep in August, September, and October, as a preparation for Wheat, and again for the ewes and lambs in January and onwards until the end of May, to be followed by Oats and Barley, or again sown with Rape, fed off by sheep, and sown afterwards with Wheat.

Root crops generally follow straw crops, which have exhausted the natural properties in the soil. The artificial manure added for the root crop, the preparation of the soil and the feeding of the crop on the land, is an excellent procedure for another corn crop to follow. In this way the land is systematically recuperated, and thus shows the value of sheep, especially on light soils in hilly districts, where it is not possible to obtain sufficient farmyard manure.

Where roots are required to be fed to cattle in stalls the Turnips and Swedes are carted off the land, as artificial manure has to be supplied, although the cultural method of manipulating the soil is the same.

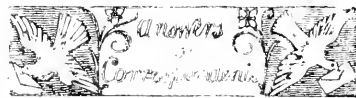
Often the root crop follows Oats, which may have succeeded Clover or old Sanfoin ley, in a foul state—through such weeds as Couch and Dock. Such land needs much preparation before it is in a fit state to receive another crop. The month of May is a good time for weeding and cleaning operations, as the weather at that time is often hot and dry, thus facilitating the cleaning of the land. Assuming that the land was water ploughed, it should now be cut across to disturb the growing Couch and disintegrate the soil thoroughly. Dragging should be the next operation, to loosen the Couch and bring it to the surface. A light roller will crush the clods and make easier the removal of the soil from the Couch by the chain harrows, which, following, will roll the Couch into small heaps. The weed should then be burned in small quantities. The present lighting regulations forbid fires at night. After the Couch has been cleared, the land should be again ploughed, repeating the dragging and harrowing operations until but little Couch can be seen. These details require much time and labour, but when complete there is the satisfaction of a good prospect of a clean field for some years; it is useless to attempt to grow good root crops in foul land.

All too often, owing to dry weather at drilling time, in May and June, it is difficult to obtain a satisfactory root "plant"; the seed does not always germinate freely in the dry soil. The best method of ensuring an even "plant" is to plough the land afresh and sow at once before the surface soil becomes dry again, even if this entails ploughing and sowing the same day. The extra ploughing will provide a better tilth, the soil moisture is conserved, the seeds germinate quicker, and the plants make headway faster than when the surface is rough and cloddy. Moreover, the Turnip tilth is more troublesome in lumpy soil; therefore, the value of a fine tilth cannot be over-estimated. The time to sow the seeds varies according to circumstances, such as requirements and locality. Turnips may be sown from the middle of May until the early part of August. Swedes in the Southern Counties should not be sown before the middle of June, as they are liable to attacks of mildew in dry weather in July. In the North of England and Scotland sowing is done much earlier.

The varieties of Turnips are numerous. For the first batch, for use in July, the White Pomona or White Globe produces much food. For October, Lincoln Red is suitable, growing in bulk; Imperial Green Globe is an excellent variety for use from October to February; it is proof against ordinary frost, and maintains its quality and good qualities. For late use Horns Green Round may be recommended as almost

proof against frost, the roots burying themselves under the surface of the soil.

Of Swedes there are many varieties. Dunn's Delance is a heavy cropper of excellent quality. Imperial Purple Top is a capital type for evenness of crop and quality. *E. Molyneux.*



APPLE SHOOT DYING. *Pulver.* The branches were attacked by canker, which is probably the cause of the large branch dying. American Blight may, as your gardener suggests, have infested the tree at one time, causing the swellings to which you refer. The fungus would gain admittance through the wounds caused by the American Blight. You can do little to check the disease beyond cutting out the affected parts below the cankered portions.

GARDEN BEET FOR SWEETENING JAM. *R. C. H.* We question whether the garden Beet would be effective in sweetening Plum jam, if both are used in equal proportions. It does not seem to be sufficiently recognised that sugar forms only a very small percentage of the Beetroot, and when this is extracted there is a very great deal of residue. By using it for jam this residue would go into the preserve, giving it a rankish flavour. Most people who are trying Beet for preserves are using the white-rooted Sugar Beet, because its sugar contents are larger. The reports from those who have tried this blending of Beet with jam are conflicting, but there is nothing to prevent your making a further trial, provided you can get your roots ready for the Plum harvest. It should always be borne in mind in regard to such matters that a result which some would regard as a failure would appear to others as a satisfactory makeshift during a time when the best jam cannot be made. (See also pp. 111, 119, 123.)

NAMES OF PLANTS. *Constant Reader.* 1. *Swainsona galegifolia* alba; 2. *Centaurea gymnocarpa*; 3. *Byonia dioica* (Bryonia).—*Reader (Kent).* *Lepidium Smithii* (one of the Cresses).

NARCISSUS FLORE PLENA. *W. G. R.* It is not surprising that your plants of the double-flowered Narcissus failed to bloom indoors, for the variety is totally unsuited for forcing. The plant needs moist, cool conditions, and is a very uncertain bloomer even in the open. Old-established clumps give the best results.

PEACH LEAVES. *Prob.* The foliage of your Peach tree is affected with Shot-hole disease, caused by the fungus *Cercospora circumscissa*. Spray the trees with the ammoniacal solution of copper carbonate, and repeat the spraying at intervals.

PERPETUAL FLOWERING CARNATIONS. *R. W.* Shorten the shoots of the old plants growing in 6-inch pots and repot them into receptacles 8 or 9 inches in diameter. With regard to those rooted this spring, and now in 5-inch pots, shift them into 7-inch pots and transfer to a cold frame.

VINE UNHEALTHY. *W. S.* As four out of five of your Vines are doing well in the same house, the fault is probably with the soil in which the one in question is planted. It may have been too wet, too dry, or sour through having too much manure. From your description, it appears that there is not sufficient root action to support the leaves and flowers. If the Vine is retained, its roots should be laid bare in early autumn, and replanted in fresh, sweet soil.

Communications Received.—*M. K. C.*—*R. A.*—*W. D.*—*Orthog.*—*M. B.*—*S. B.* and *Sons.*—*A. D. W.*—*F. W. C.*—*W. H.*—*H. L.*—*W. T.*—*A. C. B.*—*P. B.*—*White Rose.*—*Miss F. M. G.*—*W. E. B.*

MARKETS.

COVENT GARDEN, MAY 25.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.	Ferns-con.	s.d.	s.d.
Aralia Sieboldii.	dozen	...	...	...	...
Asparagus plumosus nanus.	per doz.	...	...	...	...
Aspidistra.	per doz.	...	...	...	...
Begonia heterophylla.	per doz.	...	...	...	...
Cacti.	various.	...	...	...	...
Cineraria.	48's.	...	...	...	...
Cocos Weddelliana.	per doz.	...	...	...	...
Erica persoluta.	per doz.	...	...	...	...
Ferns in thumbs.	per 100.	...	...	...	...
Geranium.	per doz.	...	...	...	...
Hydrangea.	per doz.	...	...	...	...
Impatiens.	per doz.	...	...	...	...
Jonquil.	per doz.	...	...	...	...
Marigold.	per doz.	...	...	...	...
Primula.	per doz.	...	...	...	...
Rose.	per doz.	...	...	...	...
Salvia.	per doz.	...	...	...	...
St. Geranium.	per doz.	...	...	...	...
Tulip.	per doz.	...	...	...	...
Verbena.	per doz.	...	...	...	...

These are the principal flowers now on sale. A few bunches of Double White Stocks find a ready sale. Best blooms of Double Roses and Carnations are a little scarcer. Some fine spikes of Larkspur and Antirrhinums are on sale, and small quantities of house-grown Gypsophila are available, which find a ready sale. There is an abundant supply of outdoor Tulips, chiefly Parvius, Richardia (Arms) are finishing, but Liliums are so far sufficient for the demand. Lily of the Valley chiefly consists of outdoor blooms. Orchids are more plentiful, and are offered at low prices. They chiefly consist of Cattleyas and Odontoglossums, with a few spikes of Cymbidium. All scarlet flowers are expected to advance in price towards the end of the week. White and scarlet kinds will be in demand for the Whitstuntle decorations. There is still a limited supply of Smilax but Asparagus and all other foliage is reduced in price.

Vegetables: Average Wholesale Prices.

	s.d.	s.d.	s.d.	s.d.
Artichokes.	Jerusalem per bus.	...	...	...
Asparagus.	per doz.	...	...	...
Beans.	English.	...	...	...
Broccoli.	Purple sprouting.	...	...	...
Broad Beans.	French.	...	...	...
Cabbages.	per tray.	...	...	...
Carrots.	new.	...	...	...
Cauliflowers.	per doz.	...	...	...
Cucumbers.	per doz.	...	...	...
Endive.	per doz.	...	...	...
Garlic.	per doz.	...	...	...
Herb parley.	per doz.	...	...	...
Horseradish.	per doz.	...	...	...
Kale.	per doz.	...	...	...

Fruit: Average Wholesale Prices.

	s.d.	s.d.	s.d.	s.d.
Almonds.	per cwt.	...	...	...
Apples.	per doz.	...	...	...
Bananas.	Jamaica.	...	...	...
Cranberries.	per case.	...	...	...
Dates.	per doz.	...	...	...
Figs.	per doz.	...	...	...
Grapes.	per peck.	...	...	...
Oranges.	per case.	...	...	...
Peaches.	per doz.	...	...	...
Strawberries.	per doz.	...	...	...
Tomatoes.	per lb.	...	...	...
Walnuts.	per cwt.	...	...	...

REMARKS.—The market may now be said to be almost empty of Apples, and Peas are likewise not obtainable. Mangoes and Lemons are scarce and expensive, but Grapes, both Black Hamburgh and Muscat of Alexandria, are fairly plentiful for the time of year. Supplies of Peaches and Nectarines are increasing daily, and Melons and Figs are also more plentiful. Supplies of no-fringe coloured Strawberries are arriving daily, and supplies of green Gooseberries are also increasing. Continental Asparagus is practically over, but much larger quantities of English Asparagus are arriving. Cucumbers are much scarcer than is usual at this time of year, but Tomatoes, both English and Channel Islands, are daily increasing in numbers. New Potatoes, Peas, Beans and Radishes are sufficient to meet demands. There are some good Cabbages and Broccoli on offer, but Spring onions are at present limited in supply. Mushrooms are fairly plentiful, and Rhubarb is both plentiful and cheap. Potatoes (South African) are now on offer in cases of about 84 lb. R. H. R. Covent Garden Market, May 25, 1917.

THE ONLY GARDENERS' DIRECTORY.

The Horticultural Directory and Year Book for 1917 is the ONLY Directory that exists of gardeners and gardeners in the British Isles.

If you want a list of all Nurserymen and Seedsmen, Sundriesmen, Hot-house Builders and other traders closely connected with horticulture, consult the ONLY Horticultural Directory.

Should you desire to trace the whereabouts of the young men you associated with in the Botchy you have no other means of finding out their present addresses than by turning to the ONLY Directory of British Gardeners.

Obtain a copy and see if your own name is there, and if it is not, then send us particulars for inclusion in the edition for 1918.

The Year Book part of this unique volume contains descriptions of all the new plants, flowers and fruits certificated in 1916, notes on the principal gardeners who died during that period, and much additional information of great value to all amateur and professional horticulturists.

We are still able to offer some few copies of the current number. Readers are advised to send their orders early, before the work is out of print.

GARDENING APPOINTMENT.

Mr. George Rowland, for the past 4 years and 6 months, Gardener to Lady Stray, The Bell, Blandy, as Gardener to Lady Howard, Gilmear, Bland, Blandy (Thanks for 1s. 6d. for R.G.C.F.P. box.—E.H.).

CATALOGUE RECEIVED.

FOREIGN. BERTRAND H. FARR, Wyomissing, Penna., U.S.A.—Hardy Plants.

Apply, enclosing 1/4 for each copy required, to:—

GARDENERS' CHRONICLE, LTD.,
41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

Cut Flowers, &c.: Average Wholesale Prices

	s.d.	s.d.	s.d.	s.d.
Arums.	per doz.	...	...	...
Carnations.	per doz.	...	...	...
Delphinium.	per doz.	...	...	...
Forget-Me-Not.	per doz.	...	...	...
Gladiolus.	per doz.	...	...	...
Hyacinth.	per doz.	...	...	...
Jonquil.	per doz.	...	...	...
Lily of the Valley.	per doz.	...	...	...
Narcissus.	per doz.	...	...	...
Paeonia.	per doz.	...	...	...
Rose.	per doz.	...	...	...
St. Geranium.	per doz.	...	...	...
Tulip.	per doz.	...	...	...
Verbena.	per doz.	...	...	...

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.	s.d.	s.d.
Adiantum.	per doz.	...	...	...
Asparagus.	per doz.	...	...	...
Crocus.	per doz.	...	...	...
Geranium.	per doz.	...	...	...
Hydrangea.	per doz.	...	...	...
Impatiens.	per doz.	...	...	...
Jonquil.	per doz.	...	...	...
Marigold.	per doz.	...	...	...
Primula.	per doz.	...	...	...
Rose.	per doz.	...	...	...
Salvia.	per doz.	...	...	...
St. Geranium.	per doz.	...	...	...
Tulip.	per doz.	...	...	...
Verbena.	per doz.	...	...	...

REMARKS.—Double white and coloured Gladiolus, Sweet Peas, Iceland Poppies, and

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- English Flower Garden, The.** An Illustrated Dictionary of the Plants Used, and Directions for their Culture and Arrangement. By W. Robinson. With numerous Illustrations. 15s. 7d.
- Ferns, The Book of British.** By C. T. Drury. Illustrated. 5s. 10d.
- Ferns, Choice, for Amateurs.** For the Garden, Conservatory and Stove. Illustrated. With full directions for their Cultivation, and Formation of Ferneries, Rockeries, etc. By George Schneider. New Edition. 3s. 11d.
- Fern Culture.** By A. Hemsley. Well illustrated. 2s. 9d.
- Ferns and Fern Culture.** By J. Birkenhead. Third Edition, revised by F. Parsons. 1s. 2d.
- Fertilisers and Manures.** By A. D. Hall, F.R.S. 5s. 5d.
- Flora, British, Handbook of the.** By Geo. Bentham. Revised by Sir Joseph Hooker. Seventh Edition. 9s. 5d.
- Flora, British, Illustrations of the.** By W. H. Fitch and W. G. Smith. 1,315 Wood Engravings. Revised and enlarged. 9s. 5d.
- Floral Decoration, British.** By R. F. Felton. Containing 26 full-page Illustrations (12 in colour). 4s.
- Florists' Bibliography, The.** By C. Harman Payne. Second Edition, with Supplement and Index. Cloth, 5s. 4d.
- Flower Garden, The.** By T. W. Sanders. The Formation and Management of a Garden, and the Culture of Outdoor Flowers and Plants. 450 pages, 104 Illustrations. 8s.
- Flowering Plants, Classification of.** By Alfred B. Rendle, M.A., D.Sc. Vol. 1. Gymnosperms and Monocotyledons. 400 pages. Illustrated. 10s. 10d.
- Flowers and Flower Culture.** By H. W. Ward. 8d.
- Flowers, The Book of Hardy.** By E. H. Jenkins. A Practical Guide to the Cultivation of Hardy Flowers. Illustrated. Cloth, 2s. 11d.
- Flowers, The Book of Old Fashioned.** By Harry Roberts. 2s. 10d.
- Forestry, The Development of British.** By A. C. Forbes. Illustrated. 11s.
- Forestry, The Practice of.** By Percival T. Maw. A voluminous and practical manual. It deals also with the financial aspect of Forestry. 17s. 6d.
- French Market Gardening.** By John Weathers. With practical details of "Intensive Cultivation" for English Growers. Preface by W. Robinson. 3s. 11d.
- Fruit Farming, Practical, for Commercial Fruit growers and others.** By Cecil H. Hooper. 3s. 10d.
- Fruit Farming for Profit.** By George Bunyard. A practical treatise on all the more profitable Fruits. Sixth Edition. 2s. 9d.
- Fruit Garden, The.** By George Bunyard and Owen Thomas. 15s.
- Fruit Growing, Profitable; for Cottagers and Small Holders of Land.** By John Wright, V.M.H. A Gold Medal Essay, written for the Worshipful Company of Fruiteers. Illustrated. 1s. 3d.
- Fruit, Hardy, Culture for Amateurs.** By S. T. Wright, with notes by W. D. Drury on Fungi affecting Fruit Trees. Illustrated. 1s. 3d.
- Fruit Ranching in British Columbia.** By J. T. Bealby. Illustrated. 3s. 11d.
- Fruit Trees and Their Enemies, With Spraying Calendar.** By Spencer Pickering, F.R.S., and Fred. V. Theobald. Cloth, 1s. 9d.
- Fruit Trees in Pots.** By Josh Brace, twenty-two years Foreman for Thos. Rivers and Son. Illustrated. 5s. 4d.
- Fruit Trees, The Scientific and Profitable Culture of.** From the French of M. Du Breuil. Fifth Edition, carefully Revised by George Cluney. With 187 Woodcuts. 3s. 9d.
- Fruit and Vegetables, Packing and Selling; for Cottagers and Small Holders of Land.** By R. Lewis Castle. A Gold Medal Essay, written for the Worshipful Company of Fruiteers. Illustrated. 1s. 3d.
- Fungoid Pests of Cultivated Plants.** By Dr. M. C. Cooke. Many Coloured Plates. 5s. 6d.
- Garden Beautiful, The, for Home Woods and Home Landscape.** By W. Robinson. Illustrated. 7s. 10d.
- Garden Planning and Planting.** A Guide to the Laying out and Designing of Flower Beds and Borders. Illustrated. Paper, 1s. 5d.; cloth, 1s. 9d.
- Garden, Chemistry of the.** A Primer for Amateurs and Young Gardeners. By Herbert H. Cousins, M.A. 1s. 2d.
- Garden Craft in Europe.** By H. Juigo Trizgs. 21 15s. 6d.
- Garden Designs, The Book of.** By Charles Thonger. 2s. 10d.
- Garden Flowers for Town and Country Gardens.** By John Weathers. Coloured Plates. 5s. 4d.
- Garden Furniture, The Book of.** By Charles Thonger. 2s. 9d.
- Garden Guide.** By Walter P. Wright. A Practical Handbook for all Garden lovers. 100 Illustrations. Cloth, 1s. 9d.
- Garden Plants, A Practical Guide to.** By John Weathers. Contains descriptions of Annuals, Biennials, Perennials, Flowering and Ornamental Trees and Shrubs, Conifers, etc., and also the best kinds of Fruits and Vegetables that may be grown in the open air. 1,192 pages. 163 Illustrations. 21s. 6d.
- Garden Receipts.** Edited by Charles W. Quin. Fourth Edition. 1s. 8d.
- Garden, The Well Considered.** By Mrs. Francis King. 4s. 10d.
- Garden Under Glass, The.** By W. F. Rowles. Contains much practical information. Price 6s. 6d. Illustrated.
- Garden Series** (edited by R. Hooper Pearson).
My Garden in Spring. By E. A. Bowles, M.A., Chairman of Scientific Committee of Royal Horticultural Society. With Preface by Reginald Farrer. 320 pages. Contains 16 Coloured Plates and 24 Half-tones. Price, 5s. 6d.
My Garden in Summer. By the same author as above. Price 5s. 6d.
My Garden in Autumn and Winter. By the same author. Issued 1915. Price 5s. 6d.
- Gardener's Assistant, The.** New Edition by William Watson, Curator, Royal Gardens, Kew. 6 vols., cloth, 8s. 5d. each. Also in 2 vols., Roxburgh binding, 52s.
- Gardeners' Chronicle Horticultural Directory** (58th Year.) Revised edition for 1917. This unique Horticultural Directory contains, amongst other valuable information:—A Register of the principal Nurserymen, Seedsmen and Florists, Mansions of the United Kingdom, with their Occupiers and Head Gardeners, Horticultural Builders and Engineers; Landscape Gardeners, Horticultural and Floral Societies; Fruit, Flower and Vegetable Trades Societies, Principal Fruit and Flower Salesmen and Commission Agents in London. List of County Staff Instructors in Horticulture appointed by the County Councils. Principal Public Parks in Great Britain and Ireland. Indispensable to every Nurseryman and professional Gardener. Every possible means is taken to revise this work each year; this involves over 15,000 communications by post, as a form for verification is sent to every name included in the lists. Published on January 1 each year. Price 1s. 4d.
- Gardening, Alphabet, of.** By T. W. Sanders. Illustrated by diagrams. 1s. 9d.
- Gardening, Encyclopedia of.** By T. W. Sanders. A Dictionary of Cultivated Plants, Flowers, Fruit, Vegetables, Trees and Shrubs, with Description and Popular and Technical Names, Cultivation, etc. 466 pages. 3s. 11d.
- Gardening, Home.** By W. D. Drury. A manual for the Amateur, containing instructions for the Laying out, Stocking, and Cultivation of Small Gardens. 1s. 3d.
- Gardening, Pictorial Practical.** Edited by Walter P. Wright. Illustrated. Paper, 1s. 3d.; cloth, 1s. 9d.
- Gardening, School, A First Book of.** By A. Logan. 1s. 9d.
- 1,500 Gardening Questions Answered.** A useful Handbook for the Amateur Gardener, dealing with every phase of Gardening, both inside and out. Paper, 1s. 3d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 3, 8

No. 1588. VOL. LXL. {THIRD SERIES}

SATURDAY, JUNE 2, 1917.

{Registered as a Newspaper.} PRICE 3d
{POST-FREE, 3½d.}

SUBSCRIPTION—Inland, 15-; Foreign, 17 6/22 (fr. 10c. {54 26c.} per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden W.C. 2. Telegraphic Address—"GardChron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 219.

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note that the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week MUST reach this office not later than 5 p.m. on Wednesday, otherwise they will most likely be held over until the following week.

NOW IS THE TIME TO PLANT AT REDUCED PRICES.

KELWAY'S Now and Choice Hardy Perennial Plants of all kinds
KELWAY'S Famous Gladioli.
KELWAY'S many coloured Pyrethrums.
KELWAY'S Gay Gaillardias.
 Write for Reduced Price Lists to
KELWAY & SON, Retail Plant Department, Langport Somerset.

BLACKMORE & LANGDON, Bath, will have pleasure in sending a copy of their 1917 Catalogue of Begonias and Delphiniums, &c., &c., free, if this paper is mentioned. Magnificent sets of roots of our unequalled Delphiniums, in superb variety.

VIOLAS, finest Scotch, 12 Bedding Greenhouses, &c., and Bedding Early Chrysanthemums, 12 very fine varieties, 3s. 9d., post free. Strong plants—**DOBIE & CO.**, Florists, Edinburgh.

J. GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wire, 201 Western, London. Telephone: 201, Western.

WM. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham, London, E. 7. Winter Gardens, Vines, Peach house, Portable Buildings, &c. Catalogues gratis.

GENTIANA verna, 12 large clumps, 5s. 6d.; 6 Dreyas octo-loba, 5s.; 6 Osmunda regalis, 5s.; 6 Bee orchis, 4s.—**O'KELLY**, Botanist, Ballyvaughan, Ireland.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers; also Dickson's Improved Mushroom Spawn. Priced circulars free on application to **DICKSON'S**, Royal Seed Warehouse and Nurseries, Chester.

VEGETABLE PLANTS—Barr's Selected Strains, now ready to plant out, Summer Cabbage, Small Red Cabbage, Brussels sprouts, Cauliflowers (early and late), Kale (Asparagus and Scotch), Sturdy plants, 2s. 6d. per 100, carriage paid. Potato, Empire Date, selected seed for late planting, 560s. 14s. 6d., 240s. 4s., carriage extra.—**BARR & SONS**, 12 and 13, King Street, Covent Garden, London.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes about 1lb., 3lb., and 12lb., by Dealers in Garden Sundries. Wholesale: **PRICES PATENT CANDLE CO., LTD.**, Battersea, London, S.W. 11.

SUTTON'S VEGETABLE SEEDS

SUTTON'S FLOWER SEEDS.
The Best.

SUTTON & SONS, The King's Seedsmen, READING.

GREENHOUSE PAINTING & GLAZING—"Vitreolite," superior to White Lead Paint, "Plastic" superior to Putty. Full particulars from **W. CARLSON & SONS**, Group Works, Batterssea. Agents throughout the country.

ROSES.—Wm. Paul and Son, Waltham Cross, Ltd., beg to offer a fine stock of all the best varieties, new and old, for present planting. Priced catalogue on application.—**PATER'S ROYAL NURSERIES**, Waltham Cross, Herts.

EXPENSIVE ADVERTISING. In these days, when every firm has to advertise or so it may be, it is necessary to make sure that the best plan possible is obtained. The results justify the expenditure. It is this consideration that has led most keen business men to discontinue the wasteful method of advertising by catalogue. It compares the make of any printing firm it will be found that catalogue printing has fallen away since the war by about 80 per cent., not is this to be wondered at. The price of paper is nearly three times what it was formerly, printing rates are higher, and the cost of postage is now increased. But the wholesale distribution of large catalogues is now too expensive for business purposes. The newspaper, though they themselves are produced at a high charge, a space all round have nevertheless retained it from more a long time, for advertisements and it is by utilizing those permanent media that profitable advertising may still be practised.

SPORTSMEN Farmers, Horsemen, try our splendid Yorkshire Whipcord, made by the leather, also a pair of 75 yards for 7s. 6d. Patterns free.—**BRADFORD WOOLLEN CO.**, 71, Bradford.

CANES, 6ft., 30s. 1,000. **JOHNSON**, Trafford Road, Salford.

HOTHOUSE FOR SALE, pipes and boiler working order, 200 sq. ft. glass, about 800, size 12ft. x 20ft. What offers when it stands or taken down?—**WILLIAMSON**, Market Place, Peterborough.

SANDERS Orchid Growers, St. Albans.

LAWN BOWLS.—50s. Association set Lawn Bowls, 4 pairs superior full size selected hemu, medium bias, with 2 jacks, complete, in strong box, unused, price 29s. 6d.; also 2 new pairs best Standard Match Bowls, absolutely accurate, 2 bags, Christmas Cabbage, Drumhead Savoy, 14s. 1,000, Tomato plants, Market King, ex 60s., 15s. 100, **CHIFFERHILL**, Nurseries, Hampton Hill, Middlesex.

CABBAGE PLANTS, Myatt's Early Evesham, Sutton's Harbridge, English Market, Christmas Cabbage, Drumhead Savoy, 14s. 1,000, Tomato plants, Market King, ex 60s., 15s. 100, **CHIFFERHILL**, Nurseries, Hampton Hill, Middlesex.

BEGONIAS and **GLOXINIAS**.—**MORLEY & CO.** can now supply their celebrated strain, in large 20 pots, in flower and bud. Early inquiries, as stock is limited this season.—150/156, Finchley Road, N.W. 3.

For Advertisement Charges see page 111.

SOW NOW.—**BATH'S EMPRESS PAN-SIES**, as grown for the Royal Gardens at Frogmore, the richest and largest flowered strain of Pan-sies (cut and pot), 2s. 6d. and 1s. 6d., post free for cash with order.—**Dept. Av. R. H. BATH, LTD.**, The Floral Farms, Wiltshire.

WATERER'S ALPINE HERBACEOUS PLANTS and **WATER LILIES**, Large stocks of the best and most popular varieties. Descriptive catalogue free. **JOHN WATERER, SONS & CRISP, LTD.**, The Nurseries, Twyford, Berks.

FOUR NEW PRIMULAS, collected by Geo. Forrest, P. helodoxa, A.M., R.H.S., 3s. 6d., P. maculosa, A.M., R.H.S., 7s. 6d., P. vincaeflora, A.M., R.H.S., 3s. 6d., P. comica, A.M., R.H.S., 5s. The set of four plants in 100 pots, 15s. Full descriptive catalogue of these and other new Chinese plants post free on application.—**R. WALLACE & CO., LTD.**, Colchester, Essex.

VEGETABLE PLANTS. Barr's Selected Strains, now ready to plant out, Summer Cabbage, Small Red Cabbage, Brussels sprouts, Cauliflowers (early and late), Kale (Asparagus and Scotch), Sturdy plants, 2s. 6d. per 100, carriage paid.—**BARR & SONS**, 12 and 13, King Street, Covent Garden, London.

ORCHID PLANT, 6s. and 7s. 6d. per sack; **Bloom**, Best, 10s. 6d. per yard in trucks; in bags 2s. 6d. each, 20s. dozen; **Oak and Beech Leaf Moth**, Yellow Loam, Staked and Fresh Cut, Silver Sand, 4 tons lots for 45s.; **C.N. Fibre**, 23s. dozen bags; list free.—**J. HANDELMAN**, F.R.H.S., Feltham, Middlesex.

FERNS.—**FERN'S**, Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns; catalogues free.—**J. E. SMITH**, London Fern Nursery, Loughborough Junction, London, S.W.

VERBENAS.—Miss Willmott (pink), King of Scarlets, Queen of Whites, Lovely Blue (Lavender blue), Princess of Wales (purple); strong, clean, well-rooted stock from boxes, 50 for 5s., 9s. per 100; carriage paid for cash.—**H. DEDDIERIDGE**, The Dorset Nurseries, Blandford.

ARMY BOOTS (reconstructed), cost £10, Government at 2s. 6d., selling now at bargain price, specially selected, without a blemish, as good as new, unsuperseded for Golfing, Farming, and other work. Single pairs, post free, 8s. 6d., or 10s. 6d. State size. Money returned if disapproved. Special quotations for quantities.—**THE THAMES TRADING CO., LTD.**, (Amen. Bldg. Dept.), 41, Eldon Street, London, E.C.

100,000 LARGE GARDEN FERNS, 29s. 10.; **Palms, Begonias, Crotons, Dracaenas, Roses, Ericas, C. oxianus, Lilacs, Hydrangeas, &c.**; catalogues free.—**J. H. SMITH**, London Fern Nurseries, Loughborough Junction, London, S.W.

BEGONIAS.—**de Lorraine**, Turford (Bell and Bush) Scarcity of Lorraine, well rooted cuttings, 2s. 6d., 3s. 6d., 4s. 6d., 5s. 6d., 10s. 6d., 15s. 6d., 20s. 100. **H. DEDDIERIDGE**, The Dorset Nurseries, Blandford.

SEED POTATO, Scotch-grown, and once grown in Lincolnshire from Scotch Seed; **King Edwards**, **Up-to-Dates**, **Daltonians**, **Everglades**, **Queen Mary**, and other good varieties, 14s. per 50 lb., carriage paid. Prompt despatch.—**FRED PARKES**, Wylerton, Boston.

SALES BY AUCTION.**FRIDAY NEXT.—ORCHIDS.**

MESSRS. PROTHEROE & MORRIS will sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London,

On Friday next, June 8th, at 1 o'clock,

a fine assortment of Established Orchids from various well-known Collections. Many will be in flower or fruit. On view morning of Sale and catalogues had.

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORISTS' AND SEED BUSINESSES to be Let or Sold. Published by

MESSRS. PROTHEROE & MORRIS every month. Copies may be obtained post free on application.—Estate Offices, 67 and 68, Cheapside, London, E.C.

FRUIT and Flower Farm or Market Garden, of 5 acres, with house, main line, good markets, owner retiring after 15 years' successful occupation. Price £1,900.—RUSSELL BITTERS, Reading.

FOR SALE, as a going concern, Nursery business; 600 feet glass, 2 acres land; Southend district.—R. J. Box 6, 41, Wellington Street, Covent Garden, W.C. 2.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

MISCELLANEOUS.

B. EDDY & SONS, Torleven Works, Portlaven, Cornwall.—The largest manufacturers of GARDEN NETTING in the KINGDOM NEW STOUT and specially strong SQUARE MESH NETTING, half-inch and one-inch mesh, at 4d. per square yard. LIGHT NEW square mesh, suitable for Strawberry Beds, at 3d per square yard.

These Nets are bound all round with stout cord, and cover their measured length and width. Any length or width supplied.

Repaired Nettings in all sizes in stock. State your requirements, and we will quote lowest prices.

Also makers of TENNIS NETTINGS, RICK COVERS, GREENHOUSE SHADINGS, WASP NETTINGS, PACKING and TARRED TWINES of all kinds.

All Goods sent by PASSENGER Train, CARRIAGE PAID, on receipt of order.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

WANTED, HEA WORKING GARDENER, normal sto, 6, 4 at present, must be willing and obliging, and be recommended; a knowledge of forestry would be a disadvantage; cottage provided. Apply, giving full particulars and wages asked, to MAJOR E. LITTON, Copthall Hall, Ingoldsby, Essex.

WANTED, FOREMAN, for Inside; no objections to discharged soldier, must understand Fruit; good wage, Bolly, &c.—Apply, J. VOSS, 10-Hilton Hall, Derby.

WANTED, FOREMAN for Inside; also SECOND or strong LAD, vegetables and Bolly. State wages required to WARREN, Head Gardener, Aston Rowant Gardens, near Wallingford, Oxon.

WANTED, FOREMAN, Inside, married or single, intelligible; good cottage or Bolly and liberal wages; also YOUTH, 16 or 17, live in Bolly; 1 o'clock Saturdays. State wages, E. HILL, Osberton Gardens, Worksop.

WANTED, FOREMAN, for Gardens; chiefly Inside; intelligible; good wages. Apply, L. LEACH, The Gardens, Cranfield Court, Wormin Sand, Beds.

WANTED, GARDENER; must be experienced Inside and Out; 3 men kept, single. MRS TYNDALE, Meadowcroft, Chislehurst.

WANTED, GARDENER; good all-round man; age about 50, boy kept, wages 30s. per week, with house and vegetables.—Apply, B. DAVIES, Wood-side Grange, North Finchley.

WANTED, GARDENER, intelligible, married, no family, cottage, 4 small rooms and scullery, wages 24s., vegetables; permanency. WHITTING, Tollington, Gosmore, Hitchin, Herts.

WANTED, immediately, WORKING GARDENER, Greenhouses and Vegetables, help given; wages 25s., house and coals.—Apply by letter, WOODHOUSE, Fairfield, Biggleswade.

WANTED, married MAN, over military age, for Kitchen Garden, wages 25s., good cottage, coals, and vegetables for a good man. For particulars apply to A. C. LEHANE, Park Hall Gardens, Mansfield, Notts.

GARDENER (married or single) required immediately for assistance in North London, good experience and references essential, no children. Apply by letter, giving full particulars, stating wages required, and sending copies of testimonials, to MRS PAYKE, 10, Westmore Terrace, London, W. If married, and able to assist with housework or in family, please state.

WANTED, immediately, skilled GARDENER, temporarily, to take place of one in established, with experience of Flower and Kitchen Gardens, Vines, and Plants.—Apply, stating wages, to MR H. LAMB, Griston House, Griston, Kenting.

WANTED, SINGLE HANDED GARDENER, good wages, no Glass. Apply, CAPT BRETT JAMES, St. Augustine's, Tottenham, Herts.

WANTED, 4 JOURNEYMEN or YOUTHS for Houses, good wages, according to age and experience, overtime paid. 12 o'clock Saturdays and the usual perquisites. Apply, C. A. WHEELER, Swinton Gardens, Moulton, Ripon.

WANTED (3 miles from Hampton Court). 2 Men (single or 2 Women, must be experienced, for Kitchen Garden, Borders, and Lawn; Head kept, no cottage, comfortable and permanent place. Write full particulars and wages asked, to C. L. Box 20, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, young GARDENER; under experienced Head, age 16-17 or intelligible. W. CLARE, The Gardens, Portico of House, Portlaven, Somerset.

WANTED, ASSISTANT GARDENER; not eligible for military service; Northern district, London. 4-roomed cottage provided, water laid on, penny slot gas meter. Apply, stating experience and wages required, to A. B. C. Box 7, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, SECOND GARDENER; married, good all-round experience necessary, intelligible, wages 20s., good leave, garden, part time, found, duty every third week. P. BURST, Stapleford Park, Melton Mowbray.

WANTED, a MAN, with good experience, for Houses, Bolly, and Water Gardens, intelligible or discharged from Army, good wages will be paid, good Bolly, milk, vegetable, and attendance. State wages required, with reference, P. WRIGHT, The Gardens, Ashton Ward, Durdley, Northamptonshire.

WANTED, Man or Woman for SECOND, in place of man called by Colours; knowledge of Inside; good references required. State wages. G. W., The Lodge, Brockley Hill, Brockley, S.E. 4.

WANTED, strong YOUTH for the Houses, Bolly and vegetables; good wages to anyone suitable, Sunday duty, 3s. 6d.; also intelligible man for Pleasure Grounds, State wages.—J. W. BARRIS, Castle Estate Office, Bitchingham, Surrey.

WANTED, strong YOUTH, Inside and Out; some experience; good wages, with Bolly, &c. Apply, W. DIXON, Warsley Park Gardens, near Sandy, Beds.

WANTED, YOUTH, about 17, to assist in Fruit Houses and Vegetables under Glass. 17s., with Bolly, vegetables, &c. J. MARTIN, Gardens, Bishop Hill, Crawley, Sussex.

WANTED, a strong LAD, for gentleman's Garden; about 16 or 17 years of age; to help in Inside and Outside, Bolly residence. Apply, stating wages, R. PROBY, Pavilion Friggery Gardens, near Eastford, Kent.

WANTED, several LADS, 16 to 17; Inside and Out, wages 15s., Bolly, &c.; Sunday duty paid.—C. GARRATT, Camwell Hill Gardens, South Colfield, Birmingham.

WANTED, experienced FOREWMAN Inside, State wages, required (boards and tools) ages provided, to E. BRISTOW, Leywood Gardens, Groombridge, Tunbridge Wells.

WANTED, JOURNEYMAN WOMAN GARDENER, chiefly for outside work; wages 30s. per week, extra for duty. Apply, CURATOR, Chelsea Physic Garden, London, S.W. 3.

WANTED, 2 WOMEN GARDENERS, as Head Working and Under; boy kept; furnished rooms, coal and light.—F. SCHUSTER, Esq., The Hut, Bray, Berks.

WANTED, WOMAN GARDENER, for Pleasure Grounds, State wages, experience, and full particulars, to E. BRISTOW, Leywood Gardens, Stoke Pages, Slough, Bucks.

WANTED, at once, GARDENER (lady); single handed; wages 30s., or according to experience.—Apply, with full particulars, to R. J. MOTT BISH, 15, Shottlands Grove, Shottlands.

WANTED, 4 young WOMEN GARDENERS, for Fruit and Plant Houses, take turn on duty. Apply, stating age, wages required, and experience, with excellent Bolly, coal, lights, milk, and vegetables, to resident women attendants, the ARTHUR AVERY, Enville Gardens, near Stourbridge.

WANTED, 6 WOMEN GARDENERS, experienced, for Pleasure Grounds, Rockeries, &c., and appointed Bolly. Particulars and wages required to MARTIN, Munton Park, Warwick.

WANTED, for private Gardens, in various parts of the country, WOMEN, with or without gardening experience. Full particulars to WM. C. F. BUSH & SON, Highgate Nurseries, Highgate, N. 6.

LADY GARDENERS WANTED: all situated entirely free of charge. For Abroad (Hants), Head and Under; 24 acres (Pleasure Grounds and Kitchen, some Glass); man and boy kept; could take pupil or do some market gardening. Beantien (Hants), as Greenhouse, knowledge of Vegetables; 1 pony, boy once week, 10-hay, head, Under kept; 21 week cottage, with coal and gas. Hinchford, 2 or 3 wanted, one as Head, second as Groom-Gardener (age 12-15), good all-round help-keeper, especially Vegetables. Kent, 2 wanted, night excellent Head Man, without salary, but furnished cottage, milk, wood, and vegetables given. Linsellville, 30s., no board or residence, 2 acre Garden, chiefly Vegetables, help given. Near Liverpool, 1 Head, 25s., and cottage, must have training of good experience, 5 or 6 Under kept. Near Maidenhead, under Head Man, 25s., week, live out, chiefly Glass work. Notts, 3 wanted, Head Man, 3 other men and 2 boys kept, one required with experience of Vines; and many other good posts.—MRS BUNT, LTD 29, High Street, Marylebone, W. 1.

TRADE.

WANTED, WORKING FOREMAN for Market Nursery (Cucumbers and Tomatoes) 45s. weekly and bonus. State age, experience, when 45s. wages, to Mr. Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, a CUCUMBER and TOMATO GROWER; good wages and overtime.—Apply to J. M. LEATHER, East Fields, Mitcham.

WANTED, GROWER for Caladiums, Glaximas, and Greenhouse plants, intelligible. Apply, stating wages required, to JOHN FEE & SON, West Norwood, London, S.E.

WANTED, GROWER, Ferns and Bedding Plants; good wages given for smart man.—Apply, The Firs, Barrowell Green, Windchurn Hill, N. 21.

WANTED, for Farm Seed Warehouse, a capable FOREMAN; must be able to superintend cleaning and despatch of orders for a wide trade; also Warehousesman, neat sack-stitcher and tyer indispensable; also for Garden Seed Department, an experienced Hand, must be able to take entire charge. Good wages offered. All applicants must be intelligible. Apply, to Mr. Box 19, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, AUDIT or CHECKING CLERK; experienced; over military age; quick and accurate. THOGOOD & SONS, The King's Seed-men, Southampton.

CASHIER and BOOK KEEPER required in North of England Firm of Seed Merchants. Applicants must have knowledge of Garden and Farm Seed Trades and be capable of taking entire charge of office in absence of principals. Permanent situation, good salary, and war bonus to perfectly reliable man—Write stating age, experience, salary expected, and enclose copies of recent testimonials, to S. N., Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, MAN, to help work small Nursery in every way, wages 58s per week.—**CHIPPERSFIELD,** Hampton Hill, Middlesex.

WANTED, MEN, indigible: Cucumber and Tomato growers; good prospects.—Apply, **COCKLELL,** Basildon, Essex.

WANTED, Smart LADS, to learn Fruit and Rose Growing.—Apply, **JOHN WATERER, SONS & CRISP, LTD.,** Hare Hatch, Farnham, Berks.

WANTED, FLORIST, male or female, to manage Floral and Seed Shop, must be a good maker-up; about 30 years of age, good wages and place.—W. & J. **BROWNS,** Peterborough.

FLORIST—Young lady required for good class shop, live in preferred. Write, stating salary and experience, **HORSMAN,** Beckenham.

YOUNG LADY required as **IMPROVER** in our Cut Flower department. Apply, stating age, experience, and wages required, to **WILLIS & SEGAR,** Royal Exotic Nursery, Oneow Crescent, South Kensington.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d. for each succeeding eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post office, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

HEAD GARDENER (first class), expert in every branch of Horticulture, at 1501 W. Ave., A. H., Box 13, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD): 50 years, practical experience, Inside and Out. Knowledge of stock. Please state wages. J. or Mr. H. LUTLEY, 23, St. John Road, Redhill, Surrey.

GARDENER (HEAD): practical experience in all branches in good establishments, including Aston Clinton, Godway Park, and Sandon Hall, excellent references, and can be confidently recommended, intending for May, however, no fee and no charge after 3 months' service. T. **HYLAND,** Lays of Gardens, Groombridge, Tunbridge Wells.

GARDENER (HEAD WORKING): age 51; 20 years' Head, Norfolk Park, Dorking, seeking engagement, through death of mother-in-law; has gained experience in all branches, used to growing large quantities Fruit and Vegetables, awarded medals, &c., at R.H.S. meetings; highest references. Appl. **GEORGE KENT,** Postman Lane, Dorking.

GARDENER (HEAD WORKING), where 2 or 3 kept, first-class references, experienced in all branches, Inside and Out, married, discharged (not strictly) **SPEISER,** Blackhorse, Gosport, Hants.

GARDENER (HEAD WORKING), where several are kept; first-class experience all branches; discharge certificate, age 40, married (no family). **A. SMITH,** 46, Oakridge Road, High Wycombe, Bucks.

GARDENER (HEAD WORKING): life experience in all branches, charge of small estate if necessary, 12 years' personal character; age 30.—**B. O.,** 4, Station Parade, Palmers Green, N.

GARDENER (HEAD WORKING) and MANAGER, small farm and estate if required, 26 years' practical experience, 23 years as Head, excellent recommendations, age 50, 1 boy, age 25.—**W. M. SAVAPE,** Thomas Street, St. John's, Lutbridge Wells.

GARDENER (HEAD WORKING), where 3 or more are kept (normal times), thoroughly experienced all branches, also stock, previous situations 12 and 10 years, age 40; daughter could help in Garden if required, discharges, good cottage. Please state wages.—**G.,** Box 25, 41, Wellington Street, Covent Garden, W.C. 2.

FOREMAN (WORKING), private or Nursery, good single-handed, or 2 like control, 12 years' practical experience as grower, of Pines, Firs, Yew, &c. (inside and out), total 40 years' married, age 50, good references. **H. G.,** Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

LADY GARDENER (Diploma), experienced, seeks post in July, near London, school in training course preferred.—**H. A.,** Box 1, 41, Wellington Street, Covent Garden, W.C. 2.

LADY, strong, willing, requires situation as **UNDER GARDENER,** some experience. **A. E.,** Box 17, 41, Wellington Street, Covent Garden, W.C. 2.

TRADE.

MANAGER or FOREMAN: life experience in all branches, Farnham, M. H. Wiggins, Central, and general, market, very modern address, highest references. **C. F. SEEKINGS,** The Villa, Broomfield, near Brentwood, Essex.

MANAGER or FOREMAN: life experience in all branches, including labour, and producing crops in large quantities, Plants, Flowers, Fruit, &c. **LAWRIE,** 77, Watzyck Avenue, Paddington.

OPEN for Engagement as HEAD SHOPMAN or MANAGER, upwards of 30 years' experience in all branches of the trade, over military ages. Write **G.,** Box 9, 41, Wellington Street, Covent Garden.

ASSISTANT (open market) offered by **SUNKEY'S** Famous Garden Pots. 50 years' experience in all branches of Horticulture, 12 years' Head, Norfolk Park, Dorking, seeking engagement, through death of mother-in-law; has gained experience in all branches, used to growing large quantities Fruit and Vegetables, awarded medals, &c., at R.H.S. meetings; highest references. Appl. **GEORGE KENT,** Postman Lane, Dorking.

The Gardeners' Chronicle
SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue **MUST** reach the PUBLISHER not later than **WEDNESDAY, 5 p.m.**

Ordinary Positions	per page	10	10	0
Facing matter and Back Page		12	12	0
Half and quarter pages, columns and half columns spaces, pro rata.				

4 line space not exceeding 20 words	per inch, single column	3	0
Per inch across 2 columns		7	0
Per inch across 3 columns		14	0
Per inch across 4 columns		1	10

Front page (no display allowed) 1/6 per line space. If all line counted as two lines.

For discounts apply to address below.

SITUATIONS WANTED.

26 words for 1/6, and 6d. for every additional 8 words or lower.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM	15	per annum.
ABROAD	17	6

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telephone: 4347 GARDENERS, RAND, LONDON. Telephone: 4347 GARDENERS.

PERPETUAL CARNATIONS

Flowering plants in 5in. pots. Standard varieties, 18/- per dozen, 110/- per 100. Novelties, 22/6 per dozen, 150/- per 100.

BORDER CARNATIONS

Strong plants in 3in. pots, 7/6 per dozen, 50/- per 100. All plants **CARE, PAID** and packed free for cash.

A. F. DUTTON'S NOTED CARNATIONS, IVER, BUCKS.




Sample **CRET Pot** FREE with Booklet will convince you that the **FRANCE** Fertility. Healthfulness of **CRET'S** would help you plants. Write **PETER BAILEY & SONS, LTD.,** 2 Heaton Mersey Pottery, near **MANCHESTER.**

"DUNN'S DEFIANCE SWEDE is a heavy cropper of excellent quality." This was what the writer of the valuable series of article entitled, "Crops and Stock on the Home Farm," wrote in his last week's *Gardeners' Chronicle*.

Dunn's Defiance Swede, price 1/9 per lb., carriage paid. **J. H. DUNN,** AGRICULTURAL SEED SPECIALIST, Bournemouth.

TURF LOAM.

Very Fibrous Yellow Turf Loam For VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc. *Quotations Carriage Paid or Delivered.*

A. B. JOHNSTON, New Park, Cranleigh, Surrey.

'MY GARDEN' SERIES

MY GARDEN IN SPRING. By **E. A. BOWLES, M.A.**

Acting Chairman of the Scientific Committee of the Royal Horticultural Society.

MY GARDEN IN SUMMER. By the Same Author.

:: MY GARDEN IN :: AUTUMN AND WINTER. By the Same Author

Price 5/6 each post free from—
THE LIBRARIAN, THE "GARDENERS' CHRONICLE," LTD., 41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

ORCHIDS,

Clean, well-grown and cheap, also Many Rare and Choice Varieties

TOVE AND GREENHOUSE PLANTS OF ALL KINDS.

Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being unsold.

Particulars on application,
BOULTON & PAUL, Ltd., ROSE LANE WORKS, NORWICH.

Protect Your Potatoes

Works: Stoke-on-Trent.

PROTECTION against the Potato's worst enemy—Blight—is absolutely essential. Blight cannot be cured; but it can be prevented if the crop is sprayed in time with a reliable mixture such as

Keelings Spraying Mixture (Kilin Brand)

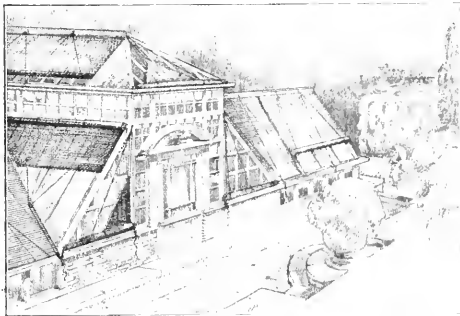
which is the mixture approved by science. Can be used with an ordinary garden sprayer—keeps in any climate—good for fruit trees. Harmless to other plants.

4 lbs. (makes 25 gallons of mixture, sufficient for 1 acre). Price, in 4 lb. bags, 4 6; 8 lbs., 8 -; 16 lbs., 13 6; 32 lbs., 24 -; all carriage free in U.K. Special prices for larger quantities. Send P.O. with order direct to the Manufacturers.

Keeling & Walker, Ltd. 20, M Iton House, Surrey St., London, W. C. 2.

BAMBOO BLINDS for GREENHOUSES.

SIZES IN STOCK FROM 10ft. x ft. TO 15ft. x 15ft.



PRICE LIST SENT POST FREE ON APPLICATION

J. AVERY & CO., Horticultural Blind Makers
81, GREAT PORTLAND STREET, LONDON, W. 1

Once Tried, Always Used.

The "PATTISSON" HORSE BOOTS

SIMPLEST! STRONGEST! MOST ECONOMICAL!

SOLES of best English Sole Leather (Waterproofed), with Motor Tyre Rubber Straps, and of Solid Rubber. Fig. 1 can be refitted repeatedly, equal to New Boots. Rubber Soles Strongly Recommended.

USED FOR MANY YEARS IN THE ROYAL AND IN THOUSANDS OF THE PRINCIPAL GARDENS.

The "PATTISSON" BOOTS are the most durable on the market, outlasting several sets of ordinary boots, and when worn out can be many times refitted and are then equal to new ones, but this may only be satisfactorily done by us, the makers

SILVER MEDALS. Hundreds of Testimonials. The "Field" says— & 1914, Royal International "As good as anything that could be devised". Exhibition, 1912.

Illustrated Price Lists, from the Makers.

H. PATTISSON & CO., 4-6, Greyhound Lane, STREATHAM, S.W.

CONTRACTORS TO H.M. GOVT.

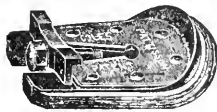


Fig. 1.



Fig. 2, A Quality.

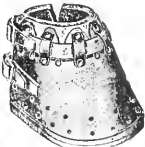


Fig. 3, B Quality.

"Say Bull's"

THE FOOD FOR PLANTS

Phytobroma

Barr's New Plant Food
For Flowers Vegetables and Fruit
of highest quality & guaranteed analysis

Phytobroma Greatly Increases all Vegetable Crops!
Guaranteed Analysis:— 3.50% Nitrogen; 16.00% Soluble Phosphates; 13.50% Available Phosphates; 3% Pure Potash.
7lb., 2 9; 14lb., 5 6; 28lb., 8/-; 56lb., 15/-;
1 cwt., 28/-.

Prepaid Orders for 28lb. and upwards, carriage paid. Circular, with full particulars, on application
BARR and SONS,
King Street, Covent Garden, LONDON.

MANY YEARS REPUTATION.

EUREKA WEED KILLER

LASTING RESULTS - NO NEW EXPERIMENT.

LABOUR SAVERS "EUREKA" LAWN SAND, SOILFUME NICOTINE INSECTICIDES, FUMES, SPRAYS AND OTHER CHEMICALS & SUNDRIES. SEE LIST. PLEASE ASK YOUR AGENT FOR THE EUREKA ARTICLES - THEY ARE ALWAYS SATISFACTORY IN ANY DIFFICULTY IN OBTAINING WE SEND DIRECT CARRIAGE PAID

Only Address: **TOMLINSON & HAYWARD 172, LINCOLN.**

6% ROLLED SHEET GLASS

HORTICULTURAL MORE LIGHT

A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/4 in. (or equal to stout 21 oz.) in thickness. Can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of

GENUINE WHITE LEAD PAINT.

"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cans.

AND

BEST LINSEED OIL PUTTY.

Complete Price List of Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.

EVERY GARDENER KNOWS THAT

Clay's gets there

and makes the Gardener gay all the year round

Sold everywhere in TINS at 6d., 1 1/4, and in BRANDED & SEALED BAGS at 2s. 6d., 4s. 6d., 7s. 6d., 10s. 6d., 12s. 6d., 14s. 6d., 16s. 6d., 18s. 6d., 20s. 6d., 22s. 6d., 24s. 6d., 26s. 6d., 28s. 6d., 30s. 6d., 32s. 6d., 34s. 6d., 36s. 6d., 38s. 6d., 40s. 6d., 42s. 6d., 44s. 6d., 46s. 6d., 48s. 6d., 50s. 6d., 52s. 6d., 54s. 6d., 56s. 6d., 58s. 6d., 60s. 6d., 62s. 6d., 64s. 6d., 66s. 6d., 68s. 6d., 70s. 6d., 72s. 6d., 74s. 6d., 76s. 6d., 78s. 6d., 80s. 6d., 82s. 6d., 84s. 6d., 86s. 6d., 88s. 6d., 90s. 6d., 92s. 6d., 94s. 6d., 96s. 6d., 98s. 6d., 100s. 6d.

CLAY & SON, Manure Mfrs & Bone C. Works, STRATFORD, LONDON, E.

IT IS THE STANDARD FOOD FOR PLANTS.



THE
Gardeners' Chronicle
No 1558—SATURDAY, JUNE 2, 1917.

CONTENTS.

Anemone Pulsatilla .. 226	Fungus which attacks canvas .. 224
Apple blossom, the glory of .. 225	Galloway garden, notes from .. 219
Australian vegetable resources .. 224	Hempden .. 224
Chamaedoxa Tandi .. 226	'Kea Bulletin,' suspension of the .. 224
Cruzeo's Island; Juan Fernandez .. 220	Obituary .. 227
Dibynospenna .. distri- cium .. 225	Rothschild, Leopold de .. 227
Electrical discharge and crop production .. 224	New hybrids .. 220
Farm, crops and stock on the home .. 225	Pea, weevil (Sitona) (lineatus) .. 225
Flora of New South Wales .. 225	Pompon Dahlias .. 225
Food production, on in- creased .. 222	Pureline breeding .. 224
Broad beans, 222; and Peas .. 221	Seeds, the germination of .. 224
Broccoli, planting .. 222	Societies—
Brussels sprouts .. 222	Horticultural Club .. 226
Butter Beans .. 221	National Tulip .. 226
Honey for fruit pre- serving .. 222	Royal Horticultural .. 226
Paranip seed, the ger- mination of .. 221	United Hort. Benefit .. 226
Peas and Beans injured by weevils .. 222	and Provident .. 226
Potatoes and Beet .. 222	War Items .. 222
Wireworms .. 221	Week's work, the
	Flower garden, the .. 221
	Fruits under glass .. 221
	Barly fruit garden, the .. 221
	Kitchen garden, the .. 221
	Orchard houses, the .. 222
	Plants under glass .. 222

ILLUSTRATIONS.

Dibynospenna distri- cium .. 225
Hybrid Rhododendron in a Galloway garden .. 219
Rothschild, the late Mr. Leopold de .. 227
Sea elephant (or elephant seal) .. 221
Trillium grandiflorum at Monreith .. 219

NOTES FROM A GALLOWAY GARDEN.—VI.*

ON a morning in April I watched a thrush plastering the inside of her new nest with the orthodox mixture of mud and rotten wood. It was a pretty sight, for the bird had chosen a bush of Rhododendron arboreum set with rose-coloured flowers, wherein to rear her brood. I have described the medium as mud; Yarroll and other writers on ornithology specify clay; but this thrush would have to fly long journeys to find real clay, and doubtless used the ordinary loam of the borders. The weather, and consequently the surface of the ground, were very dry at the time, and it occurred to me to wonder how she (or he) moistened the dry soil to make it plastic. There is no water near enough to be handy; yet when I put my hand into the nest, the walls were quite wet. Is it possible that the song thrush is enabled to finish its nest in the manner peculiar to it by a development of the salivary glands similar to that of birds of the swift family? The extreme instance is the Chinese architect of the edible birds' nests (Collocalia), which nests are esteemed by the Chinese gourmets as stuck for soup, though they consist almost entirely of the salivary secretion of the birds. To-day (May 3) there are four eggs in the nest that was being plastered a week ago.

The gardener's task at this season always consists largely of a hand-to-hand conflict with weeds, and this year victory rests in most gardens with the weeds. Amateur aid may be forthcoming, but is not always free from risk, as I felt when a fine tuft of *Wahlenbergia graminifolia* was rooted out of our rock garden by a good-natured young lady who had undertaken to conduct a raid upon Dandelions and grass so easily recognisable. The plant was duly labelled, but her education had not included Latin, therefore "*graminifolia*"—grass-leaved—conveyed no warning to her diligence!

Occasionally a garden gains fresh beauty through neglect; at least, one learns what good effect may sometimes result from following Lord Melbourne's axiom in politics: "Why can't ye leave it alone?" I came across a notable instance of this lately in the garden of Glasserton, in Wigtownshire, the residence of Admiral Johnston Stewart. The grounds, originally laid out on a grand scale, require

gravel paths, to which a clipped Yew hedge runs at right angles, cutting off another side of this mighty bush. But for this it must have spread to a circumference of 200 feet. The height I could not ascertain, but it is certainly between 18 and 20 feet. The whole plant was a sheet of golden blossom a magnificent sight. These dimensions considerably exceed those of a bush of *Berberis luxifolia* (dulcis) which we have here, viz., 114 feet in circumference and 18 feet high. It is not often that flowering shrubs are given room enough to show their full capabilities for display. The time arrives to every planter when he finds himself in a painful dilemma as to what must be sacrificed in the interest of something else. If he shrinks from the sacrifice, the result is disastrous, for a congested shrubbery is a distressing sight.

Owing to scarcity of labour this season many shrubs must have escaped the mischief so generally inflicted on them through a rage for "tidying up." The annual leaf fall provides not only natural



FIG. 80. TRILLIUM GRANDIFLORUM AT MONREITH.

more than an ordinary amount of labour to dress and keep them, owing to an extensive and complex arrangement of grass terraces. These cannot now be shaven and shorn as in the piping days of peace, neither can the flower beds be made ablaze with colour in spring and summer, as of yore. But sweet are the uses of adversity. Round a large circular bed, formerly studded with bulbs which are no more, there was planted as part of the design a ring of *Scilla sibirica*. The plants have endured, outlasting more ephemeral things; and not only endured, but prospered exceedingly, spreading into a broad, dense band of azure, whereof the beauty has to be seen in order to realise how to treat this hardy little bulb. To me, at least, the appearance it presented in mid-April was a revelation of its capabilities.

This mention of Glasserton must serve as an excuse for referring once more to *Berberis pinnata*, for I think a specimen there must break the record for size. I measured the circumference carefully last week and found it to be 135 feet. One side has been severely cut back from a

nourishment, but an excellent mulch, protecting the soil from frost and scorching sun. This is especially important for such shallow rooters as *Rhododendrons*; yet it is a common practice to rake the dead leaves off and wheel them away. One day last winter I was sorely tempted to renounce with two men whom I saw diligently engaged in scraping bare the ground under the shrubs in St. James's Park. Methought they might have been put to more profitable employment.

Staphylea trifoliata, raised from seed introduced by Mr. Wilson in 1908, is flowering here for the first time. The blossoms are pink, in short, few flowered corymbs, decidedly pretty, but not showy.

One has heard complaints about *Morista hypogaea* that it suffers from cold feet, is prone to damp off in winter, and should be treated to the luxury of a Moraine. We have no Moraine bed here, but plenty of patience, and exercise of that quality is certainly necessary in getting young plants established, for they are not only slow in getting on their legs, so to speak, but until they increase into considerable

* For previous articles see Jan. 13, p. 15; Feb. 17, p. 69; March 10, p. 105; April 14, p. 149; and April 25, p. 169.

patches, run serious risks at the hand of an inexperienced or careless weeder, so nearly do the leaves resemble those of some of our native crucifers. A pugny in height, *Morisia* owes its value to the luminous yellow of its blossoms, which it produces in such profusion as to conceal all the foliage except the outer fringe of the patch. Moreover, it continues a long time in bloom; having opened its first flower here on January 10, it is still a brilliant object on May 25. In his useful handbook on Alpine plants, Mr. W. A. Clark recommends a top-dressing in November of gritty loam and leaf mould, but we never succeeded well with it till we applied some sifted mortar rubbish. It is a most companion for *Diaba* (*Petrocallis*) *pyrenaica*, flowering simultaneously, and being of similar lowly stature.

The cultist of the terrestrial Orchids to flower is *Cypripedium calceolus*. Like most other things, it is a fortnight behind time this year, the first bloom opening on May 25, whereas it generally begins to flower in the first or second week of that merry month. It is more than thirty years since I bought up the whole stock—some twenty clumps—of an amateur who was leaving his home in Surrey, and it has been a joy ever since, growing vigorously in half-shade in a border of loam, peat, and lime. Somewhere or other, I have read a pathetic story about this, the queen of British Orchids. Long after the ruthless greed of collectors had caused it to disappear from the rest of its native haunts in Yorkshire, a few plants remained in a woodland attached to a certain vicarage in that county. The vicar, dreading the inevitable result of allowing these survivors to flout their showy blooms of canopy and chocolate, took the precaution every spring of picking off the flower-buds before they opened, whereby the roots escaped detection by raiders.

Not until mid-summer shall we know the full extent of loss ensuing upon the severest winter in two-and-twenty years. Meanwhile, we appear to have fared better than we dared to expect. The Chinese plants introduced by Messrs. Wilson and Forrest have stood the test bravely; and older species, retarded by the cold of April, have produced a deluge of blossom the like whereof is seldom seen. *Herbert Maxwell, Monroth, Weymouthshire.*

ORCHID NOTES AND CLEANINGS

NEW HYBRIDS

BRASSO-LAELIA JESSICA. A two-flowered inflorescence of this pretty and delightfully fragrant hybrid between *Brasso-Laelia Jessopii* (B. Digbyana × *L. xanthina*) and *Brassavola glauca* is sent by Pania Rath, Esq., Ashford Park, Surrey (Orchid grower, Mr. W. H. White), in whose gardens the plant is flowering for the first time. The flowers are finely formed, five inches in width, the petals broad, well displayed, and the whole flower partaking of the thick, wax-like texture of *Brassavola glauca*. In *Brasso-Laelia Jessopii* the assertive yellow of *Laelia xanthina* prevailed, but in the crossing again with the white, greenish-sepalled *Brassavola glauca*, the yellow has nearly vanished, showing only a faint trace on the greenish-white sepals, and still less on the white petals. In the lip the tubular form of *B. glauca* appears, but in the expanded white front lobe, with its slightly fringed margin, *B. Digbyana* shows its features. The disc of the lip is pale yellow, and the under side of the column purple.

CYPRIPEDIUM GENERAL PÉTAIS. Mr. F. C. Puddle, gardener to W. H. St. Quinton, Esq., sends a flower of *C. General Pétain*, raised between *C. Hera Euryades* (*Boissalii* × *Leucumii*) and *C. Psyche* (*bellatulum* × *niveum*) in Scampston Hall Gardens, Rillington, Yorks. The flower, which is finely formed, has petals nearly

two inches in width and of firm substance. The ground is white, the dorsal sepal having broad, irregular lines of claret-purple, and the petals profuse spotting of the same colour. The lip and staminate have minute purple markings, and the reverse side of the flower is tinged and spotted with claret colour. Mr. Puddle, in his letter, makes an interesting remark, showing the variation in complex hybrids. "Of this cross we have flowered two plants in which *C. Hera Euryades* dominated, and they were weak, whereas, as you can see by the flower sent, with *C. Psyche* dominating, the hybrid is quite a good thing."

SOPHRO-LAELIA STELLA.—A two-flowered inflorescence of a remarkable hybrid, obtained by crossing *Laelia superbiens* with the pollen of *Sophronitis grandiflora* some years ago in the Tring Park Gardens, Tring, is sent by Mr. Arthur Dye, the gardener. The seed capsule and young seedlings were watched for years with considerable interest, and imagination pictured a very much greater departure from *Laelia superbiens* than is shown in the resultant hybrid. Evidence of the correctness of the cross, however, is ample, and the conclusion is that, as



FIG. 21. HYBRID SOPHRO-LAELIA STELLA.

in some other cases of wide parentage, *L. superbiens*, while taking on certain minor features of the other parent, does not yield in point of size, colour, and habit. The flowers are over four inches across, and coloured rosy mauve, with white midribs. The petals are broader than those of *L. superbiens*, and the curve of the sepals faintly suggests *S. grandiflora*, whilst the shorter lip deflected in front with yellow markings in the centre, and the thinner dark roscolumn, with white anthercap, also indicate that species.

LAELIO-CATTLEYA PSYCHE. Mr. Dye also sends a fine three-flowered inflorescence of *Laelio-Cattleya Psyche*, raised in Tring Park Gardens between *Laelio-Cattleya elegans* and *L.C. Nysa superba*. In size and general appearance of the flower, it is nearest to *Cattleya Warecewiczii*, which, with *Laelia crispata*, produced *L.C. Nysa*, and the usual defects in the labellum caused by *L.C. elegans* (*C. Leopoldii* × *L. purpurata*) are happily obliterated. The sepals, petals, and tube of the lip are silver-white, flushed with rosy lilac. The front of the lip is coloured mauve-purple, the disc being pale yellow, deepening into light orange at the base.

CRUSOE'S ISLAND: JUAN FERNANDEZ.

(Continued from p. 211.)

ANSON'S VISIT IN 1741.

IN 1741 the island sheltered Anson's expedition on its voyage around the world. The chaplain of the "Centurion," the Rev. Richard Walter, gives a very complete account of the doings of the expedition which is well worth reading. The "Centurion" arrived under the lee of the island on June 10, after a dreary voyage from Cape Noir. A great number of the crew had died of scurvy, and very few were left to man the sails and work the ship. Walter says: "those only who have endured a long series of thirst, and who can readily recall the desire and agitation which the ideas alone of springs and brooks have at that time raised in them, can judge of the emotion with which we eyed a large cascade of the most transparent water, which poured itself from a rock near a hundred feet high into the sea, at a small distance from the ship. Even those amongst the diseased, who were not in the very last stage of the distemper, though they had been long confined to their hammocks, exerted the small remains of strength that were left them, and crawled up to the deck to feast themselves with this reviving prospect." One can imagine the disappointment of these much tried mariners when night closed in and still no suitable anchorage had been discovered. Owing to the imminent risk of running on shore with the strong current, the anchor was let go during the night, and their helplessness was such that next morning the anchor could not be started from the ground until a friendly breeze filled the sails and dragged it from its resting place. The crew of the "Tyral" sloped in as even a worse plight, since no fewer than thirty-four men had died of scurvy, and those that remained were so afflicted with the malady that only the captain, the lieutenant, and three of the men were able to stand by the sails. The stricken crews were at length landed on Juan Fernandez, not a few of them dying en route, and afterwards on account of their weak condition. The Cabbage trees, goats, Water cress, and a vast profusion of Turnips and Sicilian Radishes, with abundance of fresh water, soon restored the health of the survivors. They found many acres of ground covered with Oats and Clover. "The excellence of the climate and the looseness of the soil render this place extremely proper for all kinds of vegetation, for if the ground be anywhere accidentally turned up, it is immediately overgrown with Turnips and Sicilian Radishes." Mr. Anson, therefore, having with him garden seeds of all kinds and stones of different sorts of fruits, he sowed Lettuces, Carrots, and other garden plants, and set in the woods a great variety of Plum, Apricot, and Peach stones, and these last, he has been informed, have since thriven to a very remarkable degree.

Describing the interior of the island, Walter continues: "Some particular spots occurred in these valleys, where the shade and fragrance of the contiguous woods, the loftiness of the overhanging rocks, and the transparency and frequent falls of the neighbouring streams, presented scenes of such elegance and dignity, as would with difficulty be rivalled in any other part of the globe. It is in this place, perhaps, that the simple productions of unassisted nature may be said to excel all the fictitious descriptions of the most animated imagination." Walter speaks of the malicious manner in which the Spaniards had introduced a large number of dogs into the island in the endeavour to extirpate the goats in order to deprive their enemies of provisions with which goats' flesh furnished them. At the time of Anson's visit there were not more than two hundred goats left, and these had taken refuge in the most inaccessible localities and were very difficult to approach. The shallow nature of the soil was the cause of a fatal accident to one of the sailors. Whilst pursuing a goat he caught hold

of an overhanging tree to prevent himself from slipping, but it unfortunately gave way. In his fall he seized hold of another, but it also broke loose, and he fell amongst the rocks and was dashed to pieces. Describing the sea elephants or sea lions as he calls them, which were at first such a terror to poor Solliak, Walter says they are, when mature, anything from 12 to 20 feet in length, and from 8 to 15 in girth. Some idea of the appearance of these curious creatures may be gathered from the accompanying sketch (see fig. 82), copied from *Anson's Voyages*. They appear to divide their time equally between land and sea, continuing at sea all the summer and coming on shore at the setting in of the winter, where they reside during the whole season. At this time they bring forth their young, of which they generally have two at a birth. These they suckle with their own milk. Walter relates that a sailor was one day carelessly employed in skimming a young sea lion, when the female from which he had taken it came upon him unperceived, and getting his head in her mouth scored his skull in many places, wounding him so severely that he died in a few days. They live in families and societies, and feed on fish and mollusks, especially turtle-fishes. The skin furnishes leather, the oil is valuable for burning; the tongue alone is really palatable. At the time of Anson's visit, the Parahis had been practically exterminated by the dogs introduced by the Spaniards, as also the progeny of Solliak's cats. The expedition remained on the island about three months, when they were sufficiently recovered to commence serious operations amongst the Spanish merchant ships.

In 1750 the Spaniards decided to establish a colony on Juan Fernandez, and the President of Chile sent one of his superior officers as Governor, with a strong detachment of soldiers. They occupied Cumberland Bay, built a small township, and at great expense erected several forts and batteries at different points. The situation was evidently a suitable one for the practice of corruption and waste, and the Spanish proverb was often levelled at the administration, "Entre piosos y azules, van el bones" (between pick axes and hoes, many a million goes), though fortunately in this case millions of pesos and not pounds! Guns without mountings were dragged up the heights, where they were quite useless as weapons for the defence of the place, which, indeed, was never likely to be attacked. The establishment was kept up for several years at great expense, sheltering a number of political exiles as well as convicts condemned to hard labour during their term of imprisonment. Among them was a French military officer of rank and superior scientific attainments, who threw himself into the bay where he was confined, now called El Francois, no doubt on account of this melancholy occurrence. *J. Hutchinson, Ken.*

(To be continued.)

ON INCREASED FOOD PRODUCTION.

NOTES ON PLANTING BROCCOLI.

Broccoli is liable to severe injury from frost, and for this reason cultivators should take every precaution to keep the plants sturdy and hardy. The seed should be thinly sown in an open position, upon soil not too rich, ample space being allowed between the plants. Firmness of soil will check luxuriance, and encourage fibrous root growth, and it is sometimes advisable to plant upon plots that have remained undug after having been cleared of their previous crop. Quarters cleared of Strawberries have, for instance, been utilised in this way. Where the soil is very retentive, however, this method has sometimes led to failure owing to the soil being excessively hard. In the kitchen garden here, which is in a low position, and has for years been deeply trenched and well cultivated, every

Broccoli plant was lost last winter, while in the fruit garden, placed on a higher elevation, crops planted on less well cultivated land were saved. *Thos. Coomber, The Hendre Gardens, Monmouth.*

WIREWORMS

The following remarks on wireworms have been forwarded us by the Board of Agriculture:—

In some places, recently planted Potatos are being damaged by wireworms, and inquiries are being made as to the means to be taken to get rid of these pests. Inasmuch as harmless soil insects are sometimes mistaken for wireworms, it is important, that the inexperienced should be able to recognise them.

A wireworm is light brown in colour with a slightly polished and somewhat tough body. It is more or less worm shaped, and has a distinct head and three pairs of small legs just behind the head. Wireworms measure up to about three quarters of an inch in length.

A wireworm is the young or larval stage of a click beetle. The insects live as wireworms for three years or even longer. They are most active in spring and early summer; in the late summer, when they often burrow deep into the soil, they are likely to do less harm. In winter, especially during cold weather, they may go so far down into the soil that they are not seen when the ground is being dug. A full fed wireworm, after burrowing deeply into the soil in late summer,

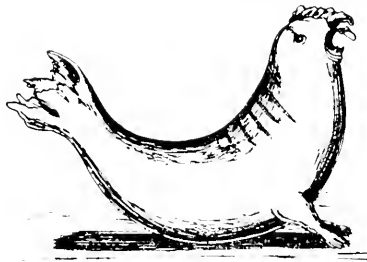


FIG. 82. SKETCH OF SEA ELEPHANT OR ELEPHANT SEAL. (V. PERRINUS). (FROM 'ANSON'S VOYAGES')

changes into a chrysalis, or "pupa," which later on turns into a beetle. In the following summer, the beetle lays the eggs from which fresh wireworms are produced.

Almost all plants are attacked by wireworm, Broad Beans less, perhaps, than other garden vegetables.

To rid a piece of ground of wireworms requires much trouble and considerable time. There is no simple remedy for this pest.

If the ground is bare of crops, digging it exposes the wireworms to the attack of birds; similarly, poultry penned on a newly dug piece of ground are useful in devouring wireworms. Naphthalene, too, at the rate of not less than 2 ounces per square yard, dug in, helps to destroy the pest; but the price of this may be prohibitive. Only so much should be spread as can be dug in on the same day that it is applied. It is not advisable to use this insecticide when the ground is under a crop. Proprietary insecticides have sometimes given good results, but at other times they have failed completely. It is unlikely that any of these remedies will succeed if they can only be applied on the surface, whilst the wireworms are far below.

The chief means for reducing damage by wireworms is to encourage the rapid growth of the crop. This may be done by applying, in the form of a top-dressing, either sulphate of ammonia at the rate of 1 lb. per rod, or soot, 1 gallon per rod. In applying sulphate of ammonia, which should preferably be in the form of a fine powder, care should be taken to

spread it uniformly and to hoe the ground immediately after the application, in order to prevent the material from burning. If the soil is dry and water is available, a thorough watering after the sulphate of ammonia has been spread will help to wash it down to the roots.

In the case of soot, this material, if taken direct from the chimney, should lie in a heap for a week or two before being spread on the soil. Another means of reducing the damage done by the pest is thorough cultivation. If frequently. If any such roots as Carrot, Beet or Mangold are available, they may be used as "baits." For this purpose, cut the roots in pieces and put a piece at the end of a short stick. Bury the pieces in the ground with the stick projecting, pull the "baits" up and destroy any worms feeding upon them.

In the case of Potatos, even if some wireworms are found attacking the seed, it should not be assumed that complete failure of the crops will result; provided that the growing parts of the plant are not destroyed, a partial crop may be obtained in spite of the presence of the pest. If, however, the attack is so severe that it becomes evident that no crop is to be expected, before planting another crop, dig up the Potatos and treat all those containing wireworms in such a way that the pests are killed. For instance, Potatos may be fed to pigs or poultry.

If transplanted plants can be obtained, Onions and Leeks may be planted. Turnips and Swede Turnips may also be sown, but care should be taken to sow sufficient seed to allow for a certain amount of loss. When thinning the crop, do not at first thin to the distance at which the permanent plants are to grow. At each thinning remove only sufficient plants to give room to the growth of the others. In the case of crops which are pricked out, keep a reserve bed to replace failures.

Good and constant cultivation extending over one or two seasons will generally reduce the number of wireworms in the soil.

THE GERMINATION OF PARSNIP SEED.

Parsnip seed may be longer in germinating this year than usual, as stated by Mr. Bartlett on p. 212, but it is habitually slow any year, and that applies to the whole of the Umbelliferae. Seeds that I sowed in April were covered with snow a day or two afterwards, yet the seedlings are up and making good progress. I have seen soft sown Parsnip seed germinate in February. It is a question of time and the warmth of the soil. Parsnip seeds need not necessarily be dormant, although they lie long in the soil. The embryo of any of the Umbelliferae ceases growing at an early stage, and at the maturity of the seed forms a very tiny body embedded in a mass of hard, oily perisperm. This latter has to undergo chemical changes by the aid of warmth and moisture in order to feed the tiny embryo, which has to make considerable growth before it can germinate. This growth can be hastened by artificial heat, as may be remembered in the case of Celery and Parsley. The seeds and embryo of the Rannunculaceae are similar in condition and behaviour; compare the slow rate of germination in Delphinium, Anemone, and Clematis. *J. F.*

BROAD BEANS AND POTATOS.

The cottager's plan of sowing Broad Beans amongst his Potatos is worthy of consideration. The Bean seeds are placed singly in alternate rows from five to six foot apart amongst the Potatos. The tuberosus crop does not suffer, and the Beans, having ample room for development, are usually very fruitful. As beans are fond of the flowers, this is an additional recommendation in many cases. *A. C. B.*

BUTTER BEANS.

The Butter Bean is the Lima (*Phaseolus lunatus*) or a variety of it, as Mr. Beckett states on p. 212. It was introduced to this country in 1818, and is stated to be a native of the Tropics, perhaps Tropical South America, but its habitat

is not positively known. Butter Beans are largely cultivated in the United States, West Indies, Madagascar, and Burma. Even in the United States the crop sometimes fails, and it cannot be grown with any certainty of success in this country. There are many varieties, the climbing sorts being known as Pole Beans. There are also Bush Limas, 18 inches to 2 feet high, some spreading and others strictly erect. The older varieties of Pole Limas have pods about 5 inches long and four-seeded. The Giant-podded Pole Lima has pods 7 inches to 8½ inches long, 5-6 seeded, and borne in clusters of four to eight. The older Bush Limas have pods 2½ inches to 5 inches long, and three to four seeded. The Burpee Improved Bush Lima has pods 6 inches long, five-seeded, and borne in clusters of five to eight, occasionally ten. Most of the varieties have white seeds, but those of the last-named are tinted with green when mature and dried. In America the term Butter Bean seems to be restricted to the small-seeded Lima, Carolina, Sieva, or Sewee, grown in the south of the United States. Some of the old Bush Limas have dry and mealy seeds, but the Fordbrook Bush Lima has juicy and sweet seeds even when mature. This is another improvement which Mr. Beckett may note when thinking of the Butter Bean of the shops. I quite agree with him that some of the Dwarf or Haricot Beans are better in flavour than the Butter Bean of the shops. I can speak from experience of Green Haricot, which must be closely related to Green Gem. *J. F.*

THE BROAD BEAN

I AM growing three to four times the usual quantity of all kinds of Beans, but prefer the Broad Bean as a food to any of the others. In some seasons large quantities of Broad Beans are dried here by laying the pods on the borders of fruit houses. There is, perhaps, a danger in using too many Kidney Beans. Some cases of Beri-beri which were brought to an infirmary were said by the medical authorities not to be traceable to any known cause, and it was suspected that the eating of large quantities of these Beans had something to do with the attack. I grow some of the Beans, and they turned out to be a variety with black and white pods. *R. P. Brotherton, Tynningham, East Lothian.*

HONEY AND FRUIT PRESERVING

THE question of the possible use of honey as a substitute for sugar in jam making and fruit preserving having been raised, the Food Production Department has considered the question. Bee-keepers who have honey to spare and, to jam, or otherwise to preserve, may utilise honey instead of sugar quite satisfactorily. The general rule is to use honey in the same quantities and in the same way as sugar for other jam or marmalade. Whether it is worth while so to utilise honey depends on individual circumstances and personal taste. Those who do not keep bees may find the price of honey much higher than that of sugar; indeed, practically prohibitive. Moreover, the supply of honey at present is very short and not likely to be large at any time this year.

BRUSSELS SPROUTS

MR. TURNER'S query, on p. 211, as to my method of growing Brussels Sprouts is reasonable. I may say that I make it a point to prove the merit of practical methods by repeated trials before publishing them, one season or two being too brief a period in which to determine the value of any practice or theory. Our Brussels Sprouts have been grown on the same ground for more than twenty years, and before that they were taken from another piece of ground for fifteen years, the rows one year invariably being planted between those of the previous year. Cultivation consists

largely in turning over the ridge of soil occupied by the crop in the preceding year, to earth-up the crop, and when pheasants are more than usually greedy, each plant has a dessert spoonful of sulphate of ammonia at the end of summer, which, however, is very seldom needed. Now, why treat them in this seemingly haphazard manner? The reason for trying it was that the Sprouts produced under the treatment usually adopted were too large and rough, while I obtain better produce by my own method. The soil here yields good crops of Broccoli and Scotch Kale, without being cultivated specially for those vegetables in any way. When pressed for time, I never hesitated to plant Cabbages and Coleworts in undug ground. Winter Spinach, of which a very large quantity has to be grown, is usually sown in Potato ground that is merely levelled before sowing the seeds. But Cabbages and Kales, as soon as time permits, have the ground between the rows forked over. Soot is applied thickly over the whole surface, but, of course, I do not limit the manure to soot. *R. P. Brotherton.*

POTATOS AND BEET.

WITH regard to my method of planting Potatoes, as recorded on p. 131, there are several limiting factors which my critics fail to notice. In regard to the Evergood variety, which ultimately grew 5 feet high, if I had known the haulm would reach that height, and had allowed a space of 5 feet between the rows, the question arises, should I have got so great a weight of produce as 22 tons? My opinion is that I should only have lifted three-quarters of that amount, or even less; therefore, instead of 22 tons 2 cwt. ware and seed per acre, I might possibly have had 16 tons 11½ cwt. My reasons for this conclusion are that the tops would have fallen down flat at the wider distance, instead of supporting each other as they did at 2 feet between the rows, and air would not have reached the roots, so well as it did. The point where overcrowding commences and the weight of crop diminishes can only be determined by experiments with each variety, and on various soils.

Mr. Beckett (p. 201) imagines, I might have grown the varieties with smaller tops closer together; yet he overlooks the fact that those early varieties require earthing-up several times if the nights are frosty, and frost is especially frequent in the Midlands. Two feet between the rows often proved an insufficient distance for this operation, for it did not permit of enough soil to cover the tops.

The fact that Beet will survive the winter in the open, unprotected, has been a revelation to many of us. I saw the plot referred to on p. 211 at Wisley, on April 25. The young leaves were coming up thickly all over it, and I have seen other cases of Beet out-of-doors this spring in gardens close to my present residence, where frost and snow were severe. But I still hold the opinion that the old plan of lifting and storing Beet in late autumn is best, provided one has a cool, moist shed where the roots can be kept from withering if a sudden frost occurred. It would be no easy matter to lift Beet from the open without injuring the roots. *W. H. Davies, Wisdhan, Hook, Surbiton.*

PEAS AND BEANS INJURED BY WEEVILS

I NOTE in your "Answers to Correspondents" a reference to weevils. Unfortunately this year these have done a considerable amount of damage in this locality to second early Peas, and also to Broad Beans. One or two long rows in our case were so disfigured that we had to sow again, and there are very many other such instances in the neighbourhood. I am wondering if it is general this season, for I know of no effectual remedy. No doubt after the welcome rains the ravages of this pest will be lessened, as they are generally most active when growth is slow owing to dry weather. *Edwin Beckett, Aldenham House, Blotter.*



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

COLEWORT.—Seeds of this useful vegetable should be sown at once, selecting Rosette, the best variety for early winter supplies, and Hardy Green, as this latter variety will stand through the winter and furnish good heads in early spring. Sow the seeds in an open position where the soil is not too rich, so that the plants may be grown as stocky and hardy as possible. When they are of sufficient size they may be planted in rows 15 inches apart. Continue to plant out, as opportunity arises, such crops as spring sown Cabbages to furnish heads throughout the autumn. Brussels Sprouts for late supplies should also be planted now. Autumn Broccoli and Hollow-leaf Giant Cauliflower should not be allowed to become crowded and drawn in the seed-bed, but should be planted in their permanent quarters as soon as large enough. Other plantations may be made later to continue the supply as far into the autumn as possible.

CELERY.—As soon as Celery plants are large enough they should be carefully transferred to the trenches, and a sufficient quantity of clear water applied to settle the soil about the roots. It is a mistake to leave these plants too long in the nursery bed, as transplanting them late causes a check from which it takes them a long time to recover, especially if the weather is dry at the time of planting. When the plants begin to make fresh growth, frequent light dustings of soot may be applied. Careful attention must be given to watering throughout the season. Continue to prick out plants for late supplies, giving each plant plenty of space.

EARLY POTATOS.—Special attention should be given to early plantations of Potatoes. Stir the ground deeply between the rows and earth-up the plants as they become large enough. Do not draw the soil up to a sharp ridge, but leave the top as broad as possible, so that the rain-water may reach the roots. Potatoes in cold pits should have all the air possible. Remove the lights and give a good supply of clear water to the roots. Old Potatoes in store should be examined, and all young shoots removed.

TOMATOS.—Plants intended for cultivation out-of-doors should be planted with as little delay as possible, and if wall space is available the best results will be obtained by planting 18 inches apart and confining the plants to single stems. Remove all side-shoots as they appear. A mulching of decayed manure should be applied as soon as the plants become established, and when sufficient fruits are set, liberal supplies of manure water may be given. Tomato plants from which ripe fruits are being gathered should be assisted to ripen the remainder of their crop by frequent applications of manure water from the farmyard, or by sprinkling the surface of the soil with guano previous to watering with clear, soft water. It is important that fresh air should be admitted to these plants night and day, and that the fruits be gathered before they become over-ripe.

MUSHROOMS.—The beds from which Mushrooms are being gathered should not be allowed to become too dry. Remove the litter from the surface of the beds in order to see if water is necessary or not. When necessary, rain-water may be given through a fine rose and the covering replaced the following day. Beds in the open should be protected from drenching rains, or the material may become sour and fail to produce a crop.

LEEKS.—Continue to plant Leeks as they become large enough, and keep the soil stirred between the plants to promote free growth. If dry weather sets in, give the roots a liberal supply of water.

LETTUCE.—The recent heavy rains have done much to promote the growth of early planted Lettuce, which will benefit by the free use of the Dutch hoe between the rows. Plant suc-

cessional batches, and make small but frequent sowings of approved varieties which are known to succeed well in summer. For these sowings a border should be selected where some protection from the hottest sunshine can be afforded. No time should be lost in digging all land recently occupied with winter and spring crops, so that other crops may be got in for autumn and winter use. Garden Swedes may be sown now and thinned to 1 foot apart in the row as soon as large enough to handle.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR DAVEY, Abbotts Wood, Godalming, Surrey.

INSECT PESTS.—Notwithstanding the severe winter and repeated sprayings with insecticide, there are many maggots on Plums, Damsons and Pears. The trees should, as far as is possible, be looked over and the grubs removed by hand-picking. Afterwards spray with a nicotine insecticide on both sides of the foliage. This spraying should be followed by another of a strong solution of Quassa Extract. Peaches and Nectarines should, if free from aphids, be syringed frequently with clear water in bright weather; if not clean, use about 1 quart of soluble petroleum to a garden engine of 50 gallons capacity. Direct the spray into the joints of the shoots and wet every portion thoroughly.

CHERRIES.—Cherry trees have set plenty of fruits, which should be thinned where too numerous, and more especially on early varieties, such as Early Rivers. Knight's Early Black is a good prolific early fruiting variety, whether grown as trained cordons or in fan shape. The shoots need to be stopped early to enable the fruits to develop. Nail in the branches roomed for extension, and stop all laterals about the third or fourth leaf. Use the garden engine to keep down aphids, and look over the trees diligently for maggots, which pull up the leaves to hide themselves. Protect the fruits of early varieties before the birds attack them, which they do as soon as they begin to show colour. Fasten the netting so that it hangs quite a foot from the trees.

WALL TREES.—The material used for protecting wall trees should be removed entirely and stored; the foliage will now afford sufficient protection for the fruit. Many of the new shoots on Pear and Plum trees are ready for stopping and tying. If the trees have been disbudded carefully the shoots will now require to be pinched about four or five leaves, and extra vigorous ones on the upper branch should be attended to first, allowing a few days to elapse before completing the operation. In the case of very old trees some of the more vigorous of the new shoots may be trained in to take the place of worn-out branches. Fruit trees on warm, south walls require copious supplies of water.

FRUITS UNDER GLASS.

By JAS. HEDDER, Head Gardener to the Hon. ARTHUR DAVEY, Abbotts Wood, Surrey.

PINEAPPLE.—Fruits of the Queen variety of Pineapple are swelling. Give closer attention to watering, affording occasional applications of a weak stimulant. Peruvian guano sufficient only slightly to colour the water may be used for feeding the roots. Attach much importance to watering Pineapples with water as warm as the plunging material. Let the house be closed early, use the syringe freely, and keep the evaporating troughs filled with weak liquid manure from the farmyard. Later plants of the Queen variety should be showing fruit for the autumn. Where the growth has been some that free it will be well to keep the plants drier for a few weeks, then water again; this treatment will have the desired result if, so far, they have not showed for fruit.

LATE GRAPES.—The Latest Vines, such as Lady Doreen's variety, will soon be in flower. I have noticed that this Grape usually flowers at the end of May without any attempt at forcing. When the Vines are in flower a night temperature of 67° Fahr. is suitable. This is not a free-

setting variety, and special attention should be directed to the pollinating of the flowers. It necessary use a camel's hair brush and dust with pollen from a free-setting variety, such as Black Alicante. More attention will be needed if the weather be dull and sunless. No varieties repay for careful thinning more than these late ones. Bear in mind, too, that medium or small bunches are the best for keeping in bottles in the spring.

THE FLOWER GARDEN

By W. J. CRUISE, Gardener to Mrs. DEMESTER, Keele Hall, Staffordshire.

ANTHRINUM.—The early plants of Anthrimum are ready for placing in their flowering quarters. In well-prepared ground the tall varieties should be placed 13 inches apart, but for the dwarf varieties 12 inches is sufficient. When planting beds with distinct colours examine the plants carefully for weevils, which may be detected by the difference in the foliage.

ROSES.—Syringe Rose trees occasionally to keep aphids in check, and make an examination of the foliage for grubs. Quassa Extract is a suitable insecticide for Roses. The removal of the weaker shoots will result in increased vigour in those that are left for flowering. Established plants will be benefited by liquid manure given in dry weather.

CLIMBERS.—Climbers on walls and pergolas should be trained before the shoots grow entangled. Clematises grow very quickly and need constant attention in this respect. Climbing Roses should receive similar treatment to that advised above.

HARDY ANNUALS.—Hardy annuals should be thinned directly they can be handled. A space of 12 inches is sufficient for dwarf plants, but such kinds as Lupins, Lupinus, Malope, and Lavatera need at least 18 inches. For supports place small brushwood between the plants. Soot heaped lightly in the soil serves to keep slugs in check and stimulate the roots.

ASTERS AND STOCKS. These half-hardy annuals need a light, rich soil, heavy, retentive ground may be made suitable by the addition of old potting soil, wood ash, and decayed stable manure. The plants are in good condition for planting, and the first showery day should be chosen to get them into their flowering quarters. It is advisable to have reserve plants to replace any failures.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMY COLVILLE, Bury, Garton Park, Brixton.

ODONTOGLOSSUM GRANDE AND O INSELEAYI. These Mexican Odontoglossums are developing young growths, and as soon as roots push from their base they should be repotted or top-dressed. Those that have sufficient root room for another season and with the compost in good condition should be immersed in water to soak the soil; afterwards allow them to become partially dry, when portions of the old materials on the surface should be picked from between the roots and replaced with fresh compost. Plants that need repotting should have all the old compost shaken from the roots, and be potted afresh in receptacles large enough to accommodate them for two seasons. Use a compost similar to that advised for *Dendrobium*, adding some crushed rocks. Plants of *Odontoglossum Fraz-Schuereri* are active at the roots, and should also be repotted or top-dressed as is considered necessary. All these plants grow best in summer in the warmest position of the Odontoglossum house, but they should be removed to the intermediate house for the winter. *Odontoglossum Bossii majus* and its many hybrids will require attention at the roots as they pass out of flower. These plants are best grown in plain shallow pans, and suspended from the roof rafters in the cool Odontoglossum house. Any specimens that have grown over the sides of the pans should be broken up, removing the back, leafless pseudo-bulbs save three or four behind the head, and the plants potted afresh.

STANHOPEA. This Orchid is best grown in shallow oak wood baskets, and suspended from the roof rafters in a moist, shady position, in the

Cattleya or Intermediate house. The pendulous inflorescences push downwards through the bottom and sides of the receptacles. For that reason, when replacing them in the baskets a thin layer of peat rhizomes should be placed over the bottom for drainage purposes, in preference to broken pots. At this period of the year, or directly new roots develop, fresh rooting material, consisting of a mixture of equal parts *Osmunda-fibre* or A 1 fibre and Sphagnum moss in rather coarse portions, should be afforded the plants. Plants that require increased rooting space should be given receptacles that will accommodate them for at least two seasons, as they dislike frequent root disturbance. Plants that have sufficient rooting space and good compost should be merely top-dressed afresh, removing a portion of the old soil to permit of this being done. Water the roots sparingly during the earliest stages of growth. Spray the foliage on frequent occasions, and especially the under sides of the leaves, to prevent attacks of red spider.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORFOLK, Eastwell Park, Kent.

TUBEROUS BEGONIAS.—Tuberous-rooted Begonias give the best results indoors when they are grown in cool conditions, but if the plants are required to bloom early in summer it is necessary to encourage growth by a little extra warmth, though conditions approaching forcing treatment must, at all times, be strictly avoided. Tubers that have been stored during the winter will start freely into growth if placed in boxes containing a little rough leaf soil. The mould should be kept slightly damp. As soon as they have rooted the plants should be potted to prevent damage to the roots in separating them. Place them in receptacles of suitable sizes according to the strength and age of the tubers, or, if preferred, direct into their flowering pots. Do not allow the roots to become pot-bound or growth will be checked. Use a light, open soil consisting chiefly of turfy loam and rough leaf-mould. If the latter is not of good quality a little manure from a spent Mushroom bed may be added, with a little sharp sand and soot. Grow the plants in a low box or frame with a moist bottom, and damp them lightly overhead in bright weather, but do not over water the plants in the early stages. As growth advances more space should be given, for on plants that are crowded the leaves and stems become drawn, and the blooms suffer in quality. Shade the plants from hot sunshine. Pick off all the flower buds until the plants have filled their pots with roots, when the latter may be stimulated by regular feeding.

SALVIA SPLENDENS. Cuttings of *Salvia splendens* struck last month should be potted on as required. Pinch the points of the shoots at intervals to ensure a bushy habit. Plants rooted from cuttings, early in the season, make large specimens in the same year if treated liberally. *Salvia* may be planted out during the summer and lifted in September. If lifted carefully and shaded heavily for a time afterwards the plants give good results indoors. Those grown in pots should be plunged in a bed of ashes in the open. Syringe the foliage regularly in the afternoon, using weak, clear soft water occasionally to keep down attacks of red spider.

BOUVARDIA. *Bouvardia*, raised from cuttings rooted this spring should be repotted as required and kept growing in a house having an intermediate temperature. The compost should consist of turfy loam mixed with leaf soil and sand. Pinch out the points of the shoots to ensure a bushy habit. Do not over water the roots, but damp the plants overhead lightly twice daily, and keep the surroundings damped. Old plants which were cut hard back after resting and shaken out, should be potted on, or as an alternative planted out in a frame, or on a south border, but planting out of doors is not suitable for gardens in cold districts. Pinch the shoots once or twice, but do not continue this practice too late in the season. Syringe the plants regularly in hot weather.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. All communications should be written on ONE SIDE ONLY of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR JUNE.

TUESDAY, JUNE 5.—

Roy. Hort. Soc.'s Com. meet. Masters' Memorial Lect. at 3 P.M.

THURSDAY, JUNE 19.

Roy. Hort. Soc.'s Com. meet. Masters' Memorial Lectures at 3 P.M.

WEDNESDAY, JUNE 27.—

Proton Flower Show.

THURSDAY, JUNE 28.—

Roy. Botanic Soc. meet.

SATURDAY, JUNE 30.—

Windsor, Eton and Dist. Rose Soc. Show.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich 58.2.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, May 31, 10 a.m.: Bar, 29.5; Temp, 67.5. Weather SHINY.

SALES FOR THE ENSUING WEEK.

FRIDAY

Orchids, at 67 and 69, Chiswick, E.C. 2, by Prothero & Morris, 11, Arwick.

Pure Line Breeding.

The usefulness of the now well-established method of breeding from single plants is well illustrated by the work in the breeding of improved races of Oats which has been carried on in Maine by Messrs. Surface and Zinn.* In the case of Oats, as in that of most other cereals, there is no complication due to crossing, and once a pure line is established as the result of breeding from a single individual, it maintains its characters indefinitely. This method of improving varieties lends itself particularly to practice by commercial men who have seed-testing stations, for they begin with the knowledge only obtained as a result of prolonged experience of what are and what are not qualities which it is desirable a given plant should possess. In order to make clear the principle underlying the method of pure line breeding, the famous example given by Johannsen may once again be described.

In a commercial sample of Beans it will be found that seeds of various sizes small, medium, and large—occur. If

the object sought be a large Bean, a plant breeder might think that by picking out a single large Bean and growing it he would next year obtain a plant all the seeds of which are large. In point of fact, he might or he might not. For the large seed which he chose might be a member of a line pure for large seedfulness, or again it might only represent the largest seed which a race of average size is capable of producing. Therefore, in order to obtain a race with uniform large seedfulness the plant-breeder picks out and grows separately, not one, but a dozen or more large seeds. The behaviour of the plants shows him at once which are pure to large seedfulness: for in those that are, although their seeds will show a range of size, all the seeds are on the large side. Those seeds in turn, whether the largest or the smallest are grown, will produce plants which are large-seeded. Once the pure line is isolated, selection will do nothing to improve the quality of size, and the larger and smaller seeds will produce similar sized progeny.

In the case of Oats studied by Messrs. Surface and Zinn, pure-line breeding led to the isolation of races which gave an average yield of 80.8 bushels as against 75.2 bushels—the average of eleven commercial varieties. Needless to say, in breeding for a particular quality the other necessary qualities must not be lost sight of; and it is because seedsmen who regularly conduct trials are of all people those most familiar with the necessary "points" of plants that we suggest that this method of pure-line breeding should be adopted as part of their routine of plant-improvement.

SUSPENSION OF THE KEW BULLETIN. The Controller of H.M. Stationery Office, hitherto publisher of the *Kew Bulletin of Miscellaneous Information*, has advised the Editor of the *Bulletin* that he has been instructed to form a priority list for printed books, and to defer the publication of everything which is not essential; that it has been ruled that the *Kew Bulletin* is not essential, and that its publication has, therefore, been suspended.

A FUNGUS WHICH ATTACKS CANVAS.—A communication* from Mr. J. RAMSBOTTOM on the subject of the destruction of canvas by fungi draws attention to the work of F. GRÉGARIS (*Comptes-rendus*, t.lix, [1914], p. 781), who has identified the canvas-attacking fungi as members of the Pyrenomyces (*Phlepospora infectoria* and *P. hebarum*).

OVERHEAD ELECTRICAL DISCHARGE AND CROP PRODUCTION.—Under the above title Professor BLACKMAN and Mr. L. JORGENSEN describe the remarkable results produced by the overhead electric discharge on Oats grown by Miss DEBORAH at Dunfermline. The discharge was started on April 14, the day after the seedlings appeared. Already, by May 16, a marked difference was apparent between the electrified and unelectrified areas, the electrified plants being taller and greener. The difference in yield was enormous, for whereas the controls yielded from 20 to 22 bushels the electrified area (1 acre in extent) yielded about threefold these amounts (62.3 bushels). The authors have also observed that the discharge appears to have a beneficial after-effect, for the Clover-Hay produced in

1916 on the area electrified in the previous year was distinctly better and gave a bigger crop than in the non-electrified parts of the field. The experiments which were begun last year at the R.H.S. Gardens, Wisley, and which are being continued in the present year, should, in view of these remarkable results, prove extremely interesting.

HUMOGEN.—An account of the tests made by Dr. RUSSELL at Rothamsted and by the authorities at the Harper Adams Agricultural College, is no more favourable to humogen than have been other recent tests carried out in the open at Wisley and elsewhere. It would serve no useful purpose to describe the results, since, in a note attached to Dr. RUSSELL'S paper, Professor BOTTOMLEY attributes the failure of the humogen to an error in its mode of preparation. We trust that before further experiments are made Professor BOTTOMLEY will give the experimenters a guarantee that the material has been properly prepared. It is a serious tax on the patience of investigators to go through all the laborious work of making a test and then to learn that the material has not been properly made. The error appears to have been due to causes beyond Professor BOTTOMLEY'S control, but it is none the less to be deplored.

THE GERMINATION OF SEEDS.—In a paper* read before the Horticultural Society of Charlotte, TOWERS, Mr. E. MANN drew attention to the great differences in germination of seed according to the place in which it was raised. He cited the case of Phlox, seed of which imported from England gave only 10 or 20 per cent. germination in Queensland, whereas seed of his own raising in that hot climate gave 85 per cent. Raisers of new seedling Chrysanthemums might take a hint from this. Mr. MANN avers that Aster seed gives even worse results than Phlox, and states that from £5 worth of seed, enough to raise 20,000 plants, he succeeded in getting only three seedlings. On the other hand, in the case of Lupinus, Mr. MANN finds that seed ripened in Queensland is so hard that it has to be chipped before it will germinate. If, however, the seed be taken before it is ripe, it germinates readily enough. Mr. MANN mentions a curious observation which he has made with respect to Sweet Peas. If planted in April in Queensland, the Sweet Pea grows well with out a check and flowers in August; but if, in order to produce early flowers, the seeds are sown in March, the seedlings, after growing about 2 inches, die off. The earlier planting is done the more the seedlings die off. He cites as examples of the irregularity of germination so common among seeds, the case of the Petunia, and, if planted in hot weather, Celery and Lettuce.

AUSTRALIAN VEGETABLE RESOURCES.—Mr. R. T. BAKER, the Curator of the Technological Museum, Sydney, New South Wales, is directing the energies of his staff to the utilisation of home products in the preparation of articles of domestic and other requirements, such as were imported previous to the war. The Institution was primarily founded to assist trade developments by scientific, industrial research, by advice, and by furnishing reports on the natural resources of the country. The Museum exhibited various articles at the Panama Exhibition, and from Mr. BAKER'S annual report we learn that the awards were a Gold Medal of Honour for Eucalyptus oils and tanning barks; a Gold Medal for prepared timber, and for Australian flora in enamelled and silver work; Silver Medals for office furniture, ceramics decorated with Australian flora, essential oils, and ornamental building stones. The Department of Agriculture was equally successful in its exhibits. Australia is peculiarly rich in vegetable resources, and a filip has now been given to their scientific investigation.

* "Studies on Oat Breeding." IV.—Pure Line Varieties. Ann. Report of the Maine Exp. Station for 1916.

* Notice, May 10, 1917.

* Queensland Agric. Journal, VII.

DIDYMOSPERMA DISTICHUM see fig. 851.—The name of "Fan-palm" may well be applied to the remarkable and rare Indian Palm, *Didymosperma distichum*. This curious tree grows to a height of 50 or 40 feet, the leaves being arranged along two sides of the stem only, after the manner of a gigantic fan. The leaf bases are effectively set off with sheaths of a very fine network of brown fibre. An avenue of this Palm forms a striking feature in the Botanic Gardens at Peradeniya, in Ceylon. The figure in the photograph, kindly sent us by Mr. HUGH F. MACMILLAN, is a Kandyan native (of Ceylon), in the typical dress of his race.

THE WORD "POMPON."—Mr. HARMAN PAYNE writes to say that we misprinted his paragraph on the word "Pompon" last week. It should have read that the final "e" appears in the N.D.S. schedule this year for the first time, not that it appears in all the society's publications.

MR. PROTHERO AND THE GARDENERS COMPANY.—On Thursday last Mr. R. E. PROTHERO was elected a member of the Worshipful Company of Gardeners, one of the old City companies, in accordance with the following resolution:—"That the honorary freedom of this Company, and (with the approval of the Court of the Lord Mayor and Aldermen) the freedom of the City of London, be given to the Right Honourable ROLAND EDWARD PROTHERO, M.V.O., M.P., President of the Board of Agriculture and Fisheries, in recognition of his distinguished services to agriculture and horticulture in the present national crisis. The ceremony took place in the Bakers' Hall, Han Lane.

AN OLD REMEDY.—We were somewhat taken aback the other day by the makers sending us a sample package of the insecticide Cyclist Compound. It was quite unnecessary, for it is nearly forty years since the writer first employed this preparation, and he has always found it as "safe as the lead," for use against the common garden insects, particularly aphides, red spider, and thrips. No gardener need be afraid of ill-effects from the use of this old remedy if he will take the trouble to follow directions.

FLORA OF NEW SOUTH WALES. The first supplement to MAIR'S and BUCHANAN'S *Flora of New South Wales*, Plant has appeared. It comprises the Freshwater Algae by G. T. PRYDE, following G. S. WEST'S classification in his *Fresh Water Algae*, of 1904. Preceding the enumeration is a summary of the differences between West and ENOTHER'S systems, the chief of which is the exclusion by West of the Flagellatae and Bacteria, the former being referred to the animal kingdom and the latter treated as a group outside the Algae. Upwards of 1,000 species and varieties are enumerated. These belong to 150 genera, grouped under eight orders.

WAR ITEMS.—Captain (Acting Major) J. L. VETTER, youngest son of Mr. PETER C. M. VETTER, of Exeter, has been mentioned in a despatch from the Commander in Chief, Sir DOUGLAS HAIG.

Mrs. LLOYD GRUBB has joined the Ladies' Committee of the War Horticultural Relief Fund.

PUBLICATIONS RECEIVED.—*Jottings of a Gentleman Gardener*. By I. T. ELLIS (London: L. Reeve & Co., Ltd.) Price 3s. 6d. net.—*Agricultural Co-operation and Organisation*. By George Radford, 2nd Edit. (London: Hodder & Stoughton.) Price 3s. 6d. net.—*The Forest Flora of New South Wales*. Vol. VI., Part X, Part IX. of the complete work. By J. H. MAIDEN. (Sydney: Government of the State of New South Wales.)—*The Rose Annual, 1917*. By H. R. DARRINGTON and COURTNEY PAGE, (National Rose Society, 25, Victoria Street, Westminster.) Post free, 2s. 6d.—*Vegeticulture*. By HARRY A. DAY. (London: Methuen & Co., Ltd.) Price 1s. 6d.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE GLORY OF APPLE BLOSSOM.—People travel considerable distances to see the Plum blossom at Evesham and Pershore, and the great sheets of whiteness presented to view are no doubt very striking. There is a monotony in the display, however, which contrasts unfavourably with the brighter colouring, and size of Apple blossom, which stands supreme over even that of the Cherry and the Pear in beauty. The sight presented by Apple orchards recently in the southern parts of England was more splendid than I can remember ever having seen it before. There was hardly a variety grown by me which failed to show at least a fair quantity of the strongest

blossom to a sudden collapse, littering the ground with petals. *Southern Grower.*

PEA WEEVIL (SITONES LINEATUS).—This most injurious beetle is very much on the increase both in field and garden, and the damage done to crops is enormous. I find in many gardens that the unweaved Pea foliage is often ascribed to birds, but in the majority of cases this is not so, the gnawing being due solely to the destructive influence of the Pea beetles, and not the birds. The beetles are rather difficult to detect, as they are very sensitive to danger, and when anyone approaches them they invariably drop from the plant to the soil, and either hide under particles of earth or remain as if dead until the danger is past. One would think after a severe winter such as we have experienced that the chrysalids would have been killed, as they hiber-

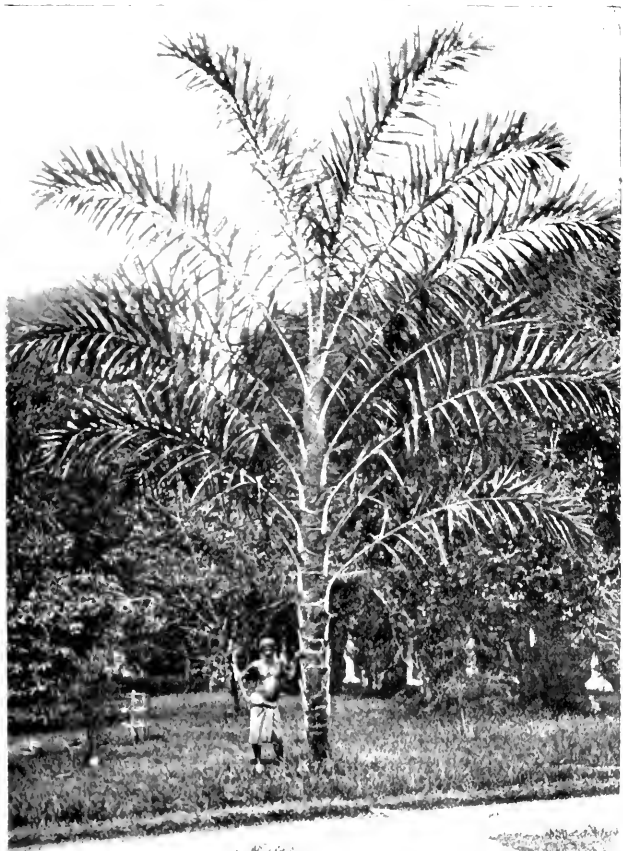


FIG. 851. DIDYMOSPERMA DISTICHUM IN THE BOTANIC GARDENS, PERADENIYA, CEYLON.

blossom, and in most cases there was a great profusion. The only exceptions were among trees too young to make much display, and patches of alternate year trees, which bore great crops last season. There are gradations of beauty even among the varieties of Apples, however. Lord Derby stands first among varieties grown by me in beauty of blossom, particularly when its flowers are only partly expanded, so that the deep shade of pink of the buds is noticeable. Royal Jubilee ranks next in colouring, followed by Domino, Irish Peach, Lane's Prince Albert, Guy's Orange Pippin, Pat's Seedling, Blenheim Pippin, Bramley's Seedling, Newington Wonder, James Grieve, Forge, and a few others. Among the least coloured are Bismarck, Duchess of Oldenburg, Worcester Pearmain, Lord Grosvenor, and Early Julian. The thunderstorm of Sunday night brought the glory of Apple

into only a few inches under the soil. I have tried several remedies for the destruction of these beetles, such as spraying with a strong solution of nicotine, and dusting on separate occasions on the damp foliage shaked lime, wood ashes, and soil. I have also tried a solution of paraffin 2 ounces to 1 gallon of water, but this latter proved injurious to the foliage of Beans. The above remedies seem to hold them in check, but do not kill outright; therefore I should be grateful to any reader who could recommend a practical remedy for their immediate extermination. *G. H. H. H.*

PROPAGATING VIOLETS (see pp. 206 and 215). Fresh numbers are Nature's method of reproduction. I admit, but I read the statements of Mr. E. H. Jenkins from a different point of view from Mr. Bartlett's, and agree with the

former. Many fail to grow Violets to their satisfaction, for, instead of making a new plantation in spring from a bed in the open, they use runners, or divide the old plants that have been in the frames all the winter, and have had their constitutions badly impaired by insufficient ventilation. Such plants generally become a prey to Violet disease (*Phyllosticta violacea*), which destroys the leaves, as I have had ample evidence during recent years. J. F.

ANEMONE PULSATILLA.—I was interested in Mr. Dyke's statement on p. 203 of the way this flower flourishes in poor, sandy soil. Here I have it growing in stiff clay, practically free of lime, and with no lime added. The plants were raised from seed about six years ago, and have had no manure of any sort, yet they flourish exceedingly. C. E. Fletcher, Bromfield, Yalding, Kent.

ΧΙΟΝΟΔΟΧΑ ΤΜΟΛΙ.—Referring to the remarks on this very pretty (*Chionodoxa* on pages 186 and 206, it is, I suppose, undisputed that it takes its name from Mount Tmolus, in Asia Minor, in the ancient province of Lydia, referred to by the Roman authors Ovid and Pliny. The plant has certainly been very unfortunate in the variety of ungrammatical appellations given to it, especially as to their endings, though such spellings as *Tmolus* and *Tmolusii* (with an "n" replacing the "m"), are, no doubt, printers' errors. There is not the very smallest doubt as to what the spelling should be. The word *Tmolus*, being actually Latin, or at least adopted and formed as such by the Romans, had its genitive, *Tmolusii*, formed as all the other words in "us" of the second declension. It therefore requires no special connecting of a genitive, as when a purely English name like Jenkins has it tacked on to it as in *Dendroica Jenkinsii* in supposed imitation. I presume, of a Roman clan name such as *Cornelius*, making its genitive *Cornelii*, but of course in this case the first "i" formed part of the stem, not of the ending marking the case. Surely, when the Latin word is in actual existence, and known, we do not want to improve on it, either by inserting an "i" before the casual ending, or still worse, by tacking a genitive ending on to a nominative one. The word *Tmolus* also existed as an adjective derived from *Tmolus*, and meant "of or belonging to Tmolus," or, as one might say, *Tmolian*. *Chionodoxa Tmolii* would therefore strictly mean not the *Chionodoxa* of Mount Tmolus, but of some person or thing connected with the mountain. This is not what was meant, of course. The inserted "i" is apt to be very misleading, and is quite out of place where names of Latin origin, in which it does not occur as part of the stem, are used, as, for instance, in the case of *Leopold*, latinised into *Leopoldus*, the genitive of which is certainly *Leopoldi*, not *Leopoldii*. But certainly the addition of one ending on the top, so to speak, of another, is worse, as in *Tmolusii*, which I believe is the form usually appearing in catalogues. It reminds one of the abbreviation, *Cathaya Trianae*, used instead of *C. Trianae*, appearing some time ago frequently in the *R.H.S. Journal*. The improver on the name did not content themselves with substituting the masculine termination "i" for the supposed feminine one, i.e., but tacked the former on to the other as if the man's name had been *Triarius*. There were, of course, many Roman masculine names of the first declension in "a," so *Triarius* was quite right. It would almost seem as if some classical author (as) was required as censor to prevent too great havoc being made with the Latin language. *Eustace F. Clark.*

HARDINESS OF SHRUBBY VERONICA.—The two Veronics enclosed are commonly cultivated here in Broadstairs, both on the "front" and in all sorts of gardens in and around the town. Both are New Zealand types, I believe, and they weather ordinary winters without injury, but the odd last killed the one with thick leathery leaves whilst the other, having rigid pointed, Pimpernel-like leaves, is unscathed. The small leaved, bushier kind is of fastigiate growth, with, usually, several nearly equal stems from near the base, rising to a height of 7 or 8 feet. *H. Bolting Irishy.* The large leaved variety is a form of *V. Andersonii*; the other is *V. Traversii*.—E.J.S.]

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

MAY 22. *Present:* Dr. A. B. Rendle, F.R.S. (in the chair), Col. H. E. Rawson, Messrs. W. J. Benn, J. Fraser, W. Hales, W. Allard, J. W. Odell, W. C. Worsdell, and F. J. Cliftenden (hon. secretary).

Gall on Rhododendron ferrugineum.—Mr. W. C. Worsdell showed specimens of the well known gall on *Rhododendron ferrugineum*, due to the attack of the fungus *Exobasidium Rhododendri*. This gall usually occurs on the leaves, but in one case on the plants shown it was on the corolla.

Varieties of Pyrus Aria.—Mr. J. Fraser showed specimens and commented upon the forms of *Pyrus Aria* which he had collected from wild sources in Surrey. Among them was one approaching the variety *sulcifolia*, and another of the variety *magistica*. The latter is particularly interesting for it is the form known as the Nepal Service tree, or *Pyrus Aria nepalensis* (though it is not known to occur in Nepal), and is generally assumed to have originated in nursery grounds.

Attention in folioli of Tropaeolum.—Col. Rawson exhibited a plant of *Tropaeolum tuberosum* to show what he considered to be the sun's influence in causing the leaves to divide, as they normally do, into any number up to five lobes. The division had been observed taking place at critical altitudes of the sun, which had confirmed previous years' observations. Prior to the leaf dividing, precipitation was seen to take place from the margin inwards, which indicated the exact vein affected. This precipitation, which was reversible, he associated with the starch of the tuberosus plant considered to be a colloidal phenomenon.

Tuberous flowers of Narcissus.—From two sources came tetramerous flowers of *Narcissus*; in each case there were eight perianth pieces, eight stamens, and four carpels. The tetramerous condition of these flowers seems, therefore, not uncommon, and it is not rare in nearly allied plants.

NATIONAL TULIP.

MAY 22. The National Tulip Society usually holds its annual exhibition on the second day of the R.H.S. show at Chelsea, but the latter exhibition having been abandoned, it was held in conjunction with the R.H.S. fortnightly meeting on the 22nd ult. The exhibits were much fewer in number than usual.

Mr. A. D. Hall, Eburyast, was the largest exhibitor, but neither he nor Mr. W. Peters, Gun Lodge, nor Mr. H. S. Bartlett, Shooters Hill, nor Messrs. Barr and Sons, entered for competition, though they all grouped their flowers more or less in accordance with the schedule.

Mr. HALL'S exhibit of Old English florists' Tulips contained a fair number of varieties, and his specimens of Annie McGregor and Tabman, both flamed and feathered, were especially good. Mr. HALL showed several new seedlings of his raising; these were of good quality, and one, of rose colour, with a fine, pure white base was much admired. The bases of many of the seedlings were of cross shape, very few having the circular base which is considered necessary to perfect form. Mr. HALL was awarded a Silver-gilt Flora Medal, while his variety named *Attraction* was adjudged the premier feathered variety, and his *Glean* the premier breeder flower. This collection was awarded a Silver-gilt Flora Medal by the Royal Horticultural Society.

Mr. WALTER PETERS, Forest House, Cambridge, had a small collection of sloped and finely-coloured Old English Tulips. Mr. PETERS, like Mr. C. W. Needham (who was present) and Mr. A. D. Hall, is an enthusiastic member of "the tany." Some of his best flowers were *Lazze*, *Mabel*, *Sam Barlow* (the premier flamed Tulip), *Annie McGregor*, *Elizabeth Pegg*, *Adonis*, *Sir Joseph Paxton* (rather dark, and needing a little more yellow), and *Garibaldi*. Mr. PETERS has rarely shown better, and his three flamed flowers, *Sir Joseph Paxton*, *Mabel*, and *Duchess of Sutherland* were capital specimens. The

Royal Horticultural Society awarded the collection a Silver Flora Medal.

Mr. H. S. BARTLETT showed a fine bloom of *Goldfinder*, the "runner up" for the premier breeder flower, while his bloom of *Adonis* was excellent.

MESSRS. BARR AND SONS had a small stand containing *Adonis*, *Annie McGregor*, *Sam Barlow*, and other old favourites.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

MAY 14.—The monthly meeting of this society was held at the R.H.S. Hall on the 14th ult., Mr. Chas. H. Curtis in the chair. Five new members were elected. Seven members withdrew double the amount of interest, amounting to £22 15s. 10d. Three members over the age of seventy years were allowed to withdraw sums from their deposit accounts amounting to £34 8s. 2d. The death certificate was produced of one deceased member, and the Army Forms of Sergeant W. T. Almond and Private J. Perks, who had been killed in action, and the sum of £93 12s. 10d. was passed for payment to their nominees.

HORTICULTURAL CLUB, LECTURE ON NARCISSUS DISEASE.

(Concluded from p. 218.)

MAY 8.

The treatment of bulbs by soaking has received much attention. Last autumn about 3,500 diseased bulbs and the same number of healthy ones were treated with different chemical solutions. The experiments are being continued, and the results will be published in due course.

Hewitt recognised some time ago that *Tylenchus* was connected with the disease, and in a paper entitled "Edworm in Narcissus Bulbs," published by the Department of Agriculture and Technical Instruction for Ireland in 1912-1913, recommends soaking the bulbs in copper sulphate solution at a strength from 5½ per cent. to 7½ per cent. for 17 hours. On a recent visit to Ireland it was understood from one firm who had worked in conjunction with Hewitt that the treatment advised had been abandoned, as the results did not prove satisfactory. Hewitt died before his investigation was concluded.

Experiments designed to ascertain the temperature which edworm will stand give the following results:—Between 45° and 44° C. all edworms were killed at the end of 45 minutes; at a temperature between 43°-49° C. the edworms succumbed at the end of 15 minutes; 52°-53° C. 11 minutes; 53°-54° C. 9 minutes; 55°-56° C. 9 minutes; and 57°-58° C. 5 minutes.

The effect of temperature on the eggs was not considered. When bulbs are placed in hot solutions, the temperature of the bulb in the interior is 5° F. below that of the solution at the end of one hour; at the end of two hours the temperature is 3° F. lower; and at the end of four hours there is no difference.

No matter in what manner the bulbs are treated it is courting disaster to plant again in infested ground, and even land which has never before been utilised for bulb culture is not necessarily free from *Tylenchus*, seeing that this edworm is capable of attacking some of our commonest grasses and weeds.

TRAP OR "CREP" CROPPING.—In 1880 Kuhn devised a method of reducing the injury caused by the edworm *Heterodera Schachtii* in Sugar Beet, based upon the principle of trapping the edworms in some susceptible plant and destroying the crop before the nematodes again entered the soil. He used a species of Rape for the trap crop, which was sown and removed from three to five times in the season. The number of edworms was reduced by this method, and profitable crops could be grown again for several years. This method has more recently been employed in America for controlling the root-knot edworm, but without success. For the edworm under investigation a suitable trap crop may be found, but it will have to be one of which the seed is cheap, of easy culture, showing great susceptibility to attack, of quick growth, and one which can be readily removed.

It appears to be generally held by growers that bulbs naturalised in grass escape the attacks of *Tylenchus*. If this be true, can it be certain grasses attract the eelworm, or that soil conditions of grass land, such as lack of air, are unsuitable for the development of eelworm? Or is it, as is well known, that certain grasses excrete toxins, which in their turn render the soil unfit for the eelworm? On the other hand, bulbs grown for naturalising are generally planted in drifts and left undisturbed for years, and, as a consequence, grow freely, so that should any succumb to the disease they are not missed. One large grower in Guernsey seems so convinced that bulbs in grass land are unaffected that he has left his beds unworked, and is experimenting in other directions.

In this country the treatment of *Narcissus* bulbs attacked by eelworm had received no attention except from Hewitt. Last July, when I had convinced myself that eelworm was probably the cause of the disease, I wrote to Prof. Litzenma Ios concerning *Fusarium*, and he gave his opinion that eelworm is the cause of the disease. I then wrote to Dr. Westeryk, Director of the Pathological Laboratory of Amsterdam, asking her to enlighten me on certain points in the investigation. In her reply she informed me that she was engaged upon the study of *Narcissus* bulb diseases in general, but that she thought eelworm was the most serious, although it had only been known in Holland for one year. Contributions from Dr. Westeryk have appeared in the Dutch trade paper. According to this author the disease which we attribute to Holland is ascribed by her to England.

The origin of the first outbreak of the disease in this country cannot be traced. Some growers say it came from Holland, others say from Guernsey, while there are others who maintain that the disease never appeared until new varieties were introduced in their collections. At first sight it certainly appears that the newer varieties are more addicted to the disease than the older ones. This may possibly, however, not be the case. If certain varieties prove to be immune we have a possible means of attacking the problem. Walder, Orton, and others in America have endeavoured successfully to breed varieties of cactus and other crops resistant to root-knot. If in a field of *Narcissus* badly infected with *Tylenchus* certain of the plants remain outstandingly free, it would probably pay to begin propagating bulbs by offsets from these plants.

The Discussion

The chairman (Mr. H. R. Darlington) stated that he had been experimenting with various chemicals that might generate a gas which would kill the disease. He had tried formalin, but this had too caustic an effect on plant life; in the case of Roses he found that formalin killed the plants entirely. Treatment with lime sulphur had yielded some success. He had soaked bulbs of *Wardale Perfection* Daffodil in this specific for half an hour on three or four consecutive days, and the bulbs were unharmed, and apparently cured. Soaking the bulbs for three months, however, killed them. He had left one in the solution for a week, which apparently cured it of disease, and did not seem to have done it any harm. He thought, however, that this method would only be effective in the case of bulbs only slightly affected with the disease. The real difficulty was to get rid of the disease from the soil; it seemed almost impossible to do this without at the same time killing the bulbs.

Mr. J. W. Barr thought it would be interesting to those present to hear that Miss Wel-ford, of the Royal College of Science, had been working on this disease of Daffodils, and that Professor Farmer had given him permission to read extracts from her notes. The conclusions of this investigator were that *Tylenchus* devastatrix was clearly the source of the disease. Both Miss Wel-ford's and his (Mr. Barr's) experience was that in the sheds where the bulbs were dried many of the mature insects emerged from the centre of the bulb, became dormant, and in this condition dropped from the bulb often on to a healthy bulb, thus infecting it if the condition were favourable. It was found that dry, cool conditions checked the spread of the disease.

Bulbs that were affected by disease began to grow earlier than healthy bulbs, and produced crinkled leaves.

Mr. Chittenden interposed with the remark that precocious flowering could not always be accepted as evidence of disease. Mr. Barr, continuing his remarks, advised the destruction of all diseased bulbs, no matter how valuable the variety, and said it would help to check the spread of eelworm if weeds were prevented from growing, as weeds were a source of infection. He had experimented in immersing the bulbs in water, which had given good results. The water was warmed to 110 Fahr., and the bulbs remained immersed for one hour. Another experimenter, Mr. J. C. Fryer, found that by the hot-water treatment all the eelworms were destroyed, and 30 to 90 per cent of the eelworm eggs. Another advantage was that the gnats of *Meloida* and *Humerus* flies were destroyed. His first experiment with heated water resulted in the bulbs throwing split flowers, but this year the bulbs had been cooled more gradually, on wood instead of on stone, with the result that none of the flowers had split.

Mr. Peter R. Barr stated that he believed that soaking the bulbs in hot water for one hour would destroy the *Tylenchus*. Last year his firm had removed every diseased-looking bulb from their Daffodil beds, and in cases of a few

were made had an influence on the health of the bulbs. He had seen a consignment of bulbs in which all the bulbs in cases made of a certain kind of wood were diseased, while all the rest, in cases of a different wood, were perfectly healthy.

The Rev. J. Jacob considered that the nature of the soil had a great deal to do with the question of disease. He thought that in cold, wet ground the spread of the disease was much more rapid and more certain. He planted a bed some 30 feet long in his own garden with *Narcissus*. The soil in the bed varied in different parts. One part was unmanured, another part had received a dressing of manure, while the remainder was peat with a damper bottom. The bulbs in the damp, peaty ground were badly affected with the disease, whereas those in the part which had been manured were very little affected, not so much as those in the unmanured part. This he considered was because the soil which had been dressed with manure was more open and in consequence drier and warmer. He thought also that it was quite possible to "over-protect" the bulbs and to lift them too often, which had the effect of weakening the stock.

Mr. W. B. Cranfield remarked that over propagation would not be likely to produce the disease, but it might render the plants more susceptible to attack. It was well known that certain varieties were more prone to attack than others.

Mr. Backhouse said that he had found eelworm in two-year old seedlings in the seed-pan. He drew attention to the fact that the older growers had noticed the discoloured tissues and irregular, dwarf growth mentioned by the lecturer in the variety *J. M. Camm*, but the disease did not then appear to spread.

Mr. W. Cuthbertson said that he grew a small collection of *Narcissus*, which was very successful until about two years ago, when he had introduced some of the newer varieties. Since then 90 per cent of the bulbs had failed. He considered that in his case the disease was introduced with the new bulbs.

Mr. Leek said that in his experience the older varieties were subject to the disease as never ones. In some cases, indeed, they were affected more severely. For instance, he found that bulbs of *St. Watkin* must be moved at least once in three years.

Mr. A. M. Wilson said that in the most highly cultivated and most richly manured garden he had ever seen the disease had never rotted an apple tree.



THE LATE SIR LEOPOLD DE ROTHSCHILD.

rate and in quantities where the offsets were found to be unhealthy, these were dipped in permanganate of potash and replanted, when upon they recovered and were showing healthy growth this season. With regard to soaking in hot water, he would recommend growers not to do this more than once in three years, as it gave a check to the bulbs. In reply to Mr. Jacob's question as to treatment of soil, Mr. Barr stated that nothing was done except to place lime in the holes where the diseased bulbs had been, as was practised in Holland. He said that in the old nursery at Surbiton they used to apply kaurit to the soil in August, when the *Tylenchus* is breeding. The best plan would be to sterilise the soil by heating, but this was too expensive for large areas.

Mr. Frank Law maintained that eelworm only attacked plants which were in feeble health. He considered that the disease was caused more often by wrong methods of culture than by eelworm. The *Narcissus* was "over-cultivated" and that was the cause of the newer varieties being the more susceptible to the disease. Growers who transplanted their bulbs every year predisposed them to the disease, as transplanting was unnatural, and led to the bulb becoming dried out. Bulbs growing in grass, which were left undisturbed for years, were usually perfectly healthy. He thought also that the material of which packing boxes

LEOPOLD DE ROTHSCHILD—It is with deep regret that we learn of the death, after an illness of six weeks, of Mr. Leopold de Rothschild, one of the most enthusiastic and discriminating of gardeners. Mr. Rothschild was devoted to the interests of Horticulture. In 1912 he acted as President of the Jury at the Royal International Show, was Vice-President of the Gardeners' Royal Benevolent Institution, and presided at the Festival Dinner in 1889, and again in 1915. He held a life office in connection with the Royal Gardeners' Orphan Fund, and, indeed, his generosity, on which there were many calls, was consistently devoted to the aid both of Horticulture and of gardeners. Not a few had, owe to his liberality their opportunity for making a start in life, and to this day are members of the source whence proceeded the help they received. The beautiful garden which Mr. Leopold established at Ascott has frequently been described in these pages. A perfect host, Mr. Rothschild took the keenest pleasure in showing his visitors round the garden and in explaining the stages by which he and his gardener had turned the countryside into a perfect garden, full of charming surprises and fine specimens of tree, and shrub, and flower, all so ably arranged as to give the greatest measure of diversity. In Gunnersbury House Gardens he took no less an interest, and the many successes of Mr. Hudson were always a source of the keenest pleasure to Mr. Leopold.

Obituary.

One of the most versatile of men, Mr. Rothschild knew how to win the hearts, not only of visitors, but of all those who worked for, or, as he preferred to call it, with him on his estates.

In the last months of his life Mr. de Rothschild threw himself with ardour into the work of increasing the production of vegetable food. With his experience and far-sightedness, he knew that the situation with respect to food supplies, with which this country is menaced had to be taken seriously, and that he might play his part in producing more food. He was prepared to convert the garden at Ascott and also that at Gomersbury into a market garden. As described recently in these pages, Roses in borders were replaced by vegetables, and the glasshouses converted into places for the intensive cultivation of food-yielding plants.

Of his many and great qualities, that which was most conspicuous was his simple kindness. He found the highest pleasure of which men are capable in love of friends and love of gardens, and his friends will always hold his name in high honour.

CROPS AND STOCK ON THE HOME FARM.

MANGOLDS.

It is important to keep Mangold plants free from weeds, and early and continuous stirring of the soil between the rows by horse or hand labour is imperative. The stirring of the soil about the plants admits air to the roots, and the resultant extra yield well repays any additional outlay in labour. Early thinning of the plants is also important. It is a mistake to delay the setting out of the plants after the second pair of leaves is formed. There is a difference of opinion among growers on the subject of the ground space required by the plants. Some consider that a medium-sized root, tolerably abundant, will yield the heaviest bulk of the finest quality; others say that extra large roots, obtained by allowing ample space to develop the leaves, yield the best results. In my opinion, however, the larger roots contain more water and less saccharine. The closest woody rings in the roots, the greater their value, as the sugar is stored mainly in these parts; therefore it may be assumed that the medium-sized roots are the more useful. The drills should be 20 inches apart and the plants thinned to 18 inches in the rows.

STIMULATING THE OAT CROP.

On p. 187 I advised the use of sulphate of ammonia for accelerating the growth and increasing the corn yield of this cereal. I note the President of the Board of Agriculture, p. 208, refers to the same subject. With a view of encouraging others who may be loth to make use of this stimulant, I will briefly give the result of an experiment I tried last year on a field of Oats. In the autumn of 1915 I ploughed and pressed 16 acres of an old Salford ley of fifteen years' existence, which was full of grass roots and a thick sward, just the home for wireworm. Early in March the plot was sown with Black Tartar Oats at the rate of 5 bushels per acre. Directly the Oat plant showed through the soil, I applied sulphate of ammonia (a little over 1 cwt. per acre), afterwards rolling the plot with a heavy ring roller. From the beginning the Oats grew luxuriantly, attaining the full height for the variety. The crop was not laid by storms of rain, but stood erect, ripened perfectly, and was safely stacked. Last week it was threshed, the yield being 80 bushels per acre. As the President of the Board of Agriculture remarks, it is not too late now to apply sulphate of ammonia to this crop. I am doing so on 20 acres as a fillip to growth of a rather weakly plant

CABBAGE.

The recent dry weather experienced in the South has retarded the germination of the Cabbage seed sown in April. To prevent an attack of Cabbage fly, and to stimulate the growth, dust

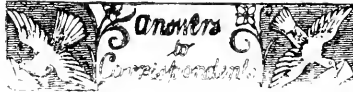
the plot with basic slag and superphosphate in equal quantities. The former is a fine powder, and will not only prevent the attacks of the fly, but will also mitigate any injurious effect the superphosphate might have on the leaves. It is liable to burn them during hot sunshine.

RAPE AND TURNIPS FOR SHEEP.

Sow at once Rape and early Turnips intended as food for sheep in August and September, to be fed off and followed with early-sown Wheat. Use two pounds of seed of Essex Branching Rape and one pound of seed of Beef Heart, commonly known as Lincoln Red, per acre. Devon Grey Stone, Red Globe, and White Pomeranian are all good Turnips for this purpose. The best method of sowing is by the Turnip drill, at the same time adding 3 cwt. superphosphate per acre, which gives a fillip to growth, and aids the Wheat crop also. Some sow the seed broadcast, but this method makes it difficult to free the plants from weeds.

WINTER SPINACH.

In view of the shortage of green vegetables in the garden and of roots on the farm during the past winter and early spring, it is remarkable how well Winter Spinach has withstood the cold. I do not see why this vegetable should not become one of the regular farm crops. I made a small experiment last autumn which augurs well for future success. Many fail with Winter Spinach by sowing too late, which does not allow the plants to get established before autumn rain and frost check the growth. By the end of August all the seed should be sown in drills 18 inches apart, which will allow for surface stirring of the soil in the autumn. Deeply worked, fairly heavy, dry soil, well enriched by a dressing of farmyard manure, suits Spinach to perfection. I grow the ordinary round and prickly variety. Since the end of March I have regularly picked large quantities of succulent leaves. There is still a promise of further supplies for some time to come. *E. Molynour*



BAMBOO IN FLOWER. *W. H.* The scrap of material you send is not sufficient for the species to be identified with certainty. It is a species of *Arundinaria*—most probably *A. Falconeri*. The flowering stems are better cut off as soon as any indication of their nature is perceptible. It is the only method of saving the lives of some Bamboos when they flower.

BANANAS. *A. W.* The fruits will be of superior flavour if they are allowed to ripen on the plants.

BEANS DISEASED. *G. B. H.* The Beans have a bacterial disease in the stem at the level of the ground; the affected plants should be destroyed.

FATSIA JAPONICA (ARALIA SIEBOLDII) DYING. *M. and Co.* The foliage has the appearance of having died very suddenly, and the injury may have been caused, as you suggest, by lightning. We notice, however, that the stems of the shoots are completely denuded of bark. Such a condition, though it would not cause the sudden death of the foliage, would certainly cause it to wilt and turn black in a comparatively short time. The destruction of the bark may have been caused by some gnawing insect or animal.

GARDENER'S CHARACTER. *Surprised.* We do not think that any redress is possible. The head gardener on leaving your service gave a statement to each of those who had served under his direction to the effect that the services rendered had satisfied him. This is not surprising when it is remembered that under gardeners almost invariably obtain their testimonials from their professional chief, rarely troubling the employer in the matter.

monials from their professional chief, rarely troubling the employer in the matter.

MARKET GARDENING. *J. P. B.* A reasonable salary to a good man would be 30s. per week, with house and fuel, and a commission of 5 per cent. on all sales. You should grow as many Tomatoes as possible instead of the Melons, Ornaments, and stove plants you now cultivate. Pay special attention to the Peaches, especially if they are late varieties. All out door fruit, especially Black Currants, will be in demand, and so will all kinds of choice vegetables and salads. In calculating the profit the upkeep of the glasshouses, such as painting, repairs, tools and manure must be taken into consideration. To keep poultry on a small scale would be an advantage, as from such a garden as yours much surplus green food would be obtainable at nominal cost. With reference to the grassland, you do not state whether your tenant has a legal right to sublet it. If not, you should instruct your solicitor to prevent the sub-tenant from entering into possession or cutting the grass. If, however, the agreement with your tenant does not stipulate that there shall be no subletting we fear you have no legal remedy.

NAMES OF PLANTS. *A. B. H.* *Allium paradoxum*—*J. G. S.* 1. *Kerria japonica*; 2. *Spiraea prunifolia* var. *flore pleno*; 3. *Coronilla Emursii*; 4. *Exochorda Albertii*; 5. *Lonicera involucrata*; 6. *Cornus sanguinea*; 7. *Spiraea bracteata*; 8. *S. hypericifolia*—*Shropshire*. *Staphylea pinnata*.

OVERTIME PAYMENT. *M. Y. C.* There is no rule as regards payment for overtime in gardens, unless a stipulation on the subject is made at the time when a gardener is engaged.

PLAN OF A TENNIS COURT AND CROQUET LAWN. *M. G.* A plan of a tennis court, with details for making it, was published in the issue for July 22, 1916, and for a croquet lawn in the issue for April 1, 1916. These back numbers are obtainable from our publishing department.

POTATO DISEASED. *G. H.* The Potato has the fungus *Rhizoctonia* on it. This disease seldom does any serious injury to the growing plant.

PROPAGATING LILACS. *R. A. Leyton.* You can propagate the Lilac from cuttings inserted now in sand, and rooted in a close frame with a bottom heat of 60° to 65°. If you have no bottom heat at command the cuttings may be rooted under a hand-lid in a shady spot outdoors, but the former method is the more successful. Choose as cuttings the young growing shoots, pulling each off with a heel, and merely trimming away the lower leaves. They should root in from six to eight weeks with a steady bottom heat, but may be expected to take at least three months out of doors.

TOMATO DISEASED. *B. J.* The Tomatoes are attacked by a disease known as black rot, or Macrosporium Tomato. The fungus probably gains access to the fruit by means of minute cracks or punctures in the skin. You should remove and burn all affected fruits, and spray the plants occasionally with potassium sulphide. Be careful to ventilate the houses thoroughly, and prevent an excess of moisture in the air. Do not use too much green manure, as this causes the fruits to crack. You should not use the soil from the Tomato house for planting Potatoes, as the disease can also attack Potatoes, and is very infectious.

WEEP ON A LAWN. *D. G. P.* The plant is one of the foliaceous Lichens, and is an indication of a very damp soil. The lawn should be drained and the turf dressed with nitrogenous manure, such as nitrate of soda or sulphate of ammonia, to stimulate the growth of the grasses.

Communications Received.—*W. W.*—*J. F. M.*—*E. M.*—*J. G. W.*—*S. A.*—*W. E.*—*B. J. G.*—*T. W. B.* (Alkhalabad)—*J. H.* (Thanks for wire)—*W. T.*—*Countess Saldes*—*Shropshire*—*T. W.*—*Dubious*—*A. R. B.*—*Fool*—*Economist*—*L. M.*—*Dr. H.*—*Miss L. M.*—*H. J. W.*—*H. B.*—*W. A. C.*—*Miss F. M. G.*—*Sir E. G. L. W. F.*—*Wolverhampton* (We are glad that the advice proved so satisfactory).

MARKETS.

COVENT GARDEN, W.C. 2.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots such as Aralia Sieboldii, Asparagus plumosus nanus, and various ferns with their prices per dozen.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers such as Arums, Carnations, and various orchids with their prices per dozen.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage such as Adiantum (Maidenhair Fern), Asparagus plumosus, and various ferns.

REMARKS: Consignments of cut flower from Guernsey and Seilly are showing the effect of the long journey in warm weather, and many boxes of Gladioli...

double white Narcissus, King and his are almost unobtainable when they reach the market. Home-grown double white Narcissus is selling freely. Double white Stock is now in plentiful supply but soon bought up. Many enquiries are being made for double white Pinks, but the first consignments of which are expected to reach the market this week. Single variegated colored, are on sale. Iceland Poppies are selling freely. Iris and Gladioli are scarce this week. All Pinks are finishing to the season, the blooms will not stand the journey in warm weather. Carnations advanced in price during last week-end. There was a good demand on Saturday for scarlet and white flowers for the Whitsun holiday, but the market being supplied with flowers on Saturday morning. Roses are much smaller. Liberty, Miss Abel Chateaux, and other Mrs. Sherman flowers are most in demand. A few packages of marse, satins and Paonies are arriving from France this week.

Vegetables: Average Wholesale Prices.

Table listing vegetables such as Artichokes, Asparagus, Beans, Beetroot, Broccoli, Cauliflowers, Carrots, Cabbages, Cucumbers, Endive, Greens, Garlic, Herbs, Kale, and Leeks.

Fruit: Average Wholesale Prices.

Table listing fruits such as Almonds, Apples, Bananas, Raspberries, Dates, Gooseberries, Grapes, and Walnuts.

Remarks: There are now no Apples available, the market being now completely cleared. Supplies of grapes from Blandford and Marlborough, Alexandria and other places are good. Peaches, Nectarines, and other fruit, and softening colored Strawberries are all in plentiful supply. Larger supplies of green Gooseberries are reaching the market. The bulk of Aparagus is now in the market in fine condition. The first consignment of home-grown fresh strawberries, which have been grown in the Channel Islands, are in the market in good condition. Peas, Beans, and New Potatoes are all in the market in good condition. Cauliflowers are in plentiful supply and at this season of the year. Lettuce, both Cabbage and Co. are scarce and dear. A consignment of South African Potatoes, consisting of the following varieties, is expected to reach the market, viz., King of the Mountains, and Paonies.

GARDENING APPOINTMENT.

Mr Arthur Freshwater, a Gardener to Lady Kinnaird, writes: HERBIC, Bean Manse, Lough brought to me yesterday.

THE ROCK GARDEN

A practical work on the cultivation and management of Rock Gardens, written by Reginald Farrer. One of the best and most popular works on the subject. Price 1/10 post free. THE PUBLISHER, The Gardeners' Chronicle, Ltd., 41, Wellington Street, Covent Garden, London, W.C. 2.

THE ONLY DIRECTORY OF GARDENS AND GARDENERS.

The Horticultural Directory and Year Book for 1917 is the ONLY Directory that exists of gardens and gardeners in the British Isles.

If you want a list of all Nurseriesmen and Seedsmen, Sundriesmen, Hot-house Builders and other traders closely connected with horticulture, consult the ONLY Horticultural Directory.

Should I you desire to trace the whereabouts of the young men you associated with in the Botchy you have no other means of finding out their present addresses than by turning to the ONLY Directory of British Gardeners.

Obtain a copy and see if your own name is there, and if it is not, then send us particulars for inclusion in the edition for 1918.

The Year Book part of this unique volume contains descriptions of all the new plants, flowers and fruits certified in 1916, notes on the principal gardeners who died during that period, and much additional information of great value to all amateur and professional horticulturists.

We are still able to offer some few copies of the current number. Readers are advised to send their orders early, before the work is out of print.

Apply, enclosing 1/4 for each copy required, to:—

GARDENERS' CHRONICLE, LTD., 41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Gardening, School, Cottage, and Allotment, A Practical Guide to. By John Weathers. 2s. 10d.
- Glass, The Garden Under. By W. F. Rowles. Illustrated. 6s. 6d.
- Grafting and Budding, Art of. By Charles Baltet. With Illustrations. 2s. 9d.
- Grafting and Budding, The Handy Book of. By James Udall. 7d.
- Grape Growing for Amateurs. A thoroughly practical book. 1s. 3d.
- Grape, The Book of the. Together with a Chapter on the History and Decorative Value of Vines. By H. W. Ward. Illustrated. 2s. 9d.
- Greenhouse and Conservatory, Construction and Heating. By Paul N. Haslcek. With 228 Illustrations. 2s. 4d.
- Greenhouse, The Amateur's. By T. W. Sanders. 416 pages, 154 Illustrations. 5s. 5d.
- Greenhouse Management, Pictorial. Edited by Walter P. Wright. Illustrated. Paper. 1s. 3d.; cloth, 1s. 9d.
- Greenhouse, The Book of the. By J. C. Tallack. Head Gardener at Shipley Hall. Illustrated. 2s. 10d.
- Hardy Flower Book, The. By E. H. Jenkins. A descriptive and practical Guide to the Cultivation of Hardy Flowers. Illustrated. Cloth, 2s. 11d.
- Hardy Trees, Flowering Shrubs, Conifers and Evergreens. By Geo. Bunyard. A Popular Handbook of 160 pages. 50 Illustrations. Useful hints. English and Latin names. 3s. 10d.
- Herb Garden. By Francis A. Bardswell. 16 Full-page Illustrations in Colour. 3s. 11d.
- Herbs, The Book of. By Lady Rosalind Northcote. 2s. 10d.
- Heredity in the Light of Recent Research. By L. Doncaster. 1s. 2d.
- Holly, Yew and Box. By W. Dallimore. 230 pages. 175 Illustrations. Contains the Illustrations of Hollies published in the monograph by the late Thomas Moore, in the GARDENERS' CHRONICLE. 8s.
- Horticultural Directory. Almanac and Address Book for present year (See *Gardeners' Chronicle Horticultural Directory*.)
- Horticulture, A Primer of Practical. By J. Wright. 1s. 13d.
- Insect and Allied Pests of Orchard, Bush and Hothouse Fruits. By F. A. Theobald, M.A., etc. 328 Illustrations. 30s. 6d.
- Insects, Injurious and Useful. An Introduction to the Study of Economic Entomology. By L. C. Miall, F.R.S. 100 Illustrations. 3s. 9d.
- Intensive Culture of Vegetables on the French System. By P. Aquatius. Illustrated. 5s. 11d.
- Iris, the Book of the. Illustrated. By R. Irwin Lynch. 2s. 10d.
- Iris. By W. R. Dykes, M.A. With Preface by Prof. Bayley Balfour, F.R.S. Contains 8 full page Coloured Plates. 1s. 10d.
- Johnson's Gardener's Dictionary. New Edition. 9s. 6d.
- Judging, Rules for. Issued by the Royal Horticultural Society. Latest Edition. 1s. 6d.
- Land of the Blue Poppy, The. By F. Kingdon Ward. With Illustrations and Maps. 12s. 6d.
- Landscape Architecture, The Art of. By Samuel Parsons. A practical and authoritative work. Illustrated. 15s.
- Lawns. By Sutton and Sons, Reading. In paper cover. Well Illustrated. 1s. 3d.
- Lawns and Greens. By T. W. Sanders. A Guide to the Formation and Management of Lawns, Tennis Courts, etc. Illustrated. Paper. 1s. 2d.
- Lilies. By A. Grove. With Preface by H. J. Elwes, F.R.S. Contains 8 Coloured Plates. 1s. 10d.
- Lily, Book of the. By W. Goldring. Illustrated. 2s. 9d.
- Little Gardens and How to Make the Most of Them. By H. H. Thomas. A handy and useful work for the Amateur. Paper. 1s. 3d.; cloth, 1s. 9d.
- Mango, The. By G. Marshall Woodrow. An account of its Culture and Varieties. 1s. 1d.
- Manures and the Principles of Manuring. By C. M. Aikman. 6s. 10d.
- Manures for Garden and Farm Crops. By W. Dyke. Cloth, 1s. 9d.
- Manuring, The Science and Practice of. By W. Dyke, with introduction by J. Wright. A most practical work for the Amateur, Market and Professional Gardener. 1s. 2d.
- Manuring of Market Garden Crops, The. By Bernard Dyer and F. W. L. Shrivell. New Edition. 1s. 3d.
- Market Gardening, The Book of. By R. Lewis Castle. Illustrated. 2s. 9d.
- Mendelism. By R. C. Punnett, F.R.S. New and Enlarged Edition. 5s. 4d.
- Mendel's Principles of Heredity. By W. Bateson, F.R.S. 12s. 6d.
- Mushroom Culture for Amateurs. By W. J. May. New Edition. Thoroughly revised. Illustrated. 1s. 2d.
- Mushrooms, and How to Grow Them. By John F. Butler. An excellent Treatise. Illustrated. 1s. 2d.
- My Garden in Spring. By E. A. Bowles, M.A., Chairman of Scientific Committee of Royal Horticultural Society. With Preface by Reginald Farrer. "Mr. Bowles . . . has the time to be his own gardener, and has thereby gained that first-hand knowledge of plants without which any writer on horticultural subjects is . . . apt to be neither interesting nor informing." Price 5s. 6d.
- My Garden in Summer. By the same author. Price 5s. 6d.
- My Garden in Autumn and Winter. By the same author. 5s. 6d.
- Orchids and their Cultivation. By James O'Brien, V.M.H., Hon. sec. of the R.H.S. Orchid Committee. Contains 8 full-page Coloured Plates from colour photography. 1s. 10d.
- Orchids: Their Culture and Management. By W. Watson (Curator, Royal Botanic Gardens, Kew), and H. J. Chapman. Illustrated with 180 Engravings and 20 Coloured Plates. 25s. 8d.
- Orchids for Everyone. By C. H. Curtis. With 53 Coloured, and 43 Black and White Illustrations. 21s. 8d.
- Orchids, Fertilisation of. By Chas Darwin. Illustrated. 3s. 11d.
- Orchid Grower's Manual, The. By the late B. S. Williams. 800 pages. Numerous Illustrations. 16s. 8d.
- Pansies, Violas and Violets. By W. Cuthbertson and R. Hooper Pearson. With 8 full-page Coloured Plates from colour photography. 1s. 10d.
- Pansies and Violets. By D. B. Crane. Paper. 1s. 2d.; cloth, 1s. 9d.
- Peach, The Book of the. By H. W. Ward. A Practical Handbook on the Cultivation of Peaches and Nectarines under Glass and Out-of-doors. 2s. 10d.
- Pears and Plums, The Book of. By the Rev. E. Bartram, D.D. Illustrated. 2s. 9d.
- Pinus, The Genus. By George Russell Shaw. Price 22 13s. 6d.
- Plant Breeding. Being Five Lectures upon the Amelioration of Domestic Plants. By Prof. L. H. Bailey. Illustrated. 8s. 11d.
- Plant Life. By C. A. Hall. £1 0s. 6d.
- Practical Plant Physiology. By Frederick Keeble, F.R.S. Illustrated. 3s. 10d.
- Practical Tree Repair. By Elbert Peets. The Physical Repair of Trees—Bracing and the Treatment of Wounds and Cavities. Illustrated. 7s. 11d.
- Plants and Trees, Diseases of Cultivated. By George Masee. Well Illustrated. 7s. 11d.
- Plants, A Popular Treatise on the Physiology of. By Dr. Paul Sorauer. Translated by F. E. Weiss, D.Sc. With 35 Illustrations. 9s. 6d.
- Primula, Handbook of the Hardy. By H. M. Paul. An Illustrated Work on the Culture, Mode of Growth and Utility of Primulas. 1s. 1d.
- Pruning. A Compendium of Outdoor Work, with special chapter for Small Holders. Reprinted from the "Fruit Trades' Journal." Illustrated. 1s. 1d.
- Pruning, The Handy Book of. With Chapters on Grafting and Budding. By James Udall, with introduction by the Right Hon. Viscount Cobham. New Edition. Illustrated. 1s. 9d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

THE GARDENERS' CHRONICLE

ESTABLISHED 1841.

No. 3989

No. 1589, VOL. LXI.

{THIRD SERIES}

SATURDAY, JUNE 9, 1917.

{Registered as a Newspaper.} PRICE 3d. {POST-FREE, 3ld.

SUBSCRIPTION—Inland, 15-; Foreign, 17 6 22r. 10c. [54 26c] per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden W.C. 2. Telegraphic Address—"GardChron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 229.

For Advertisement Charges see page v

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note that the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will most likely be held over until the following week.

FOUR NEW PRIMULAS, collected by Geo. Forrest, P. habakava AM. R.H.S.; 3s. 6d. P. montana AM. R.H.S. 7s. 6d. P. vernalis AM. R.H.S. 5s. P. conopsea AM. R.H.S. 5s. The set of four grand novelties, for 18s. Full descriptive catalogue of these and other new Chinese plants post free on application—R. WALLACE & CO., LTD., Colchester, Essex.

WATERLIES ALPINE HERBACEOUS PLANTS and WATER LILIES. Large stocks of the best and most popular varieties. Descriptive Catalogue free. JOHN WATERLIE, SOANS & RISE, LTD., The Nurseries, Twickenham, Berks.

SOW NOW, BATH'S EMPRESS PAN LILIES, as grown for the Royal Kew Gardens at Frogmore. The richest and largest flowered strain of Panuses ever. Per packet, 2s. 6d. and 1s. 6d., post free for cash with order. (Dept. A.) R. H. BATH, LTD., The Floral Firm, Wicheby.

GREENHOUSE PAINTING & GLAZING. Vitrolite, superior. White Lead Paint. Plastering, carpenter's putty. Full particulars from W. CARSON & SONS, Grove Works, Battersea. Agents throughout the country.

GISHURST COMPOUND. Insecticide and Fungicide. Over 50 years' reputation, highly commended. R.H.S. Scientifically controlled. Trials at Wexley, 1914-15. Sold by dealers in Garden Sundries. Wholesale: PRICES PATENT CANDLE CO., LTD., Battersea, London, S.W. 11.

J. GRAY, LTD., Builder of Conservatories, Greenhouses, Kiosks and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wire 201, Western, London. Telephone 201 Western.

VEGETABLE PLANTS. Barr's Selected Strains, now ready to plant out. Summer Cabbage. Small Red Cabbage. Brussels Sprouts. Cauli flowers (early and late). Kale (Aparagus and Scotch). SimPLY plants, 3s. 6d. per 100 carriage paid. Potato Flutedate, selected seed for late planting. 6d. 1s. 6d. 12d. 3s. cartages extra. BARR & SONS, 12 and 13, King Street, Covent Garden, London.

LAWN BOWLS. 50s. Association set. Lawn Bowls, 4 pairs superior full size selected lignum, medium base, with 2 marks, complete, in strong box, unroofed, price 28s. 6d. also 2 new pairs best 4. Standard Match Bowls, absolutely accurate, 3 bias, officially tested and stamped. 1s. 6d. pair or whole lot for 49. 6d. Approval. Box 707, Galvards, Barley Street Bradford.

SUTTON'S VEGETABLE SEEDS. SUTTON'S FLOWER SEEDS. The Best.

SUTTON & SONS, The King's Seedsmen, READING.

VIOLAS, finest Scotch, 12 Bedding. Var. "as, correctly named, 2s. 3d. post free. Early carnation-blossoms, 12 var., fine varieties, 3s. 9d., post free. Strong plants. DOBBIE & CO., Florists, Bdin.burgh.

BUSINESS METHODS. Experience in the world of commerce shows that there are two ways of conducting a business, the one being to charge as much as possible for what is sold, exacting a high rate from one customer and a low price from another and the other to have a fixed price for everything and stick to it. The first method is to be condemned from every point of view, but mainly because it punishes the best purchasers, those who are ready to pay what is reasonably a fair price when the goods are marked in plain figures. The "Gardeners' Chronicle" adopts the alternative. It guarantees that its advertisement rates are not added for any customer, big or little, old or new, all pay the same price for a similar thing. Consequently, while it is not possible to grant concessions, it nevertheless the privilege of the paper to be in the position to assure each advertiser that he pays no more than any one else.

GARDEN ENGINE; strongly made steel cylinder, 2 1/2 inch and 3 1/2 inch inside and outside, portable, 100 lbs pump, on wheels, 12 gallons. E. BARD, 158-20, Warren Road, High Barnet, Herts.

FISHING NETS. Second hand. Several 100 yd. nets at 11 per square yard. R. A. BODRER, Saddleton, Pilsbury, Yorkshire.

TWO LAWN MOWERS for Sale; Green's, good condition, 20in. 55in., 22in. 75in. for further use. BARRIS, Bryants, Lick, Rugby.

SET OF HORSE LAWN BOOTS; 5 1/2 inch long, 2 1/2 inch wide, used one season, 27s. 6d. L. H. Box 56341, Wellington Street, Covent Garden, W.C.

TO SELL 1 PAIR fine ITALIAN Columns. For particulars, apply GARDNER, Belize Court, Hampstead, N.W.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipcord Twined, wear's like leather, showproof, 7 yards for 17s. 6d. PATENTERS—BRADFORD WOOLLEN CO., 71, Bradford.

HOTHOUSE FOR SALE; pipes and boiler in working order, complete, glass sheets about 800, size 18in. x 22in. What offer when it stands, or taken down? WILLIAMSON, Market Place, Peterborough.

FOR SALE, Belladonna; strong seedlings; 100 in odd trays; 15s. per 100. H. CLIX, FOX BAKER, Baybushbury, Bedford.

SANDERS, Orchid Growers, St. Albans.

DICKSON'S HORTICULTURAL MANURE and other high class Fertilisers, also Dickson's Improved Mushroom Spawn. Priced catalogue for application to DICKSON'S Royal Seed Warehouse and Nurseries, Chester.

WM. DUNCAN TUCKER & SONS, LTD., Lawsons Road, South Tottenham, London. Exoticals, Water Gardens, Vines, Peachhouse Potable Buildings, &c. Catalogues gratis.

FERNS' FERNS'. Tree Ferns, Cladonia Ferns, Basket Ferns, Show and Greenhouse Ferns, Hardy Garden Ferns; catalogues free. J. J. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

BEGONIAS, Glorie de Lorraine, Turford Hall and Rothschild variety of Lorraine, well 3rd cuttings, 2s. 6d. doz., 50 for 6s. 6d., 10s. 6d. 100. Per King 3s. doz., 50 for 12s., 98s. 100. J. H. DODDER, DUCK, The Dorset Nurseries, Blandford.

BEGONIAS and GLONIAS MORLEY & CO. can now supply their celebrated strain, in large 60 pots, in flower and bud. Early maturities, a few are in flower this season. 150 Pk. Finchley Road, N.W. 3.

TUBEROSES, double African Pearl, just arrived, for winter flowering, extra large bulbs, 1 doz., 12s. 100, sent free any address, for cash. MORLEY & CO., 150 Pk., Finchley Road, N.W. 3.

125 HYBRID and other DENDROBIUMS, in hanging pots, best varieties, giving up to 100 buds. What offer? B. T. PETER, Pleasington, near Blackburn.

GENTIANA verna, 12 large clumps, 5s. 1 doz., 60. Drys, catnip (d), 3s. 6d. Osmunda regalis, 6 Red Orchids, 3s. 6d. KEEPA, Botanist, Ballyvaughan, Dublin.

100,000 LARGE GARDEN FERNS, 20s., 100, Palms, Begonias, Crotons, Dracaenas, Roses, Ferns, Gladioluses, Lilies, Hydrangeas &c. Catalogues free. J. R. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, 1,000 Large ASPIDISTRAS, all plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

ORCHID PEAT, 6s. and 7s. 6d. per sack; Brown Peat, 10s. 6d. per yard in trucks; in bags 2s. 6d. each 30s. dozen; Oak and Birch Leaf Mould Yellow, 40s. Stracked and Fiech Cut, Silver Sand, 40s. 100 for 35s.; C.N. Fibre, 25s. dozen bags; 1st top J. HANDSOMBE, F.R.H.S. Fillingham, Middlesex.

SALES BY AUCTION.

JAPANESE DWARF TREES AND MINIATURE GARDENS,

including many exceptional specimens.

GARDEN ORNAMENTS.

Old and Modern, including Fountain and other figures, Sundial, Vases, &c., in stone, stone-ware, and lead.

GARDEN FURNITURE, &c.

including Teakwood Seats, Tables, Chairs and Tubs, &c.; Bamboo Tables and Chairs, and a variety of Benches.

MESSRS. PROTHEROE & MORRIS will sell the above at their Central Auction Rooms, 47 and 65, Cheapside, London, E.C.4.

On Friday, June 22nd, at 1 o'clock.

on view two days prior and morning of sale. Catalogues on application to the Auctioneers.

SURREY.

about 2 miles from Siphston, 3 from Kingston, and 5 from Leatherhead.
The Valuable FREEHOLD PROPERTY known as **CHESSINGTON COURT FARM**, extending to about 136 acres 1 rood 22 poles, contiguous to Hook and mostly in the Parish of Chessington. It includes an attractive OLD-FASHIONED RESIDENCE, Farm Buildings, and several Cottages, RICH ARABLE and MARKET GARDEN LANDS, and possesses EXTENSIVE FRONTAGES TO MAIN ROAD available for Building Purposes.

Possession will be given at Michaelmas next. **HUMBERT & FLINT** will OFFER this PROPERTY, by AUCTION, at the Mart, Taken House Yard, E.C., on WEDNESDAY, June 20th, 1917, at 2 o'clock (in 4 Lots, unless meanwhile sold privately). Particulars of the Auctioneers, 11, Seale Street, Lincoln's Inn, W.C.2, and at Watford, Herts., or of Messrs. MAUDE & TUNNICLIFFE, Arundel House, Arundel Street, Strand, W.C.2.

BUSINESS FOR SALE.

FOR SALE, as a going concern, Nursery business; 600 feet Glass 2 acres land; Southend district.—R. F., Box 6, 41, Wellington Street, Covent Garden, W.C.2.

PARTNERSHIP.

PARTNERSHIP wanted by lady in small Nursery, Fruit, or Bee Farm, Teagarden, &c.; worked by owners. — CARMEN, 28, Dunster Gardens, Brondesbury, 6.

PUBLISHERS' NOTICE.

JOHNSON'S GARDENER'S DICTIONARY:

Entirely re-written and brought down to date by W. HEMSLEY and J. FRASER, 932 pp., royal 8vo. 12s. net.

Since its first publication in 1846, there have been several revisions of this standard work, on which most of our leading gardeners have been brought up. The present revision is a wholesale re-creating, based wholly on original work, of the 1863 edition, the main outlines of which have been preserved, tho' many improvements both in scope and in method have been introduced. It will doubtless again take rank as the book for the serious gardener, professional or amateur.

GEORGE ROUTLEDGE & SONS, LTD.,
68-74, CARTER LANE, E.C.

BOOKSELLERS' NOTICE.

SCIENTIFIC BOOKS AND SERIALS.

JOHN WHELDON & CO. have the largest stock in the country of Books in all departments of Science and Natural History; also Transactions and Journals of Learned Societies, &c., in sets, runs, and single volumes or numbers. Libraries or small parcels purchased for cash. **SPECIAL CATALOGUES:** Gardening, Botanical, Agricultural, Ornithological, Entomological, Geological, Chemical, Microscopical, &c., gratis on application. 38 GREAT QUEEN STREET, KINGSWAY, LONDON, W.C.2. Telephone: Gerrard 1412.

MISCELLANEOUS.

LAWN MOWER ("Shanks"), 42in.; in thorough repair, also Green's 36in. **FOR SALE** cheap owing to closing of golf links—HUGGS, West wood Hill, Reading.

B. EDDY & SONS, Torleven Works, Northben, Cornwall.—The largest manufacturers of GARDEN NETTING in the KINGDOM. NEW STOUT and specially strong SQUARE MESH NETTING, half-inch and one-inch mesh, at 9d. per square yard. LIGHT NEW square mesh, suitable for Strawberry Beds, at 3d. per square yard.

These Nets are bound all round with stout cord, and cover their measured length and width. Any length or width supplied.

Repaired Nettings in all sizes in stock. State your requirements, and we will quote lowest prices.

Also makers of TENNIS NETTINGS, RICK COVERS, GREENHOUSE SHADINGS, WASP NETTINGS, PACKING and TARKED TWINES of all kinds.

All Goods sent by PASSENGER Train, CARRIAGE PAID, on receipt of order.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

PRIVATE.

WANTED, HEAD GARDENER, where 4 are kept; single; must be over military age; Both; must have Inside and Outside experience; good wages to suitable man. Apply to W. L. SMITH, 12, London Wall, E.C.4.

WANTED, HEAD WORKING GARDENER (2 kept), thoroughly experienced Vegetable, Fruit, and Herbaceous, little Glass, and small home farm; preference to men with soil as Second, well built, small cottage, good wood, and vegetables found. Particulars of experience, age, wages, and family to PRESOTT, Highlands, Wellingham, Surrey.

WANTED, GARDENER (HEAD WORKER) (two, single, 2 under), wages 25 and 20 net age. Full particulars to H. S. P., c/o Willings, 25, Knightsbridge.

WANTED, GARDENER (HEAD WORKER) (1 kept), over military age, married, 8 kept, 30-cottage free, all one road, light WCKERS, Merton Hill, Croydon.

REQUIRED immediately, HEAD WORKING GARDENER (man of sound, thoroughly reliable and energetic, good cottage. See full particulars to HONBLE. MRS. F. COLBORNE, Nonsuch Park, Chisum, Surrey.

WANTED, HEAD WORKING GARDENER (1 kept), not under 50 years of age; three kept; must be a hard-working, sober, reliable man, who understands his work. Apply, by letter, to H. P. c/o Willings, 33, Knightsbridge, London, S.W.1.

WANTED, FOREMAN; chiefly Inside; good wages; overtime and Sunday duty paid. Both, vegetables, &c. — W. PHILLIPS, Dora Ormsod, Langbath, Cardianshire.

WANTED, FOREMAN or good SECOND in Glass experience in Fruit and Plant Culture (married or single, singleable, W. SMITH, Bookham Grove Gardens, Bookham, Surrey.

WANTED, FOREMAN or MAN who can give Fruit &c.; Inside, good wages and overtime paid. State particulars to E. BRISFOW, Leywood Gardens, Crombridge, Tambridge, Wells.

WANTED, FOREMAN under Glass; well experienced in Fruit and Plant Growing. Apply REES, Gardens, Llanover, Aberystwyth.

GARDENER (SINGLE-HANDED) wanted immediately for household of 8; chiefly Vegetables required. State if married or single and wages, with or without room. St. Michael's Hotel, Grove Park, Kent.

WANTED, good all-round SINGLE-HANDED GARDENER (singleable), used to a gentleman's place, help given, wages 50, and good rooms. Letters, WILLEY 16 Fulbridge Road, Eding.

WANTED, good SINGLE HANDED GARDENER, boy kept; 7 miles Guildford, cottage and garden over military age—W. M., Box 6, 41, Wellington Street, Covent Garden, W.C.2.

WANTED, GARDENER; good knowledge Inside and Out; 3 men kept; single preferred. MRS. TYNDALE, Moorhaven, Chesham.

WANTED, competent GARDENER, with WIFE capable of good plain cooking, having no children, for family of two, living about 12 miles from London, who required to look after house, board, lodging, and satisfactory wages; good references essential. Reply to W. G., 45, c/o Benson's, Broadhill Street, E.C.3.

WANTED, GARDENER; experienced, reliable; single handed; some Glass.—MRS. McMAHON, Westfield, Hertford, Herts.

WANTED, GARDENER, for Southport; mostly glass; knowledge of Orchids; indispensable; good wages.—Apply, in first instance, to JOHN COWAN & CO., Nurseries, Gateacre, Liverpool.

A GOOD VEGETABLE GARDENER wanted immediately; help given; wages 25s. and lodge (4 rooms and scullery); permanent position. S. "Dorowasky," Crawley, Sussex, or apply Monday, Wednesday, or Friday a.m. to agents, Kepp, 104, 24, Holborn, E.C. 1. Tele., 2216 Holborn.

WANTED, GARDENER, under Head; man.—Write, stating full particulars, LADY McMAHON, Southbrook House, Devizes.

WANTED, young GARDENER; under experienced Head, age 16-17 or negligible. PEARCE, The Gardens, Portishead House, Portishead, Somerset.

WANTED, JOURNEYMAN, for Houses; negligible; wages 24s. per week; Both; and vegetables, duty every third Sunday.—C. EARL, Somerset Hill Gardens, Tonbridge, Kent.

WANTED, JOURNEYMAN or YOUTH, with some experience in Fruit and Plant Houses.—Apply, with references, stating experience and wages required, with Both, &c. — C. E. BARTER, Longleaf Gardens, Warrimster.

WANTED, SECOND GARDENER, for Inside and Out; comfortable furnished cottage or Both; with usual allowances. State wages and full particulars.—A. BRADBURY, Bryn Lopus, Llanidloes.

WANTED, at once, SECOND GARDENER (married or single), good all round experience, negligible, wages 28s. and house.—H. SYMONDS, Knesworth Hall, Royston, Herts.

WANTED, UNDER GARDENER; negligible.—Apply, in writing, W. F. FLADGATE, Esq., Dooce Lodge, New Borne.

WANTED, GARDENER-HANDY MAN, for North London; wages 30s. and vegetables; also 2 nice rooms, with scullery and bath, electric light and gas. Write, stating age, experience, and references to W. B., Box 27, 41, Wellington Street, Covent Garden, W.C.2.

WANTED, 2 MEN, one expert Vegetable Grower and one for Glass chiefly; 32s. and free house. — MR. CALLOCK, Eden Gardens, Staplehurst, Kent.

WANTED, GARDENER (male or female), help work Garden, Vegetables, greenhouses. State wages required.—Apply by letter, WOOD HOUSE, Farnfield, Biggleswade.

WANTED, man or woman as SECOND, in place of man called to Colours; knowledge of Inside; good references required. State wages.—G. W., The Lodge, Brockley Hill, Brockley, S.E. 4.

WANTED, LABOURER GARDENER; married, country man, wages 25s., cottage and good garden. Write to RUTTH, Antford, Andover, Hants.

WANTED, HANDY MAN, for Ladies' School, windows, boots, and Inside generally; good wages; cottage provided.—FOSTER, Head Gardener, St. Monica's Road, Bugh Heath, Tadworth, Surrey.

WANTED, a youth as IMPROVER in the House, age 15 to 17; good wages; Sunday duty and overtime paid extra, 1 o'clock Saturdays. State age, wages, and other experience, to W. L. BASTIN, Broom Croft, Farnham, Berks.

WANTED, strong YOUTH, 16 to 17; Inside. Both, milk, and vegetables; 21s. per week; duty and overtime paid. Larchbrook Gardens, c/o BALDARD, Glimuk Park Gardens, Crickhowell.

WANTED, TWO Smart YOUTHS, one Inside and one Outside; wages 18s. per week table; overtime paid. Larchbrook Gardens, c/o BALDARD, Glimuk Park Gardens, Crickhowell.

WANTED, a thoroughly experienced lady GARDENER, for period of the war; accustomed to Vegetables, Greenhouses, Vines, and Herbaceous Borders, &c.; to lodge in garden cottage with wife of Gardener, who has been called up; Christian woman. Apply, with full particulars, to MRS. WARD-ALBAM, Hudson, Fagwell Hall, Archway Military Hospital, St. 153, Doncaster.

MRS. ARTHUR WILSON is requiring immediately 2 strong capable WOMEN, to work under Head Gardener in Fruit and Green-houses. Apply, Trinity Church, Hild.

SALE OF

Ker's Famous Aigburth Amaryllis

(R. P. Ker & Sons, Aigburth, Liverpool)

This strain of Amaryllis (*Hippeastrum*) has won First Class Honours wherever exhibited. The total honours awarded exceed the total of those given to all other strains in the whole of Europe.

44 Gold Medals and numerous other Premier Awards made at the most notable exhibitions in

- London.
- Petrograd.
- Brussels.
- Antwerp.
- Ghent.

prove this strain to be one of unparalleled excellence.

The buyer of this strain will inherit not

only the existing medals, &c., but the far more valuable Premier Position as owner of the finest race of flowers extant.

The buyer will receive, in addition to the magnificent stock of nearly 13,000 bulbs, and many thousands of seedlings, the Priceless Pedigree records which have been assiduously kept by Mr. F. Ker. These records are of inestimable value as a guide to future hybridisation, as well as to the influence of the different species, varieties and forms upon actual results.

The present status of the Amaryllis, important as it is, is only of small account compared with the brilliant future ahead.

The Stock is in a perfectly healthy condition, and consists of at least

- 620 large named flowered bu'bs.
 - 2,350 10 flowering bulbs, 3½ and 4½ years' old.
 - 7,400 2½ to 3½ year old bulbs.
 - 2,350 1½ to 2½
- and a huge quantity of seedlings.

95 per cent. of the entire stock is accurately labelled with parentage to correspond with stock book.

Offers are invited by the Trustee for the whole or part of the stock. Arrangements can be made for attention until growth is finished, and the bulbs are ripened and dry ready for shipment.

This advertisement will appear almost simultaneously in the American and the English Press.

Offers are to be made to the Trustee:

Harold Sadler, Esq. (Messrs. Finney, Son & Sadler), 31, North John Street, Liverpool

WANTED, TWO WOMEN GARDENERS, one able to do Making. Apply, W. J. POTTS, Handfield, Sutton at Home, Kent.

WANTED, 2 WOMEN as UNDER GARDENERS to work Vegetable and Fruit Garden under Head Gardener; one must be trained in vegetable growing, the other willing assist with other light work; required to dig and attend to garden stove. Head Gardener will train in Vines and Peaches as time permitted; furnished cottage, meals, light, and vegetables provided. Apply, stating age, height, experience, rates, and wage desired, to MRS. TAYLOR, Cliphouse East, Wark on Tyne, Northumberland.

LADY GARDENERS wanted; all suited to a single house; wages 36s. per week; single handed, Head and Under together, for the parts of England. MRS. HUSE, LTD., 76, High Street, Waltham, W. I.

WANTED, at once, GARDENER (lady); single handed; wages 36s. per week; apply, with full particulars, to R. J. MORRIS, 15, Shortlands Grove, Shortlands.

TRADE.

MANAGER Wanted, to take Entire Charge of General Retail Nursery; full particulars as to age, experience, references, &c. to K. P. DIXON AND SONS LTD., Hull.

WANTED, GROWER for Caladiums, Gloxinias, and Greenhouse plants; intelligible; Apply, stating wages required, to JOHN PHEASANT, West Newwood, London, S.E.

WANTED, a CUCUMBER and TOMATO GROWER, good wages and overtime. Apply to J. M. LEATHER, East Fields, Mitcham.

WANTED, CUCUMBER GROWERS for market nursery in Chesham, Bucks; wages 35s. weekly, overtime and bonus extra. State age, experience, when discharged, to H. W. Box 25, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, for Dublin Seed House, HEAD SHOPMAN, fully competent in all departments, with administrative ability. Apply, with particulars of age, experience, and salary required, to S. D., Box 1, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, MEN; intelligible; Cucumber and Tomato growers; good prospects. Apply, COCKRELL, Brighthelm, Essex.

WANTED, a man used to Ferns grown in large quantities and quick at potting. Please send wages, to J. L. Box 3, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED MAN that understands Garden growing and general market growing; good age; given and overtime. J. GREEN, Welbeck Lodge, Eastborough, Kent.

LEADER CLERK wanted to replace present employee on the Army; must be capable and trustworthy; experienced in book-keeping; knowledge of the trade a great advantage. Apply, LITTLE & BULLYNAINE, Cardiff.

WANTED, AUDIT or CHECKING CLERK; experienced; over military age; quick and accurate. THOROUGH & SONS, The King's Seed men, Southampton.

WANTED, at once, for "Works" Food (Produce Scheme), STORE KEEPER, with good experience in book-keeping. Apply, stating experience, to man with Nursery or Market Garden experience preferred. Apply, MR. GREENFIELD, Garden Superintendent, c/o Messrs. White and Poppe, Ltd., Coventry.

WANTED, SHOPMAN or SHOP WOMAN for Retail Garden Seed Business in county town in South of Scotland; man must be intelligible for Army. Please state former experience and salary required. Write, M. K., Box 26, 41, Wellington Street, Covent Garden, W.C. 2.

SEED TRADE, SAMUEL FINNEY & CO., LTD., Newcastle-on-Tyne, have vacancies for experienced ASSISTANT in their Garden Seed department; permanent situation and good wages to reliable man; Write, stating age, experience, and wages expected, to above.

WANTED, for Farm Seed Warehouse, a capable FOREMAN; must be able to superintend cleaning and dispatch of orders for a wide trade; also Warehouseman, neat, sick-stuffer, and very dependable; also for Garden Seed Department, an experienced Hand; must be able to take entire charge. Good wages offered. All applicants must be intelligible. A. B., Box 19, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, several WOMEN GAR DENERS for Market Nursery, Tomatoes, Chrysanthemums, and Roses grown; good wages and overtime. Apply, SALESFORD & ALLEN, Waltham Abbey, Ess. X.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d for each succeeding Eight words or less.

PRIVATE

HEAD GARDENER (first class); expert in every branch of Horticulture, at liberty. Write, A. H., Box 19, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD), where several are kept; five experience all round; knowledge of stock; highly recommended by past and present employers; institution of private; intelligible; age 35. KING, Underfield Gardens, Bostham Wood, Herts.

GARDENER (HEAD); five experience; eight situation first object; trustworthy; well advanced; milit. for Army; age 38; married (1 child). F. G., Fern Bank, Gtotton, Warrwickfield.

GARDENER (HEAD WORKING, or BAILEY GARDENER) (Scottish); 26 years' experience in large estate; hedges in all branches; Horticulture; also man; aged 40; Stock and Tillage; over military age. For particulars apply to MESSRS. LAIRD DICKSONS & SONS, 17, Frederick Street, Edinburgh.

GARDENER (HEAD WORKING), where 3 or 4 are kept; five experience in all branches; good references; over military age; married (no family). BOWSHAM, Rogon Cottage, New Road, Ayles.

GARDENER (HEAD WORKING), where 2 or 3 are kept; married (1 child; age 61); age 48; five experience in all branches. H. LOCKWOOD, Carr Hill, Birch Heath, Ladbroke, Surrey.

GARDENER (HEAD WORKING); 35 years' practical experience all branches; inside and out; used to large Glasshouses and growing large quantity Peaches, Grapes, Tomatoes, and all Early Fruit and Vegetables, care of Pleasure Grounds, 11 Cies, and Shrubs. Please state wages. WILLIAMS, White Lodge, Maidenhead, Condt., Maidenhead.

SITUATIONS WANTED continued on page v.

"See Bull's"
THE FOOD FOR PLANTS



✓ SLUGS SLUGS

"SANITAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (or, London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
 Limehouse, London, E.

Awarded Medal at Royal Horticultural Exhibition, 1911.

SANKEY'S FAMOUS GARDEN POTS
THE BEST and Cheapest.

Each quantity of each size required and have "patent" carriage frequently mounted on half "patent" (pots), or write for Price List, free.

41, DORSY, 11 descriptions. Both Bone and Fern Pans from 2d. each.

RICHARD SANKEY & SON, LTD.
 Bulwell Potteries, NOTTINGHAM.

ONLY MEDAL INTERNATIONAL EXHIBITION EDINBURGH-1896
 ONLY GOLD MEDAL EDINBURGH-1891

THOMSON'S CELEBRATED MANURES

PERFECT PLANT FOODS.
 Unrivalled for all garden crops. Prices: Vine, Plant and Vegetable Manure, 1 cwt. 20/-, 56 lbs 12/6, 28 lbs 7/6, 14 lbs 4/5, 7 lbs 2/5. Tim 2/6, 1/7 and 6d. Carriage paid anywhere on 56 lbs. and up. Special Chrysanthemum and Top Dressing Manure, 56 lbs. 20/-, 28 lbs 11/-, 14 lbs 6/-, 7 lbs 5/8. Tim 1/- Carriage paid anywhere on 56 lbs. and up. Sold by all Seedsmen. Sole makers Wm Thomson & Sons, Ltd., Cloudfords, N.E.

Save our Food - Thousands of tons wasted through the ravages of Rats and Mice in our Farms, Store & Home. Destroy this menace with **LIVERPOOL VIRUS** exterminates **RATS & MICE**. Intin ready prepared with bait for Rats 2/6 & 6/- for Mice 1/6. Get a Chemist or **RYANS SONS LESOHER & WEBB Ltd., Liverpool.**

BENTLEY'S WEED DESTROYERS :

Liquid : Concentrated Strength 1 to 80.
 Double Strength 1 to 50.
 Patent Powder : 1 to 25.

BENTLEY'S DAISY KILLER
 (LAWN SAND).

BENTLEY'S INSECTICIDES.

BENTLEY'S FUNGICIDES.

BENTLEY'S FUMIGANTS.

BENTLEY'S MANURES.

Catalogue on application.

JOSEPH BENTLEY, Ltd.,
 Chemical Works,
 Barrow-on-Humber, HULL.



MANY YEARS REPUTATION.
EUREKA WEED KILLER
 LASTING RESULTS - NO NEW EXPERIMENT.

LABOUR SAVERS. "EUREKA" LAWN SAND, SOILFUME, NICOTINE INSECTICIDES, FUMIGANTS, SPRAYS, AND OTHER CHEMICALS & SUNDRIES. SEE LIST. PLEASE ASK YOUR AGENT FOR THE EUREKA ARTICLES - THEY ARE ALWAYS SATISFACTORY IF ANY DIFFICULTY IN OBTAINING WE SEND DIRECT CARRIAGE PAID.

Only Agents: **LOHLINSON & HAYWARD LTD., LINCOLN.**

SALE OF SURPLUS STOCK.

We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being bought.

Particulars on application.
BOULTON & PAUL, Ltd., ROSE LANE WORKS, NORWICH.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties. STOVE AND GREENHOUSE PLANTS OF ALL KINDS. Kindly send for Catalogue.
JAMES CYPHER & SONS,
 Exotic Nurseries, CHELTENHAM.

Spray Your Potatoes

PROTECTION against the Potato's worst enemy—Blight—is absolutely essential. Blight cannot be cured; but it can be prevented if the crop is sprayed in time with a reliable mixture such as

Keelings Spraying Mixture
 (Kiln Brand)

which is the mixture approved by science. Can be used with an ordinary garden sprayer—keeps in any climate—good for fruit trees. Harmless to other plants. 4 lbs. makes 25 gallons of mixture (sufficient for 4 acre). Price, in 4 lb. bags, 4/6; 8 lbs., 8/-; 16 lbs., 13/6; 32 lbs., 24/-; all carriage free in U.K. Special prices for larger quantities. Sample 1 lb. 1/6, post free. Send P.O. with order direct to the manufacturers.

Keeling & Walker, Ltd. 20, Milton House, Surrey St., London, W.C. 2.

Ammanford and Pontyberem Collieries.
 SOLE AGENT :
T. T. PASCOE,
 York Chambers,
SWANSEA.

Tele { phone 1048 Central.
 grams Pascoe, Swansea.

Best Anthracite Large Coal for Horticultural purposes and Cobbles for House Furnaces.

Quick Dispatch. Best Quality.
Lowest Prices.

Gardeners' Chronicle

No. 1689.—SATURDAY, JUNE 9, 1917.

CONTENTS.

Asphylla squarrosa at Leonardlee 235	Orchid notes and gleanings 230
Azolla Caroliniana and Milledium Plumeri .. 237	Prothero, M., and the Gardeners' Company .. 234
Crusoe's Island; Juan Fernandez 230	Societies—
Daffodils in 1917 .. . 234	Horticultural Club .. 234
Farm, crops and stock on the home 238	Royal Horticultural .. 236
Food production, on increased—	Trees and shrubs .. . 235
Bottles for preserving .. 232	Ribes alpinum aureum .. 230
Butter Beans 231	Veronica, hardness of shrubby 236
Fruit preserving without sugar 231	Viola, propagating .. . 236
Planting Broccoli .. . 232	Wallonia disticha .. . 236
Planting Potatoes .. . 231	War items 235
Wasps, the destruction of .. 232	Waterproofing cotton and paper 238
Grizen, Monsieur G. T. 235	Weeks work, the 232
Honour 94, the 235	Flower garden, the .. . 232
Market fruit garden, the 230	Fruits under glass .. . 233
	Hardy fruit garden, the 232
	Kitchen garden, the .. . 232
	Orchid houses, the .. . 232
	Plants under glass .. . 233

ILLUSTRATIONS.

Asphylla squarrosa 235	Juan Fernandez, view showing the peak "El Yunque" at 231
Moths: Brindled Beauty, 229; Ermine Apple, 229	Mottled Umber, 229; Winter 229
Robinia Kelseyi 237	

THE MARKET FRUIT GARDEN.

It is some years since we have enjoyed a May as sunny and warm as the past month, although the wind was in a cold quarter for half the time, when prevented growth from being as rapid as it might have been. There was not a single frost 4 feet above the ground level at my station, and the nights lost their coldness in the latter part of the month. Rain was measurable on only ten days, making a total of 1.50 inch. Absolute drought prevailed until the 13th, and only one shower of a few minutes' duration occurred after the 23rd, the thunder storms of the last week having missed my district. The dry periods were beneficial for killing weeds by horse cultivation and hoeing. Gardens in which Lilac, Pink May, Laburnum, and Guilder Rose are growing in juxtaposition were very beautiful at the end of the month, as the rare spectacle of all four in blossom at the same time was presented, though Lilac blossom was past its prime.

A PLAGUE OF CATERPILLARS.

Just before the petals of Apple blossom began to drop, the outlook for Apples and Plums was extremely promising, and with respect to Apples particularly, it seemed that nothing was at all likely to occur to prevent the production of a bumper crop. In a little more than a week, however, a lamentable transformation scene was developed, the result of the most tremendous infestation of caterpillars that I have known in my seventeen years' residence in my present home. On many varieties the trusses of blossom had turned brown, as if they had been killed by frost, of which there was none at my place after the blossom had opened, while the foliage was riddled with holes. The attack varies in intensity in different orchards, and among the several varieties in the same orchard. The difference, however, is only one of degree, ranging from slight injury at present apparent to the almost total destruction of the crop and very serious injury to the foliage. Where arsenate of lead cannot be safely applied, in consequence of Black Currants growing under the trees, the damage cannot fail to be increased before the pests have finished their larval stage. The misfortune is all the more impressive to me from the fact that it is a novelty in my ex-

perience in my present place, this being the first time of serious damage to my Apple crop having been done by caterpillars, though it has suffered some injury, particularly from the Apple sawfly

sent season. To me it appears criminal to spray with rank poison trees growing over Currants which will be marketed in about four weeks, and in the case of Gooseberries the danger is much greater if they are to be sold while green.

VARIATIONS IN INJURY.

Among the most seriously damaged Apples are Cox's Orange Pippin and Allington Pippin planted in the autumn of 1906. Nearly every truss of blossom on these trees is withered, and comes off entire when a hand is passed up it. On May 30 it was found that there was, or had been, as obvious from traces, a caterpillar in nearly every truss. Probably some growers will charge the Apple sucker with this destruction, but not more than two or three out of some of cases examined with a lens contained a sucker or any trace of one. In an orchard planted in the autumn of 1900 some finely grown Allingtons have had their crop almost entirely destroyed, while trees of the same variety planted sixteen years from last autumn have set a good crop. The like contrast holds good with Blenheim Pippin in the two orchards. Mr. Gladstone has experienced damage almost entirely in three, and Beauty of Bath in three, while badly injured in a fourth orchard. Worcester Pearmain varies greatly in degree of injury; although all the trees have been badly infested, mature trees of robust growth have set a good crop, while some younger trees which have never been heavily will be almost devoid of fruit. Mature trees of Bramley's Seedling have not been much damaged, but on younger trees, even where a fair quantity of blossom has set, a very large proportion of the fruitlets have surface holes eaten in them. Queen, Lord Grosvenor, and Royal Jubilee show no injury to fruit at present, though Lord Grosvenor has its foliage much eaten in one orchard. Duchess of Oldenburg trees, ten years from the planting, have their blossoms almost entirely destroyed, while mature trees of the same variety have hardly been touched. Lane's Prince Albert has been injured in varying degrees. Chesham Wonder, of which I have only a few trees, is in the worst condition of any mature variety, its crop being destroyed and its foliage in ribbons. Excepting one lot of trees already mentioned, which have never been healthy, Cox's Orange Pippin has been injured less than many more robust varieties. James Grieve has had more harm done to foliage than to fruit.

TOO MUCH BLOSSOM

Apart from the attack of caterpillars, there must have been a considerable proportion of abortive trusses of blossom, as it was so superabundant that it could not be nearly all fertilised, nor was it desirable that it should be. But it is to caterpillar attack that the failure to set on some large groups of trees is traceable.

Reference to the loss of blossom through caterpillar attack does not cover all the injury done thereby, for, among the Apples set there is a very large proportion with surface holes eaten in them. This statement applies to almost all the varieties badly attacked.

VARIETIES OF CATERPILLARS.

The number of varieties is considerable, and it includes some not familiar to me. The proportion of Winter Moth larvae (see fig. 37) is smaller than I expected to find, while there are hardly any hairy caterpillars of any kind in the collections obtained by shaking branches over an inverted umbrella, and practically no Apple Sawfly maggots. Mr. Theobald, who has kindly reported on two collections sent to him, names the so-called Common Tissue Moth (*Notosa dubitata*) larvae as numerous in a lot from Blenheim Pippin, and remarks that they are uncommon, none having ever been sent to him before. Other varieties named by him



FIG. 34. MOTTLED UMBER MOTH.

larvae. Curiously enough, this particular pest may almost be said to be conspicuous by its absence this season.

With respect to Plums, the infestation is worst



FIG. 35. ERMINE APPLE MOTH.

in young trees, with abundant traces of a few good and tender foliage now eaten into ribbons. The blossom on Plums had set remarkably well, and on comparatively all trees the injury



FIG. 36. BRINDLED BEAUTY MOTH.

to foliage is not much worse than I have had it before, so that the crop may not be greatly reduced, but young trees will not bear out their blossoming promise. As the young trees are



FIG. 37. THE WINTER MOTH.

in an orchard where there is a bottom crop of Black Currants, they cannot be sprayed with arsenate of lead, and the injury to them will not be limited to the mischief done in the pre-

are the larvae of the pale Brindled Beauty (see fig. 86), Winter (see fig. 87), Clouded Drab, and Mottled Umber moths (see fig. 84), while one large looper requires time for identification. Here and there I find tents of the Lackey and Little Ermine moths (see fig. 85), but the caterpillars of these varieties were too small when taken to have done any material damage.

WHEN TO SPRAY AGAINST CATERPILLARS.

It has been generally agreed that the time to apply arsenate of lead for the poisoning of caterpillars is immediately after the petals of the blossom have fallen. But is that soon enough? A negative reply to this question seems to be indicated by the circumstances of the present season, for, by the time named, a vast amount of irreparable damage had been done. Even if the trees first sprayed are saved from serious injury, beginning, of course, with varieties soonest off blossom, increasing damage must be done before the operation is finished, even when continuous fine weather allows of steady progress in the work, while the case is much worse when spraying is interrupted by a few rainy days. Yet the spraying cannot be done while the blossom is open, because the result would be the poisoning of bees and other pollinating insects. It may be suggested, then, that the arsenate of lead should be applied shortly before the blossoms open, when the clusters of blossom buds have just emerged from their sheathe, which is now admitted to be the best time for what is known as "winter spraying." In other words, the arsenate of lead should be mixed with the lime-sulphur, or lime alone used for that operation. It may be objected that this implies the use of the poison on all varieties of Apples without knowing whether they will be seriously attacked by caterpillars or not, but probably half the usual proportion of arsenate of lead would suffice to kill larvae just hatched as soon as they begin to feed, and 2s. or less per hundred gallons of wash would not be a heavy addition to the expense of the first spraying of the season, while there are always more or less caterpillars on Apple trees. It is true that the suggested application of the poison would be too early for the destruction of the Codlin Moth larvae, and that a second spraying for them specially would be needed where these pests are common, unless it happened to be deemed desirable to spray against aphid and Apple sucker just after the fall of the blossom, in which case the poison could be added to the contact wash. The suggestion is not applicable to Plums, because there is nothing for the poison to lodge upon until the blossom is at least partially open. Unless I am mistaken, caterpillar attacks on Apples usually begin in the bottom trusses and among the tender foliage around them, while on Plums they are mainly confined to the foliage.

DESTRUCTION BY BROWN ROT.

This serious disease has had its part, as was the case last year, in the destruction of whole trusses of Apple blossom. Lord Derby, Cox's Orange Pippin, Fearn's Pippin, Lane's Prince Albert, Early Julyan, and Domino are most affected. Trusses of blossom killed by this fungus are easily distinguished from those which have simply faded from lack of pollination or vigour of a tree to set superabundant blossom, as the spurs are found to be rotten nearly or quite down to their junctions with a branch. Unless these spurs are cut out cleanly, each one will cause a brown rot canker. They should be removed and burnt promptly. James Grieve is a variety particularly liable to lose main branches from brown rot canker. I have some finely grown young trees of this variety which need pruning a second time this season for the removal of main branches killed by this disease. *Southern Grower*.

ORCHID NOTES AND CLEANINGS.

CHYSIS BRACESCENS.

THIS fine old Mexican species now seldom seen in good condition, is making an attractive display in the nurseries of Messrs. J. Cypher and Sons, Cheltenham, where a dozen specimens are producing their stout spikes of white wax-like flowers, each three inches across and well arranged beneath their arching, leafy pseudobulbs. A group of finely-coloured Cattleya Mossiae, with several specimens of the white-variety, Wagoner; some good emerald-green and white Cypripedium callosum Sandrae, and others of the class; a fine lot of Odontoglossum citreum, and brilliant scarlet and mauve Maslevallias, with Dendrobium Dalhousie and other Dendrobiums, are also arranged with the Chysis Bracescens.

EPIDENDRUMS AT CHELTENHAM.

THE reed-stemmed decorative Epidendrums are said to be in flower more or less all the year round. Some of the specimens at Messrs. Cypher's bearing trusses of yellow, red, and crimson flowers, have been in flower for over eight months, fresh buds expanding as the older blooms pass off. Epidendrum gattoense (Bonndii x xanthinum), of which there are twenty plants in bloom, is the favourite on account of its neat habit and compact spike. E. O'Brienianum, the eldest of the class, with flowers varying from rosy-purple to crimson, is still one of the most effective. The species from which these and other hybrids of the class were obtained—E. radicans (dark scarlet), and the lighter Bletchley Park variety; E. evectum, light purple; the dark red E. Schomburgkii; and the pale yellow E. xanthinum—are also in bloom. These Epidendrums are most useful for decorative and conservatory work, and they are easy to propagate by cuttings from the reed-like stems.

BRASSOLAELIO-CATTELEYA ADMIRAL SIMS.

A FLOWER of a new hybrid between Brassolaelia Digbyana-Mossiae and Laelia Cattleya St. Gothard (L. C. Gattoiana x C. Hardyana) is sent by Messrs. Sander and Sons, who have flowered it for the first time. The flower, which is seven inches across, with petals two and a half inches wide, has deep rosy-mauve sepals and petals. The silver-white ground shows through in the veining and on the mid ribs. The lip is well formed, three inches across, and is coloured like the petals at the base. The front lobe and the edges of the side lobes are crimped and very slightly fringed. The colour is dark reddish-purple, with yellow veining running from the base to the darker yellow disc.

TREES AND SHRUBS.

RIBES ALPINUM AUREUM

A BUSH of Ribes alpinum aureum that has never fruited with me before, is this season covered with small fruits. Mr. Bean, in *Trees and Shrubs*, states that the two sexes are usually represented on different plants. I am not aware whether the golden-leaved variety is supposed to be a male or female variety. I have a green-leaved bush of R. alpinum which carries, I believe, only male flowers, but this is nearly two hundred yards from the golden-leaved plant now in berry. Mr. Bean also states that occasionally there are perfect flowers formed. Is it possible that something in the season has so affected the bush as to induce it to produce perfect flowers throughout? *C. E. Fletcher, Yalding, Kent*.

CRUSOE'S ISLAND: JUAN FERNANDEZ.

(Continued from p. 221.)

IN March, 1817, the Spaniards ceased to hold possession of Juan Fernandez of the establishment of the independence of Chile. The Chilean patriots, who had suffered many indignities, were liberated by an intrepid Englishman, Captain Morris, at the instance of General O'Higgins, who had been proclaimed Supreme Director of the Republic. The colony was retained as a depot for State prisoners until 1821, when an insurrection took place, which obliged the Government to abandon the establishment. During the next few years it was farmed by two Chileans, who kept a few men to take care of the cattle and collect sandal wood.

Mrs. Maria Graham, wife of Admiral Graham (afterwards Lady Callcott) in her *Journal of a Residence in Chile* (1824), gives an interesting account of her visit to Juan Fernandez in 1822. Mrs. Graham, who became an authoress of some repute, had a keen interest in all things pertaining to natural history. She describes the island as the most picturesque she had ever seen, with its "high perpendicular rocks wooded nearly to the top, and beautiful valleys." In the half ruined hedges she found Apple, Pear, and Quince trees, with Cherries almost ripe. In her charming style Mrs. Graham describes how she remained behind when the rest of the party set off to reach the highest point, in order to be alone and soliloquise on her surroundings as "Monarch of all she surveyed." After some hours in a "lonely spot, where "no trace of man could be seen, and whence I seemed to have no communication with any living thing," she very soon felt, in the words of Cowper,

"Oh, solitude! where are thy charms

That sages have seen in thy face?

Better dwell in the midst of alarms,

Than reign in this horrible place";

although the place, on her own showing, was evidently not so horrible as the poet would have one believe. And she repeated again and again the whole of the poem, until she saw two of her companions of the morning coming down the hill, when she hurried to meet them, as if she had been really "out of humanity's reach." Her friends were enraptured with the wild beauty of the scenery, and brought her specimens of many beautiful shrubs, the giant Fuchsia, *Andromeda* (*Pernettya rigida*) and *Myrtles* (no doubt *Myrtus fernandeziana* and *Myrtus Selkirkii*). In one of the caverns they found an enormous goat dead, which, of course, reminded them of "poor Robinson Crusoe."

In 1835 the island was governed by Mr. T. Sutcliffe, an Englishman in the Chilean service. His trials and troubles are recorded in a pamphlet, entitled "The Earthquake of Juan Fernandez as it occurred in the year 1835; authenticated by the retired Governor of that island." On the night of February 19 a strange rumbling noise was heard, and the next day it was observed that the sea, although at the time low tide, had risen nearly over the mole. The Governor became alarmed, especially as the sea began to retire quickly, leaving the greater part of the bay dry. He ordered the drummer to beat to arms, and the alarm bell to be rung. When the people were collected he directed them to lift the boats and carry them inland. In order to animate them he led them from behind, which, in this case, was the post of danger. Then the earth began to shake violently, and a tremendous explosion was heard, whilst the sea receded in immense rollers. The convicts became so frightened that they abandoned two of the boats; all was confusion, the people screaming and making dismal cries as they climbed the hills. The soldiers had barely time to save their arms before the settlement was covered with water, which, receding again, carried away houses, several men

and women, trees and cattle, leaving only the store-house, prison, and church standing. One of the boats was launched by the Governor, and he managed to save the men and women who had supported themselves in the water on floating timber. The unfortunate Governor lost nearly everything. All the ammunition was ruined except a few cartridges in the possession of the soldiers. The town and gardens were buried in sand, and the mole and watering place destroyed. The officers and troops took refuge for the night in the caves which had formerly been the dwelling places of the convicts, the latter remaining at large.

In July of the same year an insurrection broke out. The convicts gained possession of the castle and were afterwards joined by many of the soldiers and officers, who, unfortunately for the governor, had sympathy with the rebels. The castle was stormed by the gallant governor and a few soldiers and convicts who had remained faithful to him. They killed two, wounded six, and took fourteen prisoners, the rest escaping with their firearms to the mountains. Three of the prisoners were summarily shot as an example to the other mutineers. During the parley between the renegade commandant of the troops and the governor, the latter was treacherously taken prisoner, and was eventually expelled from the island by the mutineers. The convict station was soon afterwards transferred to the main land.

In 1866 H.M.S. "Topaze" visited the island and Commodore Powell placed a tablet near "Selkirk's lookout," a high point from which both sides of the island can be seen. The tablet bears the following inscription:

In Memory of

ALEXANDER SELKIRK, Mariner.

A native of Largo in the County of Fife, Scotland, who was on this island in complete solitude for four years and four months.

He was landed from the "Cinque Ports" galley 96 tons, 16 guns, A.D. 1704, and was taken off in the "Duke" privateer, 12 February 1709.

He died Lieutenant of the "Weymouth," A.D. 1725, aged 47 years.

This tablet is erected near Selkirk's look out by Commodore Powell and Officers of H.M.S. "Topaze," A.D. 1866.

In the spring of 1875 the "Challenger" expedition visited the islands, when Moseley, the naturalist, made a very complete and interesting collection of the native plants, which are preserved in the Kew Herbarium. Some of his observations have already been alluded to.

Carl Skottsberg, an able and energetic Swedish botanist, visited Juan Fernandez in August, 1907.

In his book on *The Wilds of Patagonia*, which is appropriately dedicated to the late Sir Joseph Hooker, it is pleasant to read in the preface that

"In Chile, as well as in Argentina, we met and were assisted by a great number of English people; we made good friends wherever we came, and learnt to admire the English nation as *the great civilising power of the world*." His impressions on landing on the island are equally well worth reproducing, not only because of their interest, but also that they prove the Swedes to be as well acquainted with *Robinson Crusoe* as we are.

"We set our foot on the shore of a legendary island. Dear reader, do you remember how the wonderful fortunes and adventures of Robinson Crusoe interested you, when you were a small boy or girl, and went to the infant school? Did you not dream that it rained drops 'large as pigeons' eggs,' or that you discovered on the sandy sea shore those footprints making your blood curdle with terror?"

And I was seized by a feeling of pure joy when I thought that I was really here, walking about on that soil, and able to live through the favourite book of early childhood again."

The island is of volcanic origin, and is about 13 miles long and a little over 4 in breadth. Moseley says it is most beautiful in appearance, the dark basaltic cliffs contrasting with the

bright yellow green of the abundant verdure. The land terminates in fantastic peaks, which rise to a height of about 5,000 feet. Especially conspicuous is the precipitous mass known as "El Yunque" (Spanish for The Anvil), see fig. 38, which forms the background of the view from Cumberland Bay. *J. Hutchinson, Kew.*

To be concluded.

ON INCREASED FOOD PRODUCTION.

FRUIT PRESERVING WITHOUT SUGAR.

REFERRING to the article written by *Southern Grower*, see p. 212, where he states that without the use of sugar "it is probable that half the Plum crop will be wasted." I may say that Plums can be bottled without sugar, when fully grown and beginning to colour, by putting them into open-mouthed bottles with a teaspoonful of hot water, placing them in a slow oven, and gently cooking them till they shrivel in the bottles. Have ready some bladder that has been soaking in hot water. One bottle at a time should be

filled with fruit and spring. It is much smaller than the Butter or Haricot Bean, but the flavour is excellent. *J. J. S.*

PLANTING POTATOS.

THE planting of Potatos is practically finished for the season, but it will be well for growers to make a careful study as to the results from the various methods of planting in their particular localities. I am still firmly of the opinion that varieties and the nature of the soil should, to a large extent, be the governing factors as to the distance to plant.

If it is the opinion of Mr. Divers that the result of the heavy crop of Evergood was owing to the fact that the long growth was the means of holding the haulm erect, why should this not also apply to other varieties making much less growth, such, for instance, as Factor, a variety he mentions, when planted closer together? It would be interesting to know what kinds of manure Mr. Divers employed, and how many acres of Evergood were grown. Anyone who has had experience with this variety must be aware that it is one of the heaviest cropping Potatos, and is seldom attacked by disease, but



FIG. 38. THE MOUNTAINS, JUAN FERNANDEZ, SHOWING THE PEAK KNOWN AS "EL YUNQUE" ("THE ANVIL").

taken from the oven, and immediately filled with boiling water poured through a funnel, the bladder placed in it once, and put down with string, extending all round. Last year all my Plums were treated in this way, and after being kept on a dry, airy shelf for nine months they were excellent, and the flavour better than that of fresh fruit, as the kernels had imparted a taste of Almonds. The fruit can be eaten as a compote, and sweetened with golden syrup, honey, or dates, or made into jam. If sugar should apply to *Cross-berries*, Black and Red Currants, and Peas, the latter peeled and cut into quarters.

Fruits that are not quite ripe are best for bottling. *Food Economist*.

BUTTER BEANS

MR. BICKETT, on p. 212, recommends such Dwarf Beans as *Magnium Bonum* and *Canadian Wonder* as being equal, if not superior, to the *Lima Bean* in flavour, but, seeing the skins of these require to be removed after cooking (surely a tedious process), why not grow a dwarf Bean like *Everbearing*? This is a small white variety which may be cooked exactly in the same way as the *Butter Bean*, and it may be used through

out quality, on the majority of soils, of little value. His reasons for allowing the same distance for early varieties could surely not apply to the *Factor* and many other mid-season and late varieties, which vary considerably as to the length of their growth.

My experience has always been that the more growth a particular variety of Potato makes, the more room it requires, and the better the returns. Also, the quantity of tubers required to plant a large area of ground where close planting is adopted is an important item. *E. Bickett*.

MR. DIVERS' assumption (p. 222) that "widely set Potatos have a tendency to 'fall down flat'" is surely more theory. I allow a space of 3 feet by 1 1/2 foot for the variety *Golden Wonder*, and have no recollection of the tops ever falling, and they grow much more than 3 feet high. This year I am allowing *Arran Chief* less space because the tubers, in conditions where space is given for the haulm to extend, grow far too large for use, and possibly other varieties may have to be treated according to their peculiarities. Whenever I have been told that *Golden Wonder* has failed to give satisfaction I have found that the tubers have been planted too closely. I find it by far the best Potato I have

ever grown. The eating qualities of Golden Wonder are just as good now as they were in September last, and they will continue equally good for a long time to come. But it is not Potatoes only that are grown too thickly. Broad and French Beans are commonly planted far too closely. This entails a waste of seed, for neither need ultimately be closer in rows than 18 inches, and by seeding at half that distance every probability of loss from bad seed is guarded against, whilst the crop is not only as large as in close seeding, but the plants continue longer in bearing and produce Beans of better quality. *R. P. Brotherton, Tynningham Gardens, Prestonpark.*

PLANTING BROCCOLI.

I HAVE had experience with Broccoli similar to that related by Mr. Coulmer, on p. 221, in a northern county on the outlying spurs of the Grampians. The garden was situated on a steep slope, with a stream running through the lower end of the ground. On the higher reaches of the garden the Broccoli came through the winter safely, especially when the plants were half-wooded with the fork and laid on their sides in autumn to check growth. One year a plantation of several hundreds was made on the lower half of the slope. The following winter happened to be a severe one, with much snow, commencing in November, and continuing more or less till the third week of April. The snow continued in an unbroken sheet on the lower slopes for four months, and every plant of Broccoli had completely rotted when the snow melted. Repeated partial thaws kept the plants wet, and to this, as well as to the frost, I attribute the loss of the crop. Elevated positions and firm soils contribute to the safety of this crop. *J. F.*

THE DESTRUCTION OF WASPS.

THE capture of queen wasps in the spring is very desirable, and is encouraged in many districts by the offer of a small reward. Traps (such as jars or bottles containing beer or sugar) which are often used later in the season against worker wasps, when used in spring account for a large number of queens.

Nests should be marked down as soon as possible and dealt with before they have become too strong. Various means are employed for taking nests on the ground, such as burning or smothering them with tar, paraffin, or sulphur. In many districts potassium or sodium cyanide is used most effectively. However, the supply of cyanide this year is very uncertain, whilst the price is sure to be high. Where cyanide can be obtained, its use is the best and simplest method for destroying wasps. A little cyanide is placed inside the entrance to the nest after the wasps have returned in the evening. The hole is then blocked, and further trouble is seldom experienced, although, to make sure, the nest is sometimes dug out after the adult wasps have been killed. It must not be forgotten that cyanide is a deadly poison, and great care must be exercised when handling it.

BOTTLES FOR PRESERVING FRUIT AND VEGETABLES.

THE Food Production Department has arranged with the Ministry of Munitions of War to supply glass jars for preserving fruit and vegetables. The price of the bottles is 52s. per gross, delivered to the nearest railway station. Orders must be for not less than 100 dozen (which cost £24 15s. 4d.), and preferably for 300 dozen (one truckload, which costs £36 15s. 4d.). The requirements of every district must be ascertained by a responsible authority and submitted collectively. Only one order can be accepted from a locality; the orders of private individuals cannot be accepted. The Department will shortly be in a position to meet demands to the extent of 2,000 gross jars per week. For further particulars apply to the Food Production Department, 72, Victoria Street, London S.W. 1.

The Week's Work.

THE KITCHEN GARDEN

By J. DUNN, Foreman Royal Gardens, Windsor

CUCUMBERS.—Give a liberal supply of manure water to the roots of Cucumber plants from which supplies are being cut, and maintain a moist atmosphere by frequently damping the walls and floor of the house. The foliage may be syringed twice daily while the weather is favourable, and top ventilation should be given early in the day. Very little fire heat will be necessary during the day, but a little may be applied at night with a view to keeping the atmosphere in a buoyant condition. Thin the shoots carefully and tie in those that are retained, stopping them at the first or second leaf beyond the fruit, according to the space available. Prevent overcrowding, as this would render it necessary to cut away large quantities of foliage at one time, which would have a detrimental effect on the crop. Top-dress the bed with rich manure and horse droppings. Cucumber plants in flat pans must be kept moderately thin. Remove all rough, overgrown foliage, and peg down the leading shoots, regularly stopping the young growth as it becomes necessary. Water freely in the early part of the day, and allow the foliage to become dry before the evening.

SWEDES.—A good sowing of garden Swedes should be made as soon as possible, so that the roots may be available in the autumn and winter. Sow in shallow drills 18 inches apart, and thin the plants to 9 inches in the row. If the Turnip fly becomes troublesome, frequent light dustings of soot should be applied, and the ground between the rows frequently stirred with a hoe. Sifted wood ashes may also be applied.

TURNIPI.—Make frequent sowings of Turnips, and thin the plants as soon as large enough. The hoe should be freely used amongst this crop, and the ground selected should be of a rather cool nature, if possible. Snowball and White Model are good varieties for present sowing.

CARROTS. A good sowing of stump-rooted Carrots may be made in order to make certain of a full supply throughout the winter and spring. If showery weather prevails, these Carrots will be through the surface in a very short time, and should be carefully thinned as soon as large enough to handle. It is from this sowing that the principal supply of Carrots is obtained at Frogmore for winter use, although several sowings of Scarlet Horn are made later. It is important in the case of late-sown Carrots that thinning be accomplished as soon as the plants are large enough, and the hoe should be kept at work between the rows as much as possible. Dust the crop several times with soot during the season, to keep fly and other pests in check.

LATE PEAS.—A sowing of Antecor or some other good variety of Pea should now be made, and another ten days later. If the weather is favourable a supply of pods may be expected from these plants until late in the autumn. Pea plants require support as soon as they attain a fair size; but the latest sowings should be made in a position which is sheltered from west winds, which sometimes do much harm to Peas in October. If dry weather sets in, a mulching of farmyard manure applied in good time will do much to keep the plants in a healthy condition.

FRENCH BEANS.—A sowing of French Beans may be made now to furnish a supply in the early part of August. Sow in an open plot and give plenty of room between the plants, which should be mulched if the weather proves dry. Small sowings of French Beans should be made every ten days, so that it may not be necessary to retain the old plants after they become hard and stunted. The produce from young, healthy plants is of much better quality than from old plants, which, however, may be kept to save a break in the supply if these frequent small sowings are not made at the proper time.

THE ORCHID HOUSES

By J. COLLIER, Gardener to Sir JOSEPH COLMAN, Bart., Gattou Park, Beigate.

CYMBIDIUM.—Cymbidiums include some of the most decorative of Orchids, especially *C. churruum*, *C. grandiflorum*, *C. Lowianum*, and its variety *concolor*, and such hybrids as *C. Panvelin*, *C. Schlegelii*, *C. Gottoianum*, *C. Alexandri*, and *C. Queen of Gattou*. The majority of the plants have passed their flowering stage, and such as require it may be re-potted, but it is not advisable to re-pot often than is absolutely necessary. The treatment, however, is necessary for specimens that have become pot-bound and have not sufficient space in the pot for the development of the present season's growth. Cymbidiums are strong-rooting plants, and require rather larger receptacles than most Orchids; the pot should afford sufficient space to accommodate the roots for several seasons. If the plants are so firmly attached to the receptacles that they cannot be removed without injury to the roots, the pots should be broken and taken away in portions. Disentangle the roots as much as possible without breaking them, and pick out loose portions of the old compost by means of a pointed stick. The pots should be filled with clean crocks for drainage to about one-quarter their depth. A suitable rooting medium consists of a mixture comprising three parts good fibrous loam, one part Osmunda-fibre cut rather short, partially decayed Oak leaves, Sphagnum moss, and sufficient crushed crocks to keep the texture open. Pot moderately firmly, working the compost well between the roots. Specimens that have become bare in their centres, and are in an exhausted condition generally, should be broken up and the portions planted singly in pots of a suitable size. Species with flower spikes of a pendulous habit, such as *C. tigrinum* and *C. devonianum*, are best cultivated in pans, and suspended from the roof rafters. Newly-potted plants should be afforded extra shade and very moderate supplies of water until the roots have become re-established. Let the soil always become moderately dry before applying water. Syringe between the pots several times daily in summer and spray the plants overhead at least twice daily during fine weather. The foliage and pseudo-bulbs should be sponged frequently with an insecticide, as a preventive against attacks of scale insects and red spider. The temperature should be the same as in the Odontoglossum house.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR DAVEY, Abbots Wood, Godalming, Surrey.

GOOSEBERRIES.—Green Gooseberries may be used for tarts, and some may be bottled. By removing part of the crop at this early stage the trees will be relieved, and enabled to develop extra fine berries suitable for dessert purposes. The new shoots on Gooseberries trained on walls should be pinched as soon as they are long enough to permit of this operation. Nail in the shoots that are required for extension, and if insect pests are present syringe the plants with strong Quassia Extract. If caterpillars are seen after syringing the trees, dust the ground with strong lime and kaim, which should effectually stop the ravages of these pests.

PEARS.—Pear trees are growing well, and the shoots require stopping, especially on young, vigorous trees. Make secure the main shoots to prevent them being injured by strong winds. In the case of espaliers it is a good plan to fix small Bamboo canes in position and train the branches by easy stages to the main supports. Examine the trees very carefully for mealy-cods and the Pear-dog, which destroy much of the foliage. Thin the fruits carefully as soon as it can be seen which are swelling. Those that grow in clusters and large fruited varieties require early thinning.

PEACH AND NECTARINE TREES.—These trees should be disbudded for the last time, and the thinning of the fruit completed. The amount of crop retained must be determined by the condition of the tree, and by the variety. On trees which produce very large fruits these must be thinned to at least 9 inches apart. First take off such fruits as are badly situated,

e.g. against nails in the wall, or under the wire of the trellis, or between two branches. Train in a suitable number of the new shoots, and remove all the laterals that are not needed, in order that the light may penetrate to all parts of the tree. Such varieties as *Amsden June*, *Waterloo*, and *Early Alfred* should be given copious supplies of liquid manure and soot-water in dry weather, and syringed every day, wetting every leaf. The best liquid manure is formed from the drainings of the farmyard, but if this is not obtainable use one of the concentrated fertilisers sold specially for fruit trees. Keep the shoots free from aphid, and syringe them occasionally with insecticide.

APRICOTS.—The fruits on Apricot trees are swelling freely. Give daily attention to the work of stopping the shoots, and eradicating insect pests. Stop vigorous shoots growing at the top of the wall.

STRAWBERRIES.—Strawberry plants intended to supply runners early in the season are already sending out offshoots, and preparations should be made for rooting the runners in pots. The plants may be layered direct into 6-inch pots, or pegged into pots $3\frac{1}{2}$ inches in size. Early rich soil should be used; crocks are not necessary for drainage purposes. In order to facilitate the work of watering and hoeing between the rows the plants from two parallel rows may be layered in the space between the one row, thus leaving the next alley free for passage through the bed.

FRUITS UNDER GLASS

By JAS. HIBSON, Head Gardener, University House, Aston, W.

VINES IN COLD HOUSES.—It is possible to cultivate Vines without fire-heat with fair success, especially in warm localities and where the soil is a light, sandy loam and the subsoil not waterlogged. I have in my mind's eye a healthy Vine of Black Hamburgh variety, which fills the house. This particular Vine finishes its crop in perfection every year without the aid of fire-heat. As a companion to Black Hamburgh the ordinary Sweetwater variety may be planted. In favourable localities these Vines are in flower, and the atmosphere of the house should be kept dry. Reduce the number of pot plants in such houses to the lowest minimum. Keep the atmosphere as buoyant as possible by admitting a small amount of air both night and day. With good management there will be but little risk of an attack of mildew. Often in these cold vineries the foliage is allowed to grow too densely, whereas the rods should be trained at a greater distance apart than in the other vineries.

NEWLY PLANTED VINES.—Keep the laterals of newly planted and young Vines pinched, and encourage the leader to grow. Place a bag of soot in the water used for syringing. Young Vines in their second or third year need strict attention. Some of the second year Vines may show a few promising bunches, but do not be tempted to allow any to remain, or at the most only one bunch to each rod. Supernumeraries may be allowed to carry a few bunches the second year, as these plants will eventually be cleared out to make room for the permanent Vines. Vines in their third year should not be allowed to carry more than three bunches to each rod, even if the canes are extra vigorous. It is better to possess one's soil in patience than to overtop young Vines, for the evil caused by overcropping is not easily remedied. Keep a sharp watch for red spider and thrips. Nothing is more effectual at this stage in combating insects than thorough syringing with clean rain water.

FIGS IN POTS.—Figs raised from cuttings rooted this season are getting well established in 8-inch pots. A few fruits may be permitted to ripen if the plants have made good progress. The plants should have four or five main shoots, which, if of good length and vigorous, may be stopped. Do not rely upon bottom heat, but give all the warmth possible in other ways; the temperature of the Pine stove or Melon pit is not too high for young Figs. Moisture should be applied both at the roots and on the branches by syringing. Even if the plants are not likely to

develop fruit it is well to encourage them to make as much growth in their first year as possible. But do not use an undue amount of stimulants to this end, for the soil must be kept sweet. Established Fig trees in pots are making sturdy growth, with leaves of a dark green colour. The shoots of the more forward plants will soon need stopping to distribute the balance of growth and at the same time induce the fruits to develop. We have already top dressed our plants, preferring to be in advance with this operation rather than late, as they were not repotted during the past winter. So far the plants are much overcrowded, but this cannot be avoided, as there will be no extra room for them until the early pot Cherries are cleared of fruit, and these are later than usual this season. The houses in which the Figs are grown are freely ventilated during the day, but closed sufficiently early in the afternoon to economise fire-heat, of which only a small amount is now used.

CHERRIES IN POTS.—We have been picking cherries on our earliest pot trees for a fortnight past. The fruits have been ripened with the aid of a very small amount of fire-heat. The crop is a heavy one, and is proving extremely useful. It is a good plan to shade the house whilst fruit is in ripe or ripening, as it prolongs the development of the crop, thus extending the season with care it may be extended until the earliest fruits are ripe on south walls out-of-doors. Only a thin, or scrim, shading is needed, just sufficient to break the rays of the sun and prevent the temperature of the house from rising too high. Clear water only, and preferably rain water, should be given the roots, and this not in an excessive quantity. If these pot trees show a tendency to grow somewhat freely, keep the stronger growths pinched; this will aid in the formation of fruit buds for another year. Keep a close watch for red spider

PLANTS UNDER GLASS

By J. G. WISTON, Gardener to Lady Northmore, Eastwell Park, Kent.

CHRYSANTHEMUMS.—Let the plants be repotted as required before they become pot bound or the shoots will get hard, and growth recovery a check. The compost for the final potting should consist of rich loam, mixed with a little bone meal, soot and sand. Use the potting stick or rammer freely, as plants potted loosely in a rich compost make soft, woody growth instead of solid short-jointed wood. Stand the pots on a bed of ashes or other firm base, and let the plants have sufficient room for their development. Stake the plants before there is a danger of the shoots being damaged by high winds.

PERPETUAL-FLOWERING CARNATIONS.—Young plants intended for flowering in autumn and early winter must be given their final potting without delay. No Carnation will flower satisfactorily in the winter unless the pots are previously filled with healthy roots. When in this stage they readily respond to a little good plant food. If the plants are not so forward as usual do not over-pot them, as this would tend to make them later in developing blooms. The soil used for the final potting should be principally good loam, somewhat heavier in texture than that used for previous pottings. A shallow frame on ashes is an excellent place for them when potted. When they have re-established themselves they may be placed outside, but they must be protected from excessively heavy rains. Pinch the shoots early in the season if early blooms are required. Plants in flower should be shaded to prevent the blooms from losing their colour. Feed regularly and water freely. Carnations always pay for good cultivation.

SOUVENIR DE LA MALMAISON CARNATIONS. Plants of the main batch are now opening their blooms, and the supports should be put on with out delay. I have used the "Asot" support for many years, and find it quite satisfactory. These supports enhance the beauty of the bloom and add materially to the length of time it remains in good condition. No more manure should be given after this date. Keep the houses well ventilated, day and night. Shade from all

sunshine, which at this season quickly takes the colour out of the blooms. On very hot days the syringe should be freely used amongst the pots and foliage to ensure a cool atmosphere and keep red spider in check. If plants are required for decorative purposes in rooms select those with healthy, well-coloured foliage, just before the blooms are at their best. These will last in good condition for a long time.

THE FLOWER GARDEN

By W. J. GRISB, Gardener to Mrs. DUMSTRE, Keele Hall, Staffs.shire

TUBS AND VASES.—It is a good plan to place portable tubs and vases in cold houses for a week or so after they are planted. The plants will soon become established if they are syringed daily and shaded slightly from bright sunshine. Where vases are fixtures on terrace walls or steps, the plants should be hardened and established in pots, for usually such situations are exposed to cold winds. In such cases it is advisable to insert pieces of Yew or other evergreen around the plants in the receptacles to protect them. The compost should consist of a mixture of loam, leaf-mould, and decayed manure, with sufficient sand to keep the compost open. Tubs should be painted bronze green, a colour that lends itself to any form of decoration. Vases are generally of stone colour in keeping with their surroundings. The most popular plants for the purpose are *Fuchsias*, *Zonal* and *Ivy leaved Pelargoniums*, *Hydrangeas*, *Marguerites*, *Begonias* (these do better in a rich, light compost in which a little peat has been incorporated), *Calceolaria amplexicaulis*, the spreading varieties of *Lobelia*, *Salvia*, *Verbenas*, *Heliotropiums*, and *Sweet Peas*. *Zonal* and *Ivy leaved Pelargoniums* are always attractive. Such varieties as *Paul Crampel*, *Madame Crousse* (both the pink and scarlet sort), *Souvenir de Charles Turner*, and *Beauty Supreme*, may be used exclusively for furnishing tubs or vases for immediate effect. The soil should be made firm and a moderate watering given the roots through a coarse sieve. Syringing with tepid water in the evenings is beneficial, and stimulants are necessary, or the plants will soon become exhausted.

SUMMER BEDDING. Bedding plants should be once transferred to their final positions outside. Directly the plants have finished flowering the beds should be cleared and a light dressing of short manure and leaf-mould worked into the soil. If the beds are watered a day previous to planting, and again directly the planting is over, to settle the soil about the roots, no more attention will be required for some time, if the plants are sprayed each evening. Examine the plants carefully to see if they are dry before setting them in their final quarters. Root stakes must be placed by the tall plants before they get twisted or broken. Wire pins are the most suitable, where the plants are to be pegged down. Run the flat line between the plants during fine weather to conserve the moisture and prevent the soil from becoming caked.

DAHLIAS.—If the ground has been prepared in advance, only a light forking will be necessary after the plants are placed in their final positions. Care should be taken that the plants in pots do not suffer for want of water. Make the soil firm about the roots, and place a neat take by each, directly the work is finished. The large stakes may be placed in position at a later period. Directly the plants are established, a light mulching of decayed manure and leaves in equal proportions will be beneficial. Occasional syringings of some insecticide will keep insect pests in check.

BEGONIA.—Plants in pots or boxes will now be ready for their final positions outside. The beds should be well prepared for tuberous *Begonias*, and a partially shaded position selected. Leaf-mould, Mushroom bed manure, and a little peat should be incorporated with the soil, especially where it is heavy and retentive, and it should be made moderately firm. Apply water through a coarse rose after the beds are planted. Syringe the plants each evening until they are established in their new quarters. A light mulching of cocanut fibre or leaf-mould at a later period will assist them considerably.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher—Our correspondents would oblige delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents—The Editors do not undertake to pay for any contributions or illustrations, or to return unused contributions or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 58.4

ACTUAL TEMPERATURE—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, June 7, 10 a.m.: Bar, 29.5; temp 70.5; Weather Sunny.

Daffodils in 1917.

The Daffodil season of 1917 has proved one of the latest and, in consequence, the shortest that this generation has known. Severe wintry weather, with frequent snow showers, continued until the middle of the month of April, and till then not a flower appeared; but the sunshine of the last day or two of April and early in May caused the flowers to open with great rapidity, many of them lasting out-of-doors in good condition for barely a week. As some compensation for this brief flowering season, the blooms remained beautifully clean, scarcely a drop of rain having fallen on them from start to finish.

A curious effect of the season has been that the flowers in many cases opened very small in size, so much so in some cases as to appear out of character, and they only attained something like their normal size after being out for some few days. This peculiar feature seemed specially marked in some varieties of the Barrii section, such as Seabird and Beegonia.

The table in the next column shows the dates of first opening, in a garden to the north of London, of fifty varieties selected to range over the season, and be representative of the Daffodils usually opening at the periods named in the table.

The first column shows the average date of opening of the past five years. Speaking generally, the years 1912 and 1913 were rather early seasons for Daffodils, while 1915 was unusually late, but nothing like that of 1917. The earliest date of opening is given in the second column, and this usually occurred in 1912, but in a few cases in the following year. The final column gives the dates of opening in 1917. It will be observed that while the normal period of opening of the varieties selected extends over two and a half months, it has this year been compressed into a little over a month, but that the usual consecutive order has been fairly preserved, the differences not being greater than might be accounted for by differences in the times of planting, in the position of the bulbs in different years, errors of observation, and so on.

DATES OF OPENING.

	Average of five years, 1912-1916.	Earliest date, generally 1912.	1917.
Narcissus	Feb. 15	Jan. 26	April 6
minimus .. .. .	.. 24	Feb. 5	.. 10
bulbiflorus praecox .. .. .	.. 24	Feb. 12	.. 20
Henry Irving .. .. .	.. 7	.. 12	.. 20
loburinus .. .. .	.. 7	.. 12	.. 20
namus .. .. .	.. 8	.. 2	.. 10
obvallaris (Tenby) .. .. .	.. 11	.. 6	.. 17
Fairy .. .. .	.. 14	.. 10	.. 21
Sir Watkin .. .. .	.. 21	.. 12	.. 30
Maximus .. .. .	.. 22	.. 12	.. 28
Victoria .. .. .	.. 25	.. 16	.. 29
Blackwell .. .. .	.. 25	.. 18	.. 24
Duke of Bedford .. .. .	.. 25	.. 19	.. 27
Alley Knights .. .. .	.. 29	.. 24	.. 25
Empire .. .. .	.. 30	.. 21	.. 29
King Alfred .. .. .	.. 30	.. 25	.. 28
Frederick .. .. .	.. 31	.. 23	.. May 2
Southern Star .. .. .	.. 31	.. 23	.. April 20
Glory of Noordwijk .. .. .	.. April 1	.. 23	.. 28
Torch .. .. .	.. 1	.. 17	.. 29
Antocrat .. .. .	.. 2	.. 21	.. May 2
Glory of Leiden .. .. .	.. 2	.. 20	.. April 28
Princess Mary .. .. .	.. 2	.. 22	.. May 2
White Barr .. .. .	.. 2	.. 20	.. April 29
Lady Margaret Bosworth .. .. .	.. 3	.. 21	.. 30
Barn conspurans .. .. .	.. 6	.. 27	.. May 9
Cornelia .. .. .	.. 6	.. April 1	.. 3
Eryobright .. .. .	.. 6	.. March 30	.. 2
Honington .. .. .	.. 7	.. 29	.. 2
Charger .. .. .	.. 8	.. 30	.. 4
Mrs. Langtry .. .. .	.. 8	.. 30	.. 1
White Queen .. .. .	.. 8	.. 30	.. 1
Oranman .. .. .	.. 9	.. April 1	.. 3
Wearde Perfection .. .. .	.. 9	.. 3	.. April 29
Klondike .. .. .	.. 12	.. 7	.. May 8
Albatross .. .. .	.. 12	.. 10	.. 3
Great .. .. .	.. 12	.. 3	.. 3
Evangeline .. .. .	.. 13	.. 9	.. 2
Mme. de Graaf .. .. .	.. 14	.. 6	.. 2
Gloria Mundi .. .. .	.. 15	.. 9	.. 5
Vere .. .. .	.. 15	.. 4	.. 5
Bianca .. .. .	.. 16	.. 7	.. 9
Levadas .. .. .	.. 17	.. 6	.. 7
Mrs. G. H. Barr .. .. .	.. 17	.. 13	.. 2
Horace .. .. .	.. 18	.. 10	.. 6
White Lady .. .. .	.. 18	.. 6	.. 6
Eoster .. .. .	.. 20	.. 17	.. 4
Avenue .. .. .	.. 25	.. 12	.. 6
Genoye .. .. .	.. 27	.. 22	.. 9
Mooneham .. .. .	.. May 1	.. 27	.. 15
recurvus .. .. .	.. 1	.. 26	.. 14

The unusually fine weather and hot sun which prevailed during the whole of the time the flowers were open, while it severely tried all the blooms, was especially injurious to the red-cupped section. In many cases a flower which opened one day was faded the next, and the only way by which one could see the flowers at all in character was to gather them before they opened and keep them indoors. Lucifer and Cardinal appeared to keep their colour better than most of those with red cups, and among the newer varieties Charm seemed specially good in retaining its colour and character.

We were much struck this year with the lasting qualities of Glory of Leiden. Its

form is rather coarse, but it holds its head well up in the garden, and though among the early trumpets in opening, it succeeded in outlasting most of the others.

Another yellow which has great lasting power is Solfatare, which was still in tolerable condition so late as May 20. It belongs to the Incomparable section, and has a very pleasing, soft yellow shade of colouring. In the same section Home-spin makes a showy garden flower; it is nearly a self-yellow, and holds its head well up, a great advantage in any flower employed in a mass. Two comparatively new comers in this section, Giraffe and Noble, give promise of becoming useful for massing when the supply of bulbs will permit of this being done.

It has been a great year for the Leedsii varieties. Most of them open a pale creamy yellow, taking a few days to turn white; but this year the transition stage was scarcely noticeable. Not many of the giant Leedsii which are so striking when staged have yet earned a place as bedding varieties; White Countess, however, has a fine stance, is tall, and shows itself to advantage. The small-cupped section is, however, most attractive for this purpose, and there is, as yet, no more beautiful bed than one of Evangeline, its rounded perianth, tall stature, and graceful pose showing to great advantage when it is allowed a bed to itself. Queen of the North, perhaps a trifle taller, is another Leedsii that promises to be useful for bedding.

The poets, like the red cups, suffered too soon from the sun to make it a satisfactory year for them. The newer forms, Cadmon, Kestrel, and Socrates, and the older Virgil, Horace and Laureate, retained their colour rather better than some others, while the old recurvus, latest of all, except the double white, suffered least of all in this section, for it escaped the sunburnt and faded into the cooler weather.

Daffodil growers will look forward to next season, hoping it may be a mild spring. The present year, though interesting from the point of view of its unusual character, has given us but a month of flowers, and though it may have been "a crowded hour of glorious life," a season that will give three good months of flowers is more satisfactory, and fortunately more common.

HORTICULTURAL CLUB: VISIT TO WISLEY GARDENS.

The members of the Horticultural Club will this year visit the Royal Horticultural Society's Gardens at Wisley on the occasion of their annual outing. The visit will take place on Thursday, the 21st inst., and details of the excursion will be published in our next issue.

MR. PROTHERO AND THE GARDENERS' COMPANY.

In our last issue we referred to the election of Mr. R. E. PROTHERO, President of the Board of Agriculture, as a member of the Worshipful Company of Gardeners (see p. 225). Speaking in acknowledgment of the honour conferred upon him, Mr. PROTHERO, after referring to the great development which had taken place during the past year in the direction of establishing allotments, said: "It always strikes the visitor in France and in Belgium that right up to the mouths of the colliery pits and to the

deots of the great manufactories you find gardens laid out and cultivated to the utmost perfection. That is one of the things that during the past four or five months we have tried to bring about in this country. I think it may interest you to hear a few figures. We have in urban areas laid out 172,000 additional gardens. They are not of great size; they are gardens of 10 poles and upwards in extent. The great railway companies and the great collieries have extensively given garden ground, so that we may say there is an additional number of something like 500,000 of these gardens now being cultivated for crops. I mention especially the Vacant Land Cultivation Society, which is doing extraordinarily good work with the most unpromising material. Old bits of building land have been turned into gardens, and promise to be highly productive. In Bermondsey there are gardens which, I believe, will produce really good crops. In Middlesex there are 1,000 additional acres under small cultivation. Before the war Wandsworth had 100 allotments; to-day it has 2,200. Southall has 2,000 to a population of 30,000 people, which means a 10-rod plot to every three houses in the town. The same spirit is showing itself in the enthusiasm for spraying Potatoes, which is a very necessary thing. Last year we had a rather lamentable failure in our Potato crop, and we do not know how valuable Potatoes may be to this country in the months to come. We have a greatly increased area, and are taking every precaution to provide all the proper copper sulphate material for spraying. My Board also provides the sprayers, and sells them to different parts of the country. Devonshire has ordered 500 of these knapsack sprayers, Cornwall 400, and Glamorgan 200." Mr. PROBERT paid a tribute to the great assistance given by Professor KEBLE to the Board of Agriculture and the country at large. To his energy and advice, he thought, they owed a large part of the success they had attained.

ACIPHYLLA SQUARROSA—We are indebted to Sir EDMUND G. LODGE for the illustration in fig. 89 of a plant of *Aciphylla squarrosa* which is growing in his garden at Leonardlee, Horsham. Sir EDMUND sent us two photographs of the same plant, pointing out the peculiar phenomenon displayed by the plant of inclining the flower-spike to right and left alternately. The plant is 5 feet across, and the flower-spike 5 feet high. The old leaves are remarkably rigid. *A. squarrosa*, commonly known as the Bayonet plant, is a native of New Zealand, and a member of the Umbelliferae. The flowers are white.

M. G. T. GRIGNAN, who for ten years or so has been on the editorial staff of the Parisian journal, *La Revue Horticole*, has recently been appointed to form a Department of Horticultural Instruction at the Ecole des Beaux Metiers at Barcelona (Spain).

THE HONOURS LIST. The news that the Rt. Hon. Lieut Colonel MARK LOCKWOOD has been elevated to the peerage will be received with great pleasure by horticulturists, for Colonel LOCKWOOD is no less popular among gardeners than he is among the members of the House of Commons. Not is his popularity dependent only upon a charming personality, Colonel LOCKWOOD's gentility of manner is linked with shrewd judgment and powers of hard work, always at the service of his fellows. Both on the Council of the Royal Horticultural Society and in his own county of Essex Colonel LOCKWOOD or Lord LAMMORSE, as we believe will be his title—has rendered signal services to horticulture, services enhanced by the unvarying cheerfulness with which they are always given. Other noteworthy honours are a Privy Councilship to Mr. EVELYN COLE, whose great interest in education in general and in school gardening are well known, and a knighthood to Mr. GUYHAM BALFOUR, who, in his capacity of Direc-

tor of Education in Staffordshire, has also rendered valuable services to the development of horticultural education in his county.

WAR ITEMS.—A correspondent sends from the North of France blossoms taken from fruit trees which the Germans cut down before retreating. He writes: "All fruit trees show signs of very heavy crops this season."

—M. BENOIT BESSEY, son of the well-known Lyons seedsman, after having been wounded while serving in the cavalry, joined the Air Service. He has since been mortally wounded in an air-fight on the Somme.

—For the third time Capt. L. C. BARRY has been mentioned in Army Orders for gal-

lery; and JAMES WOODWARD, journeyman in the plant department.

—Captain E. R. RIXFORD, second son of Mr. R. RIXFORD, Melbury House Gardens, has again been wounded in France. As private in the London Scottish he was wounded in the famous charge of that regiment on October 31, 1914.

AZOLLA CAROLINIANA AND MULGEDIUM PLUMERI.—These two plants have been found by Mr. W. H. STANSFIELD, of Southport, growing apparently wild in the neighbourhood of Preston. *Azolla caroliniana* is a native of North America. It is a plant of the order Marsipaleaceae, of which order there is only one representative



FIG. 89. ACIPHYLLA SQUARROSA, FLOWERING AT LEONARDLEE, SUSSEX.

tor of this country, namely, *Ptilotana globulifera*. The *Azolla* in question is always found floating upon the surface of still water, not submerged, as in *Ptilotana*. It is probable, as Mr. STANSFIELD suggests in the *Southport Visitor*, that it is not really wild, but has escaped from some private garden in which Water Lilies and other aquatic plants are cultivated. The *Mulgedium* is a not relative of the native *M. alpinum*, or Snow Thistle, and is common in Switzerland, especially in the meadows around Andermatt. This may also be an escape from a private garden, as it is sometimes cultivated, in herbaceous borders. It is more suitable, however, for a wild garden, its growth being too rampant for an ordinary border. In its native habitat it grows to a height of several feet, and bears pale blue flowers.

and second. He is the son of the late CHARLES BARRY, the famous pomologist of Troyes.

It has just been learned that the son of M. CARRIER of Antilles was killed early in the war.

A committee has been appointed to enquire into the damage done by the retreating Germans to the orchards and fruit trees in the north of France. MESSIS, NASSIE, CHADWICK, BARBER and GROSCHMANN are members, and they will have power to deal with the question in a practical manner.

Mr. W. A. COOK informs us that three young gardeners who were with him at Leonardlee have been killed at the front. JAMES HAVES was foreman in the glass department, SAMUEL WOODS, foreman of the rock gar-

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

PROPAGATING VIOLETS (see page 225). If your correspondent is able to obtain runners or cuttings of double Violets from plants which have wintered out-of-doors he is to be envied, for, even after an average winter, the plants in most gardens are rarely so vigorous as those in frames, while this spring the outdoor plants in my garden at Hampton Hill are more dead than alive, and quite useless for propagating purposes. J. E.'s explanation of failures to grow frame Violets satisfactorily is inconsistent. If the plants have their "constitutions impaired by insufficient ventilation" they would naturally be failures, for, as all who have grown Violets successfully know full well, free and abundant ventilation, except when it is actually freezing, is one of the chief essentials. If the frame plants are treated properly no one need fear that in April the plants will be weakly and so worn out as to be unfit for propagating purposes—their vigor at that season is usually undesirably great. A. C. BURLITT.

HARDINESS OF SHRUBBY VERONICA (p. 226).—My garden is situated on the highest point between the River Severn and its tributary, the Stour, and is much exposed to east winds. Of the Shrubby Veronicas, *V. Traversii* is the hardiest, and the past winter has not harmed it in the least. *V. salicifolia* (here 10 feet high) against a wall was badly singed, but is making a quick recovery. *V. parviflora* is quite dead in an exposed position, but only slightly injured against a west wall. *V. Hillebrandii*, which I expected to lose, is coming into flower, and is decidedly harder than is often supposed. *V. pineloides* (syn. *glauco-cornuta*), in a very exposed position, is unharmed. I should class this species as quite as hardy as *V. Traversii*. *V. speciosa* has been killed outright. Can any of your readers tell me the correct name of a little creeping plant with grey leaves that I had from Messrs. Veitch, of Exeter, under the name of *Veronica cinerea*? It is not in my edition of the *Kew Hand-List*. I. B. Goodwin, Boscombe, Kidderminster. [*V. cinerea* will be found in *Index Kewensis*.—EDS.]

WALLICHIA DISTICHA (SYN. **DIDYMSPERMA DISTICHUM**).—The Palm referred to on p. 225 as forming an avenue in the Botanic Gardens, Peradenya, Ceylon, and of which a photograph was reproduced in fig. 85, is included by Hooker in his *Flora of British India*, Vol. VI, p. 419, in the genus *Wallichia*, not in *Didymosperma*. It was discovered by T. Anderson in tropical gorges in the Sikkim Himalaya. There were formerly several young examples of it in the Palm collection at Kew, but there are none now. Hooker describes the plant as having a naked, annulate trunk 10 to 15 feet high and 6 inches in diameter; leaves 6 to 10 feet long, alternate, erect, and arranged distichously, not spirally on the trunk; leaflets 1.2 feet long by about 2 inches wide, narrowing from a truncate apex to the base, and with a large tooth on each side about the middle, glaucous beneath; petiole and sheath short, scurfy. Male spaxis 3.4 feet, very narrow, with many slender crowded branches. Female spaxis 6.8 feet, pendulous, with stout, simple branches; flowers in many spiral series, green. Fruit oblong, obscurely lobed, reddish. Thirty years ago I saw a fine specimen of this Palm in the Botanic Garden, Herbarienhusen, Hanover, which the Director, Hermann Windland, pointed to with pride, and spoke of as the most interesting Palm in his collection at that time the richest in Europe. The best plant I ever had at Kew was about 8 feet high. It was planted out in a border in the Palm House by the side of *Ravennia madagascariensis*, the leaves of which are also arranged in fan-like fashion, and they both died at about the same time, as the result of a low temperature experienced in a winter of unusual severity. It may be noted here that a large number of tropical plants, including Palms and Pandanus, were injured in the same way last spring. *Bentleya Condamina*, and the Double Coconut, *Lodicea seychellarum*, both about twenty years old, having been killed by the cold. H. B.

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 5.

The exhibits at the meeting of the Society on Tuesday last filled the building. The Floral Committee inspected a very large number of novelties submitted for award. One First-class Certificate was recommended, seven Awards of Merit, and one Botanical Certificate. Messrs. DOBBIE AND CO. were awarded a Gold Medal for a group of Antirrhinums, Sweet Peas, and Aquilegias. Not only were the flowers themselves of the highest quality, but their arrangement and grouping won general admiration, especially as such flowers as Antirrhinums are difficult to stage in a graceful manner. The Sweet Peas comprised all the best, both of the old and of the new varieties. Among the novelties were Alexander Malcolm, cerise with a scarlet sheen; Mrs. Tom Jones, blue shaded with mauve; and Mrs. Hitchcock, a fine creamy pink flower of the best type. Several exhibitors showed Roses, principally the climbing varieties, in pots; the season for large blooms grown indoors is waning. Messrs. PIPER'S group contained some exceedingly well-flowered plants of Clematis, and a number of new plants sent over from China by collectors. One of the most attractive groups was a collection of Irises exhibited by Messrs. R. WALLACE AND CO. The spikes of *Eremurus* exhibited by Mr. J. C. ALLEGROVE were exceedingly fine, especially *E. Elwesii* and *E. robustus*, with its white variety. The same exhibitor also showed a number of new Chinese plants, among others a fine rose form of *Primula Billeyanii*. The new *Spiraea Wilsonii*, also shown by Mr. ALLEGROVE, had dense umbels of white flowers borne along the whole length of the branches.

The exhibits of Carnations included, besides the Perpetual-flowering varieties, some fine border flowers from Mr. James Douglas, and a hybrid form (Perpetual-flowering + *Dianthus plumarius*) from Messrs. ALLWOOD BROS. The best of the named varieties were Mary Cross (pink with a maroon centre), Dorothy (deep rose pink with darker centre), and Robert (old rose with maroon centre). The remainder of the floral exhibits included hardy plants, cut sprays of flowering trees and shrubs, Ferns, and mixed lanous greenhouse plants.

The Orchid Committee made several awards, including two Awards of Merit and one Cultural Commendation.

There was only one exhibit before the Fruit and Vegetable Committee, namely, a collection of vegetables from Messrs. BARR AND SONS, which was awarded a Gold Medal. This was a very representative collection of kitchen garden produce, comprising some seventy dishes. The quality was remarkably good.

At the 3 o'clock meeting of the Fellows an address on "Dolphinsium," by Mr. AMOS PERRY, was read by Mr. W. A. Bilbey.

FLORAL COMMITTEE.

Present: Messrs. H. B. May (chairman), J. F. McLeod, J. Heal, J. Green, C. E. Shea, C. Dixon, W. Cuthbertson, G. Reuthe, A. Turner, J. Dyckson, C. E. Pearson, J. W. Mooman, W. P. Thomson, C. R. Fielder, T. Stevenson, E. H. Jenkins, W. Howe, S. Morris, R. C. Nutt, J. J. Jennings, R. Hooper Pearson, R. W. Wallace, A. G. Jackson, H. Cowley, E. A. Bowles, G. Harrow, J. W. Barr, J. T. Bennett Poe, and W. J. Bean.

FIRST CLASS CERTIFICATE.

Robinnia Kelsonii. This species is a native of North America, and has been in cultivation in this country for some years. The specimen illustrated in fig. 90, flowered in Kew Gardens in 1903. The racemes of rose pink flowers are shorter than in the common *Robinnia*, but the individual flowers are larger. It is a first rate flowering shrub, and very effective in its colouring. Shown by Mr. J. C. ALLEGROVE.

AWARDS OF MERIT.

Antirrhinum Platan Donna. A variety of exceptional vigour, the massive spikes bearing flowers of a pale apricot-salmon tint. The base of the hood is tinged with rose pink, and the lip with lemon-yellow. Shown by Messrs. DOBBIE AND CO.

Carnation Maldivin Drummond.—A large, pale pink variety of the Perpetual-flowering type; it is fragrant, and the calyx is not apt to split. Shown by Capt. DRUMMOND, Cadland Park, Southampton (gr. Mr. L. Smith).

Tris sibirica Perry's Blue.—A very tall variety of the sibirica section, with broad, round falls of violet mauve, fading to paler mauve at the edges, with darker reticulations in the upper part, intersected with white and greenish-yellow. The standards are a pale shade of mauve, and the crests paler still, with a clear blue line down the middle. Shown by Mr. AMOS PERRY.

Alagnolia Watsonii.—The flowers of this fine species are globular, creamy-white, and deliciously fragrant. The cluster of crimson stamens forms a mass of rich colour in the centre. The species is fairly well known in gardens, and was figured in *Gard. Chron.*, August 18, 1894, p. 189. Shown by Mr. J. C. ALLEGROVE.

Deutzia Viloiniana.—This handsome flowering shrub has somewhat the appearance of a small-flowered *Philadelphus*. The branches are studded along their whole length with trusses of white blossoms, with golden stamens. The foliage is lanceolate, very pointed, with serrated margins; the leaves are dark green above and glaucous beneath. A very floriferous shrub, which would form a good garden plant. Shown by Mr. J. C. ALLEGROVE and Mr. C. TURNER.

Tris Binglewe.—A very striking variety, with a branching habit, which greatly adds to its attractiveness; this is derived from *T. pallida*, through which the variety has its descent. The falls are violet purple; the standards, of the same shade, bear darker reticulations. Shown by Messrs. R. WALLACE AND CO.

Syringa Miss Ellen Willmott.—This was a very fine double white variety of Lilac, which would make a striking feature in a shrubbery, or as a single specimen on the lawn. Shown by Mr. C. TURNER and Messrs. PAUL AND SONS, Cheshunt.

BOTANICAL CERTIFICATE.

Rheum Alcatraz.—This plant bore long spikes, well furnished with greenish-yellow bracts. The leaves, which were borne on long petioles, were dark green, and very handsome. Shown by Mr. J. C. ALLEGROVE.

GROUPS.

The following medals were awarded for collections:—*Gold Medal* to Messrs. DOBBIE AND CO., Edinburgh, for Sweet Peas, Antirrhinums, and Aquilegias. *Silver-Gilt Banksian Medals* to Messrs. W. PAUL AND SONS, Waltham Cross, for Roses; Messrs. PIPER, Bayswater, for climbers; and Messrs. R. WALLACE AND CO., Colchester, for Irises. *Bronze Flora Medal* to Mr. J. C. ALLEGROVE, Langley, for *Eremurus* and other hardy flowers; Messrs. ALLWOOD BROS., Weyfield, for Perpetual-flowering Carnations; Mr. E. HIGGS, Twyford, for Roses; Messrs. H. E. MAY AND SONS, Edmonton, for Ferns and indoor flowering plants; Messrs. STUART LOW AND CO. Enfield, for Carnations; and Mr. G. MILLER, Wisbech, for hardy flowers. *Silver Banksian Medals* to Messrs. B. R. CANT AND SONS, Colchester, for Roses; Messrs. J. CHEAL AND SONS, Crawley, for flowering trees and shrubs, and Star Dahlias; Mr. James Douglas, Great Bookham, for Border Carnations; Messrs. W. CUTBUSH AND SON, Highgate, for miscellaneous flowers; Mr. R. C. NORCOTT, Woodbridge, for flowering shrubs; and Mr. G. REUTHE, Keston, for hardy plants. *Bronze Banksian Medals* to Messrs. H. CANNELL AND SONS, Eynshford, for Pelargoniums; Mr. F. GIFFORD, Hornchurch, for single Paeonies; and Mr. I. C. JENNER, Rayleigh, for Perpetual-flowering Carnations.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Veitch, and Messrs. Jas. O'Brien (hon. secretary), Frederick J. Hanbury, Pantin Ralli, Chas. H. Curtis, Walter Cobb, J. Charlesworth, T. Armstrong, R. Brogan-White, W. Bolton, C. J. Lucas, R. G. Thwaites and R. A. Rolfe.

AWARD OF MERIT.

Miltonia vealiana var. *Sir Mervyn Buller* (c. *Miltonia* G. D. Owen × *S. Leopoldi*), from Messrs. ARMSTRONG AND BROWN, Orchidhurst, Tunbridge Wells. A great success obtained by

crossing two forms of *M. axillaria*, each with its characteristic dark claret-rose mask on the lip, and as a result obtaining a larger and better flower in every respect. The finely shaped flower has a labellum 4 inches across, bright rose in colour, with a triangular, maroon crimson mask, short, oblong rays at the sides, and two ascending crimson lines in front of the column, and corresponding lines on the bases of the lateral sepals. The broad sepals and petals are bright rose colour. The whole flower is well arranged in all its parts.

Cypripedium niveum, *The Crown Variety*, from PHILLIP SMITH, Esq., Manor House, Ash ton-on-Mersey (gr. Mr. Thompson). The species received a First Class Certificate in 1871, and has since been shown in quantity. The *Crown* variety has broader petals, and a larger lip than any of the ordinary forms. The flowers are pure white, with minute purple spotting on the inner halves of the segments and lip. The plant was remarkably well cultivated.

CULTURAL COMMENDATION.

To Mr. Collier, gardener to Sir JEREMIAH COLMAN, Bart., Gatten Park, Surrey, for a plant of *Dendrobium acuminatum* carrying six spikes of pretty rose coloured flowers with darker centres. The species, which is also known as *D. Lyonii*, is a native of Manila, and probably identical with the Bornean *D. Theacherianum*. It was awarded a First Class Certificate on August 17, 1909.

GENERAL EXHIBITS.

Sir JEREMIAH COLMAN, Bart., showed fine specimens of the rare *Saccolabium ampullaceum* with ascending spikes of dark rose coloured flowers.

Dr. MIGUEL LA ROZE, Bryndur, Rochampton Lane (gr. Mr. Crosswell), exhibited *Cattleya Aphrodite* Bryndur variety and *C. luminosa* Bryndur variety, both of excellent quality.

R. BROOMAN WHITE, Esq., Adderbrooch, Garsloothhead, showed a selection of flowers of some of the older and better forms of typical *Odontoglossum crispum*, and of hybrids raised at Adderbrooch, very finely developed.

Messrs. ALBERTSONE AND BROWN, Orchidhurst, Tunbridge Wells, were awarded a Silver Flora Medal for an effective group of good hybrids exceptionally well grown, in which hybrid Miltonias, including the delicately tinted *M. Miss Louisa Fowler* and the bright rose coloured *M. Frank Bender*, were prominent. Among *Odontiodia*s, *Oda Jean*, *Orchidhurst* variety, with large reddish claret flowers having broad labellum mottled with deep rose colour; *Oda General Haig*, *Orchidhurst* variety, with a spike of nineteen fine flowers richly spotted with Indian red, and with a broad light purple margin, are new. Other rare plants noted were *Odontoglossum Epicasta micranthemum*, *O. Menier* var. *St. Vincent*, a gem of the Braconhurst collection; white *Cattleyas*, and the brilliant scarlet *Odontiodia Chantler*, *Orchidhurst* variety.

Messrs. SUNDER AND SONS, St. Albans, were awarded a Silver Banksian Medal for a group of *Laelo-Cattleya Fascinator* and other showy hybrids. (Silver Banksian Medal.)

Messrs. STUART LOW AND CO., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for a group of *Cattleya Mossiae*, *C. Mendelii* and some good hybrids. (Silver Banksian Medal.)

Fruit and Vegetable Committee.

Present: Messrs. J. Chal (vice chairman), W. Wilks, P. A. Tuckett, E. A. Bunyard, H. Markham, J. C. Allgrove, A. R. Allan, P. C. M. Veitch, W. H. Divers, J. Vert, W. Bates, and G. P. Berry.

A *Gold Medal* was awarded to Messrs. BARR AND SONS, King Street, Covent Garden, for a collection of vegetables. The produce was exceptionally good, especially Tomatos Golden Globes and Wrote Beauty, Curost Earliest; Peas Duke of Albany and Little Marvel; Cauliflower First of All; Cucumber Delicieux; Cabbage Best of All, and Potatos Sharp's Express and King Edward VII. There were also Onions, Leeks, Mushrooms, Asparagus, Marrows, and others.

TRIALS OF STOCKS UNDER GLASS AND MYOSOTIS AT WISLEY, 1917.

Awards have been made by the Royal Horticultural Society to Stocks grown under glass in the Wisley Gardens. We print the official report:

STOCKS.

AWARDS OF MERIT.—*Crimson Brompton*, sent by Messrs. R. Veitch, Exeter; *Mammoth Pale Lilac*, sent by Mr. Dawkins, Chelsea; *Mammoth Pyramidal Flesh Colored*, sent by Messrs. Hurst,

London; H. J. Vansittart Neale, sent by Messrs. Hurst; Intermediate White, sent by Messrs. R. Veitch; John Bright, sent by Messrs. Dickson and Robinson; Madame Riviere, sent by Messrs. Dickson and Robinson; R. Veitch, and Hurst; Mammoth Park Blue, sent by Mr. Dawkins and Messrs. Hurst; Mammoth Pyramid Tasse, sent by Messrs. Hurst; Mammoth Pyramid Salmon Rose, sent by Messrs. Hurst; Mammoth Pyramid 10-week Bloo of Bel's, sent by Messrs. Hurst; Mammoth Pyramid 10-week Crimson, sent by Messrs. Hurst; Mammoth Pyramid 10-week Lilac, sent



FIG. 90.—BORONIA KLESAYANA. COLOUR OF FLOWERS, ROSE-PINK. (Awarded First-class Certificate at R.H.S. meeting on Tuesday, 11th. See p. 236.)

London; *Mammoth Rose*, sent by Mr. Dawkins; Chelsea; *New Giant Light Blue*, sent by Messrs. Nutting, London.

HEEDY COMMENDED.—Abundance, sent by Messrs. Dickson and Robinson, Manchester; Almond Blossom, sent by Messrs. R. Veitch, Exeter, and Messrs. Hurst, London; Beauty of Nice, sent by Messrs. Dickson and Robinson, Manchester; Messrs. Hurst, London; Messrs. Watkins and Simpson, London; *Cote d'Azur*, sent by Messrs. R. Veitch and Messrs. Hurst; East Lothian Crimson, sent by Mr. A. Dawkins; East Lothian Scarlet, sent by Messrs. R. Veitch; Giant Brompton Crimson, sent by Messrs. Barr,

by Messrs. Hurst; Mammoth Pyramid Yellow, sent by Messrs. Hurst; Mont Blanc, sent by Messrs. Hurst; Nice Canary Yellow, sent by Messrs. Watkins and Simpson; Nice Grand Early Simon, sent by Messrs. Nutting, London; Novelty (mammoth), sent by Messrs. Hurst; Parma Violet, sent by Messrs. Barr and Hurst; Perpetual White, sent by Mr. A. Dawkins; Princess May, sent by Messrs. R. Veitch; Purple Brompton, sent by Messrs. Watkins and Simpson; Queen Alexandra, sent by Messrs. Hurst, Messrs. Watkins and Simpson, Messrs. Dickson and Robinson; Rose of Nice, sent by Messrs. R.

Veitch and Messrs. Hurst; Souvenir de Nice, sent by Messrs. Barr; Violet Queen, sent by Messrs. Dimes, Norwich; White of Nice, sent by Messrs. Watkins and Simpson; White of Nice, No. 2, sent by Messrs. Hurst; Yellow of Nice, sent by Messrs. Hurst.

TRIAL OF MYOSOTIS.

AWARD 1. AERIE.—*alpestris Indigo Queen*, sent by Messrs. R. Veitch, Exeter.

HIGHLY COMMENDED.—*alpestris Indigo Queen* sent by Rev. J. Jacob, Whitechurch; *alpestris alba*, sent by Messrs. Hurst, London; *alpestris stricta alba*, sent by Messrs. Hurst; Blue Eyes, sent by Messrs. R. Veitch; Bonquet (blue), sent by Messrs. Sutton, Reading; Perfection Rose, sent by Messrs. Sutton; Pink Gem, sent by Messrs. Sutton; Pyramid White, sent by Messrs. Carter, Raynes Park; Royal Blue, sent by Messrs. Sutton; stricta White Gem, sent by Messrs. Barr, London; Victoria Rose, sent by Messrs. Barr; White Pearl, sent by Mr. E. H. Bowers, Roscommon.

CROPS AND STOCK ON THE HOME FARM

REARING CALVES.

ON an ordinary dairy farm where milk or butter is the chief concern, the rearing of calves is no important item. In the case of bull calves of no special pedigree value, the aim is to get rid of them as quickly as possible with a view to conserving the milk supply. In the open market such calves at about one week old will fetch 40s. In the case of pedigree Shorthorn calves of either sex where size and quality are of the utmost importance for future stock purposes, the calves should be allowed to run with their mothers for twelve months or longer. In that case milk is not the main factor.

The economical rearing of heifer calves by the utility farmer is of much more importance to him in the saving of milk, especially during the winter months. The calf should be allowed to feed from its mother four days after birth. After that period it should be removed to a warm box and fed artificially. In the morning and evening give two quarts of new milk, preferably that from its parent. At the end of a fortnight after this treatment by adding one quart of separated milk to the four quarts of new milk for another two weeks. Then, in the place of the new milk, substitute warm skim or separated milk, adding some calf meal. I prefer Bibby's Cream Equivalent, of which one short pint is mixed with the milk. There are many other calf rearing meals, all of which are doubtless suitable. Continue this treatment for six weeks. At that stage, or earlier, give a small quantity of good meadow hay.

When the calf is three months old gradually discontinue the meal, but give the separated milk, to which add a little water, as long as is convenient.

At the age of three months the calves should be given a little hay, chaff, and concentrated food. The best food for calves is undoubtedly soft linseed cake containing 9 per cent. or 12 per cent. of oil, and crushed oats. If the calves are having separated milk with their calf meal, one part of linseed cake to two parts oats is sufficient. If, however, water is substituted for the milk then the linseed cake and oats should be in equal portions. At four months old 5 lbs. hay, 3 lb. linseed cake, and the same quantity of crushed oats would be a suitable ration.

At a later stage feed twice daily with cut Mangolds, just a handful to start with, increasing the quantity as it is seen that no harmful effects in scour result. To the Mangold add a sprinkle of cod liver oil condiment, or any other approved appetiser, and give a regular supply of good hay.

The time for turning calves out in grass varies according to the time of birth. For instance, a September calf might, if strong, be given a grass run in May or June, but where convenience exists it is safer to keep them under cover where they might be fed with green Vetches.

Keep the animals in an airy shed or barn, free from draughts, but with plenty of fresh air, before putting them on grass. Fed with dry food under cover the animals grow vigorous and shapely.

The Board of Agriculture and Fisheries have made an Order, to operate on the 19th inst., which withdraws the restrictions on the slaughter of calves imposed by the Maintenance of Live Stock Orders of 1915 and 1916 *E. Molyneux*.

AREAS UNDER WHEAT.

THE Board of Agriculture and Fisheries has received the following particulars from the International Agricultural Institute:—

The area under wheat in France this year is estimated at 10,569,000 acres, or 15 per cent. below last year's acreage.

The total yield of wheat in four countries of the Southern Hemisphere (Argentina, Uruguay, Australia, and New Zealand) in 1916-17 is estimated at 125 million cwt., against 200 million cwt. in 1915-16 and 154 million cwt., the average of the previous five years. The production of Oats in these four countries in 1916-17 is estimated at 18 million cwt., as compared with 31 million cwt. last year, and 26 millions, the average of the previous five years.

REPLY.

WATERPROOFING COTTON AND PAPER.—In reply to T. H. (p. 218), waterproofed calico is the best substitute for glass, as this material lasts much longer than paper similarly treated. The calico should first be tacked on to a light wooden framework of the required size, straining it tightly. The waterproofing mixture is made up of 3 parts pale linseed oil, 1 oz. of acetate of lead, and 4 oz. of white resin. The acetate of lead should be ground up with a little of the oil into a stiff paste, then add the remainder of the oil, well mix, and stir in the resin. Place the mixture in an iron vessel over a slow fire, stirring it well. When quite hot apply with a brush in thin layers, allowing each to dry separately. Usually two or three coats are sufficient. Finely woven calico gives the best results. Calico so treated, when stretched on small frames of the correct size, will be found a fair substitute for glass for glazing greenhouses. If neatly fixed and well stopped with putty there will be very little drip. For temporary use in summer paper lights are of value. The cheapest grade of cartridge paper is suitable, and this should be fixed to the frames in the manner advised for calico. Damp the paper all over with a sponge wrung out of a bowl of water, and when dry the paper will be found to be strained tightly. Paint the upper surface of the paper with boiled linseed oil into which a small quantity of white lead has been worked. If carefully handled and care is taken to prevent them being blown about by winds, these paper lights will last much longer than might be expected. *F. C. Riddell*.

ANSWERS TO CORRESPONDENTS.

APPLE AND CHERRY SHOOTS WITHERING: L. G. P. It is not possible with any certainty to identify the cause of the shoots withering, but we may say that this year there are large quantities of boring maggot on fruit trees, which cause damage similar to that which you describe. There is one in particular which bores a hole through the base of the shoot, where it joins the main stem. You had better examine the affected trees, and see if this has occurred; if you have not many trees, your best plan will be to pick off by hand every maggot you see, and destroy it.

CATERPILLARS ON APPLE TREE: T. H. Palmer. The caterpillars infesting your Apple tree are those of the Lackey Moth (*Chissocampa nestrus*). The moth lays its eggs in bands around the young branches, each band containing from 40 to 200 eggs. In colour they are dull greyish brown. About the end of April they hatch out; the young caterpillars are at first dark and rather hairy. They soon begin to form a web of fine silk, beneath which they shelter, venturing out after a time to feed, but returning to their shelter at night and in wet weather. As they grow they become more brilliantly coloured, when full grown they are bluish grey, with four black spots at the head,

and black, orange and blue stripes down the back. They are about 1½ inch in length. Maturity is reached in the months of June and July, when they spin cocoons of pale silk. In the cocoon the caterpillar changes to a dark brown pupa, from which the moth hatches in two or three weeks.

LABURNUM WITH DIFFERENT COLOURED FLOWERS: C. J. P. Your tree of Laburnum, which is bearing blossoms of three distinct colours, is not attacked by disease, but is an example of a "graft hybrid," between Laburnum vulgare and *Cytisus purpureus*. The variety with pink flowers is known as *Cytisus Adami*, after the original grafter; the yellow flowers arise from the pure Laburnum tissue, and the purple flowers from that of *Cytisus purpureus*. So far as one can judge from anatomical evidence, C. Adami is Laburnum vulgare clothed in an epidermis of *C. purpureus*. In certain cases seedlings obtained from C. Adami have proved to be pure Laburnum.

NAMES OF PLANTS: E. Shaw. *Eonymus Sieboldianus*, a native of China. *Boyssiera*, 1. *Clematis montana rubra*; 2. *Cotoneaster horizontalis*.

ONION SEEDLINGS: J. C. B. The Onion seedlings arrived in a very crushed condition, owing to being packed in too frail a box. They appear to be affected by Onion fly, *Anthonomya ceporum*, a very common pest. The female lays its eggs on the leaves, and the maggots, working down between the leaves, reach the lowest part of the bulb. When fully fed they leave the bud and enter the soil; they there pupate, and finally become perfect flies. It is difficult to rid the plants of the flies, but one of the best preventives of injury is to induce quick, strong growth in the seedlings, and prevent anything in the way of a check. Pull up and burn all infested plants, and water the rest of the plants and the bed with strong soap-suds; or, in the case of a very bad attack, with petroleum emulsion, in the proportion of 1 gill to a gallon of water.

PEAR LEAVES INJURED: P. S. H. The Pear leaves appear to have been injured by the Pear Leaf Blister Mite, *Eriophyes pyri*. You state that the mite does not interfere with the fruiting of the tree, but we must warn you that although, in the past, it has chiefly attacked the leaves of trees, lately it has also attacked the fruit-buds, which it has completely destroyed. Pick off and destroy every leaf which shows signs of the disease; if you persevere the disease will completely disappear in a year or two.

PELAGONIUMS DISEASED: J. L. Lowwood. The spotting and blotching of the "Geraniums" is caused by the very common fungus, *Plectytis cinerea*. The disease occurs commonly on dead parts of most plants, and spreads to living plants; hence the necessity of cutting off and destroying dead blossoms, removing dead plants, and maintaining hygienic conditions in the glasshouses and gardens generally.

PINE GROWING: C. T. For small suckers just received select some good fairly yellow loam, preferably loam that has been stacked for some time, rejecting the finer portions. To this add a fair sprinkling of crushed mortar rubble, and should the loam be somewhat heavy, add also a little peat or leaf soil. Put quite firmly, for this will help to keep the suckers erect and suit them generally. Use quite small pots; a 5 inch pot is ample, but even a smaller size if the suckers are small. If a Melon house or pit is in work, either would suit them well if plenty of heat is provided. After giving one good watering, be cautious with the watering can until the roots become active. Bottom heat will encourage them to root more quickly, and is almost indispensable in Pine cultivation. Take particular care not to put the suckers in a house where there is any suspicion of white scale being present, for this pest is one of the greatest hindrances to good Pine culture.

Communications Received.—H. V. O. (Many thanks). Seedman who should have sent your name and address, and necessity for publication but as a guarantee of good faith)—J. A. P., T. C. E. M.—E. M. H., E. J., C. R., I., L.—C. N. R. Farrer.

MARKETS.

COVENT GARDEN, June 8

Plants in Pots, &c.: Average Wholesale Prices.

Table listing various plants in pots and their average wholesale prices. Includes items like Arafia Sieboldii, Asparagus plumosus, Aspidistra, Cacti, Calceolaria, Cocos Weddellii, Crassula, Ericas persoluta, Fuchsia, Geranium, Carnations, Cornflowers, Delphinium, Gladiolus, Gypsophila, Heather, Iceland Poppies, Iris, Lilium longiflorum, Nigella, Orchids, and Sweet Peas.

REMARKS: Trade is now very brisk in this district. There is a good demand for all bedding varieties. Marguerites, Heliotropes, Mignonettes, Verbenas, Hydrangeas, a few good Erica, and various kinds of Rambler Roses are in sale.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their average wholesale prices. Includes items like Carnations, Cornflowers, Delphinium, Gladiolus, Gypsophila, Heather, Iceland Poppies, Iris, Lilium longiflorum, Nigella, Orchids, and Sweet Peas.

REMARKS: Double white Narcissus is now over for the season. Double white Paeoniam and white Stock are selling freely, and the supplies of these flowers are scarcely sufficient for the demand. There is a good display of the single varieties of Paeoniam which are very popular. There is an advance in prices for the choice Flowers, Irises, Gladiolus, Sweet Peas, Iceland Poppies, Lily of the Valley, and all Libanum are much scarcer. Carnations are soon brought up. Good Roses are obtainable at the present time. The weather is no longer accountable for the inferior quality of the blooms.

Convolvulus and Nigella (Love in the Mist) are more plentiful

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their average wholesale prices. Includes items like Asparagus, Beans, Beetroot, Broccoli, Cabbages, Carrots, Cauliflowers, Cucumbers, Garlic, Herbs, Horseradish, and Leeks.

Fruit & Veg. Average Wholesale Prices.

Table listing various fruits and vegetables and their average wholesale prices. Includes items like Almonds, Bananas, Dates, Figs, Go-sberries, Grapes, Lemons, Nuts, Oranges, Peaches, Strawberries, and Tomatoes.

REMARKS: The market is generally cleared of British and Foreign fruit. A few specimens of Avocado are still in the market. The market for Asparagus is very quiet. The market for Strawberries is very quiet. The market for Grapes is very quiet. The market for Lemons is very quiet. The market for Nuts is very quiet. The market for Oranges is very quiet. The market for Peaches is very quiet. The market for Strawberries is very quiet. The market for Tomatoes is very quiet.

THE WEATHER.

THE WEATHER IN SCOTLAND. A cold, dry, westerly wind, with the accompanying feature of the variable during May. The month on the whole was a dry one, the number of rainy days being 14, and the rainfall 4.14 inches. The temperature was 47.7, the highest being 56.7, and the lowest 29.2. The number of hours of bright sunshine was 172, and the number of hours of overcast was 128. The number of hours of fog was 12. The number of hours of rain was 12. The number of hours of snow was 0. The number of hours of hail was 0. The number of hours of sleet was 0. The number of hours of drizzle was 0. The number of hours of mist was 0. The number of hours of clouds was 0. The number of hours of sun was 0. The number of hours of moon was 0. The number of hours of stars was 0. The number of hours of planets was 0. The number of hours of comets was 0. The number of hours of meteors was 0. The number of hours of aurora was 0. The number of hours of eclipses was 0. The number of hours of other celestial phenomena was 0.

GARDENING APPOINTMENT.

Mr. J. T. Nicol, for the past 4 years, Gardener to the Hon. & Right Hon. Earl of Leitch, Leitch, Perthshire. Mr. Nicol is a member of the Royal Horticultural Society, and has been awarded several medals for his services to the garden. He is also a member of the Royal Society of Gardeners, and has been awarded several medals for his services to the garden. He is also a member of the Royal Society of Gardeners, and has been awarded several medals for his services to the garden.

(Continued from page 11)

GARDENER (HEAD WORKING): life on garden in all branches, excellent testimonials, death the cause of leaving (inhabitable T. W. H. Mount Pleasant, Arundel).

GARDENER (HEAD WORKING): thoroughly experienced all branches, manage small estate, highest references, over military age, Christian; abstemious; married the family, B. Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING): thoroughly experienced all branches, where 3 or more are kept (normal times), previous situations 12 and 10 years (Head), age 45, a daughter could help if required, good references, now unemployed. Apply, GARDENER, c/o Clerk, messenger, Midland, Sussex.

GARDENER (HEAD WORKING), where 2 or 3 kept, married, two children, experienced inside and out, good references—SPENCER, Blackbrook, Gosmont, Hereford.

GARDENER (HEAD WORKING), where several are kept in normal times, age 45, married, life experience in all branches; would undertake management of small stock and land if required, also own age 17, 24 years' experience; good references. Z. Box 7, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING) and MANAGER: small farm and estate if required, 30 years' practical experience; 21 years as Head, excellent references, age 50, one boy aged 15, W.M. SWER, 5, Thomas Street, St. John's, Tunbridge Wells.

GARDENER (HEAD WORKING): 6 or more are kept in normal time, life experience in all branches, age 47, married (no family), excellent references, most prominent and prestigious employers—BEALE, New Cottage, Llanwrthwl, Newport, Mon.

TRADE.

MANAGER or FOREMAN: life expert in all branches in the Trade, controlling labour and producing crops in large quantities. Plants, Flowers, Fruit, Vegetables. LAWRENCE 83 Watwick Avenue, Bellingham.

FOREMAN (WORKING), disengaged; 28 years' general experience, Tomatoes and Cucumbers specially, excellent references, inhabitable. H. GIFFORD, West End, Brompton, Cullinampton Devon.

OPEN for Engagement as HEAD SHOP MAN, Manager of Traveller, life experience in all branches, including practical in nursery, over military age—Write, G. K. Box 3, 41, Wellington Street, Covent Garden, W.C. 2.

OPEN for Engagement as HEAD SHOP MAN or MANAGER, upwards of 30 years' experience in all branches of the trade; over military age. Write, G. Box 9, 41, Wellington Street, Covent Garden.

FLORIST: lady desires re-engagement; 12 years' experience with artistic designs, a lot of Plants, Seeds, Bulbs, etc.; disengaged. Write, MISS, 6, 9, Lawrence Road, South End, London.

The Gardeners' Chronicle SCALE OF CHARGES FOR ADVERTISEMENTS.

Table showing advertisement rates. Includes columns for Ordinary Positions, Facing matter and Back Page, Half and quarter pages, column and half column spaces, and other charges.

Front page (no display allowed) 1/2 per line space, (Headline counted as two lines) For discounts apply to address below.

SITUATIONS WANTED. 26 words 1s. 6d., and 6d. for every additional 8 words or lower.

These Advertisements must be provided AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS. THE 3 NEEDED KINGDOM 1s. 15/- per annum. ABROAD ... 17/6 ...

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD, 41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2. Telephone: 1543 "GARDENERS, RAND, LONDON." Telephone: 1543 GERRARD.

By Special Appointment to



His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

LETHORION :: VAPOUR CONE Fumigator



Introduced 1885.

The marvellous effect of this simple and cheap method of Fumigating Greenhouses is fully borne out by the enormous increase of sales year by year.

Only a match required for starting the Cone. Full directions for use on each Cone.

Thousands of testimonials received from all parts.

Registered Trade Mark 62957.
Prices. No. 1, 500 to 1,000 cubic ft., 6d.; No. 2, 1,500 cubic ft., 8d.; No. 3, for 2,000 to 2,500 cubic ft. 1s.

"TENAX" THE NEW AND MOST SUCCESSFUL Grafting Wax

It is a much required "HOME-MADE" article to meet the requirements of all Nurserymen and Gardeners.

It is rapidly taking the place of all Foreign and other preparations for all Grafting and Budding Purposes.

In Tins, each 6d., 1/-, 2/-, 4/-, 6/-. Also in bulk at reduced rates.

To be obtained through the Nursery and Seed Trade generally.

CORRY & CO., Ltd.,
Bonded Chemical Works, Shad Thames,
LONDON. S.E.

Phytobroma

Barr's New Plant Food
For Flowers, Vegetables and Fruit
of highest quality & guaranteed analysis

{Phytobroma Greatly Increases all Vegetable Crops.
Guaranteed Analysis:—3.50% Nitrogen; 16.00% Soluble Phosphates; 13.50% Insoluble Phosphates; 3% Pure Potash.
7lb., 2/9; 14lb., 5/6; 28lb., 8/-; 56lb., 15/-;
1 cwt., 28/-.}

Prepaid Orders for 28lb. and upwards, carriage paid. Circular, with full particulars, on application
BARR and SONS,
King Street, Covent Garden, LONDON

ELLIOTT'S Latest improved **SUMMER SHADING, 'PINGO.'** for greenhouses. Best ever used, says A. Wilson, Eridge Castle. Readily mixed. Pks. 1/- 1/6 Ds. To 200 sq. ft. R.H.S. Awarded Gold Medal, 1914, London. Sole Manfr.: F. ELLIOTT, LONDON. W. 3

CLIMBING PLANTS

(Present-Day Gardening Series)

By WILLIAM WATSON.

(Introduction by William Robinson.)

A Practical Handbook on the Treatment of Climbing Plants, both hardy and tender species. Illustrated with 24 full page plates, 8 of which are reproduced in colour.

Price 2/10 post free from:

THE PUBLISHING DEPT.,

"GARDENERS' CHRONICLE" OFFICES,
41, Wellington Street, Covent Garden, W.C. 2

THE BOOK OF THE MOMENT.

Root & Stem Vegetables

By ALEXANDER DEAN, V.M.H.

At the present crisis the food problem bulks largely. The question of which vegetables contain the most food is a pressing one, and it is found that root and stem vegetables, such as Potatoes, Carrots, Turnips and Parsnips, contain much higher percentages of food value than green vegetables, valuable though these are as adjuncts.

"ROOT AND STEM VEGETABLES"

is a book which treats *only* of those vegetables the root or stem of which is eaten, and is therefore especially valuable to all who are endeavouring to concentrate their attention on growing the most economical forms of food. It contains eight coloured plates reproduced from photographs.

To be obtained from—

THE LIBRARIAN,
Gardeners' Chronicle, Ltd.,
41, WELLINGTON ST., W.C. 2.

PRICE 1/10 POST FREE.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841.

No. 3990

No. 1590, VOL. LXI. (THIRD SERIES) SATURDAY, JUNE 16, 1917.

{Registered as a Newspaper.} PRICE 3d. {POST FREE, 3 1/2d.

SUBSCRIPTION—Inland, 15-; Foreign, 17 6 (22/r. 10c.). [\$4 26c.] per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden W.C. 2.

Telegraphic Address—"Gardchron, Rand, London."

Telephone—Gerrard 1543.

For CONTENTS see page 239.

SUTTON'S VEGETABLE SEEDS
SUTTON'S FLOWER SEEDS
The Best.

For Advertisement Charges see page iii.

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note that the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week MUST reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

DICKSON'S HORTICULTURAL MANURE and other high class Fertilisers, also Jackson's Improved Manure in Spain. Periodical notes on application to HICKSON'S Royal Seed Warehouse and Nurseries, Chester.

BARR'S SEEDS FOR JUNE SOWING. Fine strains of Anthriscums, Apollagos, Campanulas, Cerebrius, Bells, Chelidonia, Cicutaria, Delphiniums, Bodibooks, Lupins, Pansies, Primulas, Stocks, Wallflowers, &c. Catalogue on application. BARR & SONS, King Street, Covent Garden, London.

OUR list of Vegetable Seeds, suitable for summer sowing, is now ready, and will be sent upon application to DUBBER & CO., Seedsmen to the King, Edinburgh.

J. GRAY LTD. Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W.3. Wires, 201, Western, London. Telephone: 201 Western.

WATERER'S ALPINES, HERBACEOUS PLANTS and WATER LILIES. Large stocks of the best and most popular varieties. Descriptive Catalogue free. JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Twyford, Berks.

GISHFORD COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes about 1lb., 3lb., and 12lb. by Dealers in Garden Sundries. Wholesale & Retail PATENT CANDLE CO., LTD., Battersea, London, S.W.11.

SOW NOW.—BATH'S EMPRESS PANSEES, as grown for the Royal Gardens at Frogmore, single purpl, post free, 2s. 6d., or 10s. 6d. State size. Money returned if dissatisfied. Special quantities for quantities. THE THAMES TRADING CO. LTD., Army Base, Dept. A, Eton Street, London, E.C.

SANDERS, Orchid Growers, St. Albans.

ARMY BOOTS (reconstructed). Cost Government 22s. 6d. Selling now at bargain price. Specially selected, without a blemish, as good as new. Unsurpassed for gardening, farming, and other work. Single pairs, post free, 2s. 6d., or 10s. 6d. State size. Money returned if dissatisfied. Special quantities for quantities. THE THAMES TRADING CO. LTD., Army Base, Dept. A, Eton Street, London, E.C.

SUTTON & SONS, The King's Seedsmen, READING.

WM. DUNCAN TUCKER & SONS, LTD. Lawrence Road, South Tottenham. Contractors, Winter Gardens, Vineyards, Peach houses, Potable Buildings, &c. Catalogues gratis.

FOUR NEW PRIMULAS, collected by Geo. Forrest, P. helodoxa, A.M., R.H.S., 3s. 6d. P. nana, A.M., R.H.S., 7s. 6d. P. vernalis, A.M., R.H.S., 5s. P. cuneata, A.M., R.H.S., 3s. The set of four grand novelties for 18s. Full descriptive catalogue of these and other new Chinese plants post free on application. R. WALLACE & CO., LTD., Colechester, Essex.

EXPENSIVE ADVERTISING. In these days, when every firm has to advertise or see its business decline, it is necessary to make sure that the needed publicity is so obtained that the results justify the expenditure. It is this consideration that has led most keen business men to discontinue the wasteful method of advertising by catalogue. It requires the mode of any printing firm it will be found that this catalogue printing has fallen away since the war by about 80 per cent. more as this can be witnessed at the price of paper is nearly three times what it was formerly, printing rates are higher, and the cost of postage is much increased, so that the wholesale distribution of large catalogues is now too expensive for business purposes. The new papers, though they themselves are produced at much greater expense all round, have nevertheless refrained from increasing their prices for advertisements, and it is by utilising these permanent media that profitable advertising may still be practised.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whippet Tweed; wears like leather; showproof; 7 yards for 12s. 6d. Patterns free. BRADFORD WOOLLEN CO., 71, Bradford.

GENTIANA verna, 12 large clumps, 5s. 6d. (see 15) Pinguicula grandiflora, 7s. 6d. 6 Hibernica, 12s. 6d. O'REILLY, Bolinas, Ballyvaughan, Ireland.

B. EDDY & SONS, Torleven Works, Parthenon, Cornwall.—The largest manufacturers of GARDEN NETTING in the KINGDOM. NEW STOCK and specially strong SQUARE MESH NETTING, half inch and one inch mesh, at 4s. per square yard. LIGHT NEW square mesh, suitable for Strawberry Beds, at 5s. per square yard.

These Nets are bound all round with stout cord, and cover their mesh under length and width. Any length or width supplied.

Repaired Nettings in all sizes in stock. State your requirements, and we will quote lowest prices.

Also makers of TENNIS NETTINGS, RICK COVERS, GREENHOUSE SHADINGS, WASP NETTINGS, PACKING and TARRED TWINES of all kinds.

All Goods sent by PASSENGER Train, CARRIAGE P.M.D., on receipt of order.

GREENHOUSE PAINTING & GLAZING. "Viridite" superior to White Lead Paint. "Plastine" sunless putty. Full particulars from W. CARSON & SONS, Grove Works, Battersea. Agents throughout the country.

POTATO SPRAYING. On spot ready for immediate delivery. Sulphate of Copper 95 per cent. pure Washing Soda 38 per cent. Write for prices and quantity required per acre, G. H. RICHARDS, 1, Borough High Street, London, S.E. 1.

100,000 LARGE GARDEN FERNS, 20s., 100; Patens, Begonias, Crotons, Dianonias, Roses, Ericas, Gloxinias, Lilacs, Hydrangeas, &c. catalogues free.—J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock, cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

WANTED, offers of Tomatoes, Cucumbers, Peas, &c. old Potatoes, Carrots, Turnips, Gooseberries, &c. Mr. G. WELLS, Fruit and Contractor, 116, North High Road, Leicester.

FERNS' FERNS! True Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogues free. J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

BEGONIAS, Gloire de Lorraine, Turnford (Hill) and Rothschild variety of Lorraine, well rooted cuttings, 2s. 6d. doz., 50 for 6s. 6d., 10s. 6d., 100. The King, 4s. doz., 50 for 12s., 20s. 100. H. DUBBER, Dept. The Dorset Nurseries, Blandford.

BEGONIAS and GLOXINIAS, AIGRÉE & CO. can now supply their celebrated strain in large 60 pots, in flower and bud. Early inquiries, as stock is limited this season. 150-156, Finchley Road, N.W. 3.

TUBEROSES, double African Pearl, just arrived, for earlier flowering, extra large bulbs, doz. 15s., 100, send free any address, for cash. MOULT & CO., 150-154, Finchley Road, N.W. 3.

FISHING NETS, second hand. Several to be disposed of, of 1d. per square yard. R. V. ROBERT, Sealdam, Pickering, Yorkshire.

GLOBE ARTICHOKE plants for sale; 24s. per 100. Apply, F. A. SECRETT, Marsh Farm, Tisburyham.

ORCHID PEAT, 6s. and 7s. 6d. per sack; Brown Peat, 10s. 6d. per yard in trucks; in bags 2s. 6d. each 30s. dozen. Oak and Birch Leaf Mould, Yellow Loam, Stacked and Fresh Cut, Steep Sand, 4-ton lots for 45s. G.W. FRYER, 24s. dozen bags; list free. J. HANDSCOMB, F.R.H.S., Feltham, Middlesex.

SALES BY AUCTION.**JAPANESE DWARF TREES AND MINIATURE GARDENS.**

including many exceptional specimens.

GARDEN ORNAMENTS,
Old and Modern.

including Fountain and other figures, Sundial, Vases, &c., in bronze, stone, stoneware, & lead.

GARDEN FURNITURE, &c.,

including Teakwood Seats, Tables, Chairs and Tubs, &c., Bamboo Poles and Gates, and a variety of Texts.

MESSERS. PROTHEROE & MORRIS will sell the above at their Central Auction Rooms, 67 and 68, Cheapside, London, E.C. 4.

On Friday, June 22nd, at 1 o'clock.

on view two days prior and morning of sale. Catalogues on application to the Auctioneers.

BUSINESS FOR SALE.**PROTHEROE & MORRIS, HORTICULTURAL, MARKET GARDEN, AND ESTATE AUCTIONEERS AND VALUERS, 67 and 68, Cheapside, London, E.C. 4, and Leytonstone, E.** Monthly Horticultural Register had on application.**NOTICE.****THE WINDSOR, ETON, AND DISTRICT ROSE SOCIETY.** THE ANNUAL ROSE SHOW HAS BEEN ABANDONED for this year, the Committee having decided to devote their energies and employ their funds for the encouragement of increased food production.**EXHIBITION.****SOUTHAMPTON R.H.S.**

SUMMER SHOW, JULY 11th.

Prizes for Roses, Carnations, Sweet Peas, Fruit and Vegetables.

Schedules and Particulars of

C. S. FUDGE, F.R.H.S., Secretary,
7, SILVERDALE RD., SOUTHAMPTON.**SITUATIONS VACANT.**Four Lines 3s. (Head-line counted as Two),
6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.**WANTED, HEAD GARDENER (WORKING);** meliabile; good knowledge Vegetables, Fruit, Vines; country; half hour's rail London. Address, stating age, single or married, family experience, length, locality, former situations, wages required inclusive of rate, S. E., Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**WANTED, GARDENER (HEAD WORKING);** meliabile; 2 under; wages 28s. and cottage.—Full particulars to H. N. P., c/o Willing's, 33, Knatchbull-st., London, S.W.**WANTED, GARDENER (HEAD WORKING);** highly qualified for Reading, wages 32s and excellent lodge; Vinery and Conservatory; 2 kept FARRER & SONS, Reading.**WANTED, good man, HEAD WORKING GARDENER,** Grapes, married.—Apply by letter, MISS BOOTHBY HEATHCOTE, 10, Herford Gardens, Park Lane.**WANTED, immediately, a Temporary HEAD GARDENER,** Man or Woman, 2 boys kept, some experience of Vegetable Garden essential.—THE DOWAGER LADY CHESTERON, Clouston Court, Clouston.**WANTED, SINGLE-HANDED GARDENER,** end of June; meliabile; for Glass and Vegetables.—Apply, CRIB KISHANK, Lentham, Woodham Road, Woking.**WANTED, SINGLE-HANDED GARDENER,** meliabile; good all-round man; cottage provided.—Write full particulars to MRS. MURRAY, Fern Oak Lodge, Bishopstoke, Hants.**WANTED, good all-round SINGLE-HANDED GARDENER (meliable);** used to a gentleman's place; help given; wages 32s. and good rooms.—Letters, WILLEY, 16, Uxbridge Road, Ealing.**WANTED, a SINGLE-HANDED GARDENER (meliable);** permanent; help in summer; about 2 new mixed Garden on a hill; wages 27s. and cottage handy.—MRS. DAVIDSON, Woodlands, Alma Road, Regate.**WANTED, good all-round GARDENER,** with help, Glass, Vegetables, Household Borders, meliabile.—Apply, MRS. S. COITRAULD, Stainstead Hall, Hildesford, Essex.**WANTED, GARDENER, for 2½ acres;** good wages.—Apply, The White House, Ongar, Essex.**MR. GEORGE PAUL** is desirous of hearing of a good eligible GARDENER to undertake the management and making under his supervision of a garden to a new house about 10 miles from London.—Send particulars to The Old Nurseries, Chesham.**WANTED, experienced SECOND GARDENER,** married or single; good all-round experience; good cottage or furnished rooms, Vegetables, and 30s. State all particulars, A. SMITH, The New House, Stokenchurch, Bucks.**WANTED, SECOND GARDENER (34 years);** over 10 years' exp. only those with good experience of outdoor work in Pines and Vegetables need apply; good wages to capable man. Write, stating experience, references, wages, and with other full details, to HEAD GARDENER, Duxham, Oldlands Chase, Walsingham.**WANTED, SECOND GARDENER, married;** good all-round experience; meliabile; terms 20s. weekly; good house, garden, and coal bond; every third week P. HURST, Stapleford Park, Melton Mowbray.**WANTED, an experienced man as SPECIALIST** well up in Fruit and Plants; 30s. and lodging paid; duty and overtime paid for.—Send particulars and refs. to J. BLACKWOOD, Selton Park Gardens, Slough.**WANTED, UNDER GARDENER;** used to Greenhouses and Stone plants; single; meliabile; MRS. WAREHAM NEWPORT, Sandbourne, Bexley.**WANTED, UNDER GARDENER** having good experience and references; single and meliabile; liberal wages.—Apply, T. ELLIOTT, Norton Manor, Sutton Society, Hants.**WANTED, FOREMAN;** chiefly Inside; good wages; overtime and Sunday duty paid. Both, Vegetables, &c. W. PHILLIPS, Berry Orchard, Elmsbury, Gardingbury.**WANTED, FOREMAN or MAN** who can grow Fruit, &c.; Inside; good wages and overtime paid.—State particulars to E. BRISTOW, Layswood Gardens, Greenbridge, Tunbridge Wells.**WANTED, FOREMAN or good JOURNEYMAN,** on Fruit and Glass (Inside); Arms discharged or over military age; good wages, Both, &c. Apply, A. DYE, The Gardens, Trump Park, Trump.**WANTED, FOREMAN,** under Head Gardener; general all-round work; single or married; former professional; meliabile; state wages. Apply, W. CHALCRAFT, Bindon Hall Gardens, near Longhope, Chas.**WANTED, JOHN NEWMAN,** for Houses; meliabile; wages 24s. per week; Both and vegetables; duty every third Sunday. C. EARL, Somerhill Gardens, Tunbridge, Kent.**WANTED, an experienced MAN** for Fruit Trees and Vegetables; good cottage and garden. All particulars, wages expected, and references (copies only), to J. G. WESTON, Eastwell Park Gardens, Ashford, Kent.**WANTED, IMPROVER or discharged soldier,** Inside and Out; good wages. Apply to MOVES, The Gardens, Osterley Park, Egham, Middlesex.**ELECTRICIAN (HANDYMAN)** required to take charge of Tangle oil engine, dynamo, battery, rough carpentering and odd jobs, under Head Gardener. VISCONTRESS K., Krossenthall Hall, Royston, Herts.**WANTED, MAN and WIFE,** without children, to live in cottage on the place; man as experienced Gardener and wife occasionally to help in the house.—STEVENS, Adlestone Lodge, Adlestone, Surrey.**WANTED, LADY GARDENER,** for the Houses and Herbaceous Borders, under Forewoman; Both, &c. State experience. FARWELL, Gardeners' Lodge, Fains Hill, Colham, Surrey.**WANTED, young lady PUPIL** for Gardening, fruit bottling, poultry rearing, &c. Apply, MRS. L. Woodlands House, Beaconsfield, Bucks.**LADY GARDENERS WANTED;** all admitted entirely free of charge. Head and Under for (1) Lines, 2 men and boy to assist, cottage supplied, (2) Sussex garden, 5 acres, chiefly Vegetables; furnished cottage and stall, (3) Wores, Vegetables, Fruit, no Glass; 2 years' training required; rooms and vegetables found, (4) 30-acre garden, Vines, &c., Christmas Borders, and Kitchen garden; good man kept, (5) Hants, 3½ acres, Glass and Kitchen Garden; man and boy kept; and Head could do Market Gardening or take pupil. Forewoman for Besk, Head Man kept; Vines, Peaches, &c., putting. Single handed, for (6) Assol, plain Garden; Vegetables, Flowers, little Glass; lady helps; cottage found, (7) Vines, general Gardening, In and Outdoors; help given. And others.—MRS. HUNT, LTD., 95, High Street, Marshfield, W. 1.**WANTED, strong YOUTH,** experienced, for Kitchen and Fruit Garden, take duty, 20s. per week, Both, and vegetables, overtime paid; 1 oddnet Sunday. J. A. MULLFOLD, Merewate Gardens, Abingdon.**WANTED, strong LAD** required to work under fully trained Gardener, nursing home; 5s. and 10s. m.; all home state; age, experience, Good, take garden pupils. PRINCIPAL, Woodfield, Streatham, S.W.**WANTED, a strong LAD,** for general Gardening work, local and distant, about 10 or 16 miles, stating wages, &c., to A. SMITH, Arbury Gardens, Nantwich.**TRADE.****MANAGER or FOREMAN;** life experience in the trade; cut stuff, plants, and Tomatoes, Cucumbers, &c.; good testimonials. ROBERT, c/o 41a, Wellington Road, Coventry.**WORKING MANAGER;** Landscape and Shop trade. Life experience, age 47, A., Box 16, 41, Wellington Street, W.C. 2.**OPEN for Engagement as HEAD SHOPMAN or MANAGER;** upwards of 30 years' experience in all branches of the trade; over military age.—Write, G., Box 9, 41, Wellington Street, Covent Garden.**GENTLEMAN,** accustomed to Orchard Planting, Orchard Work, and General Farm, seeks engagement with Fruit Grower; discharged. Write, Box 4621, Welling's, 1, 5, Strand, W.C. 2.**WANTED, a PROPAGATOR** for general Greenhouse work; meliabile.—Write, stating age and salary required, GEORGE BUNYARD & CO., LTD., Maidstone.**WANTED, GROWER of small collection** for Vines, Figs, Oranges, and Tomatoes; please state wages, age, and send references.—WILL TAYLER, Hampton, Middlesex.**GENTLEWOMAN** requires post UNDER GARDENER, married or private; country between London and Brighton; strong, capable, some practical experience.—MISS SANDBERG, 81, East, Highdown Avenue, Tuning, Sussex.**SITUATIONS WANTED.**

Twenty-six words for 1/6, and 6d. for each succeeding Eight words or less.

PRIVATE.**HEAD GARDENER;** 20 years' practical experience in large Gardens, can be confidently recommended as thoroughly capable of taking charge of a good establishment.—CLEMMENT, Somerhill Gardens, Tunbridge.**HEAD GARDENER (first-class)** is open to engage with lady or gentleman; age 51; married. W. LAURENT, Ravenscroft Cottage, Conway, North Wales.

GARDENER (HEAD): Life experience in all branches, age 32, single, indigible, 5 years for situation as Head, available from 1st DECEMBER. Stamford, Wiltshire, Sussex.

HEAD GARDENER (where 2 or 3 acres) - 35 years, 11 years in this branch and 10 years in all branches, age 50, single, indigible, 5 years for situation as Head, available from 1st DECEMBER. Aston, Bury, Wiltshire.

GARDENER (HEAD WORKING): 35 years' practical experience in all branches, inside and outside to large Glasshouses and growing large quantities of Peaches, Grapes, Tomatoes, and other Fruits and Vegetables, also of Potatoes, Grounds, Trees, and Shrubs. Please state wages. WILLIAMS, White Lodge, London Court, Manchester.

GARDENER (HEAD WORKING): age 51; 21 years Head Gardener, Welbury Park, Derbyshire, seeking employment through death of employer; thoroughly experienced in all branches, used to growing large quantities of Vegetables and Fruit, and also in all other branches of Horticulture, including Potatoes, Apples, and other fruit. KENT, Pabon Lane, Barking.

GARDENER (HEAD WORKING) OF GARDENER and BAILIFF: The experience in all branches, age 50, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

GARDENER (HEAD WORKING): 40 years' practical experience in all branches, age 50, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

GARDENER (HEAD WORKING): 7 years' practical experience in all branches, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

GARDENER (HEAD WORKING): 10 years' practical experience in all branches, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

GARDENER (HEAD WORKING): 10 years' practical experience in all branches, age 47, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

GARDENER (HEAD WORKING): 10 years' practical experience in all branches, age 47, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

GARDENER (HEAD WORKING): 10 years' practical experience in all branches, age 47, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

GARDENER (HEAD WORKING): 10 years' practical experience in all branches, age 47, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

GARDENER (HEAD WORKING): 10 years' practical experience in all branches, age 47, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

GARDENER (SINGLE HANDED) with 10 years' practical experience in all branches, age 47, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

GARDENER (where 2 or more acres) with 10 years' practical experience in all branches, age 47, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

FOREMAN (inside) in good establishment, age 43, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

FOREMAN (inside) requires situation, good experience Fruit, Plants, house and garden, in or near Manchester preferred, except for service of State wage and bill, part-time, with or without Baiting, P. O. Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

ADVERTISER open for Re-engagement in all branches, age 50, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

MAN: indigible for Army; intelligent; seeks suitable work in Garden; good planter; W. & W. SEPT., 1, Lower Court, near Wellington Park, London, W.C. 2.

LADY GARDENER requires post as HEAD GARDENER in all branches, age 50, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

TRADE.

WANTED, Representative for leading firm of Seedsmen, amongst Market Gardeners, South West of England, to supply plants, etc., and must be able to speak English, French, and Italian. W. & W. SEPT., Box 9, 41, Wellington Street, Covent Garden, W.C. 2.

MANAGER or FOREMAN: Life experience in all branches, age 50, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, for Farm Seed Warehouse, a capable FOREMAN, must be able to superintend sowing and dispatch of plants for a wide Trade, also Wholesale and Retail, and must be able to speak English, French, and Italian. W. & W. SEPT., Box 9, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED FOREMEN: to undertake all the work of a Landscaping job, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, capable WORKING FOREMAN: age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, capable WORKING FOREMAN: age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, an experienced, for Woods, Field and Garden, STOREKEEPER to be good in all branches, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, SHOEMAN for SHOP: age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, a man used to Ferns grown in pots, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, a man used to Ferns grown in pots, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, a man used to Ferns grown in pots, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, a man used to Ferns grown in pots, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, a man used to Ferns grown in pots, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, a man used to Ferns grown in pots, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, a man used to Ferns grown in pots, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, a man used to Ferns grown in pots, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

WANTED, a man used to Ferns grown in pots, age 45, single, indigible, 5 years for situation as Head, available from 1st DECEMBER, 4, St. John's Place, Chichester, Sussex.

The Gardeners' Chronicle SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table with 4 columns: Position, Rate per page, Rate per inch, Rate per line. Includes Ordinary Positions, Facing matter and Back Page, Half and quarter pages, column and half column spaces pro rata, 4 line space not exceeding 20 words, Per inch, single column, Per inch, across 2 columns, Per inch, across 3 columns.

Front page (two display allowed) 1/- per line space. (Headline counted as two lines)

For discounts apply to address below. SITUATIONS WANTED.

26 words 1s. 6d., and 6d. for every additional 8 words or fewer. These Advertisements must be prepaid, AND APPLY ONLY TO GARDINER, & Co., OUT OF EMPLOYMENT.

Table with 2 columns: Subscription, Rate per annum. Includes THE UNITED KINGDOM, ABROAD.

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2. Telegrams: 1543 "GARDINER, RAND, LONDON." Telephone: 1543 GERRARD.


THE BOOK OF THE MOMENT. Root & Stem Vegetables

By ALEXANDER DEAN, V.M.H.

At the present crisis the food problem bulks largely. The question of which vegetables contain the most food is a pressing one, and it is found that root and stem vegetables, such as Potatoes, Carrots, Turnips and Parsnips, contain much higher percentages of food value than green vegetables, valuable though these are as adjuncts.

"ROOT AND STEM VEGETABLES" is a book which treats only of those vegetables the root or stem of which is eaten, and is therefore especially valuable to all who are endeavouring to concentrate their attention on growing the most economical forms of food. It contains eight coloured plates reproduced from photographs.

To be obtained from— THE LIBRARIAN, Gardeners' Chronicle, Ltd., 41, WELLINGTON ST., W.C. 2. PRICE: 1 10 POST FREE.



Bull's Shred Fumigant

1lb. Sealed Packets, 5-.

BULL'S PLANT FOOD Co., 536, King's Rd., Chelsea, LONDON.

Has proved a Phenomenal Success

TURF LOAM.

Very Fibrous Yellow Turf Loam
For VINE BORDERS, CARRIAGES, ROSES, MELONS, CHRYSANTHEMUS, FRUITS UNDER GLASS, etc.

Quotations Carriage Paid or Delivered.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.

Phytobroma
Barr's New Plant Food
For Flowers, Vegetables and Fruit
of highest quality & guaranteed analysis

Phytobroma Greatly Increases all Vegetable Crops.
Guaranteed Analysis:— 3.50% Nitrogen; 16.60% Soluble Phosphates; 13.50% Insoluble Phosphates; 3% Pure Potash.
7lb., 2/9; 14lb., 5/6; 28lb., 8/-; 56lb., 15/-;
1 cwt., 28/-.

Prepaid Orders for 28lb. and upwards, carriage paid Circular, with full particulars, on application
BARR and SONS,
King Street, Covent Garden, LONDON.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being unsold.

Particulars on application,
BOULTON & PAUL, Ltd., ROSE LANE WORKS, NORWICH.

SANKEY'S FAMOUS GARDEN POTS
Ghc. BEST and Cheapest.
"Small quantity" of each size required and have "carriage paid" letters "Carriage" frequently amounts to half value of pots. Write for Price List, free of all descriptions. Full Bowls and Fern Pots from 2d. each.
RICHARD SANKEY & SON, LTD.
Bulwell Pottery, NOTTINGHAM.

G 6% ROLLED SHEET GLASS
HORTICULTURAL MORE LIGHT

A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/8 in. (or equal to stout 21 oz.) in thickness. Can be applied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

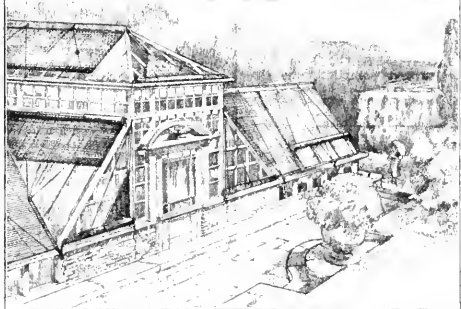
Manufacturers of
GENUINE WHITE LEAD PAINT.
"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cases.
AND
BEST LINSEED OIL PUTTY.
Complete Price List of
Paints, Colours, Varnishes, &c., on application.



GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.

BAMBOO BLINDS for GREENHOUSES.

SIZES
IN STOCK
FROM
10ft. x 8ft.
TO
15ft. x 15ft.



PRICE LIST
SENT
POST FREE
ON
APPLICATION

J. AVERY & CO., Horticultural Blind Makers
81, GREAT PORTLAND STREET, LONDON, W. 1.

MANY YEARS REPUTATION.
EUREKA WEED KILLER
LASTING RESULTS - NO NEW EXPERIMENT.
LABOUR SAVERS. "EUREKA" LAWN SAND, SOLIFUME, NICOTINE INSECTICIDES, FUMIGERS, SPRAYS AND OTHER CHEMICALS & SUPPLIES.
SEE LIST - PLEASE ASK YOUR AGENT FOR THE EUREKA ARTICLES - THEY ARE ALWAYS SATISFACTORY IF ANY DIFFICULTY IN OBTAINING, WE SEND DIRECT CARRIAGE PAID.
Only Address: **W. LINCOLN & HAYWARD LTD. LINCOLN.**

Spray Your Potatoes

PROTECTION against the Potato's worst enemy—Blight—is absolutely essential. Blight cannot be cured, but it can be prevented if the crop is sprayed in time with a reliable mixture such as

Keelings Spraying Mixture (Kiln Brand)

which is the mixture approved by science. Can be used with an ordinary garden sprayer—keeps in any climate—good for fruit trees—harmless to other plants
4 lbs. makes 25 galls of mixture (sufficient for 1/2 acre). Price, in 4 lb. tins, 4/6; 8 lbs., 8/6; 16 lbs., 13/6; 32 lbs., 24/-; all carriage free in U.K. Special prices for larger quantities. Sample 1 lb. 1/6, post free. Send P.O. with order direct to the manufacturers.

Keeling & Walker, Ltd. 20, Milton House, Surrey St., London, W. 2.

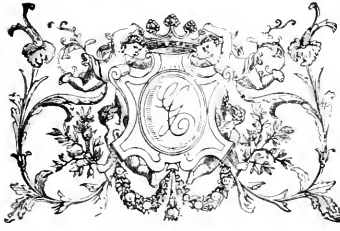
EVERY GARDENER KNOWS THAT

Clay's gets there
and makes the Garden gay all the year round

Sold everywhere in TINS at 6d. 1/6, and in BRANDS & SKEALD BAGS: 1 lb., 2s. 6d., 14 lbs., 4s. 6d., 28 lbs., 7s. 6d., 56 lbs., 12s. 6d., 112 lbs., 20s. Or direct from the Works, Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mills & Bone China Works, ST. PATRICK'S BONDEN E.

IT IS THE STANDARD FOOD FOR PLANTS.



THE

Gardeners' Chronicle

No. 1690.—SATURDAY, JUNE 16, 1917.

CONTENTS.

Alpina garden, the—	Hardy flower border.
Morizia hypogaea . . . 241	the—
Primula . . . 241	Myosotileum nobile . . . 245
Azolla caroliniana . . . 247	Orchid notes and gleanings.
Bretroot, R.H.S. trial of 244	Orchids at Gatton Park 239
Bracken, the use and eradication of . . . 243	Science and the nation . . . 239
Cruco's Island; Juan Fernandez . . . 240	Seed, old, and new . . . 244
Farm, crops and stock on the home . . . 245	Societies—
Fertility, cheap . . . 245	Manchester and North of England Orchid . . . 247
Flowers in season . . . 244	Royal Horticultural . . . 247
Food production, on increased—	Trees and shrubs—
Beet, the hardness of 242	Batsford Park, notes from . . . 245
Broad Bean, the . . . 242	Week's work, the . . . 243
Weevils . . . 242	Flower garden, the . . . 243
Frost, damage to Lime trees by . . . 247	Fruits under glass . . . 243
Fuchsia splendens . . . 245	Hardy fruit garden, the 243
Gardeners' Royal Benevolent Institution . . . 244	Kitchen garden, the . . . 242
	Orchid house, the . . . 242
	Plants under glass . . . 243
	Weevil, the Pea . . . 247

ILLUSTRATIONS.

Dendrocercis mirantha on Juan Fernandez . . . 240
Fuchsia splendens . . . 245
Juan Fernandez, vegetation of . . . 241

SCIENCE AND THE NATION.*

HOWEVER much the welter of war may be deplored, there is no doubt that a time of great stress has a value of its own in forcing us, whether willingly or not, to probe the weaknesses of beliefs, and examine the foundations of practices. Many things can be tolerated without discomfort in times of prosperous peace, and dangers are apt to grow whose very existence was hardly suspected by the mass of the people. They and their rulers have rested content with arrangements that had been good enough for their forefathers, and still seemed good enough for them, before the rude awakening in 1914 brought disillusionment with it. A few thoughtful men and women knew that all was not well, but their voices were drowned in the general shout that all was as good as it could ever be expected to be, and even the widening breach between capital and labour was accepted as something which, if regrettable, was at any rate ineluctable. Perhaps few things have undergone a greater change in the public mind than the position allotted to science from the point of view of its national importance. The whole matter of education has also assumed an aspect it never wore before. There have been Royal Commissions, Departmental In-

quiries, and all sorts of other Governmental machinery constructed to improve education in the past, but scheme after scheme was spoilt, or mutilated in the interest, not of the nation or the children, but of the politician. A very different state of things prevails to-day. We have had to examine the foundations on which our national prosperity rests, and we have not found the result of that examination to be satisfactory. We have had to realise indeed what great results for Germany accrued from the battle of Jena; for the well-constructed and definitely decided policy of education, and particularly scientific education, and the encouragement of research in the country, was started in the stress of those times. We have seen enough of the results of competent direction and foresight, and we have had a glimpse of the pit that lies in the path of a nation that wastes its opportunities of improving for its own purposes the results of advancing knowledge.

The excellent series of essays collected in the book before us has been designed to illuminate one aspect of this national question. Everyone is now agreed that Science is one of the most important branches of knowledge, and especially when viewed from the material standpoint of profit and loss. An important Committee appointed by the late Government is giving earnest consideration to the matter, and without doubt drastic alterations and reforms are in the air. Meantime, a good beginning has been made in the establishment of a national Department to aid scientific and industrial research out of the public funds.

Although many people are now vaguely appealing to science, as to a modern Esculapius whose business it is to find a cure for industrial deficiencies and for other economic evils, there is a good deal of confusion as to what is really meant by science itself, and how its operations are advantageously to be most extended. It is recognised that somehow it is concerned with industry, and the catchword "Science and Industry" is in everybody's mouth.

But in the impending processes of reconstruction the matter is too important to be allowed to suffer shipwreck on side issues, after the manner that has more than once befallen the educational barque in bygone days. We must have a clear idea of what science is, what its proper relation to industry, and through industry to material prosperity, if we are to avoid a fatal repetition of past mistakes. For we are at the parting of the ways. If we do not now learn and profit by the lesson which it has needed a great war to teach us, the writing on the wall will be written for us, as it has already been written for many another great nation before us.

It is just such a collection of utterances as is comprised in this work, issuing from some of the foremost of the scientific men trained at Cambridge, that was wanted to enable the ordinary man, in whom the political power which will make or mar our future mainly resides,

to arrive at a just apprehension of the matter. The key-note of the book, specially emphasised in Professor Bragg's admirable contribution, is the importance of pure science. That is, the building up of a knowledge of nature and the discovery of those immutable, because they are causally related, sequences of events which we term the laws of nature. Often the unravelling of cause and effect is a long and costly process, costly in time, in brain power, and—least important—in money. It is not till these natural laws are discovered that we are able, so to speak, so to control conditions as to ensure the results we require for our own advancement or prosperity. It is often not clearly realised that we never really create anything, either by scientific or other means. All we can do is to arrange conditions, and when these are supplied nature inevitably does the rest. This is a fact, the perception of which is essential to progress. It shows, too, that much of what passes for science is really a craft, a mere utilising for our own advantage, of the formula or recipe which it is the business of science to discover.

But even the fashion in which the recipe itself is to be employed, until it becomes merely a technical art, comes within the purview of science—applied science, as it is often then called. It is, however, the chief glory of science to reveal the mechanism by which things happen, to discover hidden and often unsuspected forces, to examine the relations of energy and matter in their intricate and manifold interactions, and to penetrate the disguises which conceal the reality and simplicity of law under the cloak of the most varied external conditions.

Pure science is the stream of knowledge which fertilises practice. Provided all is right with the fountain, the rest, industrial progress and all that this means, may become possible, but by no means otherwise. Pure science cannot be expressed in terms of pounds sterling, and the ordinary Englishman likes to act on the principle of putting down sixpence on Monday and picking up a shilling on Tuesday. It is this short-sighted devotion to quick profits that is our special constitutional weakness. Perhaps a perusal of *Science and the Nation* may do something to correct this besetting defect in our national character. J. B. F.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT GATTON PARK.

SIR JEREMIAH COLMAN'S collection at Gatton Park, Bengeat, is especially rich in choice Odontiodae and Odontoglossums, and the raising of new varieties of these Orchids has been carried on there for a number of years with much success. There is at the present time a fine display of scarlet Odontiodas and white and variously coloured Odontoglossums. Among the former the more striking varieties noted during a recent visit were Odontioda Chanteclair West-tonbot variety; Oda Lady Colman, a brilliant scarlet flower of exceptionally fine form; and Oda Colmanae, the gem of the collection, which was awarded a First-class Certificate by the Orchid Committee at the Royal Horticultural

* *Science and the Nation*. Essays by Cambridge graduates with an Introduction by the Right Hon. Lord Mountbatten, F.R.S. Edited by A. C. Seward, F.R.S. (Cambridge: At the University Press.) 1917. Price 5s. net.

Society's meeting on May 18, 1915. The flowers of *Oda Colmaniae* are of the largest size, with very broad petals; the ground colour is yellow, with heavy, reddish-claret blotches. In its fine form it partakes of the good qualities of *Odontoglossum Queen of Gatten*, the best yellow-ground *Odontoglossum* yet raised, its other parent being *Oda Bradshawiae*. The principal *Odontoglossum* house presents a fine appearance; it contains choice forms of *O. crispum*, including *O. c. Franz Masereel*, and the beautiful *O. c. Solim*, bearing a strong spike of its clear white flowers with dark claret-coloured labellum. In connection with this remarkable variety it is interesting to note that the unique *O. ardentissimum Memoria J. Gurney Fowler (crispum Solim - Pescatorei)*, in which its peculiarities are reproduced in an extraordinary manner, is now included in the

Royal Horticultural Society on May 8, 1917, when the latter received an Award of Merit. Another plant finely in bloom is the original *D. Triumph (Dalloiseanum - Thyriforme)*, raised by Messrs. Armstrong and Brown. A First class Certificate was awarded to the plant when shown by the late Mr. Fowler on January 19, 1915. Its history was given in *Gard. Chron.*, February 13, 1915, p. 76. The plant now bears a fine spike of large white flowers with claret-coloured blotch on the lip.

In one of the cool houses *Dendrobium Victoria Regina* makes a good show with its gentian-blue flowers with white centres, and various other rare species are in bloom.

The numerous plants of *Cattleya* and *Laelia* *Cattleya* in the intermediate houses have a wealth of flower. White forms, and others with shades of blue, are special favourites. They



FIG. 91.—TREE OF *DENDROSESERIS MICRANTHA*, NAT. ORD. COMPOSITAE, GROWING ON JUAN FERNANDEZ.

Gatten Park collection, the plant being in good condition. Many of the Gatten hybrids are in flower; one very distinct, pretty blotched form is being employed for progressive raising, a use which is also being made of the very richly blotched *O. Lambardeanum* Gatten Prince, which is finely in bloom. In an adjoining house is a beautiful collection of *Miltonias*, including *M. vexillaria Memoria G. D. Owen*, with finely developed flowers, and some of the best hybrids.

Sir Jeremiah Colman has met with great success in the raising of hybrid *Dendrobiums*, his best result being *D. Lady Colman*, which received the R.H.S. First-class Certificate on February 10, 1914. The flowers of this section of *Dendrobium* are now over, after making a good show, being succeeded by the fine strain of *D. illustre (Dalloiseanum - chrysoctoxum)*, of which the Gatten varieties, *Bartelsiana* and *Florence Bartels*, were shown at the meeting of

include a pure white form of *Cattleya* Warner and some excellent white *C. Mossiae*. *C. Mendelii delicta* is a bluish-white improvement to *Queenian* House variety; *C. Mendelii Lady Colman*, a charming white flower with sky blue front to the lip, and many of the best forms of the large flowered *Cattleyas* are in bloom. In one house a batch of the orange-coloured, purple-lipped *Laelia-Cattleya Hippolyta Phoebe*, with the yellow *L.C. Cores* Gatten Park variety, make an attractive display; in another, *L.C. Aphrodite*, *L.C. Candamiana*, *L.C. Epicasta*, and *L.C. Fascinator* are flowering in profusion, probably the best being *L.C. Fascinator* var. *King Edward VII.*, with a spike of four noble white flowers, with yellow disc to the broadly expanded lip, the front lobe of which is rose tinted at the sides. In another house is a fine lot of *Laelia panamara*, with graceful *Thunias* raised at Gatten Park.

CRUSOE'S ISLAND: JUAN FERNANDEZ.

(Continued from p. 231.)

FROM a botanical point of view, Juan Fernandez is one of the most interesting islands in the world. Far removed from the great South American continent and from other islands, it has a unique and special flora of its own. An endemic fauna is frequently associated with such a flora, i.e., many of the genera and species of plants and animals are not found elsewhere. In this respect Juan Fernandez is surpassed only by the Sandwich Islands, where 78 per cent of the vascular plants are confined to the group, as against 65 per cent in Juan Fernandez. As Skottsberg remarks, "it is as if one had been carried back to past geological periods, as if one walked about in a living museum crowded with rare specimens. So many wonderful plants are brought together here on a small area that one must touch them to realise that one does not dream."

The trees are mostly sparingly branched with long, erect, slender, nearly naked branches, crowned by a rosette of large, thin leaves. Many of the trees have tufted leaves, and belong to the Compositae, a family in which trees are comparatively rare. Similar types occur in the Canary Islands, Madeira, and in the African mountains near the Equator. In the last mentioned there are whole forests of Tree Groundsels (*Sesuvium*) which give the landscape a most weird appearance; in the Canaries there are very curious Tree Sow thistles (*Sonchus*); all these remarkable types are probably the relics of an ancient flora, perhaps of tertiary times, or even older, which existed also on the adjacent continents but which has been swept from them by vast geological changes, such as the ice age. In the narrow gorges of Juan Fernandez there is a dense and almost impenetrable primeval rain forest, with here and there one of the remarkable Cabbage Palms which have been so useful as a vegetable to successive "Robinson Crusoes."

In 1895 Prof. Johow, of Santiago, who has published a book on the flora of the island, from which some of our photographs have been taken, proposed to the Chilean authorities that this tree should be afforded protection, and that it should be considered a crime to destroy it. There exists a law on the subject. In the woods creeping or twining plants are almost absent, with the exception of a few Ferns, some of which adorn the trunks of trees. The Sandal wood, which was so much used by the early travellers, is now totally extinct. When H.M.S. "Adventure" (Capt. King), accompanied by the botanist Signor Bertero, visited the island in 1830, no growing Sandal wood could be found, only a large quantity of dry old trees in the valleys. At the time of Skottsberg's visit in 1906, only one tree remained, and it was nearly dead. Although known for such a long period, it was not until 1868 that the species (*Santalum fernandezianum*) was described. The Fern flora is remarkably conspicuous, especially the arboreal species. The number of species of Fern on the island is about one-third of the whole flora. They are a conspicuous feature in the vegetation, forming the chief constituent of the undergrowth. Amongst them are two Tree Ferns which give a pleasing yellowish tint to the general foliage. The common Bracken (*Pteris aquilina*), an almost cosmopolitan species, is entirely absent. Four of the species of Fern are found only on Juan Fernandez. One of these (*Thyrsopteris elegans*) has a striking characteristic; it is the only known instance of a genus of Ferns being confined to a small isolated island. An excellent specimen is grown in the Temperate House at the Royal Botanic Gardens, Kew. The appearance of the Fern when in "flower" is very remarkable, the cup-shaped masses of spores being bundled together and hanging down just like clusters of Millet seed. At the time of Mossley's visit in 1875 there were no trees for the first few hundred feet from the shore, as they had all been felled by the crews of vessels

visiting the island. But Skottsberg says that the Maqui (Aristotelia), a disagreeable tree imported from the American Continent, is now spreading rapidly, and is threatening the original vegetation on the lower slopes of the volcanic hills. The valleys are partly covered with rain-forest composed chiefly of three trees, a Myrtle (*Myrtus fernandeziana*) about 60 feet high, being predominant. Associated with these trees are the Cabbage Palm (*Junonia australis*) and a Tree Fern with massive stems (*Dicksonia bertouana*). There are several plants which, like the Mistletoe, grow on others (epiphytes), species of *Hymenophyllum* (a Fern), and a member of the family Compositae, which are very rarely of this habit; this is *Rhettinodendron Berteri*, a tree destroyer; it commences its life on the branches of some other tree, which it eventually kills and supplants.

Naturalists have not been slow in commemorating in the names of plants and insects those of Alexander Selkirk and his mythical double, Robinson Crusoe. There is an insect called *Variopalpus Crusoi*, whilst Dr. Hensley, the late head of the Kew Herbarium, described a new genus of plants, *Selkirkia*, a member of the borage family, peculiar to the island. There is also *Robinsonia*, a Daisy tree, described by the celebrated Swiss botanist, De Candolle. A Thistle has spread rapidly as a weed, and Moseley humorously describes it growing "as it eager to remind travellers to what race the world owes the immortal Selkirk." Scotland, of course! Amongst the plants of the family Compositae there is a remarkable genus peculiar to the island, *Dendrosicris* (see fig. 91), a kind of Tree Chicory, and closely allied to the genus *Cichorium*. In the appearance of its flowers it is something like a Dandelion, and is very like the Tree Sow Thistles of the Canary Islands. Small, but Excellent Strawberries, of a nearly white Spanish variety, have become naturalised on the lower slopes of the hills. A plant with giant, circular, Rhubarb-like leaves, *Gunnera chilensis* (see fig. 92), gives a pleasant shade during hot weather. The stalks of the leaves are about 7 feet high.

In concluding this sketch of the principal events in the history of Juan Fernandez, it seems fitting that after so close a connection with English literature and with British naval expeditions, the island should have figured prominently in the naval operations of the present war. It will be remembered that during the fight off the Falkland Islands in December, 1914, the German cruiser "Dresden" managed, owing to her superior speed, to escape from the annihilation meted out to her consorts by the gallant Sturdee. It was not until March 13, 1915, that she was cornered at the island of Juan Fernandez by the "Kent" and the "Glasgow," where, after an action lasting only five minutes, she was sent to her last resting place beneath the waters of Cumberland Bay. *J. Hutchinson, Kent*

THE ALPINE GARDEN.

PRIMULA SPICATA

Quite recently this minute but lovely species really took pride of place in the garden. And as its ways are queer, I had better put down my experience of it. Forrest sent me seed some years ago. It germinated freely. But the losses among the seedlings during winter were frightful, though boxes, pots, and pans were under glass. The few survivors flowered freely. But the following spring they came again, glorified beyond belief, and I knew that I had got one of those gems which wipe out all the disappointments of a collecting expedition. I gazed at it with the eye of folly, and it rewarded me by dying without setting a seed. Two years ago Forrest again sent home seed, and the friend to whom it came was kind enough to let me have some. History repeated itself. The seed germinated thickly. The winter almost exterminated the seedling. At this

point, however, I introduced a variation by planting out the survivors in a damp-shaded bed. Here they flowered miserably. During winter I had Gorse over them, which, by the way, is a good specific for throwing *Soldanellas* into bloom. In the spring the *Primulas* came again, changed in most cases from single to many-crowned plants, and showing by their splendid condition how thoroughly they had enjoyed the cold. Every crown is carrying bloom, and the beauty is so rare and delicate that I have the greatest difficulty in getting past it. *Garrison*, *P. mutans* is *P. spicata*'s only competitor. But, warned by previous experience, I am this time taking no chances. Every flower is being hand-fertilised. And the main object of this note is to urge all who have bought plants of *P. spicata* and *P. mutans* from Mr. Wallace, of Colchester, to do likewise. It would be sad if such beautiful plants be lost to cultivation for lack of a little care. *A. K. Ridley, Neston, Cheshire*

the two, and the natural slope of the ground prevents its stagnation. A trench was run back in the bank at one place, the excavation being subsequently filled up with a mixture of Mendip granite and limestone chips, with the minimum of added soil, forming, in fact, what often goes under the name of a monane. *Morisia* confines its natural spreading to the area thus marked out. I have hardly ever found natural seedlings on the ground on either side, though there appears to be no plain reason for its specialised predilection. But in attempting to dig up some very small seedlings for a friend the secret leaked out. I got down about 18 inches, but seemed no nearer the end of the long white tap root, which I suppose perhaps goes down to the neighbourhood of the water that percolates through the stones at the clay level, some 5 feet below the surface. I have never succeeded in getting an entire plant out—that would apparently involve the destruction of the bank and the many good plants that thrive in it, but it would be interesting to know



FIG. 92. VEGETATION OF JUAN FERNANDEZ.

A view of the thicket of *Morisia* (as seen in the foreground), the large rhubarb-like leaves collected by the author, and the table-mount of a specimen. (From the "Chalchango" narrative.)

MORISIA HYPOGAEA

Dr. Sir Robert Maxwell's interesting Notes from a Galapagos Garden, which appeared in the issue of the *Gardeners' Chronicle* on June 2, he refers to *Morisia hypogaea*, an Alpine of the greatest value not only on account of the brilliant yellow of its freely produced flowers, but also on account of its very long period of blooming. As many people seem to find this a somewhat difficult plant to keep, I may perhaps be forgiven for giving my own experience of growing it, the more so since I formerly had many failures with it. But for the last eight years it has been flourishing on a somewhat elevated bank of the rock garden, where it regularly flowers from December till June, and seeds freely, the young plants being quite abundant. But it only thrives in one spot in this fashion, and though I grow it in other places, it dies out there after a year or two.

The rock garden was originally formed by adding the banks of an old gravel pit resting on clay. Water moves freely at the junction of

whether anyone has followed this rather wonderful root system completely out. I should perhaps add that the plant never seems to take harm from either excessive heat or even cold, nor does it, in this position, suffer from drought or damp, both of which I often find to be fatal to specimens growing only a few yards distant.

Of course, it is well known that many Alpines naturally possess root systems which are very large in proportion to the size of the plant. I have found *Brachichium nanum*, for example, growing in fair abundance on the south precipice of the Meije, and one small specimen peered out of a crack which bounded a slab more than a square yard in area that turned out to be loose. On prising out the slab with an ice axe the whole of the exposed surface was seen to be closely felted over with the root system of a plant that was itself less than 2 inches in the diameter of its tuft of leaves. This is one of the properties of many Alpines which sometimes makes them difficult to manage in the rock garden. *J. R. F., Gerard's Cross.*

ON INCREASED FOOD PRODUCTION.

WEEVILS.

DURING the first spell of dry weather in May my attention was called to Peas that were being eaten by something on allotment grounds in a western suburb of London. Sparrows were blamed, but I could see that the damage was not being done by those mischievous birds, but by an insect pest. However, my shadow was sufficient to make the weevils begin dropping on their backs, feigning death, and I soon found that the culprit was *Sitona crinita*, or the spotted Pea weevil. Other Peas on the grounds were eaten in the same way, and I ascertained that the insects were there in previous years. A few days afterwards I received a boxful of Broad Beans and Peas eaten by the same pests from another part of the country. I note that the modern spelling of *Sitona lineata* (the most widely distributed and common species) is adopted by *G. H. H. W.*, p. 225. All the older authorities quote the names *Sitona lineata*, Linnaeus, and *S. crinita*, Olivier, including John Curtis in his *Farm Insects*. However, the pests are the same. There are some thirteen species that feed on leguminous plants, and four, at least, are harmful to cultivated crops. How to destroy them is the burning question, as expressed by Mr. Beckett, on p. 222, and others. I would suggest arsenate of lead paste for spraying Peas and Beans to poison the weevils. A well-made paraffin emulsion would be safer for vegetation generally than paraffin and water, mentioned on p. 225. Laying tarred boards along either side of the rows overnight or early in the morning, and making the weevils drop on them during the day, would be effective if the Peas were tall enough to shake them over the boards. They were not tall enough for this on the allotment grounds above-mentioned, and this is the stage when the weevils are most harmful. Lines of sand wetted with paraffin, strewn on either side of the rows, would have a deterrent effect. Soot and wood ashes dusted over the Peas on the allotments checked the weevils, and subsequent rains were highly beneficial to the Peas. *J. F.*

I had a fine row of *The Pilot Pea*, about 9 inches high, when weevils attacked the plants, stripping off the foliage. I obtained some soot that had been taken out of the fires three or four days previously (we had been burning logs of wood instead of coal for about six or eight weeks, and that might have made a little difference in the nature of the soot), and dressed the Peas and the ground round about with it. From that day to this I have never seen a single trace of a weevil. A row of second early Peas is entirely free from weevils. On the other side of the first row of Peas there is a row of Broad Beans in full flower, sown the same time as the Peas, and these have never been touched. *H. J. H. Davison.*

THE HARDINESS OF BEET.

MOST of us have considered it risky to leave Beet in the ground later than the end of November, though from the Wisley experience it would seem that much unnecessary labour has been expended (the lifting has to be done in any case, either collectively or as required, in storing the roots in a frost-proof place. Then, again, it Beet is a hardy perennial, why do we not sow the seed during March and obtain the advantages of an earlier crop, and of getting the seedlings safely established before the advent of the general early summer droughts, instead of waiting until the end of April or May? In my opinion, despite the apparently conclusive Wisley experience, and the fact that in my own garden a few roots have safely passed through the severe winter and are now in flower, the answer is that generally Beet is tender. The fact that it has safely withstood prolonged, hard frost merely proves that thirty odd degrees of frost

when the ground and roots are fairly dry, have no ill effects. But those conditions in this country are generally agreed to be decidedly exceptional. In an average winter we are more likely to experience frosts of much less intensity with mild intervals, and when the ground is wet. Under these usual conditions the roots in the ground would be surcharged with moisture and their skins soft. *A. C. Bartlett.*

THE BROAD BEAN.

IT is pleasant for one who has advocated the increased cultivation of the Broad Bean to observe Mr. R. P. Brotherton urge its extended cultivation on p. 222. Many seem to object to its flavour and discourage its growth in their gardens. There is a feeling abroad that it is a "vulgar" dish, and not to be mentioned in polite society! I have had an opportunity of seeing many new allotments this year, and have been disappointed to observe how few Broad Beans are being grown in Scottish allotments. It shows how little the Bean is esteemed in working-class houses, and the few grown in many private gardens show that this is not peculiar to the working housewife. In some parts of Scotland, too, the Broad Bean finds little sale in the shop of the greengrover. *A Scottish Gardener.*

THE LIFTING OF IMMATURE POTATOS.

IN certain quarters fears have been expressed that growers of Potatos this year may lift part of their crops before they are mature. It has been suggested that licences for the lifting of Potatos should be granted after inspection of crops by the local authorities or the Board of Agriculture. The Food Production Department believes that the patriotic commonsense of the general body of growers may be left safely to deal with this question. The suggested licensing would entail much labour, and possibly some irritating interference alike with amateurs and commercial growers. If the committees of gardening and allotment and small-holding societies will make it quite clear to their members that self-interest, as well as the national welfare, demands that Potatos be left in the ground long enough to produce a full crop, no regulation should be required.

POTATOS AND BEET.

THE planting of the Potato Evergood at 5 feet apart and 1 foot between the sets (pp. 181 and 222) opened up an interesting question, since the results obtained were so satisfactory. As the Potatos continued to stand upright, I immediately concluded that the soil was not overburdened with humus, and that the situation was sufficiently open for a free play of air on the haulms. I have seen old and confined gardens overdone with animal manures, and so silt in that old-fashioned varieties of Potatos grow 5 feet to 6 feet long, fell down flat, and produced only few and small tubers. I have always understood that Beet was hardy, and some books, at least, say so. However, many late sowings of Beet have been left in the ground all winter since 1914 induced the practice. Spinach Beet is a common example of the crop being left in the open. Some authorities consider that *Beta maritima* of our sea coasts was the probable origin of Beet and Mangold Wurzel. This is native from the western shores of Europe and Western Asia to India, and must be subjected to severe weather in some of its habitats. Garden practice often makes us forget the hardiness of plants. Like Mr. Divers (p. 222), I believe in storing the juicy-rooted form of garden Beet. I have stored it in sand in a shed where it must often have been frozen, yet the roots remained usable till midsummer or after. I have had to lift lumps of frozen earth 2 feet square in order to get a supply of Jerusalem Artichokes. That would not have answered for Beet, hence the reason for storing it. *J.*



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

WINTER GREENS. There is still time to sow in an open position Christmas Drumhead Cabbage for use in January and February. Put the plants out as soon as they are large enough to handle, and they will then be likely to retain their bottom leaves. Plant firmly, and give a good supply of water to settle the soil about the roots. Hardy Green Colewort may also be sown for winter and spring supplies. Savoys and other winter greens should be planted out as soon as the ground is available, allowing plenty of space between the rows. Give a liberal supply of water, and keep a sharp look-out for slugs and other pests. Broccoli should be planted in good time, and at least 2 feet allowed between the rows. The soil for these plants should not be so rich as for early varieties.

SPINACH.—If a cool border is available, a sowing of Spinach may be made every eight days. If the weather continues dry, water will be necessary, freely applied from the commencement. New Zealand Spinach is a good substitute for the ordinary variety, and where there is only a limited supply of water and labour it is the best substitute. It will grow quickly even during very hot weather, and continue to produce a large quantity of green leaves until destroyed by frost in the late autumn. It may be sown now in rows 3 feet apart in rich soil.

LEFKS.—These should be planted in large quantities, if space is available. They should be planted on good soil without any special preparation. Early plantations of Lefks will benefit by a liberal supply of manure water at the roots.

CELERY.—Continue to plant out Celery as the plants become large enough. Do not let them remain in the nursery beds too long, or they will become drawn, and suffer when transferred to the trenches. Give special attention to the watering of Celery during dry weather. Dust lightly with soot in the early morning, to keep Celery fly from the plants, and keep a sharp look-out for slugs.

BEET.—A sowing of Turnip-rooted Beet may be made on rich soil, to furnish roots for use during the winter and spring. Thin the seed lings to 9 inches apart as soon as large enough, and keep the soil lightly stirred with the Dutch hoe throughout the flowering season.

LATE PEAS.—The last sowing of Peas should be made not later than the middle of the month. Sow the seeds thinly in deep drills or trenches, and apply the sticks as soon as the plants are 2 inches high. No earthing up will be necessary beyond drawing a little crumbling soil into the drill to steady the plants until they reach the sticks. Thus the stems of the plants will be rather below the surrounding level, which is much better than drawing the soil up in ridges, which would cast the rain-water away from the roots. As soon as the sticks have been placed in position, a mulching of farmyard manure between the rows will help to retain the moisture in the soil.

POTATOS.—The earthing-up of all main-crop Potatos should be accomplished as soon as possible after the ground has been stirred and all weeds destroyed.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

CATTLEYA AND LAELIAS.—*Cattleya Mendellii*, *C. Mossiae*, *Laelia purpurata* and their many hybrids, are now at the height of their flowering season. Avoid letting the plants "overflower"; a great many are permanently injured by allowing the flowers to remain on them for too long. In the case of plants that are not well rooted, either remove the flower-spikes directly they appear, or cut the blooms as soon as they open. *Cattleya Warscewiczii* (gigas), *C. Gaskelliana*,

C. Warneri, C. Dowiana and its variety aurea, and others which produce their flowers during the late summer, are now making new growths, and should be placed in the warmest and lightest position in the Cattleya house. Give them a more liberal supply of water at the roots, thoroughly soaking the compost through, but allowing it to become moderately dry between each application. A few of the earliest plants will be producing their flower sheaths, but any specimens that do not bloom may be reotted, if necessary, as soon as they commence to root from the current pseudo-bulbs. Use a mixture of Osmunda and Al fibre, with the addition of sufficient crushed crocks to keep the materials porous. Cattleya Mendelii, C. Mossiae, and their hybrids, should be looked over as they pass out of flower, to ascertain if additional pot room or new material is needed. If so, the same mixture may be used. For a few weeks after re-potting careful watering is necessary, and extra shading should be employed. The plants should be sprayed overhead two or three times every day during bright weather.

FRUITS UNDER GLASS.

By JAS. HUDSON, Head Gardener at Gunnersbury House, Acton, W.

PEACHES, NECTARINES, AND PLUMS IN POTS.—These fruits are safely past the stoning period and are commencing to swell again. A little weak stimulant may be given to the roots to keep the shoots growing steadily whilst the fruit is swelling. We expect to gather our first fruits from trees in houses that have been kept quite cool towards the end of the present month. Early Plums have been thinned again, to be on the safe side. I noticed a little red spider on a few of the trees, but the pest was soon checked by syringing with clear water, and as there is no indication of colouring yet the fruits will not be stained. In no case are we hurrying these pot trees, and both the side and top ventilators are kept open at night. At the same time warmth from the pipes is reduced to a minimum.

LATER POT TREES. Plums have set freely on late trees in pots in a cold house, and so far, there is but little evidence of the Plum fly, which will often attack the trees soon after the fruits have set. If this fly threatens to spread we shall syringe freely with Liquid Glis-hurstone. The trees are much crowded, but I hope to be able to afford them more room later. Although Plums will, at a pinch, bear a little more crowding than either late Peaches or Nectarines at this early stage, I prefer to fully expose these trees to light and air from the time of fruit setting onwards. Sea Eagle and the Nectarine Peach, and the Victoria Nectarine, need a long season and plenty of sunshine to ripen their fruits thoroughly.

POT VINES.—Give vines in pots every attention from now onwards. Light, heat and moisture are essential, but I do not advise bottom heat. Pot vines do well standing over hot-water pipes, two bricks intervening between the pots and the pipes. An effort should be made to give the vines a fair chance of making good growth. When any reach to a length of 5 or 6 feet they should be stopped, and then be made to break the main bud at the top. Do not let the lateral growth come away, as this is not good enough.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Hon. ARTHUR DAVRY, Abbots Wood, Godalming, Surrey.

OUTDOOR VINES. Vines grown in the open for their fruits should be disbudded carefully, and all shoots which are not required for fruiting or extension removed, rubbing them out with the fingers; pinch any shoots that need stopping. The bunches should be thinned to one on each lateral, which may be stopped at about the second leaf. In training the shoots exercise great care, for they are very tender, and break off at the base in consequence of very little extra pressure. The vines must be kept free from mildew, by the use of a fungicide if necessary. Potassium sulphide is suitable, but it must be remembered that it will cause paint to turn black. If

preferred, flowers of sulphur may be dusted on the leaves, but it is necessary to repeat the application at intervals. Where the roots are growing in dry situations water may be necessary, and should be given copiously when applied at all. Vines are suitable plants for furnishing trellises and pergolas, and if the shoots are trained early in the season not much further attention will be needed.

BUSH AND PYRAMID APPLE TREES.—If black aphid is present on the tips of the shoots, use the syringe or garden engine for spraying with a strong solution of Extract of Quassia. If caterpillars are still present, give a good syringing with Bichu, according to the directions sold with it. This is best applied at night, and the trees should be washed with clear water in the morning. Early Apples which are swelling their fruits should be thinned when set in clusters. Mr. Gladstone, Irish Peach, Lady Sudeley, and Beauty of Both all ripen early. Early Harvest is also a good variety; the fruits attain to a fair size, and the tree is a free grower. Culinary varieties are also the better for being thinned early, especially such large sorts as Lord Suffield, Lord Grosvenor, Frogmore Prolific, and Newton Wonder. Be on the alert for signs of American blight, and if discovered brush the bark hard with a mixture of nicotine soap and petroleum.

TYING AND NAILING.—All kinds of trees are now growing rapidly, and if the stopping and disbudding has been already carried out the remaining shoots should be fastened to the wall or wire in the desired directions. The branches of trees which have filled their allotted space should be stopped, but in the case of newly planted or smaller trees they should be retained their whole length. The points of Cordou Peas and Cherries may be nailed in; the most robust shoots coming from the lower branches should be kept in order to furnish bare places.

STRAWBERRIES. Give the Strawberry plants a good soaking with water or liquid manure, especially in light or shallow soil, before they are netted.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcote, Eastwell Park, Kent.

SOLANUM CAPRIBASTRUM. This popular berried plant is usually much in demand for decoration during the winter months. Plants grown from seed sown, or cuttings struck, during the early spring, will now be ready for the final shift into pots measuring 4½ to 5 inches. If large specimens are required, old plants should be grown on and transferred into larger pots of the size needed. After potting they should be kept under glass till re-established, and then plunged the whole depth of the pot into soil or ashes. Excessive dryness must be avoided, or red spider will attack the plants. Syringe regularly to keep down insect pests, and use clear diluted soot water occasionally for the same purpose.

PREVELLIA ROBUSTA. When in small sized pots, such as 60's or 4's, this species makes excellent little table plants. It thrives under cool treatment, and it can be grown by anyone who has a little glass, and cannot attempt stove plants like Crotons or Dracaenas. The seed may be sown almost any time, but if sown in the early spring the plants are ready by now for potting into the sizes mentioned above, or larger if preferred. If possible, after being potted, the plants should be kept a little closer in the house or frame to ensure a quick start. If checked much they are apt to lose their bottom leaves. Avoid over-watering the plants when they are small, but syringe them freely, and provide shade from very hot sun, in order to keep the foliage fresh and green.

CYCLAMEN LATIFOLIUM. Plants of Cyclamen latifolium should be transferred to their flowering pots without delay, especially if they are required to flower in the autumn and early winter. Use a compost of two parts fibrous loam and one part leaf soil, adding sand, crushed charcoal, and a little dried cow manure. Place the plants in a frame, if possible, not exposed to the full glare

of the sun; in the latter case they would have to be carefully shaded. When the plants are well established and growing freely, the lights should be drawn entirely off at night, so as to give the plants the benefit of the cool night dews. Keep over plants that flowered this season for late blooming next year. Pot them up, and give them similar treatment to that recommended above for seedlings. Sprinkle a little soot over the ashes, and keep the frame damped. Fumigate regularly, to keep down aphid and thrips.

CINERARIAS AND PRIMULAS.—Early batches of Cinerarias and Primulas will now be ready for pricking off into small pots or boxes. The latter are economical when handling large numbers, as the plants can afterwards be transferred directly to their flowering pots. Use open soil, and return the plants when potted to a cool frame, keeping them well up to the glass, but shading them during bright weather. Disperse with the shading in the late afternoon, and draw the lights off entirely on calm nights, to allow the plants the full benefit of the night dews. Sow another batch of each of these, using light, open soil. After filling the pans or boxes, the soil should be watered before sowing the seeds. Press the seed gently into the soil, and cover very lightly; sowing too deeply is a common error. Place the seed pans in a cool frame, and see that they are kept uniformly damp.

THE FLOWER GARDEN.

By W. J. GRISSE, Gardener to Mrs. DUMFRIES, Keels Hall, Staffordshire.

SUB-TROPICAL PLANTS. Plants raised from seed this year should now be in good condition, and may be used in the summer bedding arrangements either as dot plants or for furnishing beds. An open site, but sheltered from north-east winds, should be selected. Such plants as Camia, Ricinus, Wigandia caracasana, Zea japonica variegata, Salvia argentea, Amaranthus caudatus, the Giant Hemp (Cannabis), Nicotiana wigandoides, Perilla nankinensis, Acacia lebanthica, Eucalyptus Globulus, and Solanum, are easily raised from seed, and are excellent subjects for many forms of garden adornment. Other plants that may be used in conjunction with the former are the Japanese Maples, Aralias, Yuccas, Baccopa, Dracaenas, Coleus Verschaffeltii, and Palms. It is advisable to plunge the plants, as they are then better under the control of the grower. Stimulants must be given occasionally, or the plants will soon deteriorate.

THE ROCK GARDEN.—During dry weather do not let the plants suffer for want of water. As they pass out of flower, remove all dead flowers, except from the varieties required to seed, of which the pods should remain until the seed is nearly ripe. Attach a label to each plant for future reference. The strongly growing plants will need cutting back. Place sifted leaf-mould round the base of the plants to conserve the moisture, and a small quantity of some approved fertiliser in the can before watering.

PERENNIALS. Perennials can be sown in drills on an open border, but skeleton frames are better, as they can be covered with any spare lights. Make the seed bed quite flat, and allow a space of 6 to 9 inches between the drills. A thin shading and occasional sprayings with clear water will hasten germination. The following, sown now, will provide good plants by October: Primulas in variety, Pyrethrum, Statice latifolia, Chelone barbata, Heucheras, Delphinium, Aquilegia, Anemone italica, Gallega, Lychnis, and Eryngium. Sow the seed gently and prick out the seedlings directly they are large enough to handle.

SUMMER-FLOWERING CHRYSANTHEMUMS.—Continue to stop the shoots until the end of the present month, after which the plants should be allowed to grow on to the flowering stage. Reduce the number of shoots according to the size of the plant required. Stake each root separately and allow ample space to admit light and air. The flat hoe must be frequently used between the plants, even if there are no weeds. Give water during dry weather and syringe the plants occasionally to keep insect pests in check.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication. or well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 58.5.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, June 14, 10 a.m., Bar, 29.4, temp. 70°. Weather—Cloudy.

Old Seed and New.

It is very desirable that experienced gardeners should do all in their power to assist the authorities in spreading knowledge among amateur cultivators on the subject of seeds. They know the vagaries of seeds, whereas the amateur is apt to regard a seed as the certain progenitor of a plant. The need for general instruction is a very real one, for the world is reverting to its first occupation of gardening. Nowhere is this reversion more marked than in England, although it looks as if America is going to run us very close. Hence there is bound to be a strain on the world's supplies of vegetable seeds.

Even during the present sowing season signs have not been wanting that the supplies of some kinds of seed are deficient, and that some samples contain a certain percentage of old seed.

A striking example recently came under our notice. Parsnip seed was sown a month or so ago, and generated so unevenly as to suggest the advisability of re-sowing. Fortunately, the gardener was wise, and, shaking his head, decided to wait and see. Immediately after he had taken that decision a heavy rain fell, and within two or three days a second crop—no doubt of the older seed—had germinated, and the rows of seedlings were plainly visible and sufficiently thick.

It is the habit of old seed to germinate slowly and irregularly. Such seed finds a difficulty in plumping up. Hence judg-

ment must be exercised both this year and next as to how best to compromise between the need for economy by thin sowing and the need to sow thickly enough to produce sufficient seedlings. In this connection the readiness with which different seedlings may be transplanted must be borne in mind. No doubt most vegetable seedlings may be transplanted if sufficient care be taken, but some survive transplantation better than others. For example, Beet transplants well. Peas are at least, in our experience—lickety; sometimes benefiting by a change of ground, but sometimes suffering severely.

Depth of sowing and planting is also another subject on which professional gardeners can help their neighbours. Some enthusiastic amateurs have this year planted their Potatoes 8 inches deep (in the subsoil), and their Shallots half as deep. These are no doubt exceptional cases, yet errors of lesser degree are bound to be common.

Again, the advisability of "rod-leading" seed apt to be attacked by birds requires to be made yet more widely known. We understand that the authorities are about to issue instructions in pamphlet form on seed economy, and we suggest that the many gardeners who are already giving so much of their time to helping their less experienced neighbours should, when they are issued, secure copies of the pamphlet and see that its contents become widely known. Seed economy might well form the subject of lectures and discussions in local societies during the coming late summer and winter months. By keeping the importance of economy constantly before the minds of users of seed much good can be done. It will encourage them, among other things, to place their seed orders early, and to order no more than they are likely to require, to make judicious use of seed left over from the previous year, and, in the case of such seeds as those of legumes, to save their own seed.

HORTICULTURAL CLUB: ABANDONMENT OF EXCURSION.

The proposed visit of the members of the Horticultural Club to the Wisley Ground, on the 21st inst., has been abandoned owing to unexpected difficulties in the hiring of road conveyances. *R. Hooper Pearson, Hon. Sec.*

R.H.S. TRIAL OF BEETS.—The Royal Horticultural Society is about to carry out a trial of Beets for late-summer sowing and Lettuces for autumn sowing. One packet of each variety for trial should reach the Director, R.H.S. Gardens, Wisley, on or before the 30th inst.

"ROSE ANNUAL FOR 1917."

A perusal of the *Rose Annual* for 1917, issued recently by the National Rose Society, leads to the conclusion that the somewhat apologetic tone adopted in the preface is unnecessary. Although some who have contributed articles in happier times have been on this occasion unable to assist, the *Annual* for the current year suffers nothing by comparison with its predecessors, and contains a series of articles of extreme interest and utility. "Roses for the Back Garden," by Mr. S. ARNOLD; "Roses on Walls," by Mr. EDWIN MANNING; "Roses Near a Manufacturing Town," by Mr.

C. B. WORSEY; "Pergolas and Arches," by Mr. WALTER EASLEY; "Roses in Waterlogged Gardens," by Mr. H. OPPENHEIMER; "Early Roses in Pots," by Mr. H. G. MOUNT—all deal in a practical manner with sections of Rose culture, and cannot fail to be of great assistance to the amateur rosarian. The very able and exhaustive article on "Some Early-flowering Species of Roses," by the Deputy-President of the Society, Mr. H. R. DARLINGTON, has an added value in that it is based on personal experience and keen observation. Two articles of great value—"New Seedling Roses in 1916" and a "Rose Analysis" of the same year—are contributed by Mr. COURTNEY PAGE, the honorary secretary to the Society. These latter give to the reader a survey of the never-ending improvement of the Rose at the hands of the breeder, most useful to those who cannot always themselves see the new Roses, and must be largely guided by the expert advice of those who can. Amongst other articles may be mentioned one by the Rev. J. H. PEMBERTON, who boldly tackles the subject of "Rose Perfumes," a matter wherein personal tastes differ so widely. The *Annual* is well illustrated, and, although colour photographs are absent, the black and white illustrations, accompanied by adequate descriptions, convey very useful impressions of the flowers. The last picture in the *Annual* is reproduced, by permission, from *Punch*, and shows how, even under the trying conditions of the trenches at "the Front," the taste of the true rosarian will assert itself. The National Rose Society may be congratulated on having given to its members an *Annual* which bears testimony to the vitality of the Society, and to the energy and ability of its co-workers, Mr. H. R. DARLINGTON and Mr. COURTNEY PAGE.

GARDENERS' ROYAL BENEVOLENT INSTITUTION (WORCESTER AUXILIARY).—The President of the Worcester Auxiliary of the Gardeners' Royal Benevolent Institution, EARL BEAUCHAMPE, three open his gardens at Madresfield Court, Malvern, to the inspection of the public on Whit Monday, with the object of assisting the funds of the Institution. A sum of about thirty pounds was taken at the gates. The visitors were much interested in the display of flowers in the pleasure grounds. Many of the glass houses are this year being used to grow food crops instead of flowers.

FLOWERS IN SEASON. Mr. W. A. COOK sends flowering shoots of *Halesia tetrapetala* and *Piptanthus nepalensis*. Mr. COOK states that the "Snowdrop Tree," as the *Halesia* is commonly called, is especially fine this season. This specimen was gathered from a tree 40 feet high in Miss GERTIE DE JEWELL'S garden at Munsted, and estimated to be about 35 to 40 years old, the same age as the tree at Leonardlee.

THE USE AND ERADICATION OF BRACKEN.—As is well known, Bracken contains a large amount of potash. Of the dry matter which makes up 9 per cent. of the plant about half consists of sulphate and chloride of potash. In the older fronds the percentage of potash falls from 55 to 40 per cent. According to Mr. BERRY, who has recently carried out experiments on the reduction of potash by treating the ash with water, 70 per cent. of the potash passes into solution. By adding superphosphate of lime to the extracted potash the caustic properties of the latter may be destroyed. Mr. BERRY advises a slow fire for burning, and recommends the cutting of the Bracken at a time when it has reached its maximum growth and the first signs of withering are manifest. From 4.8 acres of Bracken yield 1 ton of ash, the potash in which, at 12s. 6d. per cwt., is worth £25. After deducting cost of preparation Mr. BERRY estimates that a good margin of profit is

* A Report on Bracken Utilization and Eradication West of Scotland Agric. College Bull. No. 80.

left. The crude ash should be put up in bags and stored in a dry place. When used as a fertiliser it must not be mixed with ammonium sulphate. At the present time the use of Baekon for litter is to be recommended very strongly.

IRRIGATION AND FOOD PRODUCTION IN THE STATES.—In the annual Report of the Smithsonian Institution, Washington, U.S.A., there is an interesting article on the reclamation of certain arid districts in the west of the United States by Mr. J. B. BEARD, of the U.S. Reclamation Department. A million and a half acres have, since the commencement of work in 1912, been supplied with water, and the annual product from some of the irrigated lands exceeds the output of some other States with a good natural water supply. The chief crop grown at present is the nitrogenous Alfalfa, but many other plants are being tried, including Soy, cereals (wholly Barley), fruit of various kinds, and the Sugar Beet. Fruit growing is flourishing, and from the Sun-dried fruit as a crop for a million dollars' worth of Apples were produced in 1914.

SUMAC GROWING IN SICILY.—The *Journal* of the Society of Arborescences is interesting in its account of the cultivation of the well-known dye plant *Rhus Coriaria*, which has been used for tanning hides. Two varieties are grown, the wild and the cultivated, the latter being *R. tinctoria*. The plant of Sicily produces colored substances for the dyeing of the cloth, as it grows best on soil of volcanic origin. Such soils, indeed, such that, produces the best and most abundant tannin. The plant is a *Rhus* in general, having 6 inches diameter at the base in January, and the leaves are 24 inches long when they have attained maturity in July and August. They are used for dyeing and tanning of two or three times, 10 lbs. of a bush.

PLANTS IN SEASON.—We have received from Messrs. GEORGE RUSSELL AND CO. a number of bearded Fritses. In London the standards are pale purple, contrasting with the purple falls, and set off by the bright yellow of the beard. Most are a rather small bearded variety, with clear yellow standards and fall, purple falls veined with white. California has large, refined blossoms of bluish mauve, rather darker falls veined with white and brown, and brightened by the touch of yellow provided by the beard. The orient has a *Prince of Empress* is a small, dark purple flower, the base of the falls decorated by a close network of veining, brown and purple-gold. Shilford Chief form is a massive bloom of rich purple, the base of the falls thickly veined with white, and a profuse white and yellow beard.

CHEAP FERTILISERS.—Although crude sewage is not to be recommended for manual use by experienced persons, sewage matter properly prepared is a fairly safe fertiliser which can be utilised advantageously for general farm and garden purposes, especially at the present time, when artificial manures are both scarce and costly. Under the name of "Gum" a good deal of treated sewage matter has been bought by foreign growers, notably those of France and Belgium, for many years past, and lately fertiliser merchants, as well as many market garden growers and a few farmers, have been ready purchasers in England. The sewage of Kingston on Thames and Bradford, among other places, has been disposed of in greater or less degree for some time past for use as manure; and had it not been that the cost of transport brought the price to a figure that was relatively high—as compared with other sources of plant food—doubtless the market would have been wider. For gardeners, amateur and professional, and farmers, within comparatively short distance of a source of supply, sewage fertiliser just now can be obtained at tempting prices. For example, growers in the North who are short of manure may well communicate with

the Town Clerk, Town Hall, Bradford, with a view to securing a supply of the sewage fertiliser of which the town has many thousands of tons ready for sale. The Director-General of Food Production recommends this course; and prompt application is desirable, so that transit facilities may be arranged. The prices charged for Bradford are 6s. to 15s. per ton, according to the content of moisture, and, at these prices, a heavy rate for transit could be added before the fertiliser became uneconomical. The best samples, indeed, on the field or garden, according to an analysis ordered by the Food Production Department are worth about £2 per ton, reckoned according to the familiar system of unit valuation. That is to say, to secure the same amount of plant food in chemical form from other sources, the grower must pay about twice as much as the Bradford Corporation are charging for this sewage fertiliser, which laboratory tests showed to contain phosphate 0.2 per cent., potash 0.6 per cent., and nitrogen 1.5 per cent. The Food Production Department will be pleased to hear from any other informed body or private person holding mineral matters that might be placed at the disposal of agriculturists.

HARVESTING HORSE CHESTNUTS.—A new and important use for a tree long known to Horse Chestnuts, an apple has been issued by the Food War Committee of the Royal Society for the systematic collection of Horse Chestnut during the forthcoming season. Every ton harvested means the saving of half a ton of Mince, and hence the liberation of that quantity of food. Since my country has 17,000 tons a week to be used as a crop that all who can assist in securing the crop harvest will be doing a good deed. In particular gardeners on large estates should be requested to assist in this important work. An arrangement with regard to the organization to be adopted will be made immediately.

PUBLICATIONS RECEIVED. *British Insects and How to Know Them.* By Harold Bastin (London: Methuen & Co., Price 1s. 6d. net). *Industrial Fatigue in its Relation to Maximum Output.* By Henry J. Spooner. (London: Co-partnership Publishers, Ltd.)—*Land Nationalisation: The Remedy for Poverty and Unemployment.* By T. P. Kitzema. (Reprinted from the *Blanchard Weekly Telegraph*.) *Fruit Botting for Cottagers.* R.H.S. Leaflet. By the Rev. W. Walls, M.A.—*The Manufacture of Cheese in Co-operative Dairies.* Board of Agriculture Leaflet (special) No. 75. (London: Whitehall Place, S.W.)

TREES AND SHRUBS.

NOTES FROM BALSFORD PARK

During severe winter has imposed a severe test on many tender forms of vegetation in these gardens, and many plants and shrubs have suffered badly.

Some of the Bamboo for which this garden is famous has a row of a dozen and a half specimens. Several plants of *Arundinaria nobilis*, raised from seed by the late Lord Roxburgh some years ago, have suffered severely; most of the tops of these have been killed back, and as far as one can judge at present, only two specimens are likely to recover. A *Leydeberg*, *A. unguis*, and *A. japonica* Metakei are badly cut by the cold winds. I was somewhat surprised to find that the latter had suffered, as I hear that a large clump of this Bamboo growing in a Suffolk garden, close to the sea, is quite unharmed. *Phyllostachys Quiloi* has fared rather badly, and is far from being ornamental at present. *P. aurea* is in much the same condition, and *P. rugosa* (maiflora) has suffered a good deal. *P. arundinularis* is anything but attractive, in spite of its sheltered position, although it has not suffered in previous years.

The variety that looks best of all is *Arundinaria nitida*, which is scarcely any the worse for the severe winter. *P. viridis glaucescens*, *P. fastuosa*, and *P. Hemons* are little the worse, while *P. sulphurea* has come through the winter well, and is a variety worthy of attention.

Among other shrubs that have suffered I may mention *Cistus*, *Chonoxia*, *Buddleia*, and *Berberis Darwinii*, though none of the other *Berberis* is any the worse. Most of the *Buddleias* are breaking satisfactorily from the base, but will soon recover. *Rubus australis*, *Hypericum reptans*, and many of the *Helianthemums* have, unfortunately, been killed outright. The diminutive, but charming, *Rubus arcticus* has blossomed freely, and appears to have enjoyed the Arctic conditions. *Knapfia Northia* is little the worse; young plants have not suffered at all; and the showy *K. erulescens* has come through the winter unimpaired.

The gardens are situated at an altitude varying from 600 to 800 feet above sea level, and the most frost experienced during the winter was 26° Fahr. *J. Gardner, Balsford Park Gardens, Morston-in-Marsh.*

THE HARDY FLOWER BORDER.

MYOSOTIDÆUM NOBILE

Very great interest has been evoked by the free flowering* of a group of this interesting plant in the gardens here on account of its rarity on the East Coast, though not uncommon in Galloway and other warm spots in the west of Scotland. One lot planted on a rocky wall, however, all but completely destroyed by the severe January frost, those that escaped and flowered being in a sheltered position in the kitchen garden. I raised the plants from seeds produced by a plant in a pot a few years ago, and a various coloured lot resulted, from whitish almost to turquoise blue. All are lovely. *R. P. Brotherton, Tynninghame, East Lothian.*

MECONOPSIS SIMPLICIFOLIA.
BAILLEY'S VARIETY

My plant of Bailley's variety of *Meconopsis simplicifolia* has again opened its lovely, pebble flowers, which are fully 4½ inches in diameter, on a 15 inch stem. This is an original plant raised from seed given to me by the late Colonel Bailley, the father of the hybrid, and there are still some half dozen plants of the same batch yet to flower.

I hope, contrary to the usual habit of these Eastern *Meconopsis*, that this one will, in favourable circumstances, prove perennial, as the two plants that flowered last year have grown into big clumps, and, though not showing signs of flowering at present, may do so later, and will certainly flower next year if alive. These plants are all in their original seed bed under a north wall, and have had no protection. One plant from the same batch has a large flower of a good lake colour (not the usual dirty red lilac), with deep blue rays at the base of the petal, and a good thing, though not comparable with the lake blue relative, *Lichadd*. *Buchan Hepburn Swinton, East Lothian.*

FUCHSIA SPLENDENS.

This pretty and distinct species of *Fuchsia* (see fig. 35) is far less frequently met with in gardens than it was 40 to 50 years ago; indeed, it seems to have almost dropped out of cultivation. The plant is of free growth, and if allowed space for its development, will form a good sized bush, though effective specimens may be grown in pots eight inches in diameter. The

leaves are heart-shaped, hairy, and of a pale-green tint, while the flowers are in shape more suggestive of a Correa than a Fuchsia. The tube, which is somewhat inflated, is of a bright crimson colour, while the sepals, which do not reflex, are green. This Fuchsia should be well exposed to the sun in the latter part of the summer and in autumn, in order that

have never succeeded. It was, therefore, with great interest that I noted a variety under the name of Benita at one of the spring meetings of the Royal Horticultural Society in 1912, the exhibitors being Messrs. W. H. Rogers and Son, Red Lodge Nursery, Southampton. The novelty was said to be the result of a cross between a Continental variety—Gartenmeister Bonstedt—

scarlet. Several other species of Fuchsia are well worth cultivating, and they form pleasing subjects for the greenhouse. I refer to Fuchsia ampliata, F. microphylla, F. thymifolia, the curious F. excorticata, and F. procumbens from New Zealand. The blue and yellow in the flowers of this creeping plant give it a quaint appearance, and in addition to its

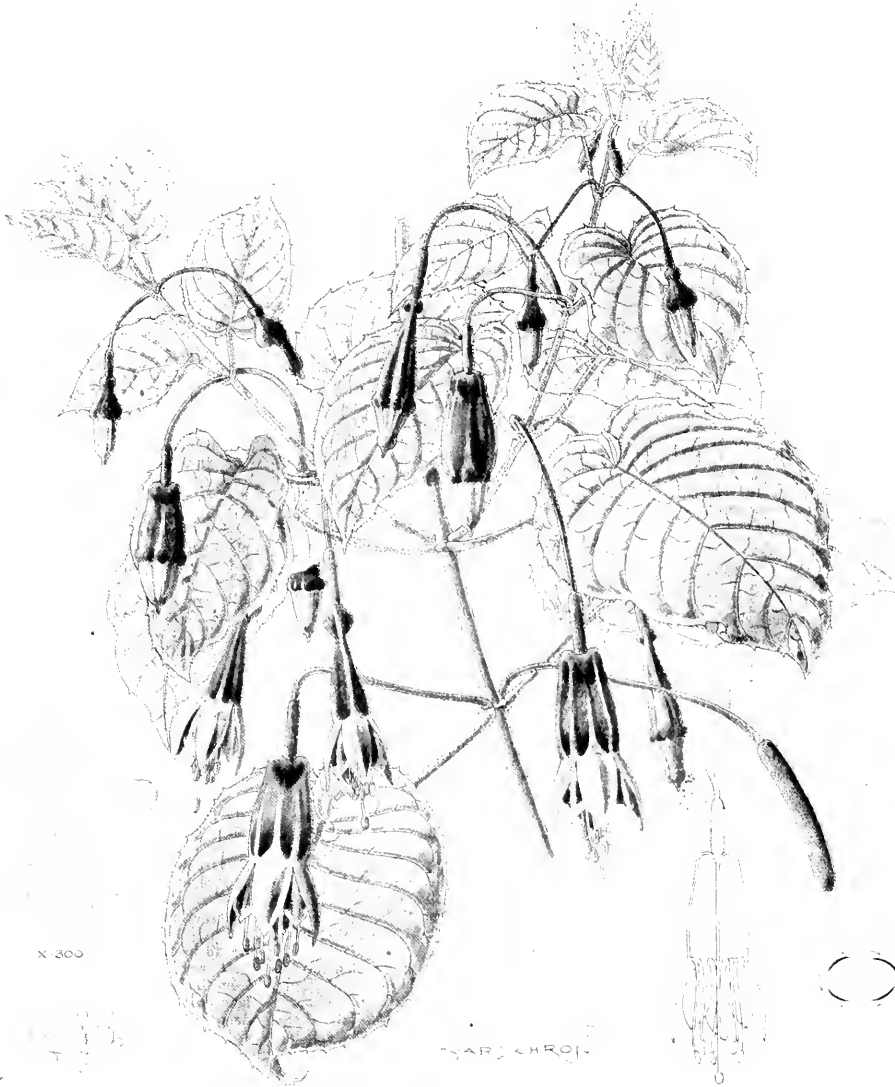


FIG. 95.—FUCHSIA SPLENDENS: FLOWERS BRIGHT CRIMSON.

the wood may be thoroughly ripened. When subjected to a temperature above that of an ordinary greenhouse, it will flower early in the year, but it is particularly effective when allowed to develop naturally. This species does not continue flowering throughout the summer as many garden varieties of Fuchsia do. I have, time after time, tried to cross *F. splendens* with other species, and also with garden varieties, but

and *F. splendens*. I had no doubt, judging by the appearance of the plant, that the last-named was one of the parents. In the variety Benita the flowers, which are borne in great profusion at the ends of the shoots, are about one inch long, and hang suspended by pedicels of the same length. The stout tube of the flower, which, however, never reflexes, is of a rosy scarlet colour, while the petals are of a bright orange

flowers the bright cherry-like fruits are very attractive. Then there are the large showy kinds, such as *F. fulgens*, *F. boliviana*, *F. corymbiflora* (and its white variety, *alba*), and *F. serratifolia*. As a roof plant for a fair-sized structure, *F. dependens* is particularly suitable, while the distinct coloured *F. triphylla* deserves mention, not only for its own intrinsic merit, but also for its value to the hybridist. W. T.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

AZOLLA CAROLINIANA (see p. 235).—With reference to the discovery by Mr. Stansfield of *Azolla caroliniana* in the neighbourhood of Preston, I may say that some years since I saw ponds of some considerable size a few miles out of West Cork, in which the plant had established itself. The growth covered every square inch of the surface with a blanket of some depth. As there are many gardens in the neighbourhood, I have no doubt that it was an escape. Should the plant spread through the country, it is just possible that it might become as great a nuisance in ponds and ornamental waters as *Elodea canadensis* (another American aquatic) did some years since. W. F. Ginn.

PEA WEEVIL (SITONUS LINEATUS) (see also p. 242).—It may interest your correspondent G. H. W. to know that I have found the following specific infallible remedy for Pea weevils: Spray the plants directly they appear through the ground with a mixture of 3 oz. of liver of sulphur to 1 gallon of rain-water. Repeat the spraying every other evening for one week. J. D. Shalstone.

DAMAGE TO LIME TREES BY FROST.—A remarkable effect of the severe frost is seen in the Lime trees, the growths of last year being killed. We experienced a severe blizzard here previous to the frost, which damaged many evergreens, but every part of the Limes, whether exposed or sheltered, is injured equally. One can only regard the damage as the effect of extreme cold on growths which had not matured sufficiently in the previous season. R. P. Brotherton, Tynningham, East Lothian.

GOVERNMENT OFFERS FOR FRUIT. Although no official notice on the subject has been published up to the time of writing, it is announced in the papers that offers of certain varieties of fruit for jam for the Army have been made to salesmen, who have been instructed to secure contracts from growers at certain prices, which may, however, be modified. The prices named are £18 to £20 per ton for Gooseberries, £50 to £32 for plumped Strawberries, £26 to £28 for Strawberries on stalks, £35 to £37 for Raspberries, £40 to £42 for Black Currants, and £10 for Victoria Plums. The higher prices, it is stated, are for fruit delivered at jam factories in growers' empties. The higher price for Gooseberries is equivalent to 5s. per half-sieve of 23 lb., which is better than peace rates for fully-grown fruits, though only about half the current price in Covent Garden. For Black Currants the higher price is equivalent to 9s. per half-sieve of 24 lb., which is below last year's average in London. For Victoria Plums the offer is only 2s. 6d. per half sieve of 23 lb., or no more than an average peace time rate. Southern Grower.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JUNE 5, 1917.—*Present*: Mr. E. A. Bowles, M.A. (in the chair), Messrs. J. Fraser, W. C. Worsdell, J. W. Odell, H. J. Elwes, W. J. Bean, and F. J. Chittenden (hon. secretary).

Many flowered Tulips.—Mr. W. C. Worsdell remarked upon the branched Tulips shown at the previous meeting, which are common especially among Darwin varieties in many gardens, that the many flowered condition arose from adnation of branches, not from fasciation, as might appear probable from the external characters of the growths. He drew attention to the occurrence of branching in some species, as in *T. biflora*, *T. saxatilis*, and *T. praestans*, and Mr. Bowles remarked that it seemed to be a primitive condition.

Cup shaped Leaves.—Mr. Fraser showed a "blind" Cauliflower in which a leaf had assumed the form of a cup. This is not uncommon in Cauliflowers, and is associated with the occurrence of a leaf at the tip of a shoot where it takes the place of a terminal bud. Mr. Anstis sent a similar growth in *Aucuba* from his garden at

Birmingham, where the leaf formed a cylinder nearly 2 inches long before the free parts of the two leaves which formed the cup were reached.

***Lygus terminalis*, etc.**—Mr. J. Fraser showed a series of specimens which he had collected in various localities, mostly on the Surrey downs, of *Pygus terminalis*, *P. intermedia*, and *P. latifolia*. He and other members of the Committee remarked upon the possible hybrid origin of *P. latifolia* and *P. intermedia* and the possibility that birds had carried the seeds of some of the forms from neighbouring gardens to apparently wild localities, where Mr. Fraser had found the trees growing.

Various Plants.—Mr. H. J. Elwes showed a series of plants from his garden, including *Paeonia Emodi*, *P. albiflora*, *P. Broteri* from Portugal, a bright, light form of *P. lobata* in variety of *P. officinalis*, and *Polygonatum verticillatum*, which he had collected many years ago in Perthshire. He also showed a large, dark form of *Camassia*, probably a seedling from *C. Leichtlinii*.

MANCHESTER AND NORTH OF ENGLAND ORCHID

MAY 10.—*Committee present*: The Rev. J. Crombholme (in the chair), Messrs. R. Ashworth, D. A. Craven, J. C. Cowan, Dr. Craven Moore, J. Cypher, A. G. Ellwood, J. Evans, P. Foster, A. R. Handley, A. Hamner, F. Houghton, J. Lupton, D. McLeod, H. Thorp, and H. Arthur (secretary).

AWARDS.

FIRST CLASS CERTIFICATES

Odontoloba Prince Albert (Olm Zephyr), a fine colour and well broad, well set flower of even colour and well broad, flat lip; *Odontoglossum crispum King*, a large flower, heavily blotched with deep crimson on a white ground, both from Dr. Craven Moore.

Odontoloba sum. crinitum (Margaret), a fine flower with heavy and even markings of a deep warm shade, and *Odontoloba Bradshawiana* (Arce), both from P. Smith, Esq.

Odontoglossum crispum Hilde, a large flower, one of the best of the white ground type, from W. R. Lee, Esq.

Oncidium superbiens (Bronze King), a flower of deep bronze colour, from Mr. J. Evans.

AWARDS OF MERIT

Odontoloba St. Francis (O. *scholastica* *nuttalliana*), *Olm Adriaens*, and *Odontoloba Bleuma* (P. *textum*), both from R. Ashworth, Esq.

Odontoglossum crispum Mantlar, from Mr. J. Bolton, Esq.

O. leucopurpureum, from Dr. Craven Moore.

O. Leucum (Olm *Collyea*), *Olm Rouge* (Drapon), from W. R. Lee, Esq.

Cattalia Mendly (Fair Queen), from Mr. J. Birchenshaw.

The annual meeting of the Society was held at 2.30 p.m., the Rev. J. Crombholme presiding. The report and balance-sheet were adopted. R. Ashworth, Esq., was re-elected president. The vice-presidents, officials, and committee were all re-elected.

The prizes were presented to the successful exhibitors as follows: *Mr. Ashworth's Silver Cup* to Dr. Craven Moore; *Mr. J. J. Bolton's Gold Medal* to the Rev. J. Crombholme; *Gardener's Prize* to Mr. E. Marshall; *Mr. Bolton's Silver Cup Medal* to R. Ashworth, Esq.; *Gardener's Prize* to Mr. S. Davenport and Mr. W. Gilden; *Botanic Society of Manchester's Gold Medal* to Mr. E. Rogers; *Mr. J. B. Handley's Prize* to Mr. C. Branch; *Messrs. Charlesworth and Co.'s Objay d'Art* to Dr. Craven Moore; *Gardener's Prize* to Mr. T. Arran; *Messrs. Cypher's Gold Medal* to R. Ashworth, Esq.; *Gardener's Prize* to Mr. S. Davenport and Mr. W. Gilden; *Mr. J. Hamner's Silver Cup* to R. Ashworth, Esq.; *Gardener's Prize* to Mr. S. Davenport and Mr. W. Gilden; *Messrs. McBean's Silver Trophy* to Dr. Craven Moore; *Gardener's Prize* to Mr. T. Arran; *Mr. P. Smith's Prize, 1st*, to Mr. S. Davenport and Mr. W. Gilden; *2nd*, to Mr. T. Arran; *3rd*, to Mr. E. Marshall.

KEW GUILD.

JUNE 2.—The annual meeting of the Kew Guild was held in the lecture room at the Royal Gardens, Kew, on the 2nd inst. Mr. Chas. H. Curtis, the president for the year, presided. Many old Kewites sent letters, expressing their regret that war-time conditions prevented them from being present; many are on active service, including Capt. Hugh Pettigrew, who is now "Somewhere in France." Mr. A. Hill was unavoidably absent, and the meeting was also notable for the absence of young men practically all the young men on the garden staff at Kew are on active service—and the presence of many of the young women who are now working in the gardens.

Reference was made to the many losses by death, and the work of the Benevolent Fund. Old Kewites will be glad to hear that Mr. W. Crisp is being assisted, but will be sorry to learn that he is gradually becoming weaker. The Guild has a sum of £325 invested.

The President, in moving the adoption of the report, suggested that some form of memorial should be raised at the end of the war to commemorate those Kewites who had taken part in the war. Mr. J. Weathers, Mr. Halses, Mr. W. Goldring, Mr. Whipps, and Miss Joshua spoke on various subjects, and it was arranged that next year a meeting of present Kewites should be called so that the ladies should have an opportunity of nominating a candidate for a seat on the committee.

Messrs. Osborne and Combs were re-elected secretary and treasurer respectively. Messrs. T. W. Brown, S. A. Skan, H. Spomer, A. Monbissier, and M. Free (the latter nominated by the Association of Kew Gardeners in America) were elected members of the committee, with Messrs. J. Clark and D. Halkerton representing the present staff. Messrs. W. Halses and J. Aikman were appointed auditors for the ensuing year. Greetings were sent to the American Association of Kewites, and also to Mr. G. Neville and Lt. Deswick, prisoners in Germany. A fund was opened for the purpose of sending food and comforts to members who were prisoners of war.

Obituary.

FREDERICK BURVENICH.—It is with deep regret that we receive the news of the death of Monsieur Fred. Burvenich, who died at Ghent on March 27 last. Burvenich occupied a prominent position in Belgian horticulture, having laboured at the Ghent School of Horticulture for many years. His close connection with the Quinquennial Exhibition at Ghent gave him world wide fame, and he was well known to the numerous English horticulturists who visited these Exhibitions, and from time to time enjoyed his profuse hospitality. M. Burvenich was born in 1837. At fifteen years of age he entered the nurseries of Louis Van Houtte, where he was apprenticed. His soon gave evidence of unusual skill and industry, and he also devoted himself to botanical studies. In his twenty first year he was appointed Professor of Fruit and Vegetable Cultivation at the Horticultural School at Gentbrugge, which was subsequently taken over by the Government and removed to Ghent. M. Burvenich soon became famous as a lecturer. Indeed, he was the most popular lecturer in Belgium. Every Sunday hundreds of people from all corners of Flanders Belgium crowded to the school, to hear his lectures on various horticultural subjects. Three of his contemporaries were Edouard Pynaert, E. Rodigas, and H. J. Van Hulst. These four friends did more than any other men to disseminate knowledge of plant cultivation throughout their country; and it is mainly due to their efforts that Belgian horticulture was brought to the high standard to which it had attained previous to the war. The little company of four enthusiasts was often likened to "the four leaved clover." Three of the leaves, alas, have long since fallen, and now the stem is bare. M. Burvenich was the author of many works on horticulture and allied subjects. His book on arboriculture, in Flemish

and French, ran through a large number of editions. His work on vegetable culture was also exceedingly popular. He was the founder of three journals, *Revue de l'Horticulture Belge et Étrangère*, *Bulletin d'Agriculture*, and *Tydschrift over Boerenteelt*. Much of his spare time was devoted to a nursery which he established near Ghent. He was a prominent member of the Société Royale d'Agriculture et de Botanique de Gand and of the official Belgian Horticultural Council. In both capacities, and in spite of his great age, his vast experience enabled him to render valuable service. In July, 1908, he attained his golden jubilee as State lecturer, and his friends presented him with a testimonial. He was also nominated by the King Chevalier de l'Ordre de la Couronne. The last Quinquennial Exhibition, which took place in 1913, was designed by Monsieur Burverich, and those of us who had the privilege of visiting Ghent on that occasion will recall the beautiful effects which were the result of his skill and experience.

It is to be specially regretted that our old friend has been called to rest whilst his loved city of Ghent is still occupied by the invading army.

CROPS AND STOCK ON THE HOME FARM.

DAIRY COWS AND PLOUGHING UP OF GRASS LAND.

In some counties there seems to be an idea that dairy cows and other cattle can only be kept when large areas of permanent grass land are available. At a recent meeting of the Essex War Agricultural Committee, various estimates were given of the number of acres of grass land necessary for each cow when the produce of arable land was used to help with their keep. It was stated that two acres per cow were desirable. The Hon. E. G. Strutt said that he found one acre per cow quite enough. Mr. Currie, who farms for cow-keeping, thought three-quarters of an acre sufficient. These opinions of practical agriculturists show what can be done with arable land. It must not be forgotten that the total food production of arable farming may be about four times as much as that from the same area of permanent grass. By ploughing up grass, the same number of cows might be kept, and a large surplus of grain food for human consumption grown as well. Dairy farmers need not fear the new three million acres of ploughed land, when labour and horses and machinery are guaranteed them.

HAYMAKING.

The recent rains have brought on the various hay crops so well that the season is now not far short of normal. The method of haymaking varies according to the locality. In the Southern Counties a start is usually made with yellow Trefoil (Hop Clover), mixed with Hampshire or Devon Bents or Italian Rye grass. In other districts Sainfoin is the first to be cut. It is not wise to allow either of these to be too old before cutting. Especial care is required in harvesting Trefoil, as, during dull weather, although the bulk appears to be thoroughly made, the Trefoil "goes back" during the night with heavy dews, and if carted before it is again dry there is a risk of its heating in the rick. Sainfoin should be cut when the blossoms are three parts expanded, or earlier if it is mixed with grass.

Machinery now plays a conspicuous part in hay making. There are many types of grass cutters; the main point in purchasing one is to secure the lightest running movement combined with efficiency. Some farmers use machines with a 6-foot cut, but where the crops average about two tons per acre a 5-foot machine is wide enough.

Swath turners save much labour. A boy with a stout cob in a Martin swath turner will turn twenty acres of Sainfoin or Clover in a (fairly long) day, and more efficiently than by hand labour. A side rake, too, is an excellent aid; not only does it turn the hay, but it collects two swathes into one, and rakes the ground clean. Where much meadow or park grass is grown the American "Vicker" is useful, which scatters the grass evenly, leaving it light. This should

follow close on to the cutter, as the sooner meadow grass is made into hay the better.

Then there are "sweeps," which collect and convey the hay to the ricks. If the ricks can be built in the field, wagons or carts can be dispensed with altogether. If not, self-loaders attached to wagons load the hay very quickly. Large ricks should be built with the aid of an elevator, driven by an oil engine or horse. To clear the field, there are horse rakes—much more economical than hand drag rakes. Of these there are many types, of which a very good one is the Howard.

In favourable weather Sainfoin and Clover should not be turned more than once; the oftener it is handled, the greater is the loss of leaf, which diminishes the quality. It is a mistake to dry hay too much; hay which does not heat at all in the rick is not good in quality. Some persons favour the building of small ricks. I prefer one of 20 tons. It is economical to build and thatch, and there is very little waste at top, bottom and sides. The shape of a rick is an important matter. Do not build too flat in the roof, which encourages moisture under the thatch and spoils several inches of hay. The Hertfordshire fashion of a sharp-pitched roof has much to recommend it. Directly a rick has settled down, the sides should be tucked and shaped, and the roof made up with the tuckings, which should be raked down quite smooth to ward off rains until the whole has settled sufficiently for thatching. When the first swathing has taken place, thatch the rick thickly at once, as a safeguard from heavy rains. Where obtainable, Dutch barns are a boon, saving labour in many ways. Into these the hay can be carted a little at a time when ready, and with safety. *E. Molyneux, Swanmore Farm, Bishop's Waltham, Hants.*

THISTLES IN CORN.

From many quarters come reports of the abnormal quantity of Thistles in the cornfields this year. Thistle-spraying is work within the capacity of women and children, and the utmost possible use should be made of this source of labour. Farmers who have difficulty in getting the necessary help should at once write to the Secretary of the County Agricultural Executive Committee.

There are several reasons why farmers should spend Thistles in their Corn as soon as possible. One of them is the special need of providing this year the maximum yield of grain, which cannot be done on Thistle-infested land. Another is the necessity for saving labour later on, particularly in view of the likelihood of the farmer having to take a second crop of Corn from the same field. Again the stocks of hay in the country are small, and may be smaller next winter and spring, and the supply of concentrated feeding stuffs is also short. Therefore, more straw than usual will have to be used for the feeding of stock. Apart from all these points, there is the further circumstance that not only will much of the forthcoming hay crop be required for the Army, but much straw as well.

ANSWERS TO CORRESPONDENTS.

ACTINIDIA CHINENSIS. *W. J. P.* This climber was only introduced to cultivation in 1900, but its flowering has been recorded on several occasions in these pages; the first time it bloomed in England was in June, 1909. In *Gard. Chron.*, Sept. 20, 1915, Colonel Mainwaring Jackson records a plant as flowering in his garden at Tedsmore Hall, Oswestry, Shropshire. Your specimen, about four years old, has flowered two years earlier than Col. Jackson's plant, which was six years old. **ADDRESS:** *A. P. M.* The secretary of the Gardeners' Royal Benevolent Institution is Mr. Geo. J. Ingram. The official address is 92, Victoria Street, S.W. 1.

A "SHAKESPEARE" GARDEN. A "Shakespeare" garden denotes one in which are flowers mentioned in Shakespeare's works, such as Pansy, Pansy, Rue, Heliozela, Crocus, and Columbine. The most complete list is found in Canon Ellicombe's *Plant Lore of Shakespeare*. The garden should be of a formal character, if possible square, with a roughly flagged space in the centre, and a sundial.

BEE SWARMING. *J. K.* When bees swarm it is usually an indication that the colony is strong and in good health. But swarming is no proof that the bees are free from Isle of Wight disease, and they might contract the complaint at any time, although the present fine weather is conducive to good health.

MOTH. *H. M.* The moth you sent us is the Privet Hawk Moth (*Sphinx Ligustri*). The caterpillar feeds on Lilac, Privet, and other plants. The perfect insects usually appear about midsummer, so that your specimen is rather early. In August and September the caterpillars are very common; they are handsome, the colour being delicate green, with pale mauve and white markings.

NAMES OF PLANTS: *J. T. S.* 1, Too withered to identify; 2, *Cornus alba* var. *Spaethii*; 3, specimen missing; 4, *Helianthemum foetidum*; 5, *Cornus alba*; 6, *Lonicera sp.* (send when in flower); 7, *Deutzia Lemoinei*; 8, *Viburnum Opulus*; 9, *Spiraea discolor*; 10, *Indigofera Gerardiana*.—*T. Barry.* *Salix phylicifolia*.—*Beech.* 1, *Staphylea colchica*; 2, *Ulmus montana*; 3, *Syringa Emodi*; 4, *Quercus flex*; 5, *Kerria japonica* var. *fore pleno*; 6, *Cryptomeria japonica*.—*J. H. S.* 1, *Euonymus europaeus*; 2, *Rhus Toxicodendron*; 3, *Syringa japonica*.

PEACHES DROPPING. *A. T.* The most usual cause of Peach fruits dropping after they have grown a little is the difficulty of forming stones. If you cut in half some of the fruits which have dropped you will probably find no trace of a stone, and this may be due to a lack of lime in the soil. The fruits may drop from other causes; any cultural defect, such as too much moisture or too little, may have a similar result. A check sometimes operates in this way, as, for instance, when too much pruning is done at one time, or when a cold draught is allowed to reach trees that are being forced.

POTATOES. *E. C.* With regard to wireworm, as you will be ploughing up the old pasture in the autumn, you had better dress the ground immediately after the ploughing with gas lime. This is the best remedy for the pest, but cannot always be adopted, as the ground must be left fallow for at least six weeks or two months after gas lime is applied. For spraying the Potato plants, the best material to use is the Bordeaux Mixture. The first spraying of main crop varieties should be done early in July, and a second at an interval of a fortnight. If you buy the specific from your sundriesman ready made you will find directions for strength with the packet; there are many formulas, all slightly differing. You do not say what caterpillar it is which is attacking your trees, but you will find in our last issue (p. 229) an article by *Southern Grower* on this subject, which includes directions for spraying. If you have not got a sprayer, you may be able to obtain one at cost price from the Food Production Department, 72, Victoria Street, S.W. 1.

RED SPIDER ON CARNATIONS. *H. B.* Red spider is not a difficult pest to combat in plant houses. Its presence is a sure sign that the house is kept in too dry a condition. Spraying the plants with clear water and damp the floor and stages. In order to get rid of it now, spray the plants with a solution of half an ounce of common salt to one gallon of water, as often as necessary, until the spider disappears. Afterwards repeat the operation once in three weeks as a preventive measure.

WEEVILS ON NECTARINES. The insects you send us are black weevils (*Othiorhynchus nicipes*). They are exceedingly prevalent this year, probably owing partly to there not being so many small birds as usual. An illustration of these insects was given in the issue for April 28 last, p. 173, with directions for catching and destroying the pest.

Communications Received. N. E. B. J. F. Corner, T. O., Ireland; E. M. T. H. Shropshire S. Pickering, J. Bartlett, D. Trusclevell, W. & S. F. P. P. P. P. N. Zealand; J. L. D. L. L. L. N. B. B. J. W. P. M. B. W. B. J. H. W. S. R. J. J. & S. P. Mrs. A. Freshwater (thanks for 2s. 6d. for R.G.O.F. box); Private R. G. A., Macedonia, K. A. C.

MARKETS.

COVENT GARDEN, June 15.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots and their prices, including Aralia Sieboldii, Asparagus plumosus, Aspidistra, Cacti, Calceolaria, Cocos Weddelliana, Crassula, Erica, Ficus, Geonoma, and various cut flowers like Carnations and Cornflowers.

Prices of all are much lower. Lobelia are also cheaper, but the price of Iris remains firm. Bunches of the long variety from France are much affected by the long journey in hot weather, and are practically unsalable when they reach the market. Sweet Peas are becoming more plentiful, and consignments of the early grown sorts arriving in good condition. Little change is noticeable in the quality of Roses and Carnations, good blooms of Roses are still difficult to obtain. Lily of the Valley is practically over for the time being. Small consignments of white Stock (after Majesty) and Carnation Mrs. S. White are available.

Vegetables: Average Wholesale Prices

Table listing vegetable prices, including Asparagus, Beans, Beetroot, Broccoli, Cabbage, Cauliflowers, Cucumbers, Garlic, Horseradish, Lettuce, and Mushrooms.

Fruit: Average Wholesale Prices.

Table listing fruit prices, including Almonds, Apples, Dates, Figs, Grapes, Lemons, Melons, Nectarines, Nuts, Oranges, Peaches, Strawberries, and Tomatoes.

GARDENING APPOINTMENTS

Mr. T. Elliott, 10, St. James's Place, London, W.1. Mr. Arthur Freshwater, 10, The Park Gardens, Wood Lane, Ealing, W.5.

CLIMBING PLANTS

(Present Day Gardening Series) By WILLIAM WATSON. (Introduction by William Robinson.) A Practical Handbook on the Treatment of Climbing Plants, both hardy and tender species. Illustrated with 24 full page plates, 8 of which are reproduced in colour. Price 2/10 post free from: THE PUBLISHING DEPT., "GARDENERS' CHRONICLE" OFFICES, 41, Wellington Street, Covent Garden, W.C.2

THE ONLY DIRECTORY OF GARDENS AND GARDENERS.

The Horticultural Directory and Year Book for 1917 is the ONLY Directory that exists of gardens and gardeners in the British Isles.

If you want a list of all Nursermen and Seedsmen, Sundriesmen, Hot-house Builders and other traders closely connected with horticulture, consult the ONLY Horticultural Directory.

Should you desire to trace the whereabouts of the young men you associated with in the Bally you have no other means of finding out their present addresses than by turning to the ONLY Directory of British Gardeners.

Obtain a copy and see if your own name is there, and if it is not, then send us particulars for inclusion in the edition for 1918.

The Year Book part of this unique volume contains descriptions of all the new plants, flowers and fruits certificated in 1916, notes on the principal gardeners who died during that period, and much additional information of great value to all amateur and professional horticulturists.

We are still able to offer some few copies of the current number. Readers are advised to send their orders early, before the work is out of print.

Apply, enclosing 1/4 for each copy required, to: GARDENERS' CHRONICLE, LTD., 41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

REMARKS: There is a further increase in the supply of Cornflowers, Delphiniums, Gypsophila, Nicotia, double and single Pyrethrum, white Dahlias and

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Rhododendrons and Azaleas.** By W. Watson. With preface by Sir. F. W. Moore, F.L.S. (The first popular volume published on this subject.) 8 full-page Coloured Plates. 1s. 10d.
- Rock and Alpine Gardening.** By H. Hemsley, rockwork expert. A practical guide to the making of Rock, Alpine, Wall and Water Gardens. Profusely Illustrated. 1s. 3d.
- Rock Gardens.** By Reginald Farrer. With Preface by Dr. J. Bretland Farmer, F.R.S. Contains 8 Coloured Plates. 1s. 10d.
- Rock Garden, The English.** By Reginald Farrer. A complete dictionary of Hardy Plants suitable for Rock Garden Culture. Contains 500,000 words and 300 Illustrations. In 2 Vols. Price, £2 2s. 10d. post free (in the press).
- Root and Stem Vegetables.** By the late Alexander Dean. Contains 8 full-page Coloured Plates. 1s. 10d.
- Rose, The Book of the.** By Rev. A. Foster Melliar, M.A. Illustrated. New Edition 5s. 5d.
- Roses.** By H. R. Darlington. Contains 8 full page Coloured Plates. 2s. 11d.
- Roses for the Garden and Greenhouse.** By John Weathers. Description, Culture, Propagation, Manures, etc. Coloured Illustrations 5s. 4d.
- Roses in Pots.** By Wm. Paul. Ninth Edition. An invaluable Guide to the Cultivation of Roses in Pots, whether for forcing or otherwise 2s. 2d.
- Salads and their Cultivation.** By T. W. Sanders. How to grow them in the Open, on Hot Beds, and Under Glass, etc. Freely Illustrated. Paper, 1s. 2d.; cloth, 1s. 9d.
- Saxifrages or Rockfoils.** By W. Irving and R. A. Malby. A practical work on the Culture of Saxifrages. Well Illustrated in Colour and Half-tones. 2s. 10d.
- Soil, The.** By A. D. Hall, F.R.S. An introduction to the Scientific Study of the Growth of Crops. New Edition. 5s. 6d.
- Species and Varieties, their Origin by Mutation.** By Prof. Hugo De Vries. Second Edition. 21s. 6d.
- Strawberry Culturist The Illustrated.** A Book worthy of the attention of Raisers of New Varieties as of the General Cultivator. 1s. 7d.
- Strawberry. The Book of the.** With Chapters on the Raspberry, Blackberry, Loganberry, Japanese Wineberry, and Allied Fruits. By Edwin Beckett. Illustrated 2s. 9d.
- Sweet Peas.** (Second and Revised Edition.) By Horace J. Wright. Contains 8 Coloured full-page Plates. With Chapter on Sweet Peas for Exhibition by T. Stevenson. 1s. 10d.
- Sweet Peas and Antirrhinums.** By William Cuthbertson. 1s. 3d.
- Sweet Peas, The Modern Culture of.** By Thomas Stevenson. Fully described and illustrated. 1s. 3d. Cloth, with Coloured Plates, 3s. 4d.
- Teratology, The Principles of Plant.** By W. C. Worsdell, F.L.S. Containing a large amount of new and interesting information. Illustrated. Price 25s. 8d.
- Tomato Culture for Amateurs.** By B. C. Ravenscroft. Illustrated. New Edition. In paper, 1s. 3d.
- Tomato Culture for Market.** By J. Stoddart. 1s. 1d.
- Topiary, The Book of.** By C. H. Curtis and W. Gibson, of Levens Hall. 2s. 10d.
- Trapping of Vermin and Birds, Practical.** By W. Carnegie. 1s. 3d.
- Trees: A Woodland Notebook.** By the Rt. Hon. Sir Herbert Maxwell, Bart., F.R.S., LL.D. 22s.
- Trees and Shrubs, Beautiful Flowering, for British and Irish Gardens.** By John Weathers. Description, Culture, Planting, Pruning, Propagation, etc. Coloured Illustrations 5s. 10d.
- Trees and Shrubs Hardy in the British Isles.** By W. J. Bean, Asst. Curator of Kew Botanic Gardens. In two volumes, with Illustrations and Index. 43s.
- Trees and Shrubs, Hardy, Ornamental Flowering.** By A. D. Webster. Third Revised and greatly Enlarged Edition. 3s. 10d.
- Tropical Gardening and Planting.** By H. F. MacMillan. Second Edition, Revised and Enlarged, with many new features added. 1s. 11d.
- Tulips.** By the Rev. Joseph Jacob. Illustrated with 3 Coloured Plates. 1s. 10d.
- Variation, Heredity and Evolution.** By R. H. Lock. 5s. 4d.
- Vegetable Culture for Amateurs.** By Trevor Mounmouth, arranged alphabetically with a calendar of operations for the year. New Edition. Illustrated. 1s. 3d.
- Vegetable Garden, The.** By Henry de Vilmorin and W. Robinson. New Edition. 15s. 7d.
- Vegetable Gardening, The Principles of.** By Prof. L. H. Bailey. 6s. 11d.
- Vegetables for Home Consumption and Exhibition.** By E. Beckett, V.M.H. Useful for every Gardener, and indispensable to Exhibitors. New Edition. 5s. 6d.
- Vegetables and Flowers, The Culture of, from Seeds and Roots.** By Sutton and Sons. Reading. New Edition. 5s. 6d.
- Vegetables and Flowers, The Culture of, from Seeds in Tropical, Semi-Tropical, and Temperate Climates.** By Sutton and Sons. Reading. 320 pages. With numerous Illustrations. 5s. 6d. England; 5s. 9d. Abroad.
- Vegetables, The Book of.** By George Wythes, V.M.H. 2s. 9d.
- Villa Garden, My.** By S. Graveson. Illustrated 2s. 10d.
- Vines and Vine Culture.** By the late Archibald F. Barron, V.M.H. New Edition. Revised and Enlarged. Illustrated. 5s. 5d.
- Vine, On the Cultivation of the Grape.** By W. Thomson. 5s. 4d.
- Wall and Water Garden.** By Gertrude Jekyll. Illustrated. 12s. 11d.
- Weeds, Common, of the Farm and Garden.** By Harold C. Long, B.Sc., in collaboration with John Percival, M.A. Illustrated. 6s. 6d.
- Wild Garden, The Book of the.** By S. W. Fitzherbert. 2s. 9d.
- Woodland Notebook, A.** By Rt. Hon. Sir Herbert Maxwell, Bt. Illustrated. 21s. 6d.
- Alpine Flora: for Tourists and Amateur Botanists.** By Dr. Julius Hoffmann. Translated by E. S. Barton (Mrs. A. Gepp). 7s. 11d.
- Alpine Flowers for Gardens.** By W. Robinson. Revised Edition. With Illustrations. 11s.
- Alpine Plants, Dictionary of (see "The English Rock Garden," by Reginald Farrer).**
- Alpine Plants of Europe.** By H. Stuart Thompson. With Cultural Notes. Price 7s. 10d.
- Alpine Plants, Sub.** By H. Stuart Thompson. Including Coloured Plates by G. Fienwill. Price 3s. 6d.
- Annals, Hardy and Half Hardy.** By Charles H. Curtis. Contains 8 Coloured Plates. 1s. 10d.
- Apples and Pears.** By George Binyard, V.M.H. With 3 Coloured Plates. 1s. 10d.
- Asparagus, The Book of.** By Chas. Hott. With sections on Celery, Salsify, Scorzonera, and Sea-kale. Illustrated. 2s. 10d.
- Bacteriology, Agricultural.** By J. Percival, M.A. 7s. 11d.
- Banana, The: Its Cultivation, Distribution, and Commercial Uses.** By W. Fawcett. With Preface by Sir Daniel Morris. 7s. 11d.
- Bee Keeping, Book of. A Practical Manual on the Proper Management of Bees, especially written for Beginners.** By W. B. Webster. Illustrated. 1s. 3d.
- Bees, for Pleasure and Profit.** By G. Gordon Samson. With chapter on "Bee-keeping in Hot Climates." Illustrated 1s. 2d.
- Botanic Terms, Glossary of.** By B. D. Jackson. 7s. 11d.
- Botanist, The Young.** By W. Percival Weston and C. S. Cooper. Excellent for young people commencing to botanise. 3s. 10d.
- Botany, Agricultural.** By J. Percival, M.A. 7s. 11d.
- Botany, A Practical Introduction to the Study of (Flowering Plants).** By J. Bretland Farmer, F.R.S. 121 Illustrations. 2s. 10d.
- Botany, A Primer of.** By Sir J. D. Hooker, F.R.S. 1s. 2d.
- Botany, A Text-book of.** By Dr. E. Strasburger. Translated by H. C. Porter, Ph.D. Revised Fifth Edition. 779 Illustrations. 18s. 6d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 3991

No. 1591. VOL. LXI. {THIRD SERIES} SATURDAY, JUNE 23, 1917. {Registered as a Newspaper.} PRICE 3d. POST-FREE, 3d.

SUBSCRIPTION—Inland, 15 s.; Foreign, 17 6 (22fr. 10c.) [54 26c] per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 249.

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note that the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week MUST reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

GISHURST COMPOUND—Insecticide and Fungicide. Over 50 years' reputation highly Commended R.H.S. See notices in Gardeners' Chronicle, 1914 15. Sold by dealers in Garden Sundries. Wholesale: **KIRKEN PATENT CANDLE CO., LTD.**, Battersea, London, S.W. 11.

SANDERS, OF Hybrid Growers, St. Albans.

POTATO SPRAYING. On spot ready for immediate delivery, sulphate of Copper 95 per cent., pure Washing Soda 98 per cent. Write for prices and quantities required per acre.—**G. H. RICHARDS,** 23, Borough High Street, London, S.E. 1.

BARR'S SEEDS FOR JUNE SOWING. Finest strains of Asteriskums, Aphogus, Com-pamula, Camphora Bells, Celadonia, Cineraria, Delphinium, Hollyhock, Lupine, Pansy, Primrose, Stock, Wallflower, &c. Catalogue on application.—**BAKER & SONS,** King Street, Covent Garden, London.

GREENHOUSE PAINTING & GLAZING. "Vitrolite," superior to White Lead Paint. "Flaxine," superdurable putty. Full particulars from **W. CARSON & SONS,** Grove Works, Battersea. Agents throughout the country.

OUR list of Vegetable Seeds, suitable for summer sowing, is now ready, and will be sent post free on application. **DOBIE & CO.,** Seaford, to the King, Edinburgh.

SOW NOW.—BATH'S EMPRESS PANSEES, as grown for the Royal Gardens at Frogmore. The richest and largest flowered strain of Pansee extant. Per packet, 2s. 6d., and 1s. 6d., post free for cash with order.—(Dept. A), **R. H. BATH, LTD.,** The Floral Farms, Washford.

BOWLS. 42 2s. Association set lawn bowls, 4 pairs superior mill size selected lignum vitae and 2 jacks in strong box, unlined, 29s. 6d.; also pairs finest Standard Bowls, perfect 3 bias, officially tested and stamped by Bowling Association, 11s. 6d. pair, or whole lot for 47 s. 6d. Approx. Box 72s. 6d. upwards. **Derby Street, Bedford.**

SUTTON'S VEGETABLE SEEDS.
SUTTON'S FLOWER SEEDS.
The Best.

SUTTON & SONS, The King's Seedsmen, READING.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also Bone-meal, Liquid Manure, Spawn, Trined circular tree application to **DICKSONS' Royal Seed Warehouse and Nurseries,** Chester.

BUSINESS METHODS. Experience in the world of commerce shows that there are two ways of conducting a business, the one being to charge as much as possible for what is sold, exacting a high rate from one customer and a low price from another, and the other to have a fixed price for everything and stick to it. The first method is to be condemned from every point of view, but mainly because it punishes the best purchasers, those who are ready to pay what is reasonably asked when the goods are marked in plain figures. The "Gardeners' Chronicle" adopts the alternative. It guarantees that its advertisement rates are not inflated for any customer, big or little, old or new, and will pay the same price for a similar thing. Conversely, while it is not possible to grant concessionary rates, nevertheless the privilege of the paper to be in the position to assure each advertiser that he pays no more than anyone else.

BEGONIAS Gloire de Lorraine, Turfend, Hall and Biddulph variety of Lorraine, well-sold mixture, 2 6d. doz., 50 for 6, 6d. 10s. doz., 100 The King 4s. doz., 50 for 12s. 20s. 100 **H. DUBBERIDGE,** The Dorset Nurseries, Blandford.

BEGONIAS and GLOXINIAS MORLE. A CO. can now supply their celebrated strain in large 60 pots in flower and bud. Early inquiries, as stock is limited this season. 150/106, Finchley Road S.W. 3.

TUBEROSES, double African Pearl, just arrived, for winter flowering; extra large bulbs, 8s. doz., 12s. 100; sent free any address, for cash.—**MORLE & CO.,** 150/106, Finchley Road, S.W. 3.

GENTIANA variegata, 12 large clumps, 5s.; also 12 Pinguicula grandiflora, 10s.; 6 Helianthus alba, 7 s. 6d.; 12 Ery. orbis, 10s.; **O'KELLY,** Belmont, Ballyvaughan, Ireland.

FERNS; FERNS; Tree Ferns, Climbing Ferns, Basket Ferns, Show and Greenhouse Ferns, Rock Garden Ferns, catalogues free. **J. E. SMITH,** London Fern Nursery, Longfborough Junction, London, S.W.

POINSETTIAS established in small pots; 10s. and strong, 7s. 6d. per dozen, 2s. per 100, orange pack ready with order.—**JOHN BIRCH,** 80, Queen's Road, Bristol.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipcord Twine; wears like leather; showproof; 7 yards for 17s. 6d. Patterns free.—**BRADFORD WOOLLEN CO.,** 71, Bradford

For Advertisement Charges see page iii

WATERER'S ALPINES, HERBACEOUS PLANTS and WATER LILIES. Large stocks of the best and most popular varieties. Descriptive Catalogue free. **JOHN WATERER, SONS & CRISP LTD.,** The Nurseries, Twyford, Berks.

MACKENZIE and MONCUR, Limited, Hot-house Builders and Heating Engineers, London, Edinburgh and Glasgow. By special Appointment to H.M. the King. London Office, 8, Camden Road, N.W.

B. EDDY & SONS, Torleven Works, Portlleven, Cornwall. The largest manufacturers of GARDEN NETTING in the KINGDOM. NEW STOUT and 1/2 inch strong SQUARE MESH NETTING, half inch and one inch mesh, at 3d. per square yard. LIGHT NEW square mesh, suitable for Strawberry Beds, at 7d. per square yard.

These Nets are bound all round with stout cord, and cover their measured length and width. Any length or width supplied.

Repaired Nettings in all sizes in stock. State your requirements, and we will quote lowest prices.

Also makers of TENNIS NETTINGS, RICK COVERS, GREENHOUSE SHADINGS, WASP NETTINGS, PACKING and TARRED TWINES of all kinds.

All Goods sent by PASSENGER Train, CARRIAGE PAID, on receipt of order.

100,000 LARGE GARDEN FERNS, 100, Palms, Begonias, Crotons, Begonia Rex, Erica, Gloxinias, Lilies, Helianthus, and other plants from **J. E. SMITH,** London Fern Nursery, Longfborough Junction, London, S.W.

ORCHID PEAT, 6s. and 7s. 6d. per sack; 10s. 6d. each 30s. dozen. Oak and Beech Leaf Mould, Yellow Loam, Staked and Fresh Cut, Silver Sand; 1 ton lots for 15 s. **C. N. FIBRE,** 23s. dozen bags; list free. **J. HANDSCOMBE, F.R.H.S.,** Feltham, Middlesex

WANTED, 1,000 Large ASPIDISTRAS, 30 plants suitable for stock, each or exchange, for other advertisements, catalogues free. **SMITH,** London Fern Nursery, Longfborough Junction, London, S.W.

WM. DUNCAN TUCKER & SONS, LTD., Lawnmower Road, South Tottenham, Essex. Specialists: Winter Gardens, Vineeries, Peach houses, Portable Buildings, &c. Catalogues gratis.

INCREASE your crops and protect them from blight and disease by using **KEELING'S SPRAYING MIXTURE (C. Kibb's Brand)** Guaranteed free from acid and keeps indefinitely. A 4 lb. bag, with 25 gallons of water, is enough to spray twenty peaches, 100 lbs. only 4s. 9d. 5 lbs. 3s. 16 lbs. 15s. 6d. 25 lbs. 21s. carriage free in the U.K. Sample 1 lb. 1s. 6d. post free. Send P.O. with order, direct to the manufacturers, **KEELING & WALKER, LTD.,** 20, Milton House, Surrey Street, London, W.C. 2.

SALES BY AUCTION.

FRIDAY NEXT.—ORCHIDS.

Two private Collections of Orchids, one by order of the owner, who is giving up their cultivation, and the other by order of the Executrix, comprising Cattleyas, Lachias, Laelia-Cattleya, Odontoglossums, Odontodia, Cypripediums, Dendrobium, &c., also choice Orchids from various growers, in flower or bud.

MESSRS. PROTHEROE and MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside.

On Friday, June 29th, at 1 o'clock.

On view morning of sale and catalogues had.

BUSINESS FOR SALE.

NORTH-WEST COAST.—Important and popular seaside town. For immediate sale, owner called up. For sale, Florist's, Seed, and Fruiterer's business. Full particulars of PROTHEROE & MORRIS, 67 and 68, Cheapside, E.C. 2.

SITUATIONS VACANT.

Four Lines 5s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

CITY AND COUNTY BOROUGH OF BELFAST. MUNICIPAL TECHNICAL INSTITUTE.

THE LIBRARY and TECHNICAL INSTRUCTION COMMITTEE invite APPLICATIONS for the position of TEMPORARY INSTRUCTOR in HORTICULTURE. Salary at the rate of £140 per annum. The appointment may be for the duration of the war. Particulars and Conditions of Appointment, together with the Form of Application may be obtained from the Acting Vice-Principal, Municipal Technical Institute, Belfast, with whom applications, on the special form provided for the purpose, must be lodged not later than NOON on THURSDAY, 22nd June, 1917. Applications should be accompanied by copies of three recent testimonials (original testimonials must not be sent). Canvassing is strictly forbidden and will be disqualify.

WANTED, HEAD GARDENER, with thorough knowledge Vegetable and Fruit Growing; Guildford district; Under Gardener kept. Send full particulars, experience, &c., to H. G., 565, 1/2 Deacons, Lea-Bullhall Street, E.C. 3.

WANTED, immediately, a Temporary HEAD GARDENER, Man or Woman; 2 boys kept; some experience of Vegetable Gardening essential. THE DOUGAGER LADY CHURSTON, Churston Court, Churston.

WANTED, HEAD GARDENER, present Head Gardener on military service, good wages for experienced man. R. CORRY, Esq., Ivanhoe, Ayles Road, Reigate.

WANTED, HEAD WORKING GARDENER, experienced inside and out. Write, stating full particulars, wages, &c., LADY M-MAHON, Southbroom House, Devizes.

WANTED, immediately, HEAD WORKING GARDENER (temporary); 2 or 3 under. Full particulars, age, wages, &c., to MRS ANDERSON WESTON, Hobne Grange, Wokingham.

WANTED, SINGLE-HANDED GARDENER, (ineligible); good all round man; cottage provided.—Write full particulars to MRS. MURRAY, Four Oak Lodge, Bishopstoke, Hants.

WANTED, good all-round SINGLE-HANDED GARDENER (ineligible); used to a gentleman's place, help given, wages 32s. and good rooms.—Letters, WILLEY, 16, Falmidge Road, Ealing.

GARDENERS WANTED; all suited free (whether married or single). Valuable presents given. (1) Beds, help given; 25s. and cottage. (2) Essex, about 30s.; look after a few chickens. (3) Herts, 30s. and good rooms over stable; present man there 9 years. (4) Middlesex, 27s. and cottage; wife with knowledge of plant cooking; required act as caretakers when family not in residence. (5) Surrey, 30s. and good cottage and coal. (6) Surrey; need not be experienced, help with poultry; discharged soldier preferred.—Write, sending full particulars, or call, MRS. HUNT, LTD., 30, High Street, Marylebone, W. 1. No engagement, no fee.

WANTED, GARDENER (SINGLE-HANDED), no Glass; wife been good servant; no children, as no help required when house empty; Norfolk—Write, Z., Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, GARDENER; single-handed; good general knowledge Flower and Kitchen Garden, Glass; good wages; good accommodation for family.—Elmsted Manor, Chislehurst.

WANTED, for Highgate, GARDENER, experienced, single-handed; six boots, coal, mats, 25s., 2 rooms and wash-houses.—L. P., Box 25, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, GARDENER, male or female, for duration of war.—Apply, stating wages required, to H. H. SCOTT, Newstead, 105, Leigham Court Road, Streatham, S.W. 16.

WANTED, GARDENER, for private grounds, single or with another, 30s. to £2; must be skilled in all general work, Glass excepted; a willing, cheerful worker is required, taking a keen interest, otherwise no use to me.—Call, if possible, otherwise send testimonials, to MR. ROBINSON, Kempdown Manor, Brighton.

WANTED, GARDENER (ineligible); experienced Inside and Out; Viney, Orchard House, some Orchids; second man kept.—Apply, with full particulars, to E. T. ROWLE, Mill House, Salisbury.

WANTED, WORKING GARDENER for small Garden at Stones. State wages required to "Roverswood," Staines, Middlesex.

WANTED, competent GARDENER, with wife, capable of good plain cooking, having no children, for family of two, living about 12 miles from London; wife required to look after house; board, lodging, and satisfactory wages; good references essential.—Reply to W. G., 425, c/o Deacons, Leadenhall Street, E.C. 3.

WANTED, ORCHID GROWER, immediately, one with some experience of Seedling raising preferred; state wages; lady would like. Please state experience and requirements G. HAMILTON SMITH, Northside, Lough Woods, Bristol.

WANTED a good SECOND GARDENER or JOURNEYMAN—Apply, LAWLEY, 11, of Gardner, Witham Hill, Bourne, Lincs.

WANTED, GARDENER, under Head—Wife, stating full particulars and wages, LADY M-MAHON, Southbroom House, Devizes.

WANTED, UNDER GARDENER; used to Greenhouse and Stone paths; single; ineligible, MRS. WAKEMAN NEWPORT, Sandbourne, Bexley.

WANTED, UNDER-GARDENER having good experience and references; single and ineligible; liberal wages.—Apply, T. ELLIOTT, Norton Manor, Sutton Stoney, Hants.

WANTED, UNDER GARDENER (ineligible); principally for market work, mostly Grapes State of references wanted.—B, Broadwater House, Broadwater, Worthing.

WANTED, FOREMAN, under Head Gardener; general all-round work; single or married, female preferred; ineligible; state wages.—Apply, W. CHALCRAFT, Bandon Hall Gardens, near Longleop, Glos.

MRS. ARTHUR WILSON requires FOREMAN for Inside; also LADY GARDENER for Fruit Houses.—Apply, W. J. EARL, The Gardens, Trenby Croft, Hull.

WANTED, JOURNEYMAN (ineligible) for Inside and Out; also IMPROVER for Inside and Out; overtime; Apply, with full particulars, to H. A. PAGE, The Gardens, Belzith Court, Hampstead, N.W. 3.

WANTED, JOURNEYMAN, for Houses; (ineligible); wages 24s. per week.—Bothy and vegetables, duty every third Sunday. C. EARL, Somerhill Gardens, Tonbridge, Kent.

WANTED, 2 JOURNEYMEN (ineligible) to discharge soldier's duties; fruit, bothy, Saturdays.—Wages expected and full particulars to H. CHANDLER, Coombe Abbey Gardens, Coventry.

WANTED, JOURNEYMAN or YOUTH, with some experience in Fruit and Plant Houses.—Apply, with references, stating experience and wages required, with Bothy, &c.,—C. E. BARTER, Longleat Gardens, Warrminster.

WANTED, an experienced MAN (over age), for Fruit Trees.—All particulars, wages expected, and references (copies only), M. CROOKE, The Gardens, Killochroan Park, Forest Row, Sussex.

ELECTRICIAN (HANDYMAN) required take charge of Tangle of engine, dynamo, battery; rough carpentering and odd jobs, under Head Gardener.—VISCOUNTESS K., Kneesworth Hall, Royston, Herts.

WANTED, at once, for gentleman's estate, a thoroughly reliable and trustworthy man; capable of running modern electric light installation with 12 h.p. duplicate oil engines; must have thorough knowledge of small running repairs, wiring, &c., and be willing to fill in time Gardening or other light duties; must be qualified for military service.—Write, stating age, wages required, and all particulars, enclosing copy of testimonials, to G. L. THURGOOD, Builder, Much Hadham, Herts.

WANTED, FOREWOMAN and 4 WOMEN UNDER GARDENERS, with experience, for Pleasure Grounds and Rockeries; well-appointed Bothy and usual perquisites.—MARTIN, Moreton Paddox, Warwick.

WANTED, LADY GARDENER for the Houses and Herbaceous Borders, under forewoman; Bothy, duty, and overtime paid.—FARWELL, Gardeners' Lodge, Pains Hill, Cobham, Surrey.

WANTED, LADY GARDENER or MAN (ineligible); help work Garden, knowledge Vegetables, Greenhouse; 24s. week.—Apply, WOODHOUSE, Fairfield, Biggleswade.

WANTED, LADY GARDENER, with some experience, for Plant Houses.—Apply to J. ELDER, Hursley Park, Winchester.

WANTED at once, 2 LADY GARDENERS, with some practical experience; relations or friends preferred, for care of Vegetables and Flower Garden and some glass; terms, nicely furnished cottage, near work, £1 a week each, vegetables and milk; Church of England. Apply, giving particulars, to MRS. TEESDALE, Whitminster House, near Stonehouse, Gloucestershire.

WANTED, two LADY GARDENERS for Inside, under a forewoman; 20s. a week, Bothy, &c. State Exs. Bylandton Gardens, Blandford.

WANTED, 4 LADY GARDENERS for inside work; Bothy, milk, and vegetables; duty and overtime paid; 12 o'clock Saturdays.—Full particulars as to experience and wages expected, to H. CHANDLER, Coombe Abbey Gardens, Coventry.

WOMEN GARDENERS (working class) wanted; all suited entirely free of charge.—Two Unders for Bath; head man kept and 3 other women; comfortable bothies, with attendance. Three, as Head and 2 Unders, for Sevenoaks, no Glass. Two Unders for Staffs; furnished cottage, water laid on, Head Man and another woman kept; chiefly Outdoor work, but man would teach Glass. Ladies wanted as Head.—(1) Derby, very comfortable post; must understand Glass; no rough work. (2) Hindhead, Greenhouse Gardener also wanted; 1 boy, small Garden, Greenhouses, Vegetables (3) Amersham, 5 kept in Gardens; Lady would take Under also if 2 friends. Single-handed for (1) Reigate; 25s., with good modern cottage, vegetables, and wood; garden, under 2 acres, and small Greenhouse. (2) Purfleet (Surrey); slight experience would do; Vegetables, Garden, and help little with poultry. Also other good posts.—MRS. HUNT, LTD., 85, High Street, Marylebone, W. 1. Tel., Mayfair 6200.

WANTED, two IMPROVERS for the Houses, with some experience; good wages, with Bothy. W. BUTLER, Wilton House Gardens, near Salisbury, Wilts.

WANTED, strong active LAD as IMPROVER, 16.17; excellent opening for intelligent lad, good wages; Bothy, vegetables, &c., overtime and Sunday duty paid.—W. PHILLIPS, Derry Ormond, Cardiganshire.

WANTED, for Inside, three smart young MEN, about 16 years of age; £1 per week; Bothy, milk, vegetables, duty and overtime paid; half day Saturdays. State experience, &c.—MR. R. STUART, The Gardens, Stoneleigh Abbey, Kenilworth.

WANTED, active lad of 16 or 17 years as IMPROVER in the Houses; good wages and Bothy, with extra for Sunday duty.—J. HOWARD, Benham Park Gardens, Newbury.

WANTED, LAD (under military age) for Inside and Out; to take duty; wages 17s. per week, Bothy and vegetables. J. L. WATERMAN, The Gardens, Suddale, Eversham.

TRADE.

WANTED, Representative for leading firm of Salsolium amongst Market Gardeners, South-West of England, state qualifications, salary, &c.; must give "SEEDS," Box 9, 41, Wellington Street, Covent Garden, W.C.

WANTED, Hardy Plant PROPAGATOR, in good Nursery, near London.—Write, stating full particulars, W. B., Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, Hardy Plant PROPAGATOR, in good Nursery, near London.—Write, stating full particulars, W. B., Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, a CUCUMBER and TOMATO GROWER, good wages and overtime. Apply to J. M. LEATHER, East Fields, Mitcham.

WANTED, GROWER; used to Ferns.—F. T., Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, GROWER; nursery, 2 1/2 acres, 7 Glass Houses, Cuckfield, Tunbridge Wells, Kent, England. Apply to Messrs. W. Lambert, Rayners Road, North Wood, Kent.

MARRIED MAN wanted for NURSERY, 1/2 acre, 1000 sq. ft. of glass, and 2 1/2 acres of land. Apply to J. M. LEATHER, East Fields, Mitcham.

WANTED, Nursery Order and Correspondence CLERK, in 20 acres of London. Apply to J. M. LEATHER, East Fields, Mitcham.

AUDIT OF CHECKING CLERK (expert) (mostly women), using the quick and accurate, TIDGOLD & SOYS, The Kings' Session, Southampton.

BOOK KEEPER wanted, to take charge of accounts, one used in general Nursery, worked over military. State particulars of position and salary required, to P. M., Box 41, Wellington Street, Covent Garden, London, W.C. 2.

WANTED, for Farm Seed Warehouse, a capable FOREMAN; must be able to superintend clearing and despatch of orders for a wholesale trade, also Washington, must speak English and French; indispensable for Garden Seed Department; an experienced Hand, must be able to take orders large. Good wages offered. All applicants must be intelligible. A. R., Box 19, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, at once, for Work's Food Production Scheme, STOREKEEPER, with good capacity of Nursery and Market Gardening. Good wages offered. State particulars of position and salary required, to P. M., Box 41, Wellington Street, Covent Garden, London, W.C. 2.

WANTED, for retail business, EXPERT SERVICEMAN, with good general knowledge of Seeds and Horticultural Supplies, and good handwriting. Full particulars as to experience and wages required. KING'S VINE NURSERY, LTD., Bedford.

WANTED, WAREHOUSEMAN for good nursery near London, with some knowledge of the handling of Bulbs and of packing. Apply, stating full particulars, N. B., Box 25, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, SHOPMAN for Seedsmen's and Florist's shop. W. B. SMILE, 31, Fleet Street, Tottenham.

WANTED, several WOMEN GARDENERS for Market Nursery, Tomatoes, Chrysanthemums, and Roses grown; good wages and overtime. Apply, SAMPFORD & ALLMAN, Waltham Abbey, Essex.

YOUNG LADY required as IMPROVER in our Cut Flower department. Apply, stating age, experience, and wages required, to WILKS & SEAR, Royal Exotic Nursery, 10, Duke of Devon, South Kensington.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d. for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

HEAD GARDENER, 25 years' practical experience, 2 1/2 acres, 200 sq. Yards, Pootles, Merton, London, London. Apply to W. LAMBERT, Rayners Road, North Wood, Kent.

HEAD GARDENER, expert in every branch of Horticulture, and estate management of 100 acres. Apply to J. M. LEATHER, East Fields, Mitcham.

GARDENER (HEAD WORKING), 6-10 hours' work, 1/2 acre, 1000 sq. ft. of glass, and 2 1/2 acres of land. Apply to J. M. LEATHER, East Fields, Mitcham.

GARDENER (HEAD WORKING), where 2 on 1/2 acre, 1000 sq. ft. of glass, and 2 1/2 acres of land. Apply to J. M. LEATHER, East Fields, Mitcham.

GARDENER (HEAD WORKING) of good SIX 1/2 acre, 1000 sq. ft. of glass, and 2 1/2 acres of land. Apply to J. M. LEATHER, East Fields, Mitcham.

GARDENER (HEAD WORKING), where 2 on 1/2 acre, 1000 sq. ft. of glass, and 2 1/2 acres of land. Apply to J. M. LEATHER, East Fields, Mitcham.

GARDENER (HEAD WORKING), age 45, 10 years' experience in Grass, Fruit, Flowers, and Vegetables. Apply to J. M. LEATHER, East Fields, Mitcham.

GARDENER (HEAD WORKING) in charge of 100 acres, 1000 sq. ft. of glass, and 2 1/2 acres of land. Apply to J. M. LEATHER, East Fields, Mitcham.

GARDENER (HEAD WORKING) of GARDENER BAILEY, well up in all requirements of 2 1/2 establishments, thoroughly experienced, both Out and Under Glass; also landscape work; excellent references. Apply to J. M. LEATHER, East Fields, Mitcham.

GARDENER (SINGLE HANDED); good with a 2 1/2 acre, 1000 sq. ft. of glass, and 2 1/2 acres of land. Apply to J. M. LEATHER, East Fields, Mitcham.

GARDENER (SINGLE HANDED) in charge of 100 acres, 1000 sq. ft. of glass, and 2 1/2 acres of land. Apply to J. M. LEATHER, East Fields, Mitcham.

GARDENER (SINGLE HANDED); life experience in all branches, Inside and Out; Chrysanthemums, Roses, Carnations, &c.; Decorator; intelligible. Single state wages. GARDENER, Sutton Green, near Guildford.

LADY GARDENER seeks post in good establishment, experienced in Fruit and Plant houses, age 42, single, willing. Manchester district. Particulars, MISS BAILEY, Edin., Hurst, Park, Wincoburgh.

TWO LADIES, experienced (trained under Head Gardeners) aspire to work together in large, up-to-date Fruit and Vegetable Garden. G. T., or MRS. WARRING, 52, Houghton Square, Bickenhead.

TRADE.

MANAGER, Grapes, Tomatoes, Cucumbers, and general market stuff, life experience—H. S., Box 25, 41, Wellington Street, Covent Garden, W.C. 2.

FOREMAN (WORKING); over 30 years' experience wholesale and retail markets, nurseries, and up in Chrysanthemums, Tomatoes, Cucumbers, Peas, Potatoes, Plants, Cut Blooms, Fencing, Stone wages, good references.—WOODS, 1, Forework Road, Mitcham, Surrey.

FLORIST—Re-engagement, lady requires: 14 years' experience Floral Designs, Bouquets, Plants, Soules, used to taking charges, etc.—FLORAL, 10, 85, Lawrence Road, South Ealing, London.

Evaporate your Fruit by using the "NATIONAL" EVAPORATOR.

It pays for itself in one season, and lasts a lifetime. Made in all sizes to suit all customers. You can thus Save and Store all your Fruit safely. Preserve it without sugar. Utilise every ounce of it. Sell when prices are highest, and Reduce transport charges. Appliances can be made by children.

Patentless, free from— THE BRITISH FRUIT EVAPORATOR CO., Ridsdale Road, ANERLEY, S.E.

ELLIOTT'S Latest Improved SUMMER SHADING, "PINGO," for greenhouses. Best ever used, SASSA WILSON, Bridge Castle Road, Hinxton, Cambs. 1-16 (over 2 1/2) ft. R.H.S. 4d. Of Seedsmen, A. & N. Stores, or Elliott, Alfred Rd., Lond. W. 3.

The Gardeners' Chronicle SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach the PUBLISHER not later than WEDNESDAY, 5 p.m.

Table with 4 columns: Ordinary Positions, Facing matter and Back Page, Half and quarter pages, column and half column spaces, 1/4 column, 1/2 column, 3/4 column, 1 column, 2 columns, 3 columns. Rates range from 10/10 to 1/10.

Front page (no display allowed) 1/6 per line space. (Headline counted as two lines.)

For discounts apply to address below. SITUATIONS WANTED.

26 words 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS. THE UNITED KINGDOM ... 15/- per annum. ABROAD ... 17/6

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2

Telegrams: 1543 "GARDENERS, RAND, LONDON." Telephone: 1543 GERRARD

ONLY MEDAL
INTERNATIONAL EXHIBITION EDINBURGH 1886
ONLY GOLD MEDAL EDINBURGH 1891

THOMSON'S CELEBRATED MANURES

PERFECT PLANT FOODS.
Derrivall for all garden crops. Prices: Vine, Plant and Vegetable Manure, 1 cwt. 20s., 56 lbs. 12s. 6d., 28 lbs. 7s. 6d., 14 lbs. 4s. 7d., 7 lbs. 2s. 4d. This 2 1/2, 1 and 6d. Carriage paid anywhere on 30 lbs. and up. Special Chrysanthemum and Top Dressing Manure: 56 lbs. 20s., 28 lbs. 11s., 14 lbs. 6s. 7d., 7 lbs. 3s. This 1 Carriage paid anywhere on 30 lbs. and up. Sold by all Seedsmen. Sole makers: Wm. Thomson & Sons, Ltd., Cleveford, N.B.

"Bill's"
THE FOOD FOR PLANTS

BENTLEY'S WEED DESTROYERS :

Liquid : Concentrated Strength 1 to 80.
Double Strength 1 to 50.
Patent Powder : 1 to 25.

BENTLEY'S DAISY KILLER
(LAWN SAND).

BENTLEY'S INSECTICIDES.

BENTLEY'S FUNGICIDES.

BENTLEY'S FUMIGANTS.

BENTLEY'S MANURES.

Catalogue on application.

JOSEPH BENTLEY, Ltd.,
Chemical Works,
Barrow-on-Humber, HULL.

SANKEY'S FAMOUS GARDEN POTS
The **BEST** and Cheapest.
State quantity of each size required and have "Carriage paid" collection ("Carriage" frequently amounts to half value of goods), or write for Price List, free.
SPECIAL POTS of all descriptions. Both Sewer and Fern Pans from 2d. each.
RICHARD SANKEY & SON, L.T.D.
Dulwell Potteries, NOTTINGHAM.

Important to Gardeners
and Fruit Growers—

"NIQUAS"™

(IMPROVED)
(REGD.)

The Most Successful Non-Poisonous
Insecticide of the Day.

Its Advantages are—
Certain Death to all Insect Pests.
No possible injury to the most delicate Plant, Flower or Foliage.
It is the cheapest Insecticide known.
One pint makes 10 to 12 gallons for Thrip, Black and Green Fly, etc., whilst RED SPIDER, Mealy Bug and Scale can be thoroughly eradicated by using "NIQUAS" about double the strength required for Fly.



PRICES.

Half-pint, 1/- ; Pint, 1/6 ; Quart, 2/6 ;
Half-gal., 4/- ; Gallon, 7/6 ; Kegs,
each, Five Galls., 25/- ; Ten Galls.,
45/-.

THE "NIQUAS" SYRINGE

These Syringes are especially adapted for the use of "Niquas," and as a general Vaporising Syringe. The "Niquas" Syringe changes automatically from Direct to Underleaf spraying by simply turning the Syringe.

To be had from the Trade generally.

Manufacturers—

CORRY & CO., LTD., BOWDOY TOBACCO
STORES & WAREHOUSE,
SHAD THAMES, LONDON, S.E.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of
Garden Seats, Garden Engines and Pumps, also
Garden Rollers, Water Carts, Garden Arches
and Hand Lights,
which we shall be pleased to clear at special prices, subject
to being unsold.

Particulars on application.

BOULTON & PAUL, Ltd., ROSE LANE WORKS,
NORWICH.

Save our Food — Thousands of
tons wasted
annually by the
ravages of Rats and Mice in our Farms, Stores, and Homes.

LIVERPOOL VIRUS

exterminates
RATS & MICE.

In its ready-prepared
form with bait for Rats,
2s. 6d. for Mice 1/8
Of all Chemists,
FRANK BONS
LESOHER & WEBB
Ltd., Liverpool.

SANITAS

✓ **SLUGS
SLUGS**

"SANITAS" POWDER
will rid your Garden of Slugs and
protect your Seeds and Plants from
other pests such as **Worms, Rats,
Mice, Sparrows, Cats, &c.**

Leaflet and Free Sample
with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (100 Lb.)
of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
Limehouse, London, E.
Awarded Medal at Royal Horticultural
Exhibition, 1911.

MANY YEARS REPUTATION

EUREKA WEED KILLER

LASTING RESULTS — NO NEW EXPERIMENT

LABOUR SAVERS. "EUREKA" LAWN SAND,
SOLFONE, NICOTINE INSECTICIDES, FUMERS,
SPRAYS, and OTHER CHEMICALS & SUNDRIES
SEE LIST. PLEASE ASK YOUR AGENT FOR THE EUREKA
ARTICLES — THEY ARE ALWAYS SATISFACTORY. IF ANY
DIFFICULTY IN OBTAINING, WE SEND DIRECT. CARriage paid.
Only Address: **COLLINSON & HAYWARD LTD., LINCOLN.**

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties.

STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

Ammanford and Pontyberem Collieries.

SOLE AGENT:

T. T. PASCOE,

York Chambers,
SWANSEA.

Tel. { phone
grams 1048 Central.
Pascoe, Swansea.

Best Anthracite Large Coal for Horticultural
purposes and Cobbles for House Furnaces.

Quick Despatch. Best Quality.
Lowest Prices.



THE Gardeners' Chronicle

No 1591—SATURDAY, JUNE 23, 1917

CONTENTS.

Agricultural education for disabled men .. 254	Irisos, notes on .. 249
Books, notices of—	Japan, letters from— .. 249
Herbs & Medicines 250	Vegetation of the Lin-kin Islands .. 249
Caterpillar plague, the 255	Market fruit garden, the 253
Farm, crops and stock on the home .. 278	Novice, confessions of a 251
Flowers, double .. 274	Obituary
Food production, on increased—	Fuster, Lieut. H. L. .. 278
Brassicas and Onions, nitrates for .. 252	Pea weevil, the .. 277
Tryeie fruit .. 251	Pineapple growing in South Africa .. 254
Food production at Gatton Park, Rogatz 251	Potato spraying .. 276
Parsley .. 252	Schneider, the late Mr. George .. 277
Strawberry plants .. 251	Seed trade, an appeal to the .. 256
Tomato, training the .. 251	Seeds, old and new .. 257
Gordonia anomala .. 250	Societies—
Strawberry plants .. 251	Royal Horticultural .. 256
Half-stem, damage by .. 250	Veronica La subulnata .. 257
Hot-watered wall .. 250	Veronica's hardness of shrubbery .. 255, 256
Relief Fund .. 250	War items .. 277
Insect pests, effect of the winter on .. 256	Week's work, the .. 257, 258
Insects and birds .. 256	

ILLUSTRATIONS.

Gordonia anomala .. 250
Meiopsis cambrica, the double flowered .. 254

LETTERS FROM JAPAN. I. THE VEGETATION OF THE LIN-KU ISLANDS.

M R E. H. WILSON, M.A., F.R.S., M.C., East gathering material and formation for the Arnold Arboretum sent the following account of his visit to the Lin-ku Islands to Professor Sargent, who has kindly forwarded it to us for publication. These islands constitute one of the least known of the dependencies of the Japanese Empire, and are rarely visited by foreigners.

I have just returned from the Lin-ku Islands, where Pine and Palm trees, and have pleasure in reporting a successful trip. The southern half of the main island is very rocky, hilly, but of no great elevation, and most of the land is under cultivation. Sugar is the chief crop, and two crops of rice are raised in a year, the first being planted about the end of February. The northern part of the island is mountainous and sparsely populated, and is partly of coral rock and partly volcanic. Some of the small islands visited were purely volcanic. Near the sea the flora is composed mainly of sub-tropical and tropical plants, which have a wide distribution in the tropics. Of these *Pandanus odoratus* is the most abundant. The common trees are *Ficus nataka*, *F. Wightiana*, *Erythrina indica*, *Besleria javanica*, *Meiopsis cambrica*, *Terminalia Catappa*, and *Hibiscus tinctoria*. Inland on the hills and mountains a few Japanese plants, such as *Thea japonica*, *Koyia japonica*, *Distylium racemosum*, *Machilus Thunbergii*, *Viburnum odoratissimum*, and *Cestropus cuspidata*, occur, but the flora proper is largely endemic, and the woody plants are nearly all evergreen, whilst the majority have lustrous leaves. The striking features of the flora are *Pinus Induchensis* and *Cycas revoluta*, and these give much character to the landscape. *Pinus Induchensis* is the only species of *Pinus* in Lin-ku, and is not only wild, but has been planted very largely. It is one of the handsomest of Asiatic Pines, and is a very distinct and easily recognised species. The bark is

always grey, quite smooth on young trees, but early becoming scaly, and finally deeply fissured and cracked into plates of irregular size and shape. The winter buds are reddish brown, and the cones comparatively small, and not very persistent. Though abundantly distinct, it appears to me more closely related to *Pinus Thunbergii* than to any other Asiatic Hard Pine familiar to me. At its best the Lin-ku Pine is a handsome tree 100 feet tall, with a straight trunk from 9 to 10 feet in girth, and a broad, oval or flattened crown. The wood is of fair quality, rich in resin, and may possibly contain turpentine in commercial quantity. The trunk hollowed out and shaped forms the canoe in common use among the fisher folk. This Pine forms pine-woods with usually a dense undergrowth of evergreen shrubs and low trees, among which *Tree Ferns* and various kinds of *Palms* are conspicuous. I took many photographs of *Pinus Induchensis*, and collected abundant herbarium material, and also some seeds of it.

On the sea of the *Cycas revoluta* is wild, but it is everywhere planted in vast quantities, and is, perhaps, the most common plant in Lin-ku. Formerly, and to a less extent to-day, the pithy trunk furnished an article of food.

In order to collect and study the *Juniper*, which has long been known to grow in Lin-ku, I made starts to visit the islands 20 and 52 miles distant from Naha, my home. This *Juniper* is a lateral, prostrate, woody, and forms dense or low mats on the ground, as above the mark. The foliage is very green, and the fruit sub-globose. *Pinus Induchensis* is a very promising. The cones are a reddish-brown, and each has two conical bands. In fact, I have seen the *Borneo Island Japanese taxodium* in Lin-ku, which I am not prepared to give a name to. In Lin-ku I collected plenty of material, including ripe fruits, and also brought home living plants. Fortunately, they are all safe, and are being held in the Arnold Arboretum, but it could be useful in Southern California and Florida.

In Lin-ku I took five dozen photographs and collected about 50 numbered specimens, representing more than one hundred species. Of the more interesting plants collected I may mention *Quercus Maximii*, *Banksia*, *Lankensis*, *Conium maculatum*, *Mezereum*, *Conium*, *Rhododendron*, *Yucca*, *Ruellia*, *Conium*, *Yucca*, *Pinus*, *Mezereum*, and a local variety of *Conium*, and several other plants, and many more. The *Rhododendron sub-umbellatum* is a very representative in Lin-ku of the group, and is called *R. Induchense* in books, and is endemic.

The *Japanese* people are a distinct race, probably of Malay origin, as the main part of them, particularly the women and children are of Malay type, and very different from those of China and Formosa. As a race they are smaller than the Japanese, and their manners are mild and unobtrusive. The women in particular, look very hard and very old, but on their heads, which are abundant, and seem happy. The houses are very small, of bamboo, with the sides and thatched roofs, and each is enclosed by a wall or fence. The people seem very poor, and whatever wealth they possess appears to be squandered on the construction of enormous family tombs. By education of the children and the development of various industries, the Japanese are doing much toward the improvement of the condition and social life of the Lin-ku people.

On the trip I received very good assistance from the Japanese. The forestry officers at Katsushima and the Agricultural Department in Lin-ku exerted themselves to the utmost in our favour. I find that our work in Japan during 1914 has become widely known, and is viewed most favourably by the forestry officials generally.

NOTES ON IRISES.

REGELIA IRISES.

May I give a warning to those who grow these beautiful Irises. It is that the rhizomes should not be lifted until the root fibres are fully developed. In early June it will probably be found that the foliage is beginning to show signs of turning yellow, and that the tips of the new growths at the ends of the running stolons are showing through the ground. Until last year I always took this to mean that growth was mature and hastened to lift my plants before the main root fibres sent out their lateral shoots. I was, however, always disappointed to find that the roots died away before planting time came in October, and that flowers were few in the following summer. Last year I left my plants in the ground until the middle of July, by which time growth was much more mature. The result was that the rhizomes and roots were in far better condition in October, and this season the plants flowered better than ever.

SOME JAPANESE IRISES.

The Japane section of Irises is by no means a homogeneous group. There are at least two main groups, those with flowers of which the half of the ball bears large wings which arch over and clasp the style branch, and those of which the half of the ball is strap-shaped and wingless. The seeds of the species of the two groups are very different, but our knowledge of some of the rarer species is still so scanty that it is impossible to say with certainty into how many subdivisions these two main groups naturally fall.

It would be interesting if some geologist could tell us whether in the hills of Asia Minor the soil is a stiff clay, or at any rate that heavy red loam which is found in the limestone districts of Southern Europe, and which seems to be extraordinarily fertile, and also whether there are not large tracts of sandy soil in Turkestan. These theories are deduced from the behaviour of various plants in this sandy soil in Surrey, and it would be interesting to know whether they are in accordance with facts. In any case, the fact remains that the Persian group of Irises does not here, such *Tulips* as *pulehella* and *polychroma* are none too happy, and *Fritillaria aurea* refuses to live, while *Iris bucharica* grows like a weed, *Tulips* such as *Kantaminum* are difficult to eradicate, and *Fritillaria pallidiflora* grows 2 feet high, with six or seven flowers on each stem. Of these plants, the former are all natives of Asia Minor, while the latter come from Turkestan.

Experience has therefore led me to abandon the Western *Junos*, and to concentrate on the Turkestan species, which have well repaid my interest in them. Last summer I lifted all my bulbs of *Iris Rosenbachiana*, and my belief was confirmed that there are either two species or two very different local forms concealed under this name. Dr. Fedtschenko in the *Journal Russ. de L'Asiologie*, 1909, p. 77, but as he only separates it from *I. Rosenbachiana* by saying that the flowers are yellow, it is difficult to be certain with what plant he was dealing. I would suggest, however, that the true *Rosenbachiana* is the early-flowering form with bright orange pollen. The thick fleshy roots on the dormant bulb taper gradually and are of a pale yellowish brown. Here I have only one colour variety of this form and the flowers have falls marked with a bright crimson stripe on a white ground. The later form, which is probably *Fedtschenko's* *hal-shumana*, is very variable in the colour of its flowers, and has green or one or two seedlings of a pale creamy yellow marked with brown purple. This form has white pollen, and the roots taper much more abruptly than do

those of the true *Rosenbachiana*, and are of a whiter colour. I found when dealing with large numbers of bulbs that I could separate them into the two species by the colour and formation of the roots.

Perhaps the most striking and certainly the most vigorous of all the Juno Irises is *I. bucharica*, with white and yellow flowers. Here it has combined with the yellow *I. orchioides* and given me wholly yellow forms, with the vigour and size of *bucharica*. One chance seedling of *bucharica* has come wholly white except for a pale yellow crest, and in others the deep yellow of the type is replaced by a pale, delicate lemon yellow, which gives a beautiful effect. I buch-

type, and pale yellow forms which also retain this feature.

Iris orchioides is rich in colour, but the flowers are small and insignificant in comparison with those of *I. bucharica*. Seedlings vary a good deal, some having conspicuous bright green markings on the golden ground; some are of a pale sulphur-yellow, while others are wholly white or white with a yellow crest.

My failure to keep *Tubergemana* and *Willmottiana*, both of which come from the neighbourhood of Tashkent, in Turkestan, and have winged falls, makes me wonder whether there is not in that district a region of the heavy soil in which this kind of Juno Iris appears to

lings are easily raised in pots sunk to the rim in the open. The seeds must be sown soon after they ripen, or germination will be unsatisfactory. At the end of the first summer the small bulbs may either be left a second year in the same pots, if the latter are large and the soil rich, or sifted out and planted in September in beds in which they will flower two or three years later. *W. R. Dykes, Charterhouse, Godalming*

NOTICES OF BOOKS.

HERBS USED IN MEDICINE.

ONE of the many difficulties that the pioneers of the herb growing industry met with was to teach collectors of wild herbs to distinguish between plants having similar names, and between those actually used medicinally and similar species which have no medicinal or commercial value. Some of the latter, such as Agrimony and Hemp Agrimony; Centaury and Centaurea; Chamomile and German Chamomile; Woody Nightshade, Garden Nightshade, and Deadly Nightshade; Mallow and Marshmallow; Wood Betony and Water Betony; Valerian and Red Valerian; Hemlock and Water Hemlock; are often confused by those who have had no botanical training or experience. Mrs. Ellis has on this account published sixteen excellent coloured illustrations of such of these plants as are actually used in orthodox, or herbal, medicine, with such botanical descriptions as should enable any one of ordinary intelligence to recognise the plants by the aid of the illustrations. A certain amount of elementary botany, such as is necessary to understand the botanical terms used, is intercalated with the descriptions. This little brochure should be very useful to beginners in herb collecting. It does not pretend to give cultural or commercial information, for which references are given to other publications of the National Herb Growing Association. Books containing coloured representations of indigenous medicinal plants are scarce, and this attempt to supply a felt want should meet with generous recognition.

GORDONIA ANOMALA.

THE Chinese shrub illustrated in fig. 94 is a native of tropical and sub-tropical Asia, and was introduced to this country in 1816. The name *Gordonia* was given to the genus in honour of Alexander Gordon, a nurseryman of this country, who died in 1780; but the plant has also been known as *Polyspora axillaris* Sweet, under which name it is figured in *Bot. Mag.*, tab. 4019; and *Camellia axillaris* Ker, the name given under the illustration in *Bot. Rep.* IV., tab. 549, and *Bot. Mag.*, tab. 2047, 1819. In the very brief description given in the last-named work, it is stated that the plant had then been cultivated for several years in a Fulham nursery, and was supposed to have been introduced from China by a Mr. Roberts. It flowered in December, 1818. The plant from which our illustration was taken flowered at Kew in April and May, and Peter Urban Fourné reported a specimen at Kew which flowered in May and June, 1905. Nicholson, in his *Dictionary of Gardening*, gives November as the month of flowering. Prof. Sargent, in *Planta Wilsoniana*, gives the period of flowering as the latter part of the summer and the autumn. Sargent adopts the specific name of *axillaris* given by Szayszlowicz; he describes the tree as being 6 to 8 metres tall, evergreen, and bearing white flowers. The specimen illustrated is two-thirds natural size.

By Mrs. J. D. Ellis. (National Herb Growing Association, London, 1917.) Small 8vo., 32 pp., with sixteen coloured plates. 3s., post free.

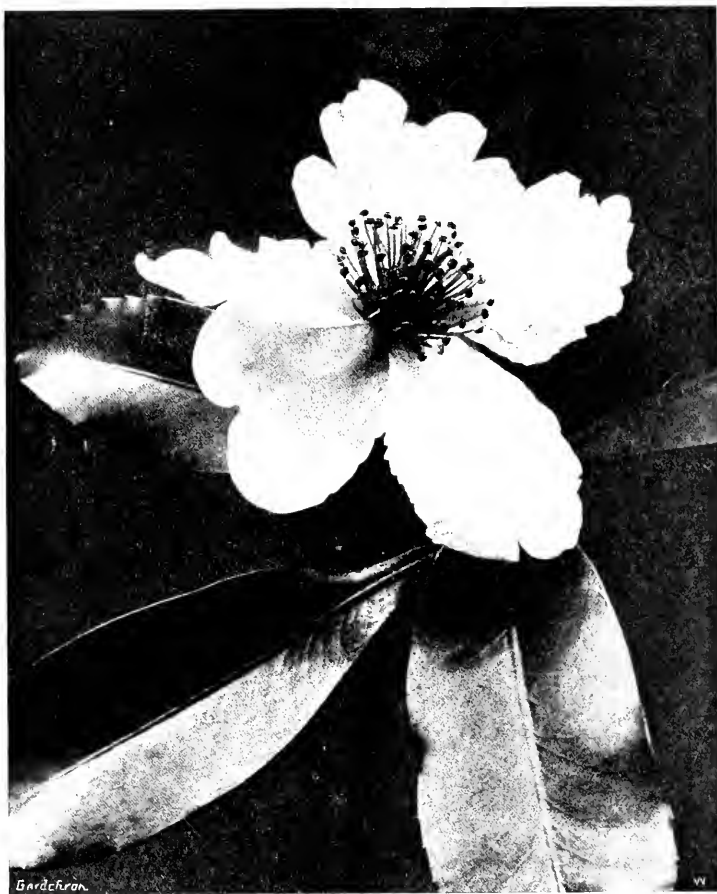


FIG. 94. GORDONIA ANOMALA. FLOWERS WHITE.

(Photograph by C. P. Roffell)

aria also crosses readily with *I. warleyensis*, and many different seedlings have recently been in flower here. The style branches and the standards are usually tinged with blue, and the blue of *warleyensis* contends with the yellow of *bucharica* to produce much variety in the markings of the falls. Sometimes these are yellow with a greenish tinge at the edge; sometimes the blue-purple only appears as blotches on the yellow, and sometimes there is little trace of the influence of *warleyensis* on the falls at all.

This *warleyensis* grows well here, but never with the vigour of *bucharica*. It has also given me a variety of seedlings, including a white form which retains the orange-coloured crest of the

level. Yet, the various crosses between *smidgenensis* and forms of *peisota*, which Van Tubergen has raised at Haarlem, presumably in the sandy soil of the bulb garden, dwindle away here.

The lifting of a number of bulbs of Juno Irises is most trying to the temper, even in the lightest of sand. In heavy soil, baked hard in summer, it must be so disheartening that no gardener except the most callous could persevere with it. The slightest jerk or twist snaps the fleshy, brittle roots or detaches them bodily from the base of the bulb. It is true that clusters of roots thus detached do develop buds in the course of time, but I have yet to find that these ever develop into vigorous bulbs.

I. bucharica seeds here abundantly, and seed-

CONFESSIONS OF A NOVICE.—XV.

Nor the least curious of the after-effects of the severe winter is the breakdown of the garden calendar. The floral times are out of joint, and flowers which hitherto had never met have lately nodded acquaintance to one another. In this garden, at all events, *Forsythia suspensa*, which ought to be a herald of spring, marched in the procession with the *Aubrietias*. The Darwin and the early Tulips went hand-in-hand, and the Daffodils, which ought to take the winds of March in beauty and to come before the swallows dare, were this year, like so many other plants, a month behind their scheduled time. Yet in this temporal anarchy many floral things, though belated, observed the relative times of their coming. The Apples waited decorously till the Peas were past their prime before fully opening their blossom. The response of plants to the hard winter weather appears to be capricious. Some, like the Larch and Laburnum, seem to reply by a sort of canny timidity. The birds poked their way into the open world a month later than usual.

For weeks the Larch buds, tipped with yellow, negotiated the weather as cautiously as a ship in a fog, and it was only when a fine burst of sunshine came that they threw caution to the winds and burst forth suddenly in their exquisite greenness, and not until June did the Laburnum throw off the silver-shining armour of its buds and reveal its yellow racemes.

Later, after brilliant sun, warm showers forced everything alive in the garden into flower. Here and there Stocks and Wallflowers which survived the killing frost scurried into flower, and my garden favourite, *Cheranthus Allionii*, flowered beside them and proved at once its superior beauty and hardiness. My Fig tree, under which in my old age I had promised myself an unbragging seat, assumed black in mourning for its own death, but near by in scarcely less sheltered positions *Magnolia* has bloomed as they had never bloomed before. *M. conspicua*, purest of flowers, has been exquisite, with its great white blooms appearing to float in the air. *M. Lemoii*, a little later, was like a candelabrum, with lamps of old rose and *M. alexandrina*, which looks like a hybrid between *M. conspicua* and *M. Lemoii*, bore its large flowers, pure white within and flushed with pink on their outsides. Nor has any night frost come to mar the beauty of these most exquisite blossoms. *Cupressus macrocarpa* later, said to be harder than the type, has just—and only just—escaped the frost, and is now resuming that mighty rate of growth which, at least on this light soil, makes it the most acceptable of all Conifers to those who are in a hurry to convert a novice garden into an established place.

The Potatoes on the lawn are growing apace, and the green borders, which are all that remain, are proving that the sacrifice of the lawn to Potatoes must be ascribed solely to patriotism, and not to despair of even making a real lawn. The top-dressings of sulphate of ammonia, of superphosphate, of chalk, and of matured road sweepings have at last proved their effect, and the border relies of the lawn that was would make superb turf if we had the labour to mow them. But that is not to be. Like all proper gardeners, all our energies are set on raising food, and the only relaxation which I am allowed from pushing the Planet Junior hoe is the destruction of the infinite variety of caterpillars and grubs which are battering on the fruit trees.

In the vegetable garden signs are not wanting that seed generally so fertile is less good than in normal years. There are gaps among the Peas and Parsnips, and even in the rows of Turnips, and it will require this year, and still more next year, a nice judgment to hit off the proper sowings to avoid waste on the one hand and broken rows on the other. Yet I am told

that it is of the first importance for every gardener to be as economical as possible in the use of seeds. The demand was never so great and the supply was never so difficult to maintain. Economy in seed-sowing is therefore an imperative duty. I have obtained supplies of the Brown Haricot Beans which the R.H.S. has procured from Holland. I sacrificed a couple of dozen in order to satisfy myself that they are really good to eat. The result of the test was very satisfactory, and these Beans appear to me to be of the best flavour of any Haricots I have tasted. I have asked for another pint. *A. N.*

THE MARKET FRUIT GARDEN.

BIRDS AS ALLIES.

It is difficult to estimate the extent to which birds aid the fruit grower in his campaign against caterpillars and various injurious insects. On two or three occasions in past seasons, when I was preparing to spray against caterpillars, I found they had almost disappeared from the trees they had infested. This season, again, although at the time of writing spraying is being continued, there are cases in which the caterpillars on Apples and Plums that had been seriously attacked have been greatly reduced in number, if not quite cleared off the trees, so far as can be told by smartly jarring the branches, or shaking them violently. When this was done a week ago numerous caterpillars fell to the ground, whereas, in the cases referred to, few, and sometimes none, were thus brought down. But we cannot afford to wait while birds are clearing off caterpillars, which is slow work when the pests are as numerous as they are this season. Enormous damage has been done in the meantime. There are always great flocks of chaffinches in my orchards. I prohibit the taking of their nests, and those of tits, in spite of the fact that the latter birds do damage by pecking holes in fruit. The blackbird, the sparrow, and the mistle thrush are the only birds whose nests and eggs I authorise one of my working lads to take, paying for the eggs brought to me. Common thrushes are regarded as doing more good than harm, although they eat Strawberries, Raspberries, Currants, and some other fruits. It is when birds have young ones to feed, as at present, that some varieties are very useful in clearing trees of caterpillars.

SHORT LIFE OF THE APPLE SPIDER.

The first Apple spiders this season were found on April 29. They were then very small, and apparently just hatched, and not many were to be found before the end of the month. By May 31 very few appeared to remain in the trusses of blossom on the earliest blooming varieties. The great majority had obviously developed into the perfect insect stage, as little swarms of psyllas were startled into flight on the jarring of a branch. In that stage they are harmless, and therefore the injurious campaign of this insect is a somewhat short one. My investigations dispose me to conclude that the injury done by this insect is much exaggerated. *Southern Grower.*

ON INCREASED FOOD PRODUCTION.

FOOD PRODUCTION AT GATTON.

At Gatton Park, Reigate, the residence of Sir Jeremiah Colman, Bart., many acres of grassland have been ploughed up and planted with Potatoes and other food crops. A number of flower beds in the pleasure gardens have been planted with Beet, Carrots, Onions, and other vegetables, instead of the usual bedding plants. Mr. Collier, the head gardener, is raising plants of various kinds of vegetables for distribution to the cottagers in the neighbourhood, whom he is also assisting by his advice on cultivation.

STRAWBERRY PLANTS.

In order to secure good crops of Strawberries in the shortest space of time, plants should be raised from vigorous plants of the previous season. The strongest runners should be selected and layered as soon as fit, in 60-sized pots filled with suitable compost. These, if carefully attended to with respect to watering, and the removal of superfluous growths, will quickly fill their pots with roots. Sever them from their parents, and place them in a semi-shaded position. Afterwards plant in an open site upon well-prepared soil, and give liberal supplies of water and liquid manure. If kept free of runners they will make strong plants before winter. Plant in rows 2 feet apart, and 1 foot apart in the rows, each alternate plant being removed after the first crop is gathered, if the plantation is to be used the second year. *This Chamber, The Home Gardens, Monmouth.*

DRIVING FRUIT.

In a recent issue of the *Evening News*, Mr. Marcus Knox, the novelist, gives an account of the methods of drying fruit for winter use as practised on the Continent, particularly in Switzerland, which seem deserving of adoption. The method is suitable for the harder fruits, such as Apples, Peas, Plums, Cherries, and Whortleberries, but is not practicable with Strawberries, Raspberries, or Blackberries, which must be bottled. Sound, ripe fruit only should be used, and must be first carefully wiped, but not washed.

Small Apples may be merely cut into halves for drying, but the larger fruits are best peeled, cored, and quartered, or, if preferred, may be cut into rings. Peas should be peeled and quartered, but only mid season and late varieties should be used, as the earlier sorts do not keep well. The stones of Plums and Cherries may be removed, but, except in the case of the largest Plums, these fruits are said to be better if the stones are allowed to remain.

The drying of the fruit requires care, and it should be realised that the fruit is to be dried, and not cooked. On the Continent, where the sun heat is greater and the air drier than here, much fruit drying is done out of doors, and it is considered that the fruit partially dried in the sun has an improved flavour. In the villages where the old fashioned brick ovens still exist, the fruit, after the preparatory sun-drying, is finished in the ovens; the heat that remains after the bread has been baked is usually just right for finishing the fruit. An excessive temperature in whatever type of oven is used must be guarded against, and novices are advised to experiment with small quantities before treating the bulk. Those who have greenhouses should make use of them for commencing the drying. The fruit must be laid out singly, and to keep the Apple rings flat they should be weighted.

When finished and quite cold, the dried fruit may be stored for winter use in tins or boxes, an tight receptacles are by no means essential; in fact, in Switzerland much of the dried fruit is hung up on the kitchen rafters in linen bags. But care must be taken to select a perfectly dry place, as damp is fatal to the keeping properties of the fruit, which should be periodically examined, and any which show signs of dampening should be taken out and used. *A. C. B.*

A PROFITABLE WAY OF TRAINING THE TOMATO.

In these gardens, for many years past, Tomatoes grown under glass have been trained in the following economical manner: The plants—single cordons are planted at 15 inches apart in a ridge of soil placed beneath the front of the trellis, and, as their growths extend, they are secured to the trellis. All lateral growths, with the exception of one at the base of each plant, are removed as they appear, while those retained are stopped at one leaf. Subsequent

growths are confined to one to each spur, and these are kept stopped at one leaf until the principal rod reaches its allotted space. By this time the earliest fruits commence to ripen, and as the gathering of each cluster is completed the leaves placed near to it are removed, by which means a section of the rod is bared. A shoot is at this time allowed to extend from each spur and trained up the old rod, this course being followed until the young rod entirely takes the place of the old one. The secondary rods, provided the plants are assisted by suitable stimulants, are equally prolific with the first, and by this system of training a succession of ripe fruit can be continually maintained from a single set of plants, with an appreciable saving of time, space, and expense, compared with that of planting another crop for succession. In our case the earliest fruit upon the young rods ripen before those at the top of the old ones are all gathered. The continuation and the length of time that a supply of fruit lasts by the adoption of this method depends, of course, upon the length of the rods of the plants. By the selection of suitable varieties, such, for instance, as *Sansiree*, combined with careful management, the plants may be kept short-jointed, and their cropping powers thereby increased. *T. C.*

PARSLEY.

PARSLEY should be grown in moderately heavy soil, and in a situation not too warm and gravelly, nor much exposed to the sun. Before digging the ground, spread a layer of soot, lime, and wood ashes in equal quantities over the surface, and work the materials well into the soil. This will make it vermin-proof for twelve months, and the Parsley will grow unmolested as far as grubs are concerned. Parsley should be sown on ground that has been well manured for the previous crop, and fresh manure is not needed. If sown in June the plants will remain perfectly good for twelve months or longer, but those sown in March generally run to seed early the following spring.

Sow the seeds in drills made 15 inches apart and about 1½ inch deep. The material used for covering the seed should be half soil and half lime, with soot and wood ash added.

When the plants are 5 inches high they may be thinned to about the same distance apart, but if they are extra vigorous they may be allowed a space of 6 inches apart. As soon as the plants meet in the rows, the large leaves should be gathered, as they become too coarse for use. After furnishing a supply all the winter, the whole of the leaves may be cut off close to the ground, and, when the plants grow again, the foliage will be as fine as ever, especially if a little soot is washed down about the roots at the time of cutting off the old leaves. *James A. Paice.*

NITRATES FOR BRASSICAS AND ONIONS.

The prevailing hot and dry weather makes growth very slow in autumn Cauliflowers and autumn Cabbages, and Brussels Sprouts. A dressing of 1 ounce per square yard of nitrate of soda will ensure a quick, healthy growth again, and assist in making up lost time when the weather changes. It should be scattered between the plants when the leaves are dry, just before hoeing, and will soon work down to the roots of the plants; if put on the leaves when they are wet it burns them. It should not be given to Broccoli, as they would grow soft and prove less able to stand severe weather. For very light soils sulphate of ammonia should be used instead of nitrate of soda, as it is not so quickly washed down by heavy rains. Onions that show signs of suffering from drought or attacks of mildew should have 3 ounces of superphosphate or dissolved bones per square yard, in addition to the nitrate of soda, but unless there is danger of losing them it is better not to apply those manures before the plants commence to form their bulbs, otherwise there may be a tendency to develop long necks. *W. H. Druce.*



THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

CYPRIPEDIUM.—After *Cypripedium Stonei*, *C. Roth-schildhamm*, *C. callosum*, *C. Lawrenceum*, and the hybrid *Maudiae* have passed out of flower, and new growth commences, any necessary repotting may be done. Plants that are in a root-bound condition may be shifted into larger pots. Remove with a pointed stick as much of the old compost as possible without damaging the roots; fill the fresh pot to one-half its depth with clean crocks for drainage, and pot firmly, keeping the base of the plant just below the rim of the pot. The summer-flowering *Cypripediums* do not require a compost of such a retentive nature as those that produce their flowers during the winter. A suitable rooting medium for the former is composed of three-parts *Osmunda* fibre and one-part good fibrous loam and *Sphagnum*-moss, the whole cut rather short, adding crushed crocks in sufficient quantity to keep the soil porous. The materials should be well mixed. After potting, place the plants in a shady part of the house, and keep the compost just moist until the new roots have grown well into the soil. During bright weather the plants will be benefited by a fine spraying overhead on mornings and afternoons, and the surroundings should be kept moist. Care should be taken with regard to *C. Stonei*, *C. Roth-schildhamm*, and others of that section, not to allow water to lodge in the centre of the growths or in the axils of the leaves, or they will decay. *Cypripediums* of the dwarf-growing species, such as *C. bellatulum*, and its variety *C. album*, *C. niveum*, *C. concolor*, and such hybrids as *C. Helen H. C.*, *Lawrencei*, *C. Chapmanii*, *C. Venus*, *C. Virgatum*, and *C. Mrs. E. V. Low*, after passing out of flower, should also be given attention at the roots. These plants are best grown in fairly deep pans, provided with ample drainage material. A suitable compost consists of two-parts good fibrous loam broken up in lumps about the size of Walnuts, and one-part peat mixed freely with small pieces of mortar rubble. After repotting, they should be placed near the roof glass of the Cattleya, or intermediate house. The plants are very liable to attacks of the small yellow thrip, which should be destroyed by means of frequent fumigations. Take the usual precautions in watering newly-potted plants until the new roots are well established in the fresh compost.

THE KITCHEN GARDEN.

By J. DENN, Foreman Royal Gardens, Windsor.

PEAS.—There should be no delay in applying a good mulching of farmyard manure to all main-crop and late Peas. If this work can be accomplished before the soil becomes too dry, it will do much to retain what moisture there is in the land, and lessen the danger of having the crop injured by mildew. One liberal application of soft water after the mulching will do more good than frequent light waterings.

SCARLET RUNNERS.—Strong sticks should be placed in position before the plants become entangled with each other, a mulching applied over the pots, and a good soaking of clear water given. The manure should be placed as near the stems of the plants as possible, and thoroughly shaken up as the work is being done, so that rain-water may find its way to the roots instead of being cast off by hard lumps of manure.

ASPARAGUS.—Do not cut Asparagus after this date, but clean the beds, and give them a good dressing of salt or some approved artificial manure. In exposed positions the shoots should receive some support, as much injury may soon be done by rough winds. Soaking with manure-water, given several times during the season, will be very valuable.

VEGETABLE MARROW PLANTS.—These should receive a liberal supply of water at the roots,

and if dry weather continues the plants will benefit by being damped overhead in the evenings. Keep worthless shoots and decaying foliage removed.

PARSLEY.—A good sowing of Parsley should now be made for winter and spring supplies. Sow in drills 18 inches apart, and select a position which is protected from north and east winds, as these sometimes work serious injury to this crop early in spring.

CAULIFLOWERS.—The plants which were put out in April will now be turning in, and may need liberal watering at the roots. Great Dane and Magnum Bonum are showing well, and Early London will follow a fortnight later. Successful plants should also receive a liberal supply of water, and the soil needs to be frequently stirred between the plants. Further plantations should be made in order to maintain an unbroken supply throughout the season. Lift the plants very carefully, retain as much soil on the roots as possible, and thoroughly water them directly they are planted.

LETTUCES AND ENDIVE.—A shady border should be selected for Lettices for the remainder of the season. Sow the seeds thickly, and as soon as the seedlings are large enough to handle transplant them removed at the thinning of the crop. If thin sowings are made very little transplanting will be necessary, as Lettices generally succeed better during hot summer weather if allowed to mature where they are sown. Prince of Wales Cos and Monument Cabbage Lettuce are good varieties for summer sowings. Endive should also be sown in a shady place and treated in the same way as Lettuce.

RADISHES.—Sow Radishes frequently on rich soil, protected from strong sunshine. Give a liberal supply of water to promote quick growth.

CHICORY.—It is not too late to sow Chicory for spring supplies. Sow in shallow drills 18 inches apart, and thin the seedlings freely. Early-sown Chicory should be freely supplied with water at the roots, or many of the plants may run to seed during hot weather. Keep the hoe freely at work between the rows, and dust the plants with soot during showery weather.

THE FLOWER GARDEN.

By W. J. GEISE, Gardener to Mrs. DEMFSTER, Keele Hall, Staffordshire.

LAWNS.—To keep tennis courts, croquet lawns and bowling greens in good condition they should be mown at least twice weekly, and as frequently rolled; or, if the lawns are not required for games now that so many things of greater importance claim our attention, once a week will be sufficient. During dry weather lawns must be watered. A light dusting of some approved lawn manure, applied before watering, will be beneficial. Grass edgings should be cut at frequent intervals.

MULCHING AND FEEDING.—On light soils, mulching can hardly be carried to excess, for there is not labour available now for frequent waterings in the flower garden. Most plants in herbaceous or mixed borders will show renewed vigour during dry weather if mulched with decayed manure and leaf mould, and watering can then be reduced to the minimum. Rose trees, climbers, shrubs, waterside plants and rock plants will greatly benefit by mulchings of some description, but manure must not be used for the Alpines; leaf mould and coconut fibre being more suitable. One gallon of liquid manure to six gallons of water is sufficient for most purposes. Four ounces of guano or other approved fertiliser dissolved in six gallons of water will make a capital stimulant as an occasional change from liquid manure.

WATERING.—During hot, dry weather it is impossible to refrain entirely from watering. Rock plants soon show signs of distress if neglected in this respect, and many herbaceous plants require copious supplies of water at this period. Give the plants a thorough soaking so that the water will reach all the roots, then apply a mulching of decayed manure, leaf mould, or even lawn mowings, to retain the moisture. By these

means much labour will be saved. Late-planted shrubs, Rose trees, ornamental trees, and climbers should receive similar treatment. All summer bedding plants recently planted may be given a mulching of cocoanut fibre or sifted leaf-mould. Plants in reserve beds will need watering occasionally. Syringing or sprinkling of seed-beds during dry weather does much good, and assists germination. Plants in tubs or vases must be examined every morning. Syringings in the evenings after a hot day will assist growth.

HOING.—The use of the flat, or Dutch, hoe cannot be too strongly recommended during dry weather. Rains and waterings soon cake or harden the surface of the soil, and, as this is detrimental to growth, the surface should be stirred frequently. Even if weeds are not visible, the soil should be stirred.

FRUITS UNDER GLASS.

By JAS. HEDSON, Head Gardener at Gunnersbury House, Acton, W.

VINES IN BEARING.—A few weeks ago I advised readers not to tie up the shoulders of the larger bunches of Grapes. Instead, it is better to go over the bunches and gently lift the shoulders with a stick. This should be done on two or three occasions, so that the berries do not become interlocked with each other. By lifting the upper berries and freeing them, the bunch will increase in the height of its shoulders and tighten to the stem. Every effort should be made to do the usual stopping of the lateral growths on vines in bearing. Much of the young shoots with the thumb and forefinger. See that rather more light is given to white Grapes during the process of colouring than to black varieties; this can be managed by moving the developed foliage aside for the time being. If there is any trace of Madreshead Court swelling to the finishing stage, see that ventilation is carefully attended to. Want of ventilation causes splitting in this Grape, which may also occur during a period of damp, dull weather, when the atmosphere is heavily charged with moisture. To prevent this maintain rather more warmth in the pipes. Excess of water during the final stage of swelling will also cause splitting. Keep a look out for any berry that may crack, and remove it as carefully as possible. When any Grapes are ripe enough for cutting, keep the temperature of the house somewhat lower and ventilate freely, except in very damp weather. If birds or troublesome insects stretch some fly-netting over the ventilators.

STRAWBERRY RUNNERS FOR FORCING.—No time should now be lost in securing the requisite number of runners. The best way by far is to set apart sufficient young plants of last year for this purpose, pinching out all the flower spikes. By so doing, quite a fortnight will be saved, and this is all important. Do not take the secondary runner off any growth if there is sufficient to shoot. For the first year's batch of plants, I am in favour of 42 inch pots, either earse or what is known as size 38. By using these pots, some labour may be saved in the potting if we lay straight away into the fruiting pot, collecting the best runners for the purpose. Of course, this only applies to the first early variety chosen for the purpose, such as Keen's Seedling, when a good stock of this old Strawberry can be obtained. My next choice is King George (Laxton's). I have found this Strawberry to be quite reliable. For packing to send away, it is the better traveller of the two. I am a strong believer in firm potting; the growth will not be quite so luxuriant, but it will be sturdy. When the larger pots are used, that is, 52 inch, prepare a sufficient number of "thumbs," rather than "stixies," for the purpose of having, pressing the soil down quite firmly. One crack is sufficient for drainage. Plunge these pots closely together, for it will be easier to water them, and they will not dry up so quickly. Use the best available soil for Strawberry culture in pots, inner some what for rooting the runners than in the after potting. To a good fibrous loam add some finely-sifted mortar rubble in sufficient quantity

for it to be distinctly traced, and a few handfuls of soot. When the loam is not all that one could wish, use with it some sifted leaf-soil, or some of the spent manure from a Mushroom-bed. Do not lose any opportunity of preparing the permanent fruiting pots; clean pots and clean drainage are both essential. Do not force so many plants as in former years, is my advice. Labour is scarce, and may be so another season.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcote, Eastwell Park, Kent.

CAMPANULA PYRAMICALIS.—This species, and its white companion *C. p. alba*, are satisfactory plants for decorative purposes. They last a long time in good condition if placed in a dry and shaded position as soon as the flowers begin to open. Last year's seedlings are throwing up their flower spikes, and should be fed regularly in order that they may develop to the fullest extent. Liquid manure should be used, alternately with a little artificial manure given as a top-dressing. Plenty of water will be required at this stage. Stake them in good time, if exposed to wind, but remove them under glass before the flower spikes open. The compact varieties are excellent for pot culture. Seedlings sown this spring for next year's blooming, and picked out early in boxes, can now be potted on, or planted out in the reserve garden. If the latter, they can be lifted and potted in the autumn. If left out during the winter, they can still be carefully lifted and potted as the flower spikes are developing. This later plan is not recommended, except in cases of emergency, as, if the balls are much broken the plants will not be satisfactory.

CANTERBURY B'ILLS (CAMPANULA MEDIUM).—These are great favourites for decorative purposes, and a hitch in pots is exceedingly useful before the outside border plants are in bloom. Give plenty of water and stimulants. The plants can be preserved in many shades, including good pinks and whites in both single and double varieties.

GREENHOUSE CLIMBERS.—Climbers in houses should be looked over at frequent intervals at the present season, as growth is very rapid. Trim the shoots, leaving only sufficient to train to the allotted space, and stopping the others fairly close to the main stem. If the house is sufficiently lofty, a number of the lateral growths can be allowed to drop from the vines in a natural manner. There is a wide range of climbers suitable for a cool greenhouse. One of the most satisfactory for an amateur is *Bougainvillea glabra*, which can be grown successfully under cool conditions. Exposure to the sun is not injurious; the flowers assume a most brilliant colour, and last in bloom almost the whole season. *Echinas* can be trained as pillar or roof plants. *Bignonia* and *Mandarin* are variety, *Jasmin*, *Lapageria rosea*, and *alba*, *Paeonia*, *Plumbago capensis*, *Mandevilla surcuferens*, *Solanum Wendlandii* and *S. praevenoides*, *Saxifraga* and *Streptocodon* (one can use all beautiful climbers which will thrive admirably in a cool house, and keep up a succession of bloom practically the whole season.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Hon. ARTHUR DAVRY, Abbot's Wood, Godalming, Surrey.

BUSH FRUITS.—Red Currants are very promising this year. In pruning the bushes, retain the old wood, with a few strong shoots at the end of the branches, to make the tree taller and bigger. Stop all shoots not required for this purpose, and pinch all side growths, retaining only those that are required for extension. Occasionally it is well to run up one or two from the base, to take the place of any that show signs of decreased vigour. White varieties require similar treatment. A good soaking from a sewage tank is advantageous at this stage. Black Currant should only be stopped when the growths are extra vigorous, but young shoots should be encouraged from the base, to take the place of old,

worn out growths. Gooseberries are yielding large crops, and require scarcely any pruning at this season, excepting where the growths are too close together, when the fruit on a superfluous one may be gathered and the shoot removed. Cordun bushes may be both stopped and thinned if too thick and vigorous.

PEAR TREES ON WALLS. All Pear trees should be examined frequently, thinning the fruit, pinching the shoots, and tying in the growths when long enough. Varieties such as Duoyette du Commerce, Beurré D'iel, Prémisier Duchess, Glou Monceau, and others require severely thinning, and they are best when of good size. Some of the second early Pears are also much improved by judicious thinning, including Marguerite Marillat, Williams's Bon Chrétien, Beurré d'Amabilis, Triomphe de Vienne, and Souvenir du Congrès. See that the roots are not allowed to lack moisture.

CHERRIES.—Cherry trees ripening their fruits need plenty of moisture. See to the proper tying of the growths, especially of cord-trained trees. The Cherries should remain on the trees till they are thoroughly ripened, for, although some kinds are quite ripe when gathered before they are quite ripe, the cherries do not, the stalks quickly wither, and the fruits become tough. Late varieties should have copious supplies of water, and should be frequently washed in order to combat anthrax. Those trained on north walls will not require so much watering as those on west or south-west walls. Bush and pyramid trained trees on light soils may also require moisture. Cherry trees should not be neglected after the fruits are gathered, but should receive careful watering and syringing till growth is matured, and all growths kept tied to prevent the wind damaging them.

STRAWBERRIES.—These are ripening very early. I gathered the first fruits outside on the 9th inst., but the main crop is now ready. The trusses of fruit of late kinds should be lifted from the soil to prevent washing by violent storms, and, if necessary, afford copious waterings, as the season will be a short one especially on light soils, and if the small, imperfect fruits are removed, it will make those that are left all the better.

THE APIARY.

By CLERK.

TAKING BEEH TO CLOVER.—After dusk give the bees a little puff of smoke, then close the entrance. Take off the roof and screw on at least two strips of wood across the frames to keep them steady in transit. Having previously levelled the ground, put down the hives at least 2 yards apart. After removing the screwed on strips put on the queen excluder and shallow frames (if a great quantity of honey be wished) fitted with drone base foundation and wired. It is best not to put on the supers the same night, because the bees will be irritable after the journey, and as it is dark, too, manipulation would be very difficult for any but the most skilled apiarists. Do not forget to open the entrances before leaving the hives. Wrap up the supers very warmly, for draughts and cool supers court failure. Whenever I go I find that this apparently simple matter is neglected, and bees refuse to use them, especially if sections are employed. Wrap the supers as completely as in winter, for what will keep out the cold in winter will keep out the heat in summer.

In fitting up sections and shallow frames, use full sheets of foundation, worker base for the former and drone for the latter, as it is easier to extract honey from the wider mouthed cells. An acquaintance in the North of England took his bees to the Clover a few years ago, and in a very few days his supers were nearly full, so he put on a second and a third, but the weather became bad before much was done to the third, and he had an average of 50 lbs. of delicious Clover honey from each, which brought a good price after winning several valuable prizes at different shows. £10 in all, and the honey was sold at prices ranging from 1s. 3d. to 1s. 8d. per pound.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or alterations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, JUNE 27—

Covent Garden Flower Show.

THURSDAY, JUNE 28—

Rev. Botanic Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years of Greenwich, 61.4.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, June 1, 10 a.m., Bar, 29.2, temp, 65° Weather, Cloudy.

SALES FOR THE ENSUING WEEK.

FRIDAY
Collections of Orchids, by Protheroe & Morris, at 57 and 59, Chancery, at one o'clock.

We are glad to know that Miss Saunders, who has already done so much to elucidate the mode of inheritance of "doubleness" in Stocks, is continuing her investigations and extending them to other flowers.

As is now generally understood, doubleness in Stocks is a remarkable and interesting phenomenon. The doubles are themselves sterile, and, therefore, when raised from seed have to be built up from "double-throwing singles."

It is probable that doubleness in Wallflowers is similar to that in Stocks, for the old-fashioned double Wallflower, not often seen nowadays, is, like the Stock, fully double, and also sterile. Whereas, however, it is open to anyone to raise double Stocks provided he possesses the right strains of singles, the fully-double Wallflower is not produced from seed. It arose as a "sport," and can only be propagated by cuttings.

A new strain of double Wallflowers, originated by German growers, exhibits different degrees of doubleness. This strain is fertile, and hence may be perpetuated by seed. In *Meconopsis cambrica* (Welsh Poppy), Carnation, and Hollyhock doubleness is a variable phenomenon, and

intermediate stages between single and full double are of frequent occurrence. In *Meconopsis* the full double is sterile, but one and the same individual may bear flowers of different degrees of doubleness. When a single and a high-grade double are mated the progeny bears flowers of an intermediate degree of doubleness, and gives rise in turn to singles, intermediate doubles, and pure-breeding doubles in the simple proportion of 1:2:1. The first reference to double *Meconopsis* which Miss Saunders has been able to find is in the *Gardeners' Chronicle*.^{*} The plant which is illustrated in fig. 95 appeared spontaneously in Messrs. Backhouse's nursery.



FIG. 95.—DOUBLE FLOWERED *MECONOPSIS CAMBRICA* THAT APPEARED SPONTANEOUSLY IN MESSRS. BACKHOUSE'S NURSERY.

It is interesting that the figure of this early sport represents a flower in extreme double condition all the parts of the flower within the normal corolla consisting of narrow, strap-shaped petaloid structures. But at the present time *Meconopsis* with all degrees of doubleness (petaloid) occur. In *Meconopsis* doubleness behaves as a dominant, whereas in Sweet William doubleness—in the sense of the transformation of the stamens into petals—behaves as a recessive.

The Hollyhock (*Althaea rosea* and *A. ficifolia*) produces doubles which are capable of yielding seed. High-grade

doubles, as well as singles, breed true, and when crossed with one another give rise to intermediate (low-grade) doubles, which behave as heterozygotes, producing, in the next generation, singles, intermediate doubles, and full doubles.

In the Carnation (*Dianthus Caryophyllus*) the case would appear to be different. Seed from doubles throw some singles. According to Mr. James Douglas, the number of singles amounts to 12 or 15 per cent. According to work carried out by Mr. J. B. Norton,^{*} doubles yield doubles, semi-doubles, and singles in the proportion of 1:2:1, and Norton regards the semi-double, in which some stamens are always found, as the florists' type. This conclusion was confirmed by Batehlor,[†] and has been verified by Miss Saunders. Singles are recessives and breed true, but of doubles obtained by crossing single and double and breeding from the F₁ plants, it is not possible to discriminate between pure doubles and heterozygous doubles. Nevertheless, as Miss Saunders has found, it is a fact that some doubles breed true (pure dominants) and some throw doubles and singles.

NATIONAL SWEET PEA SOCIETY.—The National Sweet Pea Society, having abandoned the exhibition that was to be held in Manchester, will hold a special exhibition of Sweet Peas in conjunction with the Royal Horticultural Society's meeting at the Drill Hall on Tuesday, July 3. No money prizes will be given, but medals will be awarded to the more meritorious exhibits.

SOUTHAMPTON SUMMER SHOW.—We learn that the Southampton Royal Horticultural Society's Summer Show will take place this year on July 11. There will be prizes for Roses, Carnations, and Sweet Peas, besides a number of classes for fruit and vegetables.

FRUIT CROPS IN THE NETHERLANDS.—In a report dated May 30 from the British Consul General at Rotterdam it is stated that the prospects for small fruit crops in Holland are satisfactory, although Raspberries suffered from the severe winter, and some damage was done to Gooseberries by insects. Prospects for Red and White Currants are on the whole very good, though near Winschoten and in part of North Brabant they are only fairly good. Prospects for Black Currants are from good to very good. Gooseberries generally are good to very good, and favourable reports are received as to Raspberries from the neighbourhood of Breda, the principal district of cultivation. Cherries generally show good prospects.

AGRICULTURAL EDUCATION FOR DISABLED FRENCH SERVICE MEN.—We learn from the *Revue Horticole* that at the Agricultural School at Oisellerie (Charente, France) a department has been opened for the re-education in agricultural operations of disabled Service men. The course will be open free to discharged, wounded men, and those still being treated at the hospitals. The scheme has been sanctioned by the Minister of Agriculture.

PINEAPPLE-GROWING IN SOUTH AFRICA.—The *Journal of the Royal Society of Arts* publishes in its issue for June 15 a fascinating account of the Pineapple industry in South Africa, which has reached amazing proportions in the comparatively short period of sixty years. It appears that until the middle of the last cen-

* See *Gard. Chron.*, XXXVII., 1905, p. 63.

† "Carnation Breeding," *Aust. Report American Breeders Assoc.*, vol. 1, 1912, p. 193.

tury Pineapples were unknown in South Africa, but at the present time, on one estate alone, there are 2½ million plants. The soil and climate of South Africa are eminently adapted for Pineapples. Sixpence to a shilling per dozen is the average selling price, out of which the grower obtains a good profit. It is calculated that the returns are about £60 per acre per annum. One large estate, the Langholm Estate, is obtaining concessions from shipping companies which will enable a number of Pines to be sent to the European markets on advantageous terms.

THE LATE GEORGE SCHNEIDER.—We notice in our esteemed contemporary, *L'Horticulture Française*, an appreciative article based on the notice of MR. SCHNEIDER which appeared in these columns at the time of his death. Our readers will sympathise with the widow in her recent loss—the husband of her youngest daughter (Maad) having been killed at the Front a few weeks ago. He was serving in the H.A.C.

HORTICULTURAL WAR RELIEF FUND.—At the invitation of Lady Northcote, the County Presidents of the Ladies' Committee of the Royal Horticultural Society's War Relief Fund attended an At Home at Lady Northcote's residence, 25, St. James's Place, S.W., on Saturday, June 16. The meeting was presided over by Lady Northcote, who gave a report of the work which had been done by the Ladies' Committee in securing subscriptions for the Fund. Lady Northcote reported that not only had the Committee been active in this country, but it had also been able to create interest in the Fund in the United States. The Right Honourable the Speaker gave a graphic account of the devastation in the region of the Somme battle field, which region he had recently visited. So complete is the destruction in that region that it is not possible for peasants returning to their countryside to discover either their homes or the boundaries of their land. All has been blotted out by the constant rain of shells. The Speaker insisted upon the need for a survey and the re-parcelling of the land, and drew attention to the fact that it must take years before the fertility of the soil is restored. Even in those places where the soil is not pitted with great shell holes the surface soil has been buried, and is not covered by infertile subsoil. Reports from Serbia show no less devastation. The Plum trees, which were the chief source of income of the peasants, have been systematically destroyed. Mr. Mackinder was able to speak as an eye-witness of the state of the ground from which the Germans have recently retired. Across that strip of land over which no battles had taken place the German army has effected a destruction even more complete than that on the battle fields. This foolish thoughtfulness has taken the form of razing villages and hamlets to the ground, so that nothing is left of them but the debris of the bricks of which the houses were once composed. But the act which will be excoriated so long as the German name is known is that of the destruction of the fruit trees. They lie in thousands in close ranks as they were cut down. Nor is it true that the destruction was designed to serve any military purpose. Hardly approaches so vast this method of act of destruction might yet further prejudice the name of Germany, the authorities caused a semi-official statement to be issued from Berlin to the effect that the cutting down of the fruit trees was undertaken in order that military use might be made of the timber, but Mr. Mackinder was able to demonstrate the clumsiness of the privation by pointing to the facts that the trees lie there untrampled, with every branch intact, and those that have not been felled have been ringed, so that the subsequent death of the trees is assured. Even the vines and Apricots and Plums on the walls, have been torn down and destroyed. Those whose hearts are touched by these accounts of damage done may rest assured

that the Fund which the Ladies' Committee is collecting will help not only to restore the pleasant land of France, but to kindle hope again in the desolate hearts of the peasants in the countries of our Allies.

WAR ITEMS.—MR. H. CORROYON, of Geneva, has contributed an article to the *Journal de Genève* on the subject of German devastation in Belgium and France. Basing his observations on Denteromyon, ch. 20 v. 19, he protests vigorously against the wicked destruction of the beautiful forest of Soignes, in Belgium, and against the mutilation of fruit trees in France.

—M. PIERRE LEVIGNE DE VILMORIN (the youngest son of M. MAURICE L. DE VILMORIN), to whom the War Cross for gallantry has lately been awarded (see p. 175), was mentioned in a despatch as follows: "On the 27th and 28th of March, 1917, having received the order to return with his gun only enough men to keep it in action, under a hot fire of heavy shells, himself took the post of gunner, showing complete indifference to danger."

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

HARDINESS OF SHRUBBY VERONICAS.—(pp. 229 and 230.) Veronica Traversi is usually considered to be the hardiest species, but I saw specimens killed outright in 1915. This year the species has escaped death, sheltered by hedges or bushes. Four dwarf and vigorous plants, close to where I write, have lost every leaf, though the branches are now sprouting freely. The site is fully exposed to wind, which caused the damage before the advent of snow. All the species of which I have experience require a considerable amount of assistance to support the charge, which was destroyed because the soil was frozen. Hitherto I have regarded *V. lobulodes* as one of the hardiest. For years past some thousands of plants have been grown in pots and boxes, for planting in the London district. So far I have not seen a live bush since the frost, except some very small ones on the shores of the Mersey Firth. With me, more than one variety of it have been killed. *V. Hartwegii* and *V. thoughii* (formerly *V. Amygdaloides*), *V. speciosa*, *V. lazaroensis*, *V. dussancti* in front of them have been killed outright. Thus I attribute to greater exposure, and it is borne out by the fact that *V. pumilodes* itself was partly killed on the outer or less sheltered side. *V. Turcomana* lost all its leaves on the larger branches, while the shoots at the base retained their leaves and are now growing freely. *V. Colensoi glauca* was killed *J. F.*

INSECTS AND BIRDS. I noticed in the issue for June 22nd remarks on the subject of insect pests by several writers who lamented their prevalence, "in spite of the severe winter." It is a common failing to think that a severe winter is bad for insect life; as a matter of fact it is just the reverse. Most insects are well equipped for withstanding cold in the particular stage in which each species is accustomed to hibernation. The severer and more prolonged the winter, the more complete is that hibernation, and the more do the natural enemies of insects die, either. When the winter consists of alternations of spells of mild weather and cold dry frost, it does not materially affect the birds, but the warm spells tend to rouse the hibernating insects to activity, only to perish in the succeeding cold snap for which they are not always prepared. Large numbers of insectivorous birds have perished during the recent winter. In addition to this, our authorities in their wisdom recommend us to kill sparrows and other birds just when they would be most useful; in spring and early summer, when their plumage would be full on destructive caterpillars and other insects. I fear that the crops we so badly need this year will fall victims to the devouring flocks of insects, and it is to be hoped that if there is a food shortage later on, we shall learn

the importance of setting the forces of Nature to control each other, which is the only proper way. America and Germany have taken in hand the subject of bird protection and conservation in a thoroughly scientific manner. C. A.

THE PEA WEEVIL. (See p. 222).—This insect has done much damage in our locality to early Peas. Market growers and allotment holders testify to the terrible crippling in some cases the actual loss—of all early sowings. In this garden four rows of Peas were sown on the same date on the same plot of ground, two dwarf rows alternating with two rows three and a half feet high. The dwarf varieties were spoiled, while the taller plants escaped. The damage was done when the Peas were just above the ground, early in April. It is difficult to understand why the two tall rows escaped unharmed. C. T., *Amphill Park*.

THE CATERPILLAR PLAGUE.—The caterpillar attacks seem to be gathering strength in Kent, and will have to be taken in hand more systematically if fruit is to be grown successfully. Opinions as to the value of grease banding as a preventive are very diverse. Only the Winter, Umber and March moths have wingless females, while the Pepper and Salt, Clouded Drab, and several varieties of Tortrix, have winged females, and all have been found on Apple and Pear trees. The difficulty of fixing any band on a tree in such a manner that the minute larvae hatched below the band cannot pass under it is very great, and on old trees one often sees large fissures by which even the female can ascend. Before any sound conclusion can be drawn as to the efficiency of banding, we must know what is the larva attacking the foliage, and how and where the bands were affixed. Kentish growers are in no doubt as to the success of arsenate of lead as an insecticide, and enormous quantities are used annually. My experience of four years' continued use of this specific on an orchard of dwarf trees is very hopeful. After several bad attacks, a gradual decrease in the number of pests has been noted, and this year, despite bad attacks close by, my trees were almost clean. My experience would lead me to believe that the moth does not travel far in search of a host plant, and that it should be regarded as a soil rather than an air pest. Fruit trees planted on fresh land remain comparatively clean for some years, even when adjoining infested plots. The danger of hedges as breeding grounds is shown in one plantation I have seen, where the hedges are riddled, and also the row of trees close to it, while further in the trees are untouched. *Southey Grove* refers to the susceptibility of certain varieties. This may be partly due to the fact that late-staying Apples are generally exempt from attack. I have noticed a curious case of a row of Peas, alternately Hessele and Chalk. The Hesseles are almost clean and bear a good crop, whilst the Chalks are nearly debilitated. S. B.

OLD SEEDS AND NEW. In the article on "Old Seeds and New," that appeared in the *Gardeners' Chronicle* on June 16, it is urged that economy should be exercised in using seed. A good deal of preventable waste occurs every year with expensive seeds such as Peas and Scarlet Runners owing to irregularity of germination, and the various causes the young seedlings are cut off according to the soil during their earliest stages of swelling and growth. For some years I have reduced the amount of seed used, and have secured a great improvement in the final result by the very simple expedient of germinating the seeds before sowing them. Several friends have also tried the game, and with uniformly successful results. The method is fairly obvious, and is known to practical gardeners, but there are at least beginners who have not tried it, and it is this circumstance which emboldens me to record my own practice. The seeds are soaked in water for about a couple of hours, and then spread out on a wet rough towel, which is folded back to cover them over. The whole can be conveniently placed in a meat dish and covered with a second inverted dish. It is important that the seeds should not lie in water, but they must have enough liquid to keep them thoroughly wet. When the radicles have protruded from about ¼ inch to 1 inch, they may be sown of course,

with the roots pointing downwards) in a prepared trench, the bottom of which should have been well soaked if the ground is at all dry. Under these conditions germination goes on rapidly, and in a few days they are above the soil. The whole process only takes relatively little time, and it means not only saving about 50 per cent. of the seed, but the final results are, so far as I am able to judge, always more satisfactory than those obtained by the ordinary practice of sowing. *J. B. F.*

AN APPEAL TO THE SEED TRADE.—The seed trade has for many years required an association that could do something for the mutual benefit of both employers and employees. Could not a meeting be arranged to form a committee and to appoint a permanent secretary who is thoroughly conversant with all branches of the trade, and who would receive a salary for his services. A subscription should be paid by all members, and these could be utilised for the benefit of employees who through illness or any just cause fall out of employment. One of the chief objects would be the finding of employment for those requiring situations, which would materially help the trade in general in recommending only suitable applicants, and this would be beneficial to employers. I should be glad to hear that there are men willing to promote an association covering the whole of the United Kingdom. As there are a great many men doing their bit at the present, something could be done to find employment for those after the present crisis is over, and thus it would be a great benefit to all connected with our trade if such a matter could be taken in hand at once. *Seedsmen, Gloucester.*

POTATO SPRAYING.—The Food Production Department, in the campaign which it is carrying on for potato spraying, is perhaps following too closely in the footsteps of the Irish Board of Agriculture, without having sufficiently examined the soundness of that Board's action, and I wish to point out the climatic differences in Ireland and in England. The material recommended by the Department is soda-Bordeaux, which the Irish Board has in recent years called Burgundy mixture, though I know not on what authority, for that name was applied by Gaillon in 1868 to an ordinary lime-Bordeaux of a particular strength; it consists of copper carbonate made by adding carbonate of soda to sulphate of copper, and was introduced by Masson in 1867, and used by Partington in that same year as a remedy for mildew of vines. At that time the nature of the reaction between soda and copper sulphate was not known, and Masson used 1 lb. of sulphate to from 1 to 2 of soda. Partington adopted a mean of these proportions, namely, 1 to 1.5, and further increased the actual strength of the mixture so that 4 parts of the sulphate should be used for every 100 of water. In 1909 an investigation of the reaction in question appeared in the *Journal of the Chemical Society* (reproduced in the 11th Woburn Report), showing that the copper carbonate produced had the formula $5\text{Cu}_2\text{O} \cdot 2\text{CO}_2$, acid sodium carbonate (bicarbonate) being formed at the same time, and that, consequently, the requisite proportions of the reagents were 1 of sulphate to 1.8 of carbonate. The Irish Board, however, made no alteration in the proportions which they had adopted in 1901, and our English Board is now copying them. These proportions are 4 of sulphate to 5 of soda, recently modified to 4.45 by the English Board, and they appear to be based on the relative molecular weights of the substances concerned, which are in the proportion of 4 to 4.6, thus implying a belief that it is the normal copper carbonate which is formed, CuCO_3 , a substance which any school text-book on chemistry would have taught is incapable of existence. At the same time, it may be mentioned, an actual strength in excess of that originally proposed, namely, 20 parts of copper sulphate to 100 of water, is being adopted. It was shown in the communication referred to that any alteration in either direction from the correct proportions of the reagents resulted in an increase in the amount of copper remaining in solution (though not to any large extent) till the proportion of soda was reduced below 1.51, and consequently, an increase in the danger of scorching the foliage, whilst the large amount of sulphate of

soda in the mixture further increases this danger, for, according to statements made, this substance has considerable scorching tendencies. Doubtless the heavy rainfall in Ireland would reduce the danger, but from certain remarks of the Irish Board in its *Journal* it is evident that it has not been entirely avoided even there, and might be serious in this drier climate. In any case, it is well to warn fruit-growers against using such a mixture on fruit trees. The Irish Board has published the results of trials with Bordeaux paste (now known as Bordrite), soda-Bordeaux, and ordinary lime-Bordeaux, the effectiveness found being least with the paste, and greatest with the lime-Bordeaux, whereas, according to our trials at Woburn these latter two gave practically the same results; indeed, the proportion of paste required for spraying was based on the amount found to be equivalent to ordinary Bordeaux mixture in such trials. These apparently discrepant results are not really contradictory, for the fungicidal value of different substances must necessarily vary with the climatic conditions under which they are used. One substance may have greater killing powers than another, but in a wet climate this advantage may be outweighed by the other substance possessing a greater adhesiveness, or containing a greater bulk of solid. Supposing that the above three substances gave the same results in England, a mere consideration of the bulk of solid in them would lead us to anticipate that their order of merit in Ireland would be that which it has been found to be there. This shows the unwisdom of basing recommendations for one country on experiences obtained in another, where the meteorological conditions are different. It is to be hoped that growers will be able to supply further evidence this year as to the comparative value of different fungicides, but they should be reminded that results must be based on the comparative yields of sound tubers; the mere appearance of the haulms is, as we have shown, an altogether fallacious guide. A word of warning as to soda-Bordeaux should be added, namely, to use it at once after preparation, for on keeping it, even sometimes for only a few hours, the carbonate changes to a dense deposit of malachite, and becomes useless for spraying purposes. Careful observation should also be made on the behaviour of subsequent crops in fields which have been sprayed. Copper is intensely toxic to vegetation, and the large dose applied in the case of soda-Bordeaux (24 lbs. of sulphate to the acre) may have a deleterious effect. *Spencer Pickering.*

HARDINESS OF VERONICAS AND OTHER SHRUBS.—I find that I omitted in my note (p. 256) to say that *Veronica luxifolia* has come through the winter unharmed, but in a sheltered position, while *V. catarractae* on a dry wall is dead, *Rhododendron intratum*, in a most exposed position, and not protected in any way, has surprised me by proving thoroughly hardy. In Mr. W. Watson's book, *Rhododendrons and Azaleas* (Present-Day Gardening series), p. 105, it is described as "tender." My plant has not lost a leaf, and is growing into a nice little bush. *Azalea Himodigma*, in the same position, has suffered badly. I thought it dead, but to-day (June 16) I see it is springing up from the base. After this winter I shall never again doubt the hardiness of *Carpentaria californica*. True, it lost some branches and looked a pitiable object for some time this spring. But it has made a rapid recovery, and will flower in July. *Azara microphylla* was punished severely, losing most of its side branches. The main stem is, however, quite unimpaired, and is now shooting out freely. Of the *Cotonasters*, *pyrenæica* (?) is, I am sorry to say, quite dead. *C. pamosa*, 20 feet high on an east wall, is unharmed. *Pyraeantha angustifolia*, which I understand has taken to itself yet another name, is even now looking miserably brown. *Evogy Cistus* in the garden save *ladaniferus* and *alsodesis* (now a mass of golden glory), has been killed, so has a very large plant of *Ericorhiza Wulfenii*. Young plants of this latter, however, have taken no harm, though given no protection. In the valleys below me, *Tea*, *H. T.*, and *Wichuriana* Roses have suffered severely, while hardly a plant has been injured here. I have only lost two standards, *Maman Cochet* and *Mme. Lam-*

bard; varieties like *W. R. Smith*, *Mrs. Aaron Ward*, *Edin Meyer*, and the *Lyons Rose*, grown in standard form and given no protection whatever, have come through unscathed. *Arthur R. Goodwin, Kidderminster.*

VERONICA LA SEDUANTE.—I agree with W. T. (p. 60) in what he says regarding this fine *Veronica*. At the same time, hardiness is a thing of degree, and if by experiment we find that any given shrub or other plant of ornamental value will live outdoors for three to five years in a given soil or situation, that plant is worth growing. I have not yet seen the plants of *V. La Seduante*, mentioned on p. 52, since the storm, but two fine bushes, $2\frac{1}{2}$ to 3 feet high, which have been flowering for some years past in a suburb of London, still look relatively happy. Some of the older leaves are browned, but the rest are green, flat, and in their normal position. If every plant that is not quite hardy in some part of this country were debarred from cultivation outdoors, that would exclude all the New Zealand shrubby *Veronics*, for I have seen *V. Traversii* killed in a sandy soil in the spring of 1895, though it was 3 feet high, and this is generally regarded as the hardiest of them. This would also exclude *Wallflowers*, *Antirrhinums*, and *Pentstemons*, and gardens would be the poorer. The temperature for five days in succession during the early part of February showed an average of 17.6°, with a maximum of 25°, yet I consider the degree of frost was not directly responsible for the damage. The ground was frozen hard before the advent of snow, and evergreen subjects, both shrubby and herbaceous, could not get sufficient moisture from the roots to support the foliage. I have seen *Prunus Laurocerasus*, 10 feet high, with every leaf hanging perpendicularly and limp. The variety *Veronica Diamond*, mentioned by W. T., is a very fine one, but I consider the scarlet *V. Simon Delaux* better. I have dried flowering specimens of both grown outdoors; also *V. lobeloides* and several forms of *V. Andersonii*, all of which have *V. speciosa* as one of their parents. My impression is that *V. lobeloides* is a more common plant around London than *V. Traversii*. *J. F.*

THE EFFECT OF THE WINTER ON INSECT PESTS.—During the long and trying winter some consolation was derived from the thought that the severe weather would put a check upon many garden pests. This idea would appear to have been based on a fallacy, for there does not seem to be any diminution in their numbers. Slugs and snails are just as numerous and voracious as ever, while complaints as to the damage done by weevils are heard on all sides. The white butterflies made their appearance in clouds, and their numbers suggest trouble with the various members of the *Paesia* family later on. The hot, dry weather has caused an outbreak of red spider, and that terrible pest *Lepo* (to the south-west of London), namely, the frog hopper, or cuckoo spit, is, as usual, dotting everything with its masses of slime. Even the *Rhubarb* is not proof against its attacks, almost the only subject immune therefrom being the *Delphiniums*. Complaints with regard to caterpillars, too, are very general, and I have often wondered whether the caterpillar plague is not partly due to the sparrows being so ruthlessly destroyed. I am aware that they do a good deal of mischief, but consider that they have some redeeming features, the destruction of green fly and caterpillars, for instance. They used to pull up many seedling vegetables till I followed the advice of a bird-loving friend to put plenty of water within their reach. *W. T.*

DAMAGE BY HAILSTORM IN LANCASHIRE.—On Sunday, the 17th inst., a severe hailstorm, accompanied by thunder and lightning, took place at Woolton, Gateacre, and Hunts Cross in the neighbourhood of Liverpool. The storm was from 15 to 20 minutes' duration. Trees, plants and glasshouses were badly damaged. In Mr. G. Tulloh's establishment at Gateacre about 600 squares of glass were broken, whilst other trade growers, including the Liverpool Orchid Company, Gateacre, report extensive damage. In the gardens at Bellevue Hall, Gateacre, from four to six hundred sheets of glass were broken. *R. G. Waterman, Woolton.*

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 19.—The usual fortnightly meeting was held on Tuesday last in the Drill Hall, Buckingham Gate, Westminster. The number of exhibits was well maintained, and all sections were represented. Several novelties were submitted both to the Floral Committee and to the Orchid Committee, the latter of which awarded two Awards of Merit, two Preliminary Commendations, and four Medals to collections. The exhibits in the floral section were the more numerous, and the Floral Committee gave four Awards of Merit, for *Trollius Ledebouri* and three varieties of *Sweet Pea* respectively. The highest medal award was made to a collection of *Delphiniums* and *Paeonies* shown by Messrs. KELWAY AND SONS, whose exhibits of these flowers are always of high merit. They showed a new variety of *Delphinium* named Admiral Cadigan, with a very large spike of cobalt-blue flowers flushed with mauve. The *Paeonies* included the beautiful single variety *Lena Ashwell*, like a pink coblet, with a cluster of golden stamens in the centre.

Roses, which are now the glory of every garden, were displayed in a wealth of variety of colour and form. Most of the Rose specialists had something new to offer, besides the old favourites, and on Messrs. FRANK CANN and Co.'s stand there was a sweetly-scented Rose called *Beulah*, of a rich red colour, and Mrs. Hugh Dickson, a large new sulphur yellow H.T. variety of great promise as an exhibition Rose. Mr. GEORGE PRINCE showed that delightful little Tea variety, *Shower of Gold*, the dark green, glossy leaves of which are almost as attractive as the blooms. He also showed *Düchaba*, a velvety-crimson single Rose of the Wichuriana type. Mr. ELSA HARKS gave great prominence to his novelties *C. E. Shea* and the climbing *Lady Hillingdon*, while Messrs. W. PARR AND SONS exhibited *Scarlet Climber* from plants in the open to demonstrate how well the colour is retained even in hot sunshine. Mr. W. EASTLEY had a stand of very seedling Roses, the best of which were *Mrs. Bayn and de Esoulet*, a H.T. variety of deep rose colour, shaded in the centre with bright red; *Footway Queen*, a lemon-yellow Tea variety, the inner petals margined with pink; and *President Wilson*, a full petalled shell pink bloom of fine build. Messrs. STUART LOW AND CO. showed a selection of the popular varieties, and had a separate exhibit of perpetual flowering Carnations. These flowers, which are now at their best, were also well shown by Messrs. ALFRED BROS., whose hybrid Pinks are very floriferous and a promising new break in border plants. The variety *Mary* is a good example of the type, some of the individual stems bearing a dozen blooms. Mr. J. C. ALFORD showed a fine group of border flowers, among which were many new varieties. Besides the *Trollius*, which gained an award, these were *Nasturtium Hooded*, with very refined foliage of delicate pink flowers arising from a cluster of long, narrow leaves, and *Senshu Przewalskii*, which has black stems and petioles contrasting sharply with the clear yellow flowers. The foliage is deeply lacinated and exceedingly handsome.

There were several exhibits of shrubs, both flowering and ornamental leaved. Mr. L. R. RESSER brought a varied collection of *Maules*, which formed a companion group to an exhibit of shrubs and climbers from Messrs. PIPERS. Several firms showed varieties of *Philadelphus*, and Mr. C. TRUSLER, of Slough, showed some of Messrs. Lemoine's choice hybrids, including *P. hybridus Lemoinei virginial*, which received a First class Certificate on June 20, 1911, and *P. Manteau d'Hermione*, which has smaller blooms so numerous as almost to hide the foliage. Most of the new *Philadelphuses* are white, but the petals of *P. purpureo maculatus* are blotched at the base with mauve-pink. The group of *Antirrhinums* shown by Messrs. W. H. SIMPSON AND SONS covered a wide range of beautiful colours. Mr. H. J. EWERS brought a number of rare plants from his interesting collection at

Colleshorne. They included a species of *Bomarea* from Peru, bearing a large lax umbel of rose-pink flowers, spotted in the interior with crimson; the dainty *Blandfordia principis*; *Dyckia rariflora* (a Bromeliad) with spikes of orange-coloured flowers; *Trenthalia Blandfordiana* (*Cyprinodium spectabile*); forms of *Orchis latifolia*; *Lilium sutchuenensis*; and *Iris Clarkei*.

Floral Committee.

President: Messrs. H. B. MAY (Chairman), J. Green, S. Morris, R. C. Nuttall, J. W. Barr, G. Renthe, J. Heal, E. F. Hazellon, E. A. Bowles, B. Hooper Pearson, R. W. Wallace, J. T. Bennett Poe, C. B. Fielder, J. Dickson, J. Hudson, W. J. Bean, C. Dixon, W. P. Thomson, W. Howe, G. Watson, J. W. Moorham, A. Turner, J. F. M. Lloyd, J. Jennings, W. H. Page, C. E. Shea, E. H. Jenkins, and G. Paul.

AWARDS OF MERIT.

Trollius Ledebouri. This magnificent Globe-flower has large expanded blooms of bright orange-colour, not so cup-shaped as the common *Trollius*. In the centre there are a number of filamentous processes of a rather deeper shade than the petals. The upper foliage is sessile, or nearly so, dissected almost to the base into five or six segments. Shown by Mr. J. C. ALFORD.

Sweet Pea Mrs. Tom Jones. A fine flower of deep lavender colour, shaded with mauve.

Sweet Pea Alexander Hood. Scented with intense tendency, beautifully scented. Both these varieties shown by Messrs. DOUGLAS AND CO.

Sweet Pea Elizabeth. A very refined flower of soft blue pink, the blooms carried on a gold spike. Shown by Messrs. ALEXANDER DREW AND SONS, Haymarket.

Groups.

The following medals were awarded for collections:

Silver First Medal to Messrs. KELWAY AND SONS, Langport, for *Delphiniums* and *Paeonies*; *Silver Second Medal* to Mr. J. C. ALFORD, Longley, for *Camellia* and other hardy flowers; Mr. E. HOES, Exford, for *Roses*; Messrs. W. PARR AND SONS, Waltham Cross, for *Roses*; Messrs. B. R. CANN AND SONS, Colchester, for *Roses*; Mr. L. R. RESSER, Richmond, for ornamental trees; Messrs. PIPERS, Basingstoke, for *Carnations* and *Alibon*; and Messrs. W. H. SIMPSON AND SONS, Birmingham, for *Antirrhinums*.

Silver Third and Fourth Medals to Messrs. ALFRED BROS., Weymouth, for *Perpetual Flowering Carnations* and *Hybrid Pinks*; to Mr. G. REITH, Kilmac, Kilmac, for *Alpine and Hardy Plants*; to Messrs. H. B. MAY AND SONS, Edmondton, for *Roses* and *flowering plants*; to Mr. G. W. MERRILL, Wexley, for *hardy plants*; to Mr. JAMES DOUGLAS, Great Bookham, for *Carnations*; to Messrs. CARRIS, Waltham Cross, for *Roses*; and to Mr. C. TRUSLER, Slough, for cuttings of *Delphinium* and other shrubs.

Bronze First Medal to Messrs. STUART LOW AND CO., Bush Hill Park, for *Roses* and *Carnations*.

Bronze British Medal to Messrs. H. CANNELL AND SONS, Exford, for *Roses* and *herbaceous plants*; Messrs. FRANK CANN AND CO., for *Roses*; Mr. GEO. PRINCE, Oxford, for *Roses*; and Messrs. B. TEPPER AND SONS, Oxford, for *Alpine plants*.

Orchid Committee.

President: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Veitch, and Messrs. Jas. O'Brien (hon. secretary), W. Bolton, J. W. Polter, R. A. Rolfe, Pautia Ralli, E. R. Ashton, J. Charlesworth, W. H. Hatcher, C. H. Curtis, Walter Cobb, C. J. Lucas, and R. Brooman White.

AWARDS.

AWARDS OF MERIT.

Odontiodes The Prince (Oda, Charlesworth) - *Odm. Adriani triumphans*, from G. W. BRID, Esq. The Manor House, West Wickham (see Mr. H. Redden). An interesting and pretty hybrid closely following the large-flowered

Odmontoglossums in size and shape in consequence of its having *Odm. Harryannum*, *Hannewellium*, and *triumphans* and crispum in its ancestry, with only one influence of *Cochlidia Noezliana* through *Odm. Chertsworthy*. The flower is of good shape and light lilac purple in colour, the lip being blotched with red-brown in front of the yellow crest. The *Odmontoglossum* parent was entered as *Odm. Ernesti*, but the name *Adriani-triumphans*, Charlesworth, 1906, takes priority.

Mittona Fairy Mary (Algebra x Blumina), from Messrs. ARMSTRONG AND BROWN, Orchid Nurst, Tunbridge Wells. A large flower with distinctly lobed white labellum, having at the base a broad purplish-rose mark extending wing-like on each side, and with thin, ruby coloured, radiating lines in front. The sepals and petals are white, the latter having a pale blue tinge at the base.

PRELIMINARY COMMENDATIONS.

Mittona Fairy Queen (Princess Mary x Fairy Queen Memoria G. D. Owen), from Messrs. ARMSTRONG AND BROWN. A charming seedling flowering for the first time and bearing one large, pure white flower of fine shape, with an almost copulidly sided triangular mass at the base of the lip, of ruby crimson colour, lighter between the short lines radiating from the margin.

Odmontoglossum Felicity (Olympea x odontoglossum), from Messrs. CHARLESWORTH AND CO. A promising seedling with a large and finely-formed white flower with clusters of red brown blotches in the middles of the segments.

GENERAL EXHIBITS.

Messrs. CHARLESWORTH AND CO., Hayward Heath, were awarded a *William's* Gold Medal for a magnificent group, in which their famous strain of *Mittona Charlesworthii*, *Mittona Lyth*, and other large-flowered *Mittonas*, of which there were over three hundred spikes, formed the chief display. *Odontiodes* and *Odmontoglossums* were well represented, the dark red *Oda Brown* giving effective coloring. Among the *Odmontoglossums* the new *Odm. harveyense aureum triumphans aureum x crispum* (Antistes) gave an interesting example of fixed characters of colour suppression in the parents being handed on to the progeny. *O. hexentense aureum* has creamy yellow flowers with darker yellow blotches, and without the brown markings of *O. triumphans* seen in the original natural hybrid.

Messrs. ARMSTRONG AND BROWN, Orchid Nurst, Tunbridge Wells, were awarded a Silver-gilt Flora Medal for an excellent and varied group of new and rare hybrids, among which *Mittonas* were in attractive feature. A fine selection of *Odmontoglossums* and brilliantly coloured *Odmontodes*; the emerald green and white *Cyprinodium Muehlsch. aureum* and *C. Holdenii*, and some white *Cattleyas*, including *C. Saturnalia*, were included in the collection.

Messrs. STUART AND SONS, St. Albans, were awarded a Silver Rankian Medal for a group of *Cattleyas*, *Laelio-Cattleyas*, and other, specially noteworthy being *Laelio-Cattleya General Pershing*, a fine white flower with deep purple lip of uncoloured percentage, and *L. C. Goffiana*, Imperator, a grand plant with two spikes of four flowers each.

Messrs. STUART LOW AND CO., Jarvisbrook, Sussex, were awarded a Silver Rankian Medal for a group of *Laelio-Cattleyas* and *Odmontoglossums*. A striking new form was seen in *L. C. Vesuvius* var. *Aurora* (*Veronique x Haroldiana*), which has well formed flowers of a rose tinted copper colour with purplish-crested lip.

G. W. BRID, Esq., The Manor House, West Wickham, again showed *Odontiodes Aurora*, which received an Award of Merit on May 2, 1916. The margins of the sepals and petals are the colour, the greater part of the segments bearing large red markings.

Fruit and Vegetable Committee.

President: Messrs. J. Cheal (vice chairman), W. Jeffries, F. Perkins, E. A. Buryard, W. H. Davies, W. Pountney, E. Buckett, J. C. Allgrove,

A. Ballock, P. C. M. Veitch, Owen Thomas, W. Bates, H. S. Rivers, J. G. Weston, E. Holmes, W. Wilks, and A. R. Allan.

Mrs. VINCENT BARKS, Park Street, Grosvenor Square, London, was awarded a Silver-gilt Banksian Medal for bottled fruits preserved without sugar.

Mr. STEWARD, Panshanger Park Gardens, Hertford, showed large, solid heads of Cabbages Sutton's Earliest, Imperial Harbinger, and Flower of Spring, raised from seed sown on February 17 last, also Cos Lettines of the Dwarf Perfection type.

Mr. G. J. WHELPLEG, Chislehurst, showed the Newberry, a Rubus raised from the Loganberry crossed with the Raspberry.

Obituary.

LIEUT. H. L. FOSTER.—Keen regret will be felt by horticulturists, and especially those in Kent, at the news of the death in action on June 7 of Lieutenant Harry L. Foster. Second son of the late Mr. Charles Foster, who made a great reputation at the Reading University Gardens, Lieutenant Foster was educated at Reading Collegiate School and at the Wisley Laboratories of the Royal Horticultural Society. In 1915 he was appointed Assistant Horticultural Instructor under the Kent Education Committee, and in that capacity did admirable work until the outbreak of war, when he immediately asked permission to join the Army. Enlisting as a private, he fought bravely in several engagements before being wounded at the great battle of Loos in 1915. At the end of a long convalescence he was recommended for cadet training, and in the early spring of the present year he received his commission. Lieutenant Foster resided for a considerable time in Maidstone, and became a popular member of the Church Institute. Although a keen student, first of horticulture and entomology, and subsequently of military science, he was a versatile athlete. He had a singularly engaging personality, and was greatly beloved by all who knew him.

CROPS AND STOCK ON THE HOME FARM.

EELWORM IN OATS.

ALREADY I hear complaints that the oat crop is being attacked by stem eelworm, *Tylenchus devastatrix*. At the present stage of growth no remedy can be applied. An entire change of crop and deep cultivation are the best preventives. A dressing of gas lime in the autumn after the stubble is ploughed, allowing it to lie on the surface for two months, would do much to eradicate the pest. Sulphate of potash, if obtainable, would act as a corrective. Dressings of unslaked lime, soot, and even chalk, are also to be recommended. The oat crop should be followed by roots such as Mangold and Swedes, Rape, Vetches or Mustard.

POTATOS.

Where new seed tubers were planted, growth is satisfactory, the haulm being strong and of good colour. Although some plots of home-saved "seed" are promising generally, growth on these is weak and irregular. So far the results once more prove the advantage of a change of seed. Weakly growing plants would be improved by the use of sulphate of ammonia scattered along the rows at the rate of 1 cwt. per acre before earthing them up. Freeing the haulm from weeds and admitting air to the roots by stirring the soil will be time well spent with this crop. Where the plants are 6 inches high no time should be lost in earthing them up, as this is a means of conserving the moisture in the soil.

Wireworm is rampant in some plots where the soil is recently dug grassland. Whether this pest will attack new tubers, after disposing of the old sets, remains to be seen, certainly the haulm of plants growing in some newly-broken up plots has a distinctly promising appearance for a good crop.

WEEDS IN PASTURES.

Such weeds as Thistles, Docks and Ragwort are very troublesome in pastures this season. Cutting off the tops of the Ragwort causes it to spread all the more. Pulling the plant up by the roots is the only remedy; it is shallow rooting, and easily dealt with during wet weather. Continuous cutting of Thistles will check their growth, but not so Docks, the roots of which must be removed. Corn crops have been especially infested with Thistles and Docks this season, and where not removed the weeds are liable to increase in the future, as straw and hay used on the land as manure may contain the seeds of both weeds. *E. Molyneux.*

TOP-DRESSING FOR HAY.

Correspondence in certain papers suggests that farmers who have top-dressed for hay, or intend to do so in the future, with nitrogenous fertilizers, may be needlessly alarmed by exaggerated statements as to the dangers of such top-dressing. Some ardent men and hunting men and other owners of fast-working horses are well known to favour hay produced "naturally," as they call it, and to attribute kidney troubles in horses to hay forced into bulk by the use of rapidly-acting nitrogenous fertilizers. If there is anything in the theory or the prejudice at all—and a few cases are reported to have occurred where horses appeared to be injured by the use of such hay—the probable explanation was the excessive application of nitrate of soda or its very late application, or both excess and lateness of dressing. No well-founded complaint can be traced against hay from fields top-dressed at the proper time with a reasonable application of sulphate of ammonia. This is the nitrogenous fertilizer which will be generally used in this country this year and next, and for the supply of which to farmers at a fair figure the Food Production Department has made arrangements. The Department will gladly give further information about sulphate of ammonia, its use and cost, to anyone interested.

ANSWERS TO CORRESPONDENTS.

CUCUMBERS DISEASED: *E. F. C.* We cannot say definitely what is the matter with your Cucumbers without having seen them. The symptoms of *Cercospora melonis* (which we presume is what you mean by "spot") are that the leaves become spotted, the affected parts, sometimes an inch or more in diameter, being whitish or grey. Every affected leaf should be picked off and burnt, or the whole plant destroyed if the attack is very severe. Spraying with Bordeaux mixture is sometimes effective as a preventive, but careful cultivation is the best way of preventing attacks.

FIGS: *L. L. L.* On one Fig (the oldest) the fungus *Botrytis cinerea* was present; this tree should be grubbed up and burnt. The others are free from apparent disease, but have the appearance of suffering from some cultural defect.

GOOSEBERRY AND CURRANT BUSHES DYING: *J. H.* The Gooseberry bushes are affected with the "die-back" disease, *Sclerotinia Fuckeliana*. The Currant bush is affected with *Nectria rimbarrina*. The remedy is the same in both cases, viz., cutting out and burning all dead or diseased wood. This is far more effective than spraying.

BIRSES DISEASED: *M. P.* There are mistakes of the fungus *Gloeosporium* on two of the leaves sent, but it is not possible to say whether this is the cause of the disease unless younger leaves are sent. All the leaves showing the symptoms should be picked off and burnt.

LILIUM MARTAGON SPOTTED: *Doult Gardner.* The leaves sent were insufficient for examination. You should have sent more, packed in a box, not merely enclosed in a letter; they arrived very crushed.

LIME LEAVES GALLED: *Cambram.* The leaves are attacked by a gall mite, *Eriophyes trifae*. The trees will not suffer permanent injury from this pest.

MILITARY SERVICE: *E. B.* You say you have an appeal pending, but we presume you mean you

are making application for exemption, as it is at the Local Tribunal. If the application has not already taken place, we should advise you to take a friend with you who can confirm, if necessary, what you say about the extent of the ground you are cropping with vegetables. If, however, your application is refused, you can still ask permission of the local Tribunal to lodge an appeal at the Appeal Tribunal; and if permission is granted, there is some chance that you may still be exempted. If you have already appeared before the Local Tribunal, there may still be time to ask for permission to appeal, but you should do so *immediately*, or permission will not be given.

NAME OF PLANT: *H. W.* Your *Calceolaria* is in all probability a seedling from "Jeffrey's Hybrid."

PEACH LEAVES FALLING: *J. M.* The trees are attacked by the "Shot-hole Fungus," *Cercospora circumscissa*. Spray with ammoniacal solution of copper carbonate next season when the leaves are just expanding, and repeat at intervals. Do not use Bordeaux mixture, which is injurious to the leaves of Peaches.

PEAR LEAVES DISEASED: *D. H.* See reply to *P. S. H.* in our issue of June 9, p. 258. You have apparently used some kind of spray.

PLUM TREE: *J. H. S.* The Plum tree is evidently in need of a good dressing of lime in the soil round it. It appears to be suffering from an excess of feeding with strong manure.

POT POURRI: *W. P.* Take the rind of two Lemons (cut thinly), one pound of bay salt, one ounce of powdered Orris root, one ounce of Gum benzoin, one ounce of Cinnamon, half an ounce of Cloves, one ounce of Nutmegs, one grain of Musk, 12 Bay leaves, a few Sage leaves, Rosemary, and Lavender, cut small, one ounce of Lavender water, one ounce of Eau de Cologne, and one ounce of Bergamot. Mix all together in a pan, and add Rose petals in their natural state as they come into blossom. Stir frequently; at least once a day. Put into a covered stoneware pot with a wooden spoon to stir with. At the end of two months, the mass can be placed in Japanese Rose jars. From time to time throw in fresh Rose petals.

SHRIVELLED GRAPES: *G. P.* The temperature of your viney has been too high during the period of stoning, and the berries are affected with what is called "scabbing." The temperature should not rise much above 80° at such a time. This is difficult, with such bright hot weather as that lately experienced, but much may be done by temporary shading, abundant ventilation, and frequently damping the house while the ventilators and doors are open. The danger will be past as soon as the second swelling commences.

SLUG: *K. A. C.* The slug you send is the white form of *Arion equestrum*, which is commonly known as the black slug. It shows variations in colour, being sometimes red, brown, or yellow.

TOMATOES: *G. A. B.* Your plants are hopelessly diseased with bacterial wilt, and should all be destroyed. Spraying will be of no use whatever.—*Reader.* On one stem of your Tomatoes the fungus *Mycosphaerella citrifolia* was present. You should obtain from the Board of Agriculture, Whitehall Place, S.W., the leaf-let on Tomato canker caused by that fungus.—*H. W.* The spotting of the fruits is not due to any fungus; the specimen received was not sufficient for us to be able to say why the stem was rotten.

VINE ROOTS: *E. L.* The roots sent had the appearance of having been attacked by a "grab" of some sort, but without specimens it is not possible to identify it. Please send some the next time any are seen, securely packing them in a small box.

Communications Received: Sr E. G. L., C. F., R. L., J. D. E. A. B. W., Gloucester, C. H. C., Paul A., T. O. T. H.—M. A. E. F. A. S.—J. P. Sr A. B. H. W. S. R.—W. D.—L. F. B.—S. A. E. R.

MARKETS.

COVENT GARDEN, June 23.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand and they may fluctuate very freely from day to day, but occasionally several times in one day.—FOS

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots and their average wholesale prices. Includes items like Aralia Sieboldii, Asparagus plumosus nanus, Aspidistra, Cacti, Calceolaria, Cocos Weddelliana, Crassula, Erica, Fuchsia, Genomium, Pelargonium, and various other species with their respective prices per dozen or per pot.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers and their average wholesale prices. Includes items like Canterbury Bells, Carnations, Cereus, Delphinium, Gladiolus, Gypsophila, Heather, Iceland Poppies, Iris, Larkspur, Lilium longiflorum, Marguerites, Nicotiana, Orchids, and Viola.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage and their average wholesale prices. Includes items like Adiantum (Maidenhair Fern), Asparagus plumosus longiflorus, Carnation foliage, and Croton foliage.

REMARKS. Pyrethrums are almost over, and Pinky Bell Mistle and Mrs. Sinkins are taking the place of double white Pyrethrums. White Stocks are getting more plentiful, and a few bunches of magenta and pink are in the market. Hardy flowers are more plentiful, consisting chiefly of Achillea, Cornflowers, Cosmos, Galliasia, Delphiniums of various sorts, Scabiosa caucasica, Spirea, white and pink, pink and white Gypsophila, Cornflower Bell, Yellow Marguerite, and many and white Sweet Williams. There is a good supply of outdoor Roses, the most saleable sorts are Mrs. John Laing, Comtesse Testout, Frau Karl Druschki, General McArthur, and General L'Esperance. All indoor flowers are more or less offered by the best weather, especially Lilies, Clematis, and many boxes of Roses are almost useless when they reach the market. Lilies are now very low in price, but still of the Valley is most valuable. A few Tuberoses are beginning to arrive.

Vegetables: Average Wholesale Prices.

Table listing vegetables and their average wholesale prices. Includes items like Artichokes Globe, Asparagus, Beans Broad, Beetroot, Broccoli, Cabbage, Carrots, Cauliflowers, Cucumbers, Garlic, Herbs, Lettuce, Mushrooms, Peas, Potatoes, Radishes, Spinach, Turnips, and Vegetables.

Fruit: Average Wholesale Prices.

Table listing fruit and their average wholesale prices. Includes items like Almonds, Apples, Bananas, Cherries, Dates, Figs, Gooseberries, Grapes, Lemons, Melons, Nectarines, Nuts, Oranges, Peaches, Pears, and Walnuts.

REMARKS. A shipment of Australian Apples is to hand, packed in boxes of about 70 lbs. Some of the samples are producing record prices, as much as 90s. per box in our market. Oranges are limited in supply and very expensive. There are heavy supplies of Strawberries from all parts of the country, and are plentiful, and a very few are on the Grape. Most of Alexandria and Red Hamburg are much more plentiful. Outcrop Melons are available and Melons and Figs, both English and Channel Islands, are fairly plentiful. Supplies of Peaches and Nectarines have increased during the week. Cucumbers continue limited in supply, but varieties are increasing in number. Large quantities of English and Channel Islands Tomatoes are arriving daily. Peas and Broad Beans are fully increasing in number, and new Potatoes are plentiful. Cauliflowers and Cabbages are much in demand, but new Carrots and Turnips are plentiful. Asparagus is almost over for the season. E. H. R. Covent Garden Market, June 23.

THE ONLY DIRECTORY OF GARDENS AND GARDENERS.

The Horticultural Directory and Year Book for 1917 is the ONLY Directory that exists of gardens and gardeners in the British Isles.

If you want a list of all Nurserymen and Seedsmen, Sundriesmen, Horticulture Builders and other traders closely connected with horticulture, consult the ONLY Horticultural Directory.

Should you desire to trace the whereabouts of the young men you associated with in the Botany you have no other means of finding out their present addresses than by turning to the ONLY Directory of British Gardeners.

Obtain a copy and see if your own name is there, and if it is not, then send us particulars for inclusion in the edition for 1918.

The Year Book part of this unique volume contains descriptions of all the new plants, flowers and fruits certificated in 1916, notes on the principal gardeners who died during that period, and much additional information of great value to all amateur and professional horticulturists.

We are still able to offer some few copies of the current number. Readers are advised to send their orders early, before the work is out of print.

Apply, enclosing 1/4 for each copy required, to :-

GARDENERS' CHRONICLE, LTD., 41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

CATALOGUE RECEIVED.

YOSHIMAMA NURSERY CO., LTD., 21-25, Nishiohri, Yoko-hama, Japan. Bulbs, &c.

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Botany, A Year's.** Adapted to Home and School Use. By Frances A. Kitchener. With 195 Illustrations. 5s. 4d.
- Botany, Elementary.** By Dr. E. Drabble 2s. 10d.
- Botany, First Course of Practical.** By G. F. Scott Elliott. Illustrated 3s. 10d.
- Botany, Lectures on Plant Physiology.** By Dr. Ludwig Jost. Translated by J. Harvey Gibson. Morocco back, gilt top. 24s. 6d.; cloth, 21s. 6d.
- Botany, Practical Plant Physiology.** By Frederick Keeble, Sc.D., F.R.S. Recommended for use in colleges and schools 3s. 10d.
- Botany, Structural.** By D. H. Scott, M.A. 2 Vols.
PART I.—FLOWERING PLANTS. 3s. 11d.
PART II.—FLOWERLESS PLANTS. 3s. 11d.
An excellent introduction to the Anatomy and Life Histories of Plants.
- British Plants, List of.** By G. C. Druce, M.A. A detailed list of Species and Varieties 2s. 9d.
- British Plants, The Uses of.** By Prof. Henslow. 4s. 9d.
- Bulb Book, The.** A Practical Work on Cultivation, Propagation, etc. By John Weathers. Illustrated 15s. 7d.
- Bulbous Plants, Beautiful.** By John Weathers. 5s. 4d.
- Bulbs and their Cultivation.** By T. W. Sanders 2s. 10d.
- Bulbs, The Book of.** By S. Arnott. Illustrated 2s. 9d.
- Calendar of Garden Operation, The.** Based on the original work compiled by the late Sir Joseph Paxton, M.P. Adapted to the requirements of Cottage Gardeners, Allotment Holders, and Amateur Gardeners, by members of the staff of the GARDENERS' CHRONICLE. Illustrated. (New edition in the Press) 1s. 3d.
- Cambridge Manuals of Science.** Cloth edition. 1s. 4d. each, post free.
- Plant Animals: A Study in Symbiosis.** By Frederick Keeble, Sc.D., F.R.S.
- Plant Life on Land.** By Prof. F. O. Bower. F.R.S., Sc.D.
- Earthworms and their Allies.** By F. E. Bedford, F.R.S.
- The Earth.** By Prof. J. H. Poynting. F.R.S.
- The Atmosphere.** By A. J. Berry, M.A.
- The Story of a Loaf of Bread.** By Prof. T. B. Wood, M.A.
- Bees and Wasps.** By O. H. Latter, M.A.
- Soil, The Fertility of the.** By E. J. Russell, D.Sc.
- Insects, The Life Story of.** By Prof. G. H. Carpenter.
- Carnation Culture, Commercial.** Edited by J. Harrison Dick. A collection of treatises by the best modern cultivators. Illustrated. 7s. 4d. (\$1.50).
- Carnations, Perpetual Flowering.** By Laurence J. Cook. A Practical Manual with Details of Cultivation. Illustrated Paper. 1s. 3d.; cloth, 1s. 9d.
- Carnations and Pinks.** By T. H. Cook, Head Gardener at Sandringham; James Douglas, V.M.H.; and J. F. McLeod. Contains 8 Coloured Plates, reproduced from colour photographs. 1s. 10d.
- Carnations, Picotees and Pinks.** By John Fraser. Fully Illustrated. 8d.
- Chemistry of the Garden.** By D. R. Edwards-Ker. A course of practical work designed for the use of Teachers and Students of Gardening. 1s. 8d.
- China, A Naturalist in Western.** By Ernest Henry Wilson. Illustrated, in Two Volumes. £1 10s. 6d.
- Chrysanthemums.** By Thomas Stevenson. With Chapters by Charles E. Shea and C. Harman Payne. Contains 3 Coloured Plates. 1s. 10d.
- Climbing Plants.** By W. Watson, A.L.S. With Introduction by W. Robinson, author of "The English Flower Garden." 2s. 10d. and 3s. 10d.
- Cocconut, The.** By Edwin Bingham Copeland. 10s. 6d.
- Cottage Gardening; or, Flowers, Fruits and Vegetables for Small Gardens.** By E. Hobday. 1s. 9d.
- Cucumber Culture for Profit.** By W. Dyke. A Practical Guide to the Cultivation in Frames and in the Open. 1s. 2d.
- Cyclopædia of Botanical Drugs, Potters.** By R. C. Wren, with additions by E. M. Holmes. Containing the Names and Properties of all the Herbs employed medicinally in this country. 5s. 10d.
- Cyclopædia of Horticulture, The Standard.** By L. H. Bailey. In 6 vols. Fully Illustrated in colour and half-tone. A valuable book of reference. Each part, 26s.
- Daffodils.** By the Rev. Joseph Jacob. With Preface by the Rev. W. Wilks, M.A. A full treatise on their culture for private and Exhibition purposes. With 3 Coloured Plates. 1s. 10d.
- Dahlias and their Cultivation.** By J. B. Wroe. 1s. 2d.; cloth, 1s. 8d.
- Dahlias.** By George Gordon, late President of the National Dahlia Society. Contains 3 Coloured Plates. 1s. 10d.
- Date growing in the Old World and the New.** By Paul P. Popenoe. Illustrated 9s. 6d.
- Dictionary of Hardy Flowering Plants** (see "The English Rock Garden," by R. Farrer).
- Directory, Horticultural** (see *Gardeners' Chronicle Horticultural Directory*).
- Diseases and Garden Pests, Book of Plant.** By R. Hooper Pearson. 214 pages. Over 65 Illustrations. Cloth, 2s. 11d.
- Diseases of Cultivated Plants and Trees.** By George Masee. 7s. 11d.
- English Rock Garden.** By Reginald Farrer, author of "My Rock Garden," "Among the Hills," etc. This work contains up-to-date monographs of the Plants suitable for cultivation in the Rock Garden. The text consists of 500,000 words. 300 Plants are Illustrated in Half-tone Plates. In 2 Vols. Price £2 2s. 10d. (in the Press).
- English Flower Garden, The.** An Illustrated Dictionary of the Plants Used, and Directions for their Culture and Arrangement. By W. Robinson. With numerous Illustrations. 15s. 7d.
- Ferns, The Book of British.** By C. T. Drury. Illustrated. 3s. 10d.
- Ferns, Choice, for Amateurs.** For the Garden, Conservatory and Stove. Illustrated. With full directions for their Cultivation, and Formation of Ferneries, Rockeries, etc. By George Schneider. New Edition. 3s. 11d.
- Fern Culture.** By A. Hemsley. Well Illustrated. 2s. 9d.
- Ferns and Fern Culture.** By J. Birkenhead. Third Edition, revised by F. Parsons. 1s. 2d.
- Fertilisers and Manures.** By A. D. Hall, F.R.S. 5s. 5d.
- Flora, British, Handbook of the.** By Geo. Bentham. Revised by Sir Joseph Hooker. Seventh Edition. 9s. 5d.
- Flora, British, Illustrations of the.** By W. H. Fitch and W. G. Smith. 1,315 Wood Engravings. Revised and enlarged. 9s. 5d.
- Floral Decoration, British.** By R. F. Felton. Containing 26 full page Illustrations (12 in colour). 4s.
- Florists' Bibliography, The.** By C. Harman Payne. Second Edition, with Supplement and Index. Cloth, 5s. 4d.
- Flower Garden, The.** By T. W. Sanders. The Formation and Management of a Garden, and the Culture of Outdoor Flowers and Plants. 450 pages. 104 Illustrations. 8s.
- Flowering Plants, Classification of.** By Alfred N. Rendle, M.A., D.Sc. Vol. 1. Gymnosperms and Monocotyledons. 400 pages. Illustrated. 10s. 10d.
- Flowers and Flower Culture.** By H. W. Ward. 8d.
- Flowers, The Book of Hardy.** By E. H. Jenkins. A Practical Guide to the Cultivation of Hardy Flowers. Illustrated. Cloth, 2s. 11d.
- Flowers, The Book of Old Fashioned.** By Harry Roberts. 2s. 10d.
- Forestry, The Development of British.** By A. C. Forbes. Illustrated. 11s.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

THE GARDENERS' CHRONICLE

ESTABLISHED 1841.

No. 3992

No. 1592. VOL. LXI.

(THIRD SERIES.)

SATURDAY, JUNE 30, 1917.

{Registered as a Newspaper.} PRICE 3d.
 {Post-FREE. 3d.}

SUBSCRIPTION—Inland, 15 s.; Foreign, 17 6s. (22fr. 10c.) [54 26c.] per annum. Entered at New York Post Office as second-class matter.
 Postal Address—41, Wellington Street, Covent Garden W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 259.

For Advertisement Charges see page iv.

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note that the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

To replace Dutch Bulbs for next Spring

flowering so now British flowers.

SUTTON'S WALLFLOWERS.
 Sweet-scented flowers of brilliant colour.
 SUTTON'S FIRE KING, vivid orange, per packet 1s. 6d.
 SUTTON'S GREAT VULCAN, brilliant crimson, per packet 1s. 6d.
 SUTTON'S ORANGE BOBBLE, a variety of orange, per packet 1s.
 SUTTON'S CLASH OF GOLD, bright yellow, per packet 1s. 6d.
 SUTTON'S SUPERB, mixed pet. per packet 1s. 6d.

SUTTON & SONS, THE KING'S SEEDSMEN, READING.

SPRAY YOUR POTATOES.
INCREASE your crops and protect them from beet and disease by using **KEELING'S SPRAYING MIXTURE**. Keeps potatoes free from beet and keeps potatoes in a dry bag, when 25 quarts of water is enough to spray twenty bushels, and costs only 4s. 6d. per 100 lbs. The 6d. 2s. 6d. cartridge fits in the I. K. Sprayer. 7/3 1s. 6d. post free. Send P.O. order direct to the manufacturers, **KEELING & WALKER, LTD.**, 20, Milton House, Saffery Street, London, W.C. 2.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also Jackson's Improved Mushroom Spawn. Beware of imitations on application to **DICKSON'S Royal Seed Warehouse and Nurseries**, Chester.

BARR'S SEEDS FOR JUNE SOWING.
 Finest strains of Anthriscums, Apulgas, Cimicifugas, Canterbury Bells, Calceolarias, Chrysanthums, Delphiniums, Hollyhocks, Lupins, Pansies, Primulas, Stocks, Wallflowers, &c. Catalogue on application.
BARR & SONS, King Street, Covent Garden, London.

GREENHOUSE PAINTING & GLAZING.
 "Vitreoline," superior to White Lead Paint. "Plastine" superdries putty. Full particulars from **W. CARSON & SONS, Grove Works, Battersea.** Agents throughout the country.

WM. DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham. Generalist. Wholesaler. Gardeners, Nurseries, Peach-houses, Potable Buildings, &c. Catalogues gratis.

CHESTER HORTICULTURAL COLLEGE—Women War Workers Short Courses. Through tuition in Fruit and Vegetable Growing by expert teachers. Apply, SECRETARY.

3S. 9d.—Spray Potatoes now with Bordeaux. Crown, reliable, effective, inexpensive; sufficient to spray 20 rods twice; full instructions; P.O.O. with order.
 G. L. MOORE, 27, Dalnallyn Road, Croydon, Surrey.

SPRING CABBAGES.—The best varieties to sow during the early part of August, or later at once.

SUTTON'S HARBINGER CABBAGE.
 The earliest Cabbage for Spring Cutting. Per packet 1s. per dozen 12s. 6d.
Try our Autumn Cabbages.—A trial of 10 cabbages than 114 stocks, represented 12 different sorts, was made at Witley last year, and it will be noticed that Sutton's Harbinger is the earliest of the lot, and is also the most valuable for winter and spring use. The Field, 7 June 17, 1916.
Cabbage Harbinger, a capital variety. I sowed some seed in July, and on January 10, 1917, I am reaping some lovely heads. Mr. A. L. Cotes, The Gardener, Wallingford, Oxon.

SUTTON'S APRIL CABBAGE.
 The most popular variety Cabbage for garden use. Per packet 1s. per dozen 12s. 6d.
 The April Cabbage is the earliest that will last year and give the most satisfactory results. It has been described in "The Field," 1916, and is now coming into service. The Field, 17 June 17, 1916.
 The April Cabbage, raised from seed supplied by us, is the most valuable of the early cabbages for garden use. Mr. H. B. Jones, Framfield.

SUTTON'S FLOWER OF SPRING CABBAGE.
 The most popular variety Cabbage for garden use. Per packet 1s. per dozen 12s. 6d.
 The Flower of Spring Cabbage is a well known variety, and is one of the most valuable in the collection. Mr. W. W. Wood, Epsom.
 I sowed a few of the April and Flower of Spring Cabbages in my garden last November. I pointed them out being, and in the middle of the year, they were still being found in the garden. The Field, 17 June 17, 1916.
 The Flower of Spring Cabbage is a well known variety. Mr. H. B. Jones, Framfield.

SUTTON & SONS, THE KING'S SEEDSMEN, READING.

SOW NOW—BATHS EMPRESS PANSIES, as grown for the Royal Gardens at Frogmore. The most beautiful and longest-flowered strain of Pansies ever. Per packet 1s. 6d. and 1s. 6d. post free for cash with order. Apply to **W. R. BATH, LTD.**, The Floral Farm, Walsley.

WATERER'S ALPINE, HERBACEOUS PLANTS AND WATER LILIES. Large stocks of the best and most popular varieties. Descriptive Catalogue free. **JOHN WATERER, SONS & CRISP, LTD.**, The Nurseries, Twickenham, Berks.

EVERY GARDENER'S LIBRARY contains a certain number of indispensable books. Some gardeners have a small library, others a pretty complete collection of modern books on cultivation, some have in the fortunate possession of books on every phase of each one, both old and new, from the early Herbals to the latest American Cyclopaedia. There is one little book which should be found on the shelves of every gardener, young or old, literate or ignorant, practical or theoretical, and which is consulted a thousand times a year by those who possess it. That is the "Herbicultural Dictionary and Year Book." There is so much in it, it is a valuable medium in prose. This year it is smaller than of old, because it has cut off a good weight of out-dated, old-time stuff, but it is steadily growing again, and is already having fresh names added, and old ones corrected, in preparation for the 1918 edition. There are still some copies left of the present year's issue. The price is 2s. 3d., post free. Do not let your library remain incomplete for lack of this indispensable volume. Send for it to the Librarian, "Gardeners' Chronicle," 41, Wellington Street, Covent Garden, W.C. 2.

SANDERS' Orchid Growers, St. Albans.

LANTON'S STRAWBERRIES.
FINE early pot plants for forcing or outdoor planting of King George V., Royal Sovereign, &c. pots 15s., 100s.; open ground, by 100s. Grand New Meteor, Lexington, pots, 20s., 100s.; open ground, 20s. 100s. Illustrated Catalogue, with cultural hints and description of all the new and older sorts gratis.
LANTON BROTHERS, Bedford.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Drop American Blight, Green and Brown Fly, &c. It is in boxes about 1lb., 5lb., and 12lb., by Dealers in Garden Supplies. Wholesale: **FRICES PATENT CAMPBELL CO., LTD.**, Battersea, London, S.W.11.

POTATO SPRAYING. On spot ready for immediate delivery. Sulphate of Copper 38 per cent. Washing Soda 38 per cent. Water for process quantity required per acre, 4s. H. RICHARDS, Borough High Street, London, S.E. 1.

OUR list of Vegetable Seeds, suitable for summer sowing, is now ready, and will be sent post free on application. **DOBIE & CO.**, Seedsmen to the King, Edinburgh.

ARMY BOOTIES (UNBOOTS), cost Government 2s. 6d. Selling now at bargain prices. Specially selected, without a blunder, as good as new. Unsuited for gardening, farming, and other work. Strong parts, post free. Sent on 10s. and 20s. sizes. Money returned if disappointed. Special conditions for quantities. **THE TRAMBS TRADING CO., LTD.** (Army Boot Dept.), 6, Eldon Street, London, E.C.

J. GRAY, LTD. Builders of Conservatories, Greenhouses, &c., and Heating Engineers, Drapers' Street, Clerkenwell, London, W.C. 2. Wire, 201, Western, London. Telephone, 204, Western.

THE GREAT POTATO SPRAY (third spray) protects your tubers with success. Finest remedy for Potato and Tomato Blight, Mosaic, Fungus, Caterpillars, and Diseases of all other Crops. One packet makes 5 gallons. Price 1s. 6d. or 12s. per doz. Spraying Cabbages, Wallflowers, Sweet Broad Beans and French Beans, &c. Keeps your Potatoes and wood the growing crop. Loads of every variety, good lines in Garden Boxes. All carriage paid. **LAND TROLL CO., Rt. Allport Street, Upper Baker Street, N.W. 1.**

GENTIANA Acoma, 12 large clumps, 5s. 6d. "Erie," 12 small clumps, 25s. 3d. "Hollis," 12 3/4 Butterfly Clumps, 25s. **ORRILL,** Royal Bull, Loughlin, Ireland.

MESSRS. ROBERT GREEN (1911), LTD., have a limited number of Standard and Pyramid Bay Trees to offer, in fine condition.—25, Coventry Street, London, W.

JAPANESE GARDEN UMBRELLAS. 400, various when opened, 7s. 6d. each, carriage paid. Japanese Sunshades, prettily coloured, 6s. 6d. per doz., 7s. 6d. for 6, 2s. for 3 carriage paid.—**ARCHER WOODFORD,** 3, Meeting House Court, Miles Lane, E.C.

"Say Bull's"
THE FOOD FOR PLANTS

6" ROLLED SHEET GLASS
MORE LIGHT

A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/8 in. (or equal to about 21 oz.) in thickness. Can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of
GENUINE WHITE LEAD PAINT.

"BLACKFRIARS BRAND."
 Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cans.

AND
BEST LINSEED OIL PUTTY.



Complete Price List of
 Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, Ltd.,
 34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C. 2.
 And Blackfriars Wharf, Upper Ground Street, S.E.
 QUOTE GARDENERS' CHRONICLE.

MANY YEARS REPUTATION.
EUREKA WEED KILLER
 LASTING RESULTS—NO NEW EXPERIMENT.

LABOUR SAVERS: "EUREKA" LAWN SAND, SOILFUME NICOTINE INSECTICIDES FUMERS, SPRAYS AND OTHER CHEMICALS & SUNDRIES SEE LIST. PLEASE ASK YOUR AGENT FOR THE EUREKA ARTICLES—THEY ARE ALWAYS SATISFACTORY IF ANY DIFFICULTY IN OBTAINING WE SEND DIRECT CARRIAGE PAID

Only Address: **10 LINCOLN & HAYWARD L^{ts} LINCOLN.**

Sample **CRET Pot** FREE with Booklet will convince you that the Drainage, Porosity, Healthfulness of **CRET'S** would help your plants. Write **PETER BAILEY & SONS, Ltd.** 2 Heaton Mersey Pottery, near MANCHESTER.

ELLIOTT'S Latest Improved SUMMER SHADING, 'PINGO.' For greenhouses, Res. ever used, says A. Wilson, Erdre Castle. Readily mixed. Pkts. 1- 1 6 lb. To 200 sq. ft. R.H.S. Add. SAVES TIME. 1- 1 6 lb. To 200 sq. ft. R.H.S. Add. Of Seedsmen, A. & N. Stores, or Elliott, Alfred Rd., Lond. W. 3

TURF LOAM.

Very Fibrous Yellow Turf Loam
 For VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid or Delivered.

A. B. JOHNSTON,
 New Park, Cranleigh, SURREY.

CLIMBING PLANTS

(Present-Day Gardening Series)
 By **WILLIAM WATSON.**
 (Introduction by William Robinson.)

A Practical Handbook on the Treatment of Climbing Plants, both hardy and tender species. Illustrated with 24 full page plates, 8 of which are reproduced in colour.

Price 2/10 post free from:

The PUBLISHING DEPT.,
 "GARDENERS' CHRONICLE" OFFICES,
 41, Wellington Street, Covent Garden, W.C. 2

POLYANTHUS v. FLOWERING BULBS

With the restricted trade in Flowering Bulbs, and to those who still wish to have a few bright flowers, we suggest as a war time change that **Polyanthus** should take a leading place this next Spring, and would draw your attention to our stocks of the

Famous Clovenfords Strain of Polyanthus,
Specially selected and saved by ourselves,

White, Dark Yellow, Primrose Yellow, Crimson and Mixed,
all at 1/-, 2 6, 5/- and 10/- per packet.

LAING & MATHER, The King's Seedsmen, KELSO.

SANKEY'S FAMOUS GARDEN POTS
 The BEST and Cheapest.
 A fine quantity of each size required and have a variety of material ("Carriage" frequently amounts to half value of goods), so more for your 25s. than from any other SPECIAL POTTS of all descriptions. Sub. Beasts and Fern. Price from 2d. each.

RICHARD SANKEY & SON, L^{ts}
 Bulwell Pottery, NOTTINGHAM.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being unsold.

Particulars on application,
BOULTON & PAUL, Ltd., ROSE LANE WORKS, NORWICH.

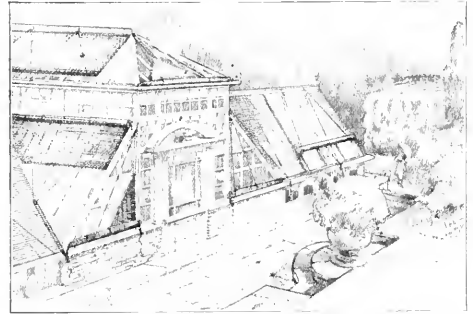
ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
 Kindly send for Catalogue.

JAMES CYPHER & SONS,
 Exotic Nurseries, CHELTENHAM.

BAMBOO BLINDS for GREENHOUSES.

SIZES
 IN STOCK
 FROM
 10ft. x 8ft.
 TO
 15ft. x 15ft.



PRICE LIST
 SENT
 POST FREE
 ON
 APPLICATION

J. AVERY & CO., Horticultural Blind Makers
 51, GREAT PORTLAND STREET, LONDON, W. 1.

EVERY GARDENER KNOWS THAT

Clay's gets there
 and wherever there is a garden
 clay all the year round

Sold everywhere in TINS at 6d. & 1s., and in BRANDED & SEALED BAGS: 7 lbs. 2s. 6d., 14 lbs. 4s. 6d., 28 lbs. 7s. 6d., 56 lbs. 12s. 6d., 112 lbs. 20s. Or Direct from the Works, Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mills & Blue Greenhouses, STRATFORD, LONDON E.

IT IS THE STANDARD FOOD FOR PLANTS.

Gardeners' Chronicle

No. 1593.—SATURDAY, JUNE 30, 1917.

CONTENTS.

Aciphylia C. Jensen ... 263
Botanical Magazine ... 262
Publications received ... 261
Farm, crops and stock on the home ... 264
Food production, on increased—
Beet, the hardness of ... 260
Cabbage ... 259
Celery fly and Parsnips ... 261
Earthing-up Potatoes ... 261
Old seeds and new ... 261
Prices of sulphate of ammonia ... 261
Protection of allotments ... 261
Threats of rain ... 260
Vegetable economy ... 260
Vegetable Marrow ... 260
Kitchener orange ... 260
Weeds ... 260
Fuchsia splendens ... 264
Galloway garden, notes from a ... 259

ILLUSTRATIONS.

India, a flower show in ... 260
Saxifraga mammosissima ... 264
Sweet Peas at Khairat Bagh, Allahabad ... 260

NOTES FROM A GALLOWAY GARDEN.—VII.

Quia delectasti me, Domine, in factura tua et in operibus manuum tuarum exultabo. (Ps. xcii. 4).

It does not stir to unison with these words of the Psalmist. And such a June as is now passing amply atones for the rigours of April and blots from memory the asperities of the last half of May when the latter half brought to body to mind Disraeli's characteristic expression, "the radiant effulgence of spring." How gladly would every gardener compound by a severe winter for the absence of late frosts! We are now in a position to estimate pretty accurately the extent of loss caused by the severest winter for two and twenty years, in which years probably more exotic plants have been introduced to British and Irish gardens in the last time than in any previous period of equal length. The results will, of course, differ widely from each other, according to variation of soil, exposure, latitude, longitude and humidity; but a comparison of results cannot fail to bring out some facts serviceable for general guidance.

The garden in which the following lists have been compiled is on the south-west coast of Scotland, one mile or so from the sea, and 120 feet above it. Although the shade thermometer never registered more than 17° of cold, the frost continued with but slight intermission throughout January and February, accompanied by searing winds. Had that been all, we should have escaped scathless, but worse was to follow. It was the frost of March 7, 8, and 26, and April 1 and 2, that did all the damage. The following lists include only plants reputed to be of doubtful hardihood in Britain and those which have been introduced or distributed since 1395. The letter "w" is prefixed to the names of plants grown against a wall. No Rhododendrons have been mentioned, because the only injury sustained in that genus, besides the ruin of blossom on R. barbatum and R. procerum, has been to R. grande and R. bullatum, the growth buds of which were nearly all destroyed.

PRINCIPAL

Table with 2 columns listing plant names such as Aciphylia vitifolium, Saxifraga mammosissima, and others.

Table listing various plant species and their status, including w. Camptotheca indigo, Choisya ternata, Cordyline australis, etc.

Table listing various plant species and their status, including w. Mattia decurrens, Myrtus communis, Myrtus Lania, etc.

Table listing various plant species and their status, including w. Camptotheca indigo, Choisya ternata, Cordyline australis, etc.

Table listing various plant species and their status, including w. Mattia decurrens, Myrtus communis, Myrtus Lania, etc.

Table listing various plant species and their status, including w. Camptotheca indigo, Choisya ternata, Cordyline australis, etc.

Table listing various plant species and their status, including w. Mattia decurrens, Myrtus communis, Myrtus Lania, etc.

Table listing various plant species and their status, including w. Camptotheca indigo, Choisya ternata, Cordyline australis, etc.

Table listing various plant species and their status, including w. Mattia decurrens, Myrtus communis, Myrtus Lania, etc.

Table listing various plant species and their status, including w. Camptotheca indigo, Choisya ternata, Cordyline australis, etc.

Table listing various plant species and their status, including w. Mattia decurrens, Myrtus communis, Myrtus Lania, etc.

In these lists there are but two or three plants which may not have been anticipated. It is strange that while the Spanish Broom (Spartium juncum) should have suffered severely, neither Carmichaelia nor Nothofagum should have turned a hair. Again, while Pieris formosa and P. japonica both escaped injury and flowered abundantly, our native Andromeda polifolia, originally brought from a sour peat moss in the same parish, has been hard cut. The cause for this may probably be traced in the luxuriant growth of the plant in garden soil, where it grows to a height of 15 inches, whereas in its native peat it never exceeds six. Some doubts have been expressed whether Romneya trichocalyx is more than a variety of R. Coulteri. It seemed at first as if our experience here indicated a specific distinction between the two, for whereas R. Coulteri is none the worse of the winter, both our plants of R. trichocalyx are no more. But when I was in Mr. Elwes' beautiful garden last week, where, in the Cotswold district the winter was far more severe than on the west coast, I found that R. trichocalyx had survived unhurt, while R. Coulteri had succumbed.

The most unexpected result has been that in Thamnocalanus Falconeri, for the leaves of this Bamboo are striated, which the late Lord Redesdale regarded as an invariable sign of tenderness, only those with a tessellated venation being hardy in the British climate (The Bamboo Garden, pp. 54, 55). I thought at first that the twenty-foot rods had been killed, for they shed their leaves, while the base of the plant remained green; but now they have put forth fresh verdure along their entire length. That charming bush or small tree, Xanthocheas sorbifolia, has never established itself as a favourite in north-country gardens, and we had written it off as one of those things that require stronger sunshine than we get on the west coast to cause it to flower freely. Thirty years ago or thereabouts two small specimens were planted here, which are now 10 and 15 feet high. As the years passed without any sign of blossom, we used them as supports for Rambler Roses and Clematis, mutilating the bushes sorely in the process. Suddenly, three years ago, both of them appeared sheathed with erect panicles of white flowers blotched with chocolate. Although these are carried on the old wood, which the cold and sunless summer of 1916 was ill calculated to ripen, yet both bushes are again flowering freely. This must be the effect of the warmth of last September. It looks as if Xanthocheas requires to reach a considerable age before flowering. Perhaps some of your south country readers can enlighten me. Even were it never to flower, this shrub is worth growing for its beautiful foliage. In 1915 Mr. Clarence Elliot gave me some seed of Clebanthus linifolius, commending it as a desirable thing to establish in order to sow itself about. It made no sign until May of the present year, when patches of agreeably soft lavender colour appeared in various places. I trust it has come to stay. For clothing an old wall there are few things more commendable than Erinus alpinus, which sows itself abundantly, and, being of humble stature, interferes with none of its neighbours; but far superior in colour to the type, which is mauve pink, is the variety called carmineus, clear rose in hue without a trace of blue. A chance colour harmony was caused by wood Forget me not, self sown round a bush of Rhododendron glaucum. Herbert Maxwell, Monroeth

The most unexpected result has been that in Thamnocalanus Falconeri, for the leaves of this Bamboo are striated, which the late Lord Redesdale regarded as an invariable sign of tenderness, only those with a tessellated venation being hardy in the British climate (The Bamboo Garden, pp. 54, 55). I thought at first that the twenty-foot rods had been killed, for they shed their leaves, while the base of the plant remained green; but now they have put forth fresh verdure along their entire length.

That charming bush or small tree, Xanthocheas sorbifolia, has never established itself as a favourite in north-country gardens, and we had written it off as one of those things that require stronger sunshine than we get on the west coast to cause it to flower freely. Thirty years ago or thereabouts two small specimens were planted here, which are now 10 and 15 feet high. As the years passed without any sign of blossom, we used them as supports for Rambler Roses and Clematis, mutilating the bushes sorely in the process. Suddenly, three years ago, both of them appeared sheathed with erect panicles of white flowers blotched with chocolate. Although these are carried on the old wood, which the cold and sunless summer of 1916 was ill calculated to ripen, yet both bushes are again flowering freely. This must be the effect of the warmth of last September. It looks as if Xanthocheas requires to reach a considerable age before flowering. Perhaps some of your south country readers can enlighten me. Even were it never to flower, this shrub is worth growing for its beautiful foliage.

In 1915 Mr. Clarence Elliot gave me some seed of Clebanthus linifolius, commending it as a desirable thing to establish in order to sow itself about. It made no sign until May of the present year, when patches of agreeably soft lavender colour appeared in various places. I trust it has come to stay.

For clothing an old wall there are few things more commendable than Erinus alpinus, which sows itself abundantly, and, being of humble stature, interferes with none of its neighbours; but far superior in colour to the type, which is mauve pink, is the variety called carmineus, clear rose in hue without a trace of blue.

A chance colour harmony was caused by wood Forget me not, self sown round a bush of Rhododendron glaucum. Herbert Maxwell, Monroeth

ORCHID NOTES AND CLEANINGS.

ODONTOGLOSSUM MINOS

Flowers of this very fine Odontoglossum, raised between O. harveyense and O. Lambeanum, are sent by R. Ashworth, Esq., Ash Lane, Newchurch, near Manchester, with whom the variety first flowered in October, 1914. The flowers, which are large and broad petalled, have clear yellow sepals, heavily blotched with chestnut red, lighter yellow petals with one large and several small irregular blotches, and a broad, pinrose yellow lip with one large chestnut red blotch in front of the orange coloured crest. In the derivation, O. crispum, O. triumphans, O. Harrymanii, and O. Pescatorei are blended with excellent results.

ODONTOGLOSSUM CALYPSO.

Mr. Ashworth also sends a flower of this pretty yellow Odontoglossum, raised by Mr. De Barri Crawshaw, between O. triumphans and O. Lambeanum (crispum + Balfour), first shown by him in 1913. The plant then shown was nearest to O. Lambeanum, but the present variety has the features of O. triumphans very strongly marked. The sepals are bright yellow with clusters of reddish claret blotches; the petals are white with broad yellow margins, and two or three small claret coloured spots. The lip is reddish claret, with white base and margin and yellow crest.

INDIA.

ALLAHABAD FLOWER SHOW

ON February 24, 1917, the annual flower show of flowers, fruits, and vegetables was held in the beautiful grounds of Government House, Allahabad, and it proved a great success. Until I arrived in India I had no idea such luscious vege-



FIG. 96. FLOWER SHOW IN INDIA.

tables could be produced here. I have rarely seen such fine specimens of Lettuces, Carrots, Cabbages, Onions, Potatoes, Celery, Beet roots, and Artichokes. Tomatoes were also shown, some first class fruits being staged. The flowering annuals were arranged on the lawns, and these comprised a most attractive series. The first prize, for a group of 24 pots of annuals, was won by the Hon. T. C. Piggott. The group contained Clarkia, Schizanthus, Candy tuft, Brachycome (which makes an ideal pot plant), Dianthus, and Lobelia. Other annuals staged in their various classes embraced Mimulone, Mimulus, Asters, Stocks, Nemesis, Nasturtium, Phlox Drummondii, Larkspur, Nemophila, Leptosyne, and Antirrhinum.

In the tents were staged the foliage and flowering plants, including good Cinerarias. The Ferns made an excellent display, while the Crotons, Coleuses, Palms, and Aralias were worthy of special mention. Among the flowering plants I noted some finely grown Freesias, Begonias, Eucharis grandiflora, and lily-leaved Pelargoniums, while the humble Violet was also seen, although the perfume was not so pronounced as at home. Roses were a feature, but the outstanding exhibits were the lovely specimens of *Maréchal Niel*; never before have I seen them in such quantity or quality. They made an impression on my mind which will remain long after my sojourn in India is finished. What an exquisite Rose, and what a loss to English Rose-growers that it cannot be produced in such splendour in English gardens! Oranges, Limes, Cape Gooseberries, and Papayas were also shown.

Another notable feature of the show was the various exhibits staged by Mr. Head (an old Kewite), the hon. secretary and superintendent of the Government Parks and Gardens of Allahabad. They included Roses, a miscellaneous group of foliage and flowering plants, an effectively arranged exhibit of Sweet Peas, including many of the latest varieties; a fine collection of Cannas, showing a wide range of colour; and a large group of Freesias remarkable for their different tints and shades of red and pink. In fig. 97 will be seen some Sweet Peas grown in Khusrui Bagh, where Mr. Head

cultivates a fine collection of plants. The reader will gather from this picture that Sweet Peas in India are not far behind those at home.

The judges were Mr. H. A. Davies, Superintendent, Government Gardens, Lucknow; Gunner Briscoe, R.G.A., Bombardier, Langdon, R.F.A., and Gunner Conybear, R.F.A. As a result of the show Rs. 353 were handed to the St. John Ambulance Association. T. W. Briscoe, Fort Allahabad, India.

practically round, and absolutely distinct from anything I am acquainted with.

For providing early supplies of this favourite vegetable, it should prove of great worth. Cooked whole when small, the fruits make a tempting dish, the quality being first rate. E. Leckell.

THE HARDINESS OF BEET (see p. 242).

I have found Beetroots keep longest and in best condition stacked at the north side of a wall, with a covering of straw or litter during hard frosts, which is removed as the weather becomes warmer. Some amateurs have but little shed room, and this method will enable them to save as many roots as possible for winter use. One cannot imagine gardeners leaving crops needed for daily use in the ground during the winter, when the land should be cleared and dug as soon as possible. M.

WEEVILS.

I FIND the best remedy for the Pea weevil (which has been very troublesome in this district) is nicotine emulsion, sprayed on the plants in the evening. This has cleared the pests from the Peas and Broad Beans, and the plants have now recovered. I would also recommend it for the Turnip beetle or flea when ordinary remedies fail. H. H. M., Wiltshire.

VEGETABLE ECONOMY.

IN hot, dry weather, Lettices have a great tendency to bolt, making them unsuitable for salad purposes. They will, however, be found a good substitute for Cabbage if cooked in the usual manner. They should be used before they run too far to seed, or they will have a bitter taste when cooked. L. F. Bagg, Sunnyside Gardens, Holmwood.

CABBAGE.

FOR early spring Cabbage, sow the seed at the end of July, and plant out the seedlings when ready at a distance of 2 feet by 1 foot 3 inches each way. Also sow seeds in a box early in February, prick out the seedlings in a frame, and when large enough plant them between the early spring crops which have just been earthed up. The earliest Cabbages at cutting time should be cleared away at once, a fertiliser forked in the soil, and a fresh crop of some kind planted. Carrots should be sown between the spring sown Cabbage, the latter, when cut, to be followed by Lettuce or Radishes. John Bates, Meaford Gardens, Stone.

TOMATO TRAINING (see p. 251).

USUALLY the Tomato is trained as a single cordon. Verrier recommends that the main stem should be stopped above every second truss, the prolongation being obtained from the eye of the last leaf retained, and claims that fruiting is hastened and regularised thereby. With the single cordon, as age advances, innumerable side shoots have to be dealt with—at any rate, where the plants can only be allowed a sufficient height for four or five trusses. In the hope of avoiding this confusion and work last year, I grew some plants upon two stems, and certainly the difference in accessory shoots which had to be dealt with after a fortnight's absence at the beginning of September was very striking. The U trained plants hardly required any attention. In this way I got eight to ten trusses per plant; moreover the plants have a bigger root run, and fewer plants are required. This year I am trying alternate singles and U shaped plants, which seems, perhaps, the most economical arrangement. The plants are stopped at the second leaf, when about four have appeared; the upper shoot may want pegging down for equalisation of growth. The eyes at the bases of the seed leaves may be used; if the eye of the first true leaf is destroyed and the stem above it nipped off, the cotyledonary eyes shoot, and a Lopetle-like U is formed, but retardation of growth is rather greater than with the other plan. H. E. Durham.



FIG. 97. SWEET PEAS AT KHUSRUI BAGH, ALLAHABAD.

ON INCREASED FOOD PRODUCTION.

VEGETABLE MARROW BOTHERSIDE ORANGE

MR. F. HERBERT CHAPMAN kindly sent me a few seeds of this early Marrow last spring. We have grown it side by side with many other varieties, starting the plants in frames on a mild hot-bed. Both frames and lights have now been removed some time, and the plants are literally covered with fruits of medium size,

THE CELERY FLY AND PARSNIPS

More earlier than usual, the larvae of the Celery fly has obtained a firm hold on the Parsnip leaves, and unless remedial measures are promptly and widely undertaken, the crop will be at the best a comparative failure. In normal seasons Parsnips grow so freely that the presence of the maggot is not a serious matter, and concerted means of prevention and cure are not needed; but this year, largely on account of the drought, though, also, by reason of the unavoidable lateness in sowing the seed in the generality of allotments, the plants are only one-quarter of their usual size at this season, and the leaves are studded with the yellowish-brown patches which tell of the presence of the maggot. Usually the fly lays her eggs singly, though in considerable numbers, on the upper surface of the leaf, but this year I have found two maggots in many of the brown patches, so it would seem that the insect is determined to be exceptionally destructive. In a season favourable to the fly there may be half a dozen, or even more, generations hatched out, so that it is highly important to take immediate steps to combat the pest. Where the plants are small, the brownish patches should be squeezed between the forefinger and thumb to kill the maggot, but as in larger plants the loss of the affected leaflet is not such a serious matter, it may be removed and burnt. To prevent future egg laying, the foliage should be made distasteful by dusting it while damp with soot or powdered lime, or by spraying with Omista Extract or paraffin emulsion; but whatever is selected, the applications should be repeated at regular intervals until the danger is past. The application of a stimulant, either liquid manure, nitrate of soda, or sulphate of ammonia and superphosphate of lime, is also advisable in order to encourage the plants to grow as quickly as possible. In some gardens and allotments the fly has also attacked the leaves of Beet, therefore this crop should receive similar attention, that given the Celery and Parsnips. *F. C. B.*

EARTHING UP POTATOES

Comparatively little is said by writers on Potatoes about how much or how little earthing is desirable. I have usually given a slight earthing when the plants were well up, a second when about 8 inches, and a final one later. When the rows are close together (say 24 to 26 inches) the ridge of soil is much less than that obtained when the distance is 30 or more inches. It is clear that the yield per plant is generally greater with wider rows, and the question as to how far this may be due to deeper burying of the lower stem, and also to better drainage and aeration, seems possibly of some importance, especially in heavier soils, where the disposition to disease is rather greater than in previous sandy ground. In the Cornell trials (Roberts' *Fertility of the Land*, New York, 1911, p. 220, etc.), "inter-tilage" was in some cases repeated seven or eight times, and superior results were claimed; the "earth mulch" was kept up till late in the season, and seemed to be quite as beneficial in the late as in the early part of the season." At present it is not possible to get in amongst most of my main crop varieties where the rows are 30 inches apart and the height from bottom of furrow to top of ridge is about 6 inches, so that further cultivation cannot be done. A ventilation of the question of the effect of different depths of earthing would be interesting, if not important. *H. E. D.*

PRICES OF SULPHATE OF AMMONIA

The attention of manure mixers, agricultural merchants, co-operative societies and farmers is drawn to the advantages to be obtained from ordering sulphate of ammonia at once. Prices have been arranged with the manufacturers for the season ending May 31, 1918, in such a way as to give an advantage of £1 per ton to those who purchase before the end of September. Dealers and others having good dry storage accommodation should take advantage of this

offer. (1) The terms and conditions which will be applicable to the sale of sulphate of ammonia 24½ per cent. basis, in makers' single bags, net cash delivered to consumer's station in any part of the United Kingdom, in quantities of not less than two tons, are:—For orders placed with makers for delivery during the following periods: (a) June 1, 1917, to September 30, 1917, £15 7s. 6d. per ton. For this first period orders for 60 tons and upwards are to be placed by June 20 for delivery in Great Britain, and by July 10 for delivery in Ireland. Delivery in Great Britain must be in four equal monthly quantities, and in Ireland in three equal monthly quantities. Smaller quantities must be ordered before September 15. (b) October 1, 1917 to December 31, 1917, £15 15s. per ton. For this second period orders for 60 tons and upwards must be placed by September 10 for delivery in three equal monthly quantities either for Great Britain or Ireland. Smaller quantities must be ordered by the 10th of each month for delivery during that month (not January 1, 1918, to May 31, 1918, £15 7s. 6d. per ton. For this third period all orders, large and small, must be given by the 10th of each month for delivery during that month. The foregoing prices are subject to a discount for cash of 10s. per ton to manure mixers, agricultural merchants and dealers and co-operative societies. (2) Quantities of less than 2 tons will be supplied at the above rates, provided they form part of a bulked order of not less than 2 tons, so as to facilitate railway transport and avoid the wasteful use of trucks. (3) Where the purchaser takes delivery at the maker's works for conveyance otherwise than by rail the price will be 10s. per ton less. For sulphate of ammonia of higher or lower quality a difference of 3s. 5d. per ton is to be allowed in respect of each quarter per cent. above or below 24½ per cent. Fractional differences of less than a quarter per cent. will not be taken into account. Where makers require purchasers to provide their own bags the actual cost of bags at the time of delivery shall be allowed.

PROTECTION OF ALLOTMENTS.

Nearly twelve thousand acres of allotments are being handled under the Cultivation of Lands Orders in England and Wales, and it will be apparent that the value of the crops more or less intensively grown on this area is considerable, able in terms of cash and in terms of food for the people. The area occupied by allotment men otherwise than under the Cultivation Orders, of course, is much greater. There are 15,300 allotment holders, for instance, holding land from a single railway company, and 3,000 from another.

The problem of protecting the crops on allotments has been considered by the Food Production Department. Circumstances differ so widely that it is not possible to give advice equally applicable to societies or authorities all over the country on the best means of guarding allotment crops. It is desirable, however, to point out to all concerned that where land has been taken under the Cultivation Orders and a notice of the provision governing the matter is conspicuously exhibited, any trespass thereon becomes an offence under the Defence of the Realm Regulations, and anyone injuring or stealing his neighbour's crops is liable to a fine of £100 or a long period of imprisonment. As a rule, the patriotism and good sense of the citizens will doubtless prove a sufficient protection for crops on unfenced plots; but it should be made clear to other persons that they cannot thieftly tamper with our food supply without being visited by the severities of the law. Although allotments not taken under the Cultivation Orders are outside the scope of the Defence of the Realm Regulations, magistrates may be relied upon, no doubt, to do their best to safeguard general and specific interests against evil-doers. Patrols of members of allotment societies doubtless will be arranged as crops increase in value; in some cases the special constables will keep a watchful

eye on the local allotments. Day guards of school boys have been suggested, and some of the older lads might be utilised, although the ordinary small boy generally has his defects as a sentry. There are obvious objections to the use of young people as guards at night; and it is after dark that supervision is most needed, especially in districts where men work in shifts and there is much "broken time." In most places there are elderly men who would help guard either for patriotic reasons or in return for a small payment; and large allotment societies might well consider the desirability of subscribing funds for this purpose, the cost of which would probably be small.

OLD SEED AND NEW (see p. 255).

ABOUT twenty-five years ago part of our garden (previously a playground for children) was infested with slugs, and to prevent the pests eating the Scarlet Runners as they came above ground we adopted the plan of sowing the seeds in boxes of old potting soil, with a fair proportion of sand in it. This answered the purpose admirably, and it has been continued ever since. Though slugs have long ceased to be troublesome, there were some failures with Peas in the same soil. They rotted instead of germinating. This year I sowed seeds of Dwarf Beans, Canadian Wonder, Excelsior, Filibasket, and Mont d'Or (climbing). About 98 per cent. of the first three came up, and 95 per cent. made good plants, including a blind one which sprouted from the axils of the cotyledons. They were sown on May 12, placed in a cold frame, planted out on the 20th of the same month, and commenced to open their flowers on June 23, in spite of the severe battering they got from the hailstorms of June 16 and 18. About the middle of April I sowed seeds of a second early Marrow-fat Pea on an allotment, and next day they had snow upon them. Three-fourths of them failed to germinate. About the middle of May I sowed or planted Scarlet Runner, two seeds to each stake, to make sure of plenty of plants. More than half failed to germinate, and the same process was repeated. Even then we had to transplant some of the duplicates to avoid blanks. On the same allotment we sowed Brown Haricot Beans obtained from the Royal Horticultural Society, and, though most of them germinated a considerable percentage lost their heads by rotting just as they came through the soil. This was during drought or fine weather, and we suspect injury from ground insects and snake millipedes, of which *Julus pulchellus* is the most abundant. The Brown Haricot Bean was sold by growers in our district during winter, and more recently a similar variety with dark brown spots. The Beans are excellent cooked, though they contain a good deal of colouring matter. *J. F.*

BAUERKRAUT IN FRANCE.—It may not be generally realised that Sauerkraut is a very popular dish in France, especially in the North. Before the war most of it used to be imported from Germany; but the *Revue Horticole* tells us that a large factory near Paris has enormously increased its output since 1914. The Cabbages used are chiefly grown at Dammarin (Seine-et-Marne), and the manufacture takes place only in the last five months of the year. It takes about twenty days for the Cabbage to become sufficiently fermented, and the material used produces about 50 per cent. of its own weight in Sauerkraut.

PUBLICATIONS RECEIVED.—Good-keeping in War-time. By C. J. Davies. (London: George Newnes, Ltd.) Price 7s. net. (This is a booklet of about thirty pages, evidently written by a practical keeper. There is no preface, and we are not told why good-keeping in war-time is peculiar; but anyone desirous of acquiring one or more of these animals will find the book very useful.)—**Experiments with Humogen in Comparison with other Fertilisers.** A report of the tests carried out at Reading in 1916. By Martin H. F. Sutton. Price 2s. 6d. net.

The Week's Work.

THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

CUCUMBERS IN FLAT PITS.—Cucumber plants in flat pits require careful attention in thinning and pinching the young shoots. Stop them at the first or second joint beyond the fruit, and remove all worthless growth to allow the light and air to enter freely. If aphids makes its appearance, fumigate the pits at once. Syringe the foliage with clear water twice daily in warm, sunny weather, but not in the afternoons in dull weather. Strong, healthy plants may still be planted in pits which have been occupied by Potatoes or French Beans; a supply of Cucumbers should be had from such plants throughout September and October.

FRENCH BEANS.—From a sowing of French Beans made now pods should be gathered about the middle of August. Use rich soil, and select an open position for the plants, allowing them plenty of room. The Belfast and Canadian Wonder are two good varieties for present sowing, and will furnish pods in the order named. Earlier plants will be benefited if afforded supports, and especially those planted in exposed situations.

TURNIPS.—A large sowing of Turnip seed may be made in late districts with a view to obtaining roots in late autumn. In gardens in the south, the middle of July will be soon enough for sowing. Frequent small sowings of Turnip seed should also be made in order to make quite certain of a crop, as much depends on the district on the success of autumn crops.

BET.—Beet raised from seed sown in the beginning of June is ready for thinning. Allow a space of at least 9 inches between the plants. After thinning, work the Dutch hoe carefully amongst the plants to clear the ground of small weeds. A sowing of Turnip-rooted Beet will still be made, and the plants should furnish nice roots for use in winter. Select rich soil for this crop, and thin the plants as soon as they are large enough.

CARROTS.—A sowing of Early Gem or early Scarlet Horn Carrot may be made forthwith with good prospects of a crop of roots for winter and spring supplies. Model is another suitable variety for present sowing, and the roots will retain their colour if left in the ground through out the winter for use as required.

WINTER GREENS.—No time should be lost in filling all available ground with winter crops. Broccoli, Savoys, and Hardy Cabbage should be planted in quantity, also Late Broccoli, Coleworts, and Christmas Drumhead Cabbage.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR DAVY, Abbots Wood, Godalming, Surrey.

PEACHES AND NECTARINES.—These are making very strong growths this season. All new shoots not required for next year's crop should be removed forthwith. On young, vigorous trees the remaining shoots can be trained in position against the wall by means of small lengths of Bamboo slipped in between the wire or branches. The plants should be split into small flexible pieces about a foot long, and, if collected in the autumn and dipped in some strong insecticide and tied in bundles, will last several seasons. Syringe the trees on all available occasions, every afternoon if possible, about 4.50 or 5 o'clock. If this is done very thoroughly, it will keep the foliage free from red spider. Occasionally the trees should be sprayed with an insecticide or some reliable wash; some stimulant should also be given occasionally. Too much manure at one dressing will sometimes cause irreparable damage, so little and often should be the practice. It must be borne in mind that only healthy trees will stand manuring; an unhealthy tree may be killed out

right if manured heavily at any time. Old trees will be quite resuscitated by suitable dressings.

GOOSEBERRIES AND RASPBERRIES should be netted as soon as the fruits begin to colour, or the birds will attack them. Place the nets high up on poles, so that one can walk under to gather the fruit or water the trees. Good, stout poles, with strong tarred rope strained across, will bear the netting very well, and will last for several seasons. If the nets are laid directly on the bushes, the shoots get through, and the nets are torn.

FIGS growing rapidly will be improved by a good watering with clear water, and trees carrying heavy crops of fruits should be given a soaking from the sewage tank.

FRUITS UNDER GLASS.

By JAS. HENSON, Head Gardener at Gimmershury House, Acton, W.

YOUNG VINES.—When young vines and others that have not yet reached the limit of growth have need of stopping, it is a good practice to compel the young growth after it has been topped to force the main bud to break. This bud would not, in ordinary circumstances, break until next year. By forcing it to break now it will be the means of plumping up the buds lower down the rod. These buds will not break of themselves, but the laterals will continue to grow. Do not continue to stop the laterals, but rather allow them to extend, so that all the available space is covered, but not to overcrowd. If have allowed the laterals to hang down when the growth has been free, far by so doing a greater amount of growth can be ensured without obstructing the light.

MELONS.—See that the last-sown batch of plants have all the light possible, so as to keep them sturdy and strong. These should be kept well away from any stock that may have red spider amongst them. Bottom heat will hasten growth, we know, but for this next batch most of the progress will be made whilst we have plenty of warmth from early closing. It is not now essential to success that fermenting material should be employed.

CHERRIES IN POTS.—With us this crop is now all gathered and the trees will without delay be put outside and be plumbed over the rims of the pots. Cherries like a little shade from trees in the open during a part of the day. Watering will have to be carefully attended to daily, and can be done with the hose. After plunging, an occasional dose of artificial manure will be applied, preferably one containing a good percent age of phosphates and potash. During hot weather a good overhead spraying should be given to keep insect pests in check. Thus treated, the foliage is retained well into the autumn in a healthy condition.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

THUNIA. As Thunias pass out of flower they should be removed to a cool, well-ventilated greenhouse, where the temperature does not fall below 55°. Expose the stems and leaves gradually to full sunlight, which will cause them to mature. The plants will need water at the roots occasionally for so long as the leaves remain green, but when the foliage commences to turn yellow moisture should be withheld gradually. Plants that are exposed to the sunshine and grown in a dry atmosphere are liable to attacks of red spider. To prevent such attacks they should be placed on their sides and syringed with a nicotine insecticide, or soft soap dissolved in warm rain-water. Thunias are easily propagated from the back pseudo-bulbs by cutting them through a joint into lengths of about 4 inches and inserting them in pots filled with a mixture of chopped Sphagnum-moss and silver sand. The present is the most suitable time to root these cuttings, which will soon develop roots and top growth, in a frame in the warmest house. Old plants that have failed to flower and with stems growing to an unreasonable length should have the points of the shoots pulled out, and receive similar treatment to those that have bloomed.

THE FLOWER GARDEN.

By W. J. GUINN, Gardener to Mrs. DEMPFSTER, Keels Hall, Staffordshire.

IRIS. Groups of Japanese Iris are at their best when planted at the sides of lakes, or streams, or in any damp situation where the roots can eventually reach the water. Although the roots should be kept in a dry state during winter, copious supplies of water are necessary continually during the summer. A rich, retentive loam suits them best, and established plants will respond to a mulching of decayed manure. To increase the stock, lift the largest plants and divide them directly after flowering. The Bearded Irises are very effective in large masses planted in the herbaceous or mixed border. These Irises like a retentive soil with plenty of moisture during growth. The plants do much better if they are divided and replanted every few years.

CARNATIONS.—As these are now pushing up their flower spikes, the stakes should be placed in position without delay. The wire spiral stakes are best, as no tying is required. Give the ground between the plants a dusting of some approved Carnation manure, afterwards stirring the soil with the hoe. Soft water and liquid manure properly diluted are excellent stimulants.

HERBACEOUS PLANTS.—The necessary staking and tying of herbaceous plants will demand constant attention. Use green stakes, as they are hardly noticeable. The plants are growing luxuriantly, therefore it is advisable to restrict and regulate the young growth to prevent overcrowding of the weaker-growing varieties.

BULBS IN GRASS.—Directly the foliage of bulbs growing in grass show signs of turning yellow, the long grass should be mown with a scythe, to allow sun and air free access to the bulbs.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHOTE, Eastwell Park, Kent.

STOVE CLIMBERS.—Amongst climbers requiring warm house or stove treatment may be mentioned *Alamanda* in variety, *Cissus discolor*, *Dipladenia*, *Stephanotis floribunda*, *Aristolochia*, *Clendendium*, *Gloriosa superba*, *G. Rothschildiana*, and *Thunbergia*. These all thrive when treated in the manner described for greenhouse climbers on p. 255—hanging loosely and gracefully from the roof. Climbers always bloom better if kept thinned out or pinched back. If in tubs or restricted borders, they require abundance of water during the growing season, and regular stimulants either from liquid manure or top-dressings of artificial manure. Young plants propagated this season should be potted as required. Do not allow them to become pot-bound until they are in their flowering pots, when they must be fed.

AMARYLLIS (HIPPEASTRUM).—Hippeastrums should be removed from the houses to a cool frame, standing on a damp ash bottom. Do not be in too great a hurry to dry them off. Continue to give them a moderate amount of water, with liquid manure at intervals. Ventilate moderately and shade the plants slightly during bright weather, in the hottest part of the day. When growth is complete, disperse with the shading, give more air, and gradually reduce the water supply. This assists in the complete ripening of the bulbs, which is necessary for their satisfactory flowering next season.

HYDRANGEA.—Late-flowering plants in pots, now in full growth, should be given plenty of water and stimulants. When coming into bloom, arrange them in the cool greenhouse or conservatory. If shaded from bright sunshine, the blooms will keep in excellent condition for a long time. *H. paniculata*, grown as a standard in pots, is especially good for associating with Palms, *Cordylines*, and other green plants in corridors and verandahs, as well as in the ordinary greenhouse. The same variety, as a dwarf bush, is useful for all decorative purposes. When grown in pots, and the plants are in full growth, abundance of water and plenty of feeding are necessary to ensure fine, clean heads of bloom.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C. **Editors and Publisher.**—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR JULY.

- WEDNESDAY, JULY 11—Southampton Royal Horticultural Society's Flower Show.
- TUESDAY, JULY 17—Roy. Hort. Socy's Com. meet. and National Carnation and Prosees Society's meeting at Drill Hall.
- THURSDAY, JULY 26—Royal Botanic Society meets.
- TUESDAY, JULY 31—Roy. Hort. Socy's Com. meet. and Show of Dry Bulbs.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 61.9.

ACTUAL TEMPERATURE:—Gardener's Chronicle Office, 41, Wellington Street, Covent Garden, E. 1940, 1, 1940, 1, 1940, 2, 10 a.m., Bar. 29.7; temp. 75.5. Weather, Cloudy.

How to secure the most effectual distribution of surplus produce is a problem which is vexing the minds of many people who are growing more vegetables than they require.

On the one hand there is the outstanding fact that their surpluses are needed to help to make good the general shortage of supplies; on the other hand, there is the equally cogent fact that owing to lack of expert labour and to decreased railway facilities it is difficult for the inexperienced to supplement the work of the ordinary distributing agencies. The difficulty of the problem is aggravated by the facts that many vegetable products are perishable, and that, coming in about the same time, there are likely to be temporary gluts, which will mislead people into believing that there is no risk of subsequent shortage.

It will be evident to anyone who has thought upon the subject that it is not possible to draw up a scheme for marketing which will be applicable to all localities. It therefore follows that the task of organising distribution is one which must be initiated by each community for itself. In not a few cases this is being done, and it is to be hoped that every local community will without loss of time give careful attention to the subject. In this the wholesalers and retailers engaged in the distributing trade could lend invaluable assistance to the State. Everyone is agreed that it is desirable for distribution to be carried out so far as possible through existing channels; but if it is to be effectual those channels must be broadened and multiplied so as to allow of compensation, so far as possible, for the decreased rail way facilities.

The problem in its broadest aspect may be stated thus: How to secure uniform distribution with the minimum of strain on

the transport system. Evidently local organisation of distribution can assist in achieving this object; but the local organisations require to be co-ordinated by some larger authority. Just as the Army has its Army Service Corps to carry out its work of distribution, so we require a National Service Corps to discharge a similar function for the Nation. The wholesale and retail distributing trade should be able to provide experienced officers for this service. National Service recruits for distribution of supplies could easily be obtained for the purposes of local organisation. An approximate measure of the vegetable foodstuffs available in each district could be obtained, and the regions which these foodstuffs were earmarked to supply could be delineated.

The staff of the National Service Supply Corps would co-ordinate the plans of neighbouring localities, and it could also do invaluable service in other ways. For example, it could issue ration-tables giving information as to the average quantity of each kind of vegetable sufficient for the needs of an individual. This, supplemented by instructions in the preserving and storing of vegetables, would enable the inexperienced to ascertain how much of their produce should be reserved for home consumption and how much might be liberated for distribution.

It may well be that there are simpler and better ways of dealing with this all-important problem, but what is certain is that it requires to be dealt with, and that speedily. No less certain is it that the problem is one which might not, and cannot be dealt with solely by a central authority. It is one to the solution of which each locality must make a contribution.

"BOTANICAL MAGAZINE." The quarterly issue, comprising Nos. 1562-1564 of the entire work, being the issues for April, May, and June, 1917, contains illustrations and descriptions of the following plants:—

RUBUS HETEROCARPUS, tab. 8704.—The fruits of this species of *Rubus* resemble a large Raspberry. The popular name is the Strawberry Raspberry, under which it is frequently seen at exhibitions. The stems only attain a height of about eight inches, and die down in winter, so that the plant is herbaceous, not of a true woody character. The plant has been grown in this country as *R. sorbifolius*, having been introduced from America under that name.

SAXIFRAGA HORTONII, tab. 8705.—A native of New Zealand, introduced into this country by Captain A. A. DOUGLASS SMITH. The species is tender, but has great promise as a conservatory plant. The flowers are white; the capitulum is sometimes two inches and a half in diameter. The lower leaves are pinnately dissected, but the upper ones are entire and sessile.

CHIRITA TRAILLIANA, tab. 8706.—This handsome Gesneriad is a native of China, and was discovered by Mr. GEORGE FORBES at an elevation of five to seven thousand feet in Yunnan. The species flowered in June in a greenhouse, and is apparently too tender to thrive out of doors in this country. The flowers are tubular, the face of the corolla bright violet, with yellow lines in the interior on a paler violet ground.

SAXIFRAGA MANSHURIENSIS, tab. 8707.—This species (see fig. 96) was described by Mr. W.

IRVING in *Gard. Chron.*, September 18, 1915, from specimens which flowered at Kow, the seeds of which were obtained from Messrs. REBEL AND KESSELERINO, Petrograd, in 1915. The inflorescence is a rounded panicle of white flowers, with orange coloured stamens and red pistils.

CORYLORHIZA WILLMOTTII, tab. 8708.—This new Chinese species is closely allied to *C. Veitchiana*, from which it differs in its pilose calyx and fruits, longer nectaries, and exserted red anthers. The raceme of pale yellow flowers is very attractive, and the foliage has purplish petioles, subtended by stipules of the same colour.

VANDA LUZONICA, tab. 8709.—This handsome Orchid is a native of the Philippine Islands, and closely related to *V. tricolor*. The most marked difference is in the colour of the flowers, the sepals and petals of *V. luzonica* being white, blotched with purple, and with a lip of the same colour.

PHYROLA ULGINOSA, tab. 8710a; **PHYROLA BRACKETATA**, tab. 8710b.—Both these plants are natives of North America. *P. ulginosa* has a spike of cup-shaped flowers, bright rose coloured outside, and pale pink inside, against which the violet stamens are conspicuous. *P. bracketata* bears a denser spike, and the flowers are more open, with yellow anthers and a conspicuous yellow style. Both species are suitable for growing in peaty soil, such as that of a bog garden, or near the banks of a stream.

PLAGIOSPERMUM SINENSE, FORMA BRACHYPODA, tab. 8711.—This Manchurian shrub was described in *Gard. Chron.*, February 2, 1907, p. 65. The flowers are yellow, and almost sessile; they arise in groups of three or four along the whole of the branch from clusters of linear leaves.

MYRSINE AFRICANA, tab. 8712.—This plant was first introduced from the Cape of Good Hope about the year 1691, in which year specimens were cultivated at Hampton Court. The flowers are inconspicuous, and are sometimes, though not often, followed by handsome purple fruits.

ÆSCULUS TURBINATA, tab. 8713.—The flower spike of this Japanese Horse Chestnut is exceedingly handsome; the petals are creamy white, with yellow blotches which turn pink with age. The foliage has been described as being the noblest of Horse Chestnuts, the leaves being sometimes 27 inches long. A tree in Westonbirt, Gloucestershire, has attained a height of 30 feet, and has a trunk measurement of 2 feet 9 inches.

STAPHYLIS AMHERSTII, tab. 8714.—This species is named in honour of Sir EVERARD IM THURN, who first found it in 1905 when visiting the Solomon Islands. The flowers are white, with pale yellow markings, and violet blotches on the lip. The scape is erect, and about three feet long, arising from an aggregation of long, narrow foliage.

CAMPANULA EMBERSII, tab. 8715.—See *Gard. Chron.*, May 12, 1917, p. 190, fig. 69.

DISANTHUS CERCIPOFOLIA, tab. 8716.—This very attractive plant is the only member of the genus, and belongs to the Hamamelidaceae. It is a native of Central Honko, Japan. Its chief attraction lies in the rich hues assumed by the foliage in autumn.

ACIPHYLLA.—We are indebted to the Kew Herbarium for the information that the photograph of *Aciphylla* from Sir EDMUND LOOPER's garden, reproduced on p. 235, represents the species *Colemanii*, not *spuriosa*, as printed. The former species has longer leaves than *A. spuriosa*, and makes a plant of larger growth.

WAR ITEM.—A bouquet of Mikado Carnations and Frank Dolly Sweet Peas, presented by Messrs. W. AND J. BROWN, Stamford, to the Peterborough and District Farmers' Branch of the Red Cross Society, and given by the Society to Mrs. G. C. FITZWILLIAM, was sold by auction, and realised the sum of £112.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

FUCHSIA SPLENDENS.—It may be of interest, in connection with the article on *Fuchsia splendens* by B. F. (see p. 245), to mention that plants at the base of a south wall here have come through the winter unharmed, and have now grown to a foot high. The plants have never had any protection, but are always killed down to the ground in winter. I have no doubt that *F. fulgens* could be grown successfully in many places in Great Britain. *Arch. Buchanan-Hopburn, Smeaton, East Lothian.*

GERMINATION OF PARSNIP SEEDS.—The reference in the issue for June 16 (p. 244) to

week or so after I had removed the second set. Where the line has not been run through the rows, occasional seedlings have appeared since, and as late as June 19 I pulled out a few inch high plants from among those left at the original thinning, and which are now nearly a foot high. The variety sown was *Maltese*. It seems pretty certain that the seeds were not all from the same crop, and the experience suggests that Parsnip seeds may retain their germinating power longer than we have believed. *Charles H. Curtis, Buxtonford.*

A GOOD WORD FOR THE HOUSE SPARROW.—*Southern Growers* and others complain of the damage done to the fruit trees by caterpillars. In last week's *Gardeners' Chronicle* *Southern Grower* states that the only birds he allows his

so clean. I keep the sparrows alive by feeding them when very sharp frost or snow prevails; and if there are some Chickweed patches left among the old cabbage stumps and winter greens the birds do no damage to my Parsnips or Lettuces. Bullfinches will not do any damage for three seasons; but blackbirds, blue tits and whitethroats are often troublesome. *Wm. Stanbury, Mount Fife, Walton on Thames.*

Obituary.

SIR W. C. MACDONALD.—By the death of Sir W. C. Macdonald, Chancellor and President of McGill University, Canada has lost one of its most generous benefactors. Sir W. Macdonald devoted much of his vast wealth to the promotion of education, and was particularly generous in assisting all schemes connected with rural and agricultural education. It was due to him that the great agricultural college at Guelph, the Agricultural Department of the University, was established, and Sir William also established "consolidated schools" in Ontario, New Brunswick, Nova Scotia, and Prince Edward Island, equipped for horticultural and manual training and household science. He was one of those men, not rare on the American continent, who have a genius for spending their fortunes lavishly for the benefit of their fellow-men.

J. HARRIS. We regret to record the sudden death of Mr. John Harris, aged fifty, a partner in the firm of Messrs. Harris and Matthews, seedsmen, of Abingdon. Mr. Harris came to Abingdon about twenty-five years ago as an assistant to Mr. A. Pritchard, and in 1895 joined Mr. F. W. Matthews, with whom he developed a large business in Bridge Street. He was much esteemed by horticulturists and others in the town and neighbourhood. He was an active member of the Abingdon Horticultural Society.

HERBERT T. KING. Mr. Herbert T. King, who was killed by a bomb during the air raid on London which took place on the 15th inst., was head of the well-known seed firm, Messrs. J. K. King and Sons, of Coggeshall. Mr. King was on his way from Coggeshall to inspect seed crops in Lincolnshire, and his train had just reached the station when a bomb fell on or him, exploded, and killed him instantly. Mr. King was accompanied by Mr. J. H. Millard, the general manager of the firm. Mr. Millard was not injured by the fatal bomb, but directly afterwards a second bomb wounded him on the back of the head, rendering him unconscious. Mr. King was known and esteemed throughout the horticultural world, and especially at Coggeshall, where the firm has been established for many years. He leaves a wife, with whose loss all will feel the most profound sympathy.

CROPS AND STOCK ON THE HOME FARM.

POSTURE OF ARABLE LAND FOR DAIRY COWS.

In reply to a correspondent, I may say that in the county of Hants, where pastures vary considerably in their quality for feeding purposes owing to the various kinds of soil, three acres per cow is the standard allowed for milk production; in some cheese-making districts, three and a half acres is allowed.

If the Hon. F. G. Strutt and Mr. Currie had given the Essex War Agricultural Committee (see p. 248) a few particulars as to what amount of arable land would be required, and what crops to grow in lieu of grass, they would have enlightened an inquiring public. A bald statement, by whomsoever it is made, does not convey the information desired. Some cowkeepers do not give their animals artificial foods regularly. I think it will be admitted that it is much more expensive to farm arable land for crops than for grass for cows. There are many foods obtainable from arable land suitable for cows, but the question of cost weighs considerably.

As to the various foods obtainable from arable land, a single cow will eat 60 lbs. Mangold per



FIG. 93. SANSEVIERIA MANSHURIENSIS. FLOWERS WHITE, WITH ORANGE STAMENS AND RED PISTILS. (See p. 267.)

the germination of Parsnip seeds reminded me of my experience this year. Assuming that, in consequence of the great demand, I might have to deal with seeds below the average in quality, I sowed somewhat thickly for this crop, and instead of sowing a few seeds in regular patches I sowed all along the drills. A very few germination took place, and I was able at the first thinning to leave plants at regular intervals of eight inches apart in each of my long ten yard-long rows. About ten days after thinning, I went to live between the rows, and was surprised to find a second crop of Parsnip seedlings growing between the larger plants. These were removed, and by themselves were sufficient to provide a good crop had there been no earlier seedlings. I was more surprised, however, to find a third crop of small seedlings a

leads to destroy are missed thrushes, black birds, and sparrows. If it had been some farmer with fields of corn I could have understood, but a fruit grower allowing the nests of sparrows to be destroyed, and even paying for their eggs, would be beyond my comprehension if I was not aware of the ignorance that prevails in many parts of the country in connection with the house sparrow. The house sparrow destroys more fruit tree pests than all the other birds combined, and never touches the fruit. He commences by searching the trusses of blossoms, then the young foliage and fruit. I scarcely ever need to spray my trees or bushes, except cherries for black aphids, and Plums sometimes for aphids, as the sparrows will soon clean them, if not too many for them. Travellers and others often ask me what I spray with to keep my trees

SALES BY AUCTION.

In Bankruptcy, By order of the Trustee... AIGBURTH, LIVERPOOL... PROTHEROE & MORRIS

THE NURSERIES, AIGBURTH, LIVERPOOL. On Monday and Tuesday, July 16th and 17th, 1917.

the well-known stock of R. P. Ker & Sons, consisting of 5,000 PALMS, including 200 fine specimens, 4 to 12ft.

COLLECTION OF AMARYLLIS. which has been so successfully exhibited at the principal shows; also the whole of the General Nursery Stock in the ground.

The whole of the stock and contents as described (excepting the Amaryllis) will be first offered in One Lot, including the Name and goodwill of the Business, and if not fully disposed of, then in detail as catalogued.

May be viewed one week prior to the sale. Catalogues may be had on the premises, of the Trustee, Harold Sulley, Esq., Chartered Accountant (Messrs. Finlay, Son & Salford), 31, North John Street, Liverpool, and of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

BUSINESS FOR SALE.

LONDON, N.—Nursery, 2 acres, 11 Green-houses; total length 552 feet; near station; no stock. rent £70 per annum. Particulars, PROTHEROE & MORRIS, 65, Cheapside, E.C. 2.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock, cash or exchange. See other advertisements; catalogues free. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

PLANTS, &c., FOR SALE.

FEIKNS' FEIKNS'!—Two Ferns, Climbing Ferns, Basket Ferns, Show and Greenhouses Ferns, Hardy Garden Ferns, catalogues free. J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

BEGONIAS. Gloire de Lorraine, Tumbled Hall and Rothschild variety of Lorraine, well-tossed cuttings, 2s. 6d. doz., 50 for 6s., 6d., 10d. 100 The King, 4s. doz., 50 for 12s., 20s. 100.—H. DUDDEIDGE, The Dorset Nurseries, Blandford.

BEGONIAS and GLORINIAS—MORLE & CO. can now supply their celebrated strain, in large 60 pots, in flower and bud. Early inquiries, as stock is limited this season.—150/156, Finchley Road, N.W.3.

100,000 LARGE GARDEN FERNS. 20s., 100; Palms, Begonias, Crotons, Dicranas, Ferns, Eriacs, Gloxinias, Lilies, Hydrangeas, &c., catalogues free. J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

TUBEROSES, double African Pearl, just 2s. doz., moved, for winter flowering; extra large bulbs, 2s. doz., 25s. 100; sent free any address, for cash.—WORLE & CO., 150/156, Finchley Road, N.W. 3.

POINSETTIAS, established in small pots; clean and strong, 3s. 6d. per dozen, 21s. per 100, carriage paid, each with order. JOHN BURCH, Staple Hill Nursery, Bristol.

MISCELLANEOUS.

BOWLS. £2 2s. Association set lawn bowls, 4 pairs superior full size selected legum, bowls and 2 jacks in strong box, unused, 29s. 6d.; also 2 pairs finest Standard Bowls, period 3 bias, officially tested and stamped by Bowling Association, 11s. 6d.; pair of bowls, set, 7s. 6d. Approval—Box 728, Wilbards, Tisbury Street, Bradford.

SPORTSMEN, Farmers, Horsemen, try like leather, 7 splendid Yorkshire Whipcord Tweed; wears like leather; 7 cards, 17s. 11d. Patterns free. BRADFORD WOOLLEN Co., 71, Bradford.

B. EDDY & SONS, Torleven Works, Porthleven, Cornwall.—The largest manufacturers of GARDEN NETTING in the KINGDOM, NEW STOUT and specially strong SQUARE MESH NETTING, half-inch and one-inch mesh, at 6d. per square yard. LIGHT NEW SQUARE mesh, suitable for Strawberry Beds, at 3d. per square yard.

These Nets are bound all round with stout cord, and cover their measured length and width. Any length or width supplied.

Repaired Nettings in all sizes in stock. State your requirements, and we will quote lowest prices

Also makers of TENNIS NETTINGS, RICK COVERS, GREENHOUSE SHADINGS, WASP NETTINGS, PACKING and TARRED TWINES of all kinds.

All Goods sent by PASSENGER Train, CARRIAGE PAID, on receipt of order.

ORCHID PEAT, 6s. and 7s. 6d. per sack; Brown Peat, 10s. 6d. per yard in trucks; in bags 2s. 6d each 30s. dozen; Oak and Beech Leaf Mould, Yellow Loam, Stacked and Fresh Cut, Silver Sand, Golden Loam, 2s. 6d. C.N. Hens, 24s. dozen bags; list free. J. HANDSCOMB, ERBIS, 2, Feltham, Middlesex

THE reason why advertisers find the Gardeners' Chronicle so good a medium is that it reaches the best class of people, who are in the best position to do what is best for them, and who do not generally mind how much they spend upon a thing, provided it is the best that can be got. Our advertisers supply the best quality, and therefore they appeal to those who know good quality when they see it.

DEATH.

SPOONER.—On June 25, at Wood-lane, Hounslow, London, wife of Henry Spooner, of the Hounslow Nurseries.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d for each succeeding line

PRIVATE.

WANTED, HEAD GARDENER (WORKER). Must be thoroughly good at Flowers, Vegetables and Fruits, including Vines and Melons. I kept.—Apply, stating full particulars of age, experience, and wages, to—RICHARD GERRISE, The Manor, Windsor, Salisbury.

WANTED, HEAD WORKING GARDENER; thoroughly experienced in up-to-date Gardening, Inside and Out, reference to last employer indispensable; wages 45s. (five) only, &c. CHARLES THOMAS, Esq., Plymouth, Wrexham.

WANTED, at once, an experienced WORKING HEAD GARDENER; ineligible; no young family; state full particulars, and wages.—Address, MRS GERBESS, Longwood, Bishopcote House, Warwick.

WANTED, UPPER GARDENER of Flowers, Grapes and Pears, under Glass, must be over 45 or more like Apply, stating qualifications, to MRS DAVENTSEY, Portsea House, Port-head, Somerset.

WANTED, SINGLE HANDED GARDENER; in Wimbledon—Write, stating previous experience and wages required, to H. L. Carr, c/o J. W. Vickers & Co., Ltd., 5, Nicholas Lane, E.C.

WANTED, SINGLE HANDED GARDENER; good all round man, and to look after pots and trap, good estimates wages 27s. per week.—Full particulars, T. W. HANMER, Framfield Lodge, Fifehead, Wiltshire.

WANTED, GARDENER (SINGLE HANDED), must understand Orchids, good wages. Apply first to JOHN COWAN, Nurseries, Galsgate Liverpool.

REQUIRED, capable and industrious SINGLE HANDED GARDENER able to manage a large, consisting of Vegetable and Flower Gardens, Vines, Grapes, and Pears, in a 30-acre Greenhouse, wages 30s. per house, fuel and green vegetables from garden.—Apply, F. SIMON BANK, Woodside Road, Wallington.

WANTED, GARDENER, for private grounds, single or with another, 50s to £2; must be skilled in all general work, Glass excepted; a willing, cheerful worker is required, taking a keen interest, otherwise no use in me. Call, if possible, otherwise send testimonials, to MR ROBINSON, Rompney Manor, Brighton.

WANTED, good WORKING GARDENER where 2 under-ones are kept, no family.—DOWAGER LADY SOUTHAMPTON, Park Place, Englefield Green.

WANTED, immediately, GARDENER (ineligible) to attend to Egoton Gardens; two days a week only required.—Wages expected and full particulars to MRS SIEGEL, 50 Egoton Gardens, London S.W.

WANTED, a Man as KITCHEN GARDENER; must be either discharged from or ineligible for the Army; no Boys; wages 30s. per week. Apply, ALFRED WILLIAMS, Wallingford, Oxford.

WANTED, good all-round GARDENER, ineligible for Harrow-on-the-Hill; cottage provided, good wages and help given.—MR A. K. CARLTON, Mount Park, Harrow-on-the-Hill.

WANTED, GARDENER; ex-Army man preferred; permanency.—Apply, The Priory, West Molesey, Hampton Court.

WANTED, GARDENER (ineligible); experienced Inside and Out; Vineyard, Orchard House, some Orchids; second man kept.—Apply, with full particulars, to E. T. BOWLE, Mill House, Salisbury.

WANTED, GARDENER; capable, all-round man (whole time), at Wimbledon.—Write, in first instance, giving full particulars, to F., c/o J. W. Vickers & Co., Ltd., 5, Nicholas Lane, E.C.

WANTED, SECOND GARDENER (3 kept), over military age; only those with good experience of Orchard work in Pleasure and Vegetable Garden need apply, good wages to capable man.—Write, stating experience, references, wages, and with other full details, to HEAD GARDENER, "Dunham," Outland-Chase, Weybridge.

WANTED, SECOND GARDENER; single; ineligible; good experience with Carnations, Begonias, Chrysanthemums and House-Decorative garden wages, £100, variable man.—Full particulars to K. DAVIDSON, Kingswood Manor Lodge, near Reigate.

WANTED, UNDER GARDENER, for Vegetable and Chickens; ineligible military duty.—permanency.—Apply, GARDENER, G. W. Jackson King's Brad Hotel, Harrow.

WANTED, UNDER GARDENER, for Inside work, Grapes, Pears, and Plant Houses; must have had some experience, Bothy and vegetables.—FARSONS The Gardens, Garsins, Hereford.

WANTED, UNDER GARDENER; used to Greenhouse and Stone plants; single; ineligible.—MRS. WAKEMAN NEWPORT, Sandbourne, Bexley.

WANTED, UNDER GARDENER having good experience and references; single and ineligible; liberal wages.—Apply, T. ELLIOTT, Norton Manor, Sutton-Seeley, Hants.

FOREMAN WANTED, for Houses; well-versed in Fruit and Vegetables, ineligible, or discharged soldier; good wages and comfortable place to reside in.—Apply, E. B. KIPP, Aldenham House Gardens, Ebbw, Berks.

WANTED, FOREMAN of good JOURNEYMAN (INSIDE), 30s. per week, Bothy, &c., overtime paid. E. BRISTOW, Leyswood Gardens, Greenbridge, Tunbridge Wells.

WANTED, INSIDE FOREMAN or good JOURNEYMAN (ineligible), good wages, Bothy, &c., to reliable man—A. J. EAST, Shipley Hall Gardens, Derby.

WANTED, FOREMAN (INSIDE); ineligible or discharged.—Write full particulars, to H. BARKER, The Gardens, Goldings, Great Warley, Essex.

WANTED, FOREMAN (married); experienced; good wages offered; must be ineligible or over military age.—Apply, J. ELDER, Hursley Park, Winchester.

WANTED, JOURNEYMAN, ineligible, for Inside and Out, also IMPROVER, for Inside and Out; wages 25s. and 21s. per week and Bothy? duty and overtime paid.—Apply, with full particulars, to H. A. PAGE, The Gardens, Bolsoe Court, Hampstead N.W.3.

WANTED, JOURNEYMAN; experienced (inside) and Out, with Bothy, vegetables, and good wages, ineligible. Write, stating age and experience, to H. SWAIN, The Gardens, Wilton Park, Beaconsfield, Bucks.

WANTED, JOURNEYMAN or YOUTH, for Fruit and Plant Houses, with some experience, ineligible wages 18s. per week, with Bothy, &c.—WM. HOWE, The Gardens, Park Hill, Stratham Common.

WANTED, JOURNEYMAN (INSIDE); good wages and duty paid; also YOUTH about 17, with some experience; Bothy and vegetables.—W. STOTT, Blenheim, Langworthy, Cumberland.

WANTED, ELECTRICIAN (HANDYMAN), for Croxall's Oil Engine, &c.; ineligible for military service.—Apply, stating age, wages required, to W. E. ANDERSON, Chase House Gardens, Wylam-on-Tyne.

WANTED, LADY GARDENER of MAN (ineligible); help work Garden, knowledge Vegetables, Greenhouses, 24s. week.—Apply, WOODHOUSE, Fairfield, Biggleswade.

WANTED, urgently, LADY GARDENER, understanding Vines, Cucumbers, Tomatoes, all branches Gardening; lodge and board included, 30s. weekly; excellent references. Apply, LADY MARGRIETE, Kilworth, Leicester.

WANTED at once, 2 **LADY GARDENERS**, with some practical experience, and/or if funds preferred, for care of Vegetables and Flower Garden, and some Glass, terraria, newly furnished cottage, near work, £1 a week each, vegetables and milk. Church of England—Apply, giving particulars, to **MRS. THESS BALE**, Whitminster House, near Stonehouse, Gloucester-shire.

WANTED, **TWO LADY GARDENERS**, for inside and outside work, 25s. per week, bothy, and some extra experience, good wages and furnished cottage—Apply, **MISS RATIFFE**, Godden, near Coventry.

WANTED at once, **TWO LADY GARDENERS**, for inside and outside work, 25s. per week, bothy, and some extra experience, good wages and furnished cottage—Apply, **MISS RATIFFE**, Godden, near Coventry.

WANTED, **FOUR LADY GARDENERS**, for inside and outside work, 25s. per week, bothy, and some extra experience, good wages and furnished cottage—Apply, **MISS RATIFFE**, Godden, near Coventry.

LADY GARDENERS wanted; all suited to employ in or out of house. Heads to do. Bilbs, 10s. Under, 5 kept in Garden, Orchard glass, Vegetables, and Flowers, man kept in Under, Kitchen Garden, and all sorts of Flowers, nice cottage. (3) B. CHANDLER, 10, Whitehall Gardens, London, W. 1. (4) B. CHANDLER, 10, Whitehall Gardens, London, W. 1. (5) B. CHANDLER, 10, Whitehall Gardens, London, W. 1. (6) Hants, two wanted, one in Under, 25s. and 20s. per week, outside, coal, and vegetables, and inside Fruit and Vegetables, in house, 7s. wanted one in Under, 30s. and 15s. per week, outside, milk, and vegetables. (7) Wores, good salary and accommodation. Vegetables. Under also, must have good training. Also many good single-handed posts, small Gardens. **MRS. HEST, LTD.**, 76, High Street, Manchester, W. 1.

WANTED, strong active **LAD** as **IMPROVER**, 16-17, excellent opening for intelligent lad; good wages; bothy, vegetables, & overtime on Sunday duty paid. **W. PHILLIPS**, Derry Ground, Chislehurst.

WANTED, strong active **LAD**, about 16, for inside and outside work, good opening for intelligent Youth, wages 18s., and bothy duty every afternoon. Particulars to **A. CHEFFINS**, Myer Hall Gardens, Holberry, York.

WANTED, a **YOUTH**, as Improver, to work in the Houses, age 16-17, wages 16s. bothy and vegetables, Sunday duty and overtime. 12 o'clock on Saturdays. Wages expected 10s. per tenths to **H. CHANDLER**, Godden, near Coventry, Coventry.

TRADE.

TRAVELLER WANTED for the South of England and Scotland, splendid opportunity for a representative with a commission arrangement and private car and motor. For particulars apply to **MR. J. W. WATKINS**, 10, St. James's Place, London, W. 1.

WANTED, **MAN**, to take charge of all handiwork, including all work in flower, outside, building, and general Nurseries, good prospects to the right man. **JOHN PIERCE & SON, LTD.**, The Nurseries, Langley, Bucks.

WANTED, **Hardy Plant PROPAGATOR** in good Nursery, near London. Write, giving particulars, **W. B. Box 2, 41, Wellington Street, Covent Garden, W. 2.**

WANTED, experienced **GROWER** to take charge of Glass, East Coast, Scotland, expert in Tomatoes, Chrysanthemums, Bocking Plants, Fungus Bolls, &c. Write in confidence, with testimonials, giving wages expected, to **W. B. Box 1, 41, Wellington Street, Covent Garden, W. 2.**

WANTED, a **GROWER**, for Caladiums, Glorinas, and other Gloxinium plants. Please apply, stating previous experience, and wages required, to **JOHN PIERCE & SON, The Nurseries**, West Norwood, S. E.

WANTED, a **CUCUMBER** and **TOMATO GROWER**, good wages and overtime. Apply to **J. M. LEATHER**, East Fields, Mitcham.

WANTED, good **MAN** for Vegetables and Flowers and Bird Roses, &c. **T. FEWSTER & SONS**, Kewworth Nurseries, Southampton-Test.

WANTED, a man used to **FORSYTHIA** growth in large quantities and quick at potting. Please state wages to **L. J. Box 3, 41, Wellington Street, Covent Garden, W. 2.**

GARDENER ASSISTANT WANTED, male or female, with some experience Glass work, Cucumbers, and Tomatoes, intelligible—**W. H. CHANIN & CO.**, Nurseries, Minchesh.

WANTED, for retail business, **EXPERT SEEDSMAN**, with good general knowledge of Seeds and Horticultural business, intelligible for service. Full particulars as to experience and wages required,—**KING'S ACRE NURSERY, LTD.**, Hereford.

WANTED, for Farm Seed Warehouse, a capable **FOREMAN**; must be able to superintend cleaning and despatch of orders for a wide trade, also Warehouseman, good sack stuffer and tyer indispensable; also for Garden Seed Department, an experienced Hand, must be able to take entire charge. Good wages offered. All applicants must be intelligible—**A. B. Box 19, 41, Wellington Street, Covent Garden, W. 2.**

SHOPMAN WANTED, General Seed and Nursery trade—Apply, **BRUCE & ROBBIE**, Southampton, Forth.

SEED TRADE.—Wholesale House requires a capable experienced **SHOPMAN** for Vegetable Seed Department, also **WAREHOUSEMAN** for Agricultural Seeds. Applicants must be intelligible for military duties. Write, giving particulars, to **W. B. Box 2, 41, Wellington Street, Covent Garden, W. 2.**

WANTED, a **SHOP ASSISTANT**, with a good knowledge of retail seed and horticultural business, for a large, thriving, starting seed reference, and wages improved. **H. S. THOMSON & SONS**, The Nurseries, Wimpington, S.W.

WANTED, **WAREHOUSEMAN**, for good business near London, with some knowledge of the handling of Bilbs and packing. Apply, stating full particulars, **W. B. Box 25, 41, Wellington Street, Covent Garden, W. 2.**

WANTED, Nursery Order and Correspondence **CLERK**, within 20 miles of London. Apply, giving full particulars, **A. L. Box 24, 41, Wellington Street, Covent Garden, W. 2.**

AUDIT or CHECKING CLERK (experience essential), intelligible, quick and accurate. **TORNGOOD & SONS**, The King's Seedsmen, Southampton.

WANTED, **FLORIST** (Young Lady), experienced in Seeds and Bilbs preferred; good connections. Apply, stating age, experience, and daily required. **MR. F. A. GODFREY**, Nurseries, Stourbridge.

WANTED, **FLORIST**, Male or Female, to manage shop, age about 40, must be a good talker, good wages and place (Middlesex). Apply **DEARLIS**, Covent Garden.

SITUATIONS WANTED.

Twenty-six words for 1.6, and 6d for each succeeding Eight words or less.

PRIVATE.

FARM BAILIFF or BAILIFF and GARDENER, Active, energetic, fit, age, and having had a long experience in all branches, would be pleased to consider any position, and to give references, if required. Write, giving particulars, to **H. J. Box 1, 41, Wellington Street, Covent Garden, W. 2.**

HEAD GARDENER, 25 years' practical experience in growing Vines, Peaches, Melons, Cucumbers, Tomatoes, Fungi, large quantities of Vegetables, and general Glass work. **W. LAMBERT**, East Norwood Cottage, Grove, North Wales.

HEAD GARDENER, **EXPERT** in every branch of Horticulture, and active management, if necessary, at the office. Apply, **A. B. Box 25, 41, Wellington Street, Covent Garden, W. 2.**

HEAD GARDENER; all round, fit, experienced, including Woodwork, Gunton, Barn, age 48, married, 2 children, at liberty after August. **BOWLS**, The Garden, Woodstock Hall, Norwich.

GARDENER (HEAD), life experience in all branches, knowledge of stock, good references, age 35, permanent discharge from Army; disengaged. **KING**, 6 Milland Cottage, Buryham Wood, Herts.

GARDENER (HEAD), where several applications, experienced, years last place as Head, single, intelligible. **T. DENYER**, The Victoria, Colham, Surrey.

GARDENER (HEAD WORKING) or GARDENER BAILIFF, well up in all requirements of good establishments, thoroughly experienced, both outside and inside Glass; also landscape work, excellent references, 14 years' Head; age 48, married (no family). **P. H. Box 27, 41, Wellington Street, Covent Garden, W. 2.**

GARDENER (HEAD WORKING); 6 of them are kept in normal time; life experience in all branches; age 47, married (no family); excellent references from present and previous employers. **BEALE**, New Cottage, Lissenden, Newport, Mon.

GARDENER (HEAD WORKING), in large establishment, first class experience in all branches of the profession, good organizer, personal recommendations, age 46, **J. L. G. Box 19, 41, Wellington Street, Covent Garden, W. 2.**

GARDENER (HEAD WORKING), where one or more kept; good experience Inside and Out, first class references, married, 2 children. **SPENCER**, The Forts, Bertram, Reading, Berks.

GARDENER (HEAD WORKING), age 45; 11 years' practical life experience Glass; Fruit, Flowers and Vegetables; good references—**L. REDDENT**, The Gardens, Littlestone, Dayrell, Buckingham.

GARDENER (HEAD WORKING), of 3 or more, married, no family, 25 years' experience all branches, Grapes, Peaches, Melons, Cucumbers, Tomatoes, Hardy Fruit and Vegetables, Pleasure Grounds—**A. WILLIAMS**, 5, Broadway, Marchwood.

GARDENER (SINGLE-HANDED); Second or Third (Kitchen Garden); life experience, chiefly Outside, over military age, who garden work (bothy or bothy), excellent references, no family. Please state wages and particulars to **GARDENER**, 19, Broad Street, Walsinghamton.

GARDENER (THIRD), age 47, single, seeks situation, Pleasure Grounds and Kitchen Garden, where two more are kept—**A. HODLAMBY**, 42 Wellfield Road, Streatham, S.W.

FOREMAN (WORKING); disengaged; 28 years' good general experience. Tomatoes and Cucumbers a specialty. Excellent references, intelligible. **H. CRIPPIN**, West End, Bradninch, Colyton, Devon.

LADY GARDENER, one year's College training, requires post as **UNDER GARDENER** or in Nursery—**VERREX**, Hazlemere, Southdale, Weston-super-Mare.

TRADE.

MANAGER or FOREMAN; Chrysanthemums, Roses, Bilbs, Ferns, Pot Plants, Cucumbers, Tomatoes; capable of controlling a large staff; good references, 30 years' experience. **ROSES**, 44a, Wellington Road, Coventry.

MANAGER or INSIDE FOREMAN in up-to-date establishment; used to controlling labour and to producing everything required for market or shop sale. **LAWRENCE**, 72, Warwick Avenue, Paddington.

FOREMAN (WORKING); over 30 years' experience wholesale and retail market, nurseries, well up in Chrysanthemums, Potatoes, Chombers, Ferns, Pans, Plants, Cut Blooms, Fencing. State wages; good references. **WOODS**, 1, Foxwork Road, Mitcham, Surrey.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS. Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Ordinary Positions	per page	£ s. d.
Facing matter and Back Page		10 10 0
Half and quarter pages, column and half column spaces, pro rata.		
Line space not exceeding 20 words		£ s. d.
Per inch, single column		7 0 0
Per inch, across 2 columns		14 0 0
Per inch, across 3 columns		1 1 0

Front page (no display allowed) 1/- per line space. (Headline counted as two lines.) For discounts apply to address below.

SITUATIONS WANTED. 26 words 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE 11 STEP KITCHEN	per annum	15/- 6d.
ABROAD		17/6

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W. 2. Telegrams: 1543 "GARDENERS", RAND, LONDON, W. Telephone: 1543 GERRARD.

SELECT LIST OF BOOKS ON GARDENING

To be obtained at the "GARDENERS' CHRONICLE" OFFICE from the Librarian.

Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Forestry, The Practice of.** By Percival T. Maw. A voluminous and practical manual. It deals also with the financial aspect of Forestry. 17s. 6d.
- French Market Gardening.** By John Weathers. With practical details of "Intensive Cultivation" for English Growers. Preface by W. Robinson. 5s. 11d.
- Fruit Farming, Practical, for Commercial Fruit-growers and others.** By Cecil H. Hooper. 5s. 10d.
- Fruit Farming for Profit.** By George Bunyard. A practical treatise on all the more profitable Fruits. Sixth Edition. 2s. 9d.
- Fruit Garden, The.** By George Bunyard and Owen Thomas. 15s.
- Fruit Growing, Profitable; for Cottagers and Small Holders of Land.** By John Wright, V.M.H. A Gold Medal Essay, written for the Worshipful Company of Fruiteers. Illustrated. 1s. 3d.
- Fruit, Hardy, Culture for Amateurs.** By S. T. Wright, with notes by W. D. Drury on Fungi affecting Fruit Trees. Illustrated. 1s. 3d.
- Fruit Raising in British Columbia.** By J. T. Beahy. Illustrated. 5s. 11d.
- Fruit Trees and Their Enemies.** With Spraying Calendar. By Spencer Pickering, F.R.S., and Fred V. Theobald. Cloth. 1s. 9d.
- Fruit Trees in Pots.** By Josh Brage, twenty two years Foreman for Thos. Rivers and Son. Illustrated. 5s. 4d.
- Fruit Trees, The Scientific and Profitable Culture of.** From the French of M. Du Breuil. Fifth Edition, carefully Revised by George Ghenny. With 187 Woodcuts. 3s. 9d.
- Fruit and Vegetables, Packing and Selling; for Cottagers and Small Holders of Land.** By R. Lewis Castle. A Gold Medal Essay, written for the Worshipful Company of Fruiteers. Illustrated. 1s. 3d.
- Fungoid Pests of Cultivated Plants.** By Dr. M. C. Cooke. Many Coloured Plates. 5s. 6d.
- Garden Beautiful, The, for Home Woods and Home Landscape.** By W. Robinson. Illustrated. 7s. 10d.
- Garden Planning and Planting.** A Guide to the Laying-out and Designing of Flower Beds and Borders. Illustrated. Paper. 1s. 3d.; cloth, 1s. 9d.
- Garden, Chemistry of the.** A Primer for Amateurs and Young Gardeners. By Herbert H. Cousins. M.A. 1s. 2d.
- Garden Craft in Europe.** By H. Inigo Triggs. 21 15s. 6d.
- Garden Designs, The Book of.** By Charles Thonger. 2s. 10d.
- Garden Flowers for Town and Country Gardens.** By John Weathers. Coloured Plates. 5s. 4d.
- Garden Furniture, The Book of.** By Charles Thonger. 2s. 9d.
- Garden Guide.** By Walter P. Wright. A Practical Handbook for all Garden lovers. 100 Illustrations. Cloth. 1s. 9d.
- Garden Plants, A Practical Guide to.** By John Weathers. Contains descriptions of Annuals, Biennials, Perennials, Flowering and Ornamental Trees and Shrubs, Conifers, etc., and also the best kinds of Fruits and Vegetables that may be grown in the open air. 1,192 pages. 163 Illustrations. 21s. 6d.
- Garden Receipts.** Edited by Charles W. Quin. Fourth Edition. 1s. 8½d.
- Garden, The Well Considered.** By Mrs. Francis King. 4s. 10d.
- Garden Under Glass, The.** By W. F. Rowles. Contains much practical information. Price 6s. 6d. Illustrated.
- Garden Series** (edited by R. Hooper Pearson).
My Garden in Spring. By E. A. Bowles, M.A., Chairman of Scientific Committee of Royal Horticultural Society. With Preface by Reginald Farrer. 320 pages. Contains 16 Coloured Plates and 24 Half-tones. Price. 5s. 6d.
My Garden in Summer. By the same author as above. Price 5s. 6d.
My Garden in Autumn and Winter. By the same author. Issued 1915. Price 5s. 6d.
- Gardener's Assistant, The.** New Edition by William Watson, Curator, Royal Gardens, Kew. 6 vols., cloth, 8s. 5d. each. Also in 2 vols., Roxburghe binding, 52s.
- Gardeners' Chronicle Horticultural Directory** (55th Year.) Revised edition for 1917. This unique Horticultural Directory contains, amongst other valuable information:—A Register of the principal Nurserymen, Seedsmen and Florists, Mansions of the United Kingdom, with their Occupiers and Head Gardeners, Horticultural Builders and Engineers; Landscape Gardeners, Horticultural and Floral Societies; Fruit, Flower and Vegetable Trades' Societies; Principal Fruit and Flower Salesmen and Commission Agents in London. List of County Staff Instructors in Horticulture appointed by the County Councils. Principal Public Parks in Great Britain and Ireland. Indispensable to every Nurseryman and professional Gardener. Every possible means is taken to revise this work each year; this involves over 15,000 communications by post, as a form for verification is sent to every name included in the lists. Published on January 1 each year. Price 1s. 4d.
- Gardening, Alphabet, of.** By T. W. Sanders. Illustrated by diagrams. 1s. 9d.
- Gardening, Encyclopedia of.** By T. W. Sanders. A Dictionary of Cultivated Plants, Flowers, Fruit, Vegetables, Trees and Shrubs, with Description and Popular and Technical Names. Cultivation, etc. 466 pages. 3s. 11d.
- Gardening, Home.** By W. D. Drury. A manual for the Amateur, containing instructions for the Laying-out, Stocking, and Cultivation of Small Gardens. 1s. 3d.
- Gardening, Pictorial Practical.** Edited by Walter P. Wright. Illustrated. Paper. 1s. 3d.; cloth, 1s. 9d.
- Gardening, School, A First Book of.** By A. Logan. 1s. 9d.
- 1,500 Gardening Questions Answered.** A useful Handbook for the Amateur Gardener, dealing with every phase of Gardening, both inside and out. Paper. 1s. 3d.
- Gardening, School, Cottage, and Allotment, A Practical Guide to.** By John Weathers. 2s. 10d.
- Glass, The Garden Under.** By W. F. Rowles. Illustrated. 6s. 6d.
- Grafting and Budding, Art of.** By Charles Baltet. With Illustrations. 2s. 9d.
- Grafting and Budding, The Handy Book of.** By James Udde. 7d.
- Grape Growing for Amateurs.** A thoroughly practical book. 1s. 5d.
- Grape, The Book of the.** Together with a Chapter on the History and Decorative Value of Vines. By H. W. Ward. Illustrated. 2s. 9d.
- Greenhouse and Conservatory, Construction and Heating.** By Paul N. Hasluck. With 228 Illustrations. 2s. 4d.
- Greenhouse, The Amateur's.** By T. W. Sanders. 416 pages, 154 Illustrations. 5s. 5d.
- Greenhouse Management, Pictorial.** Edited by Walter P. Wright. Illustrated. Paper. 1s. 3d.; cloth, 1s. 9d.
- Greenhouse, The Book of the.** By J. C. Tallack, Head Gardener at Shipley Hall. Illustrated. 2s. 10d.
- Hardy Flower Book, The.** By E. H. Jenkins. A descriptive and practical Guide to the Cultivation of Hardy Flowers. Illustrated. Cloth. 2s. 11d.
- Hardy Trees, Flowering Shrubs, Conifers and Evergreens.** By Geo. Bunyard. A Popular Handbook of 160 pages. 50 Illustrations. Useful hints. English and Latin names. 3s. 10d.
- Herb garden.** By Francis A. Bardswell. 16 Full page Illustrations in Colour. 3s. 11d.
- Heredity in the Light of Recent Research.** By L. Doncaster. 1s. 2d.
- Holly, Yew and Box.** By W. Dallimore. 230 pages. 175 Illustrations. Contains the Illustration of Hollies published in the monograph by the late Thomas Moore, in the GARDENERS' CHRONICLE. 8s.
- Horticultural Directory.** Almanac and Address Book for present year. (See *Gardeners' Chronicle* Horticultural Directory.)
- Horticulture, A Primer of Practical.** By J. Wright. 1s. 11d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

DECEMBER 29, 1917 |

THE

GARDENERS' CHRONICLE

A Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS.

(ESTABLISHED IN 1841.)

VOL. LXII.—THIRD SERIES.

JULY TO DECEMBER, 1917.

LONDON:

41, WELLINGTON STREET, COVENT GARDEN, W.C.

1917.

INDEX OF CONTENTS.

JULY TO DECEMBER, 1917.

(FOR SPECIAL HEADINGS SEE UNDER BOOKS; CERTIFICATES; LAW NOTES; NURSERY NOTES; OBITUARY; PLANT PORTRAITS; PLANTS, NEW; SCIENTIFIC COMMITTEE; SOCIETIES; AND ILLUSTRATIONS.)

A

- ACETIC acid as an insecticide, 142
 Actinidia arguta, fruiting of, 132
 Adansonia digitata in India, 22
 Agricultural machinery in Palestine, 161
 Agricultural Wages Board, 234
 Agricultural workers, wages of, 143, 234
 Agriculture in Jamaica, 80
 Alcohol from Potatoes, 210
 Aldenham House, Elstree, food production at, 12; Potatos on grass land at, 191; variation in free species at, 171
 Aldershot Camp, vegetable growing at, 97
 Alpine garden, the, 105, 177
 Allotment holders, seeds for, 131; Southern Federation of, 168, 242; Scottish Union of, 230
 Allotments, 168, 221, 238; at Belfast, 178; at Bermondsey, 231; at Birmingham, 208; at Chester, 233; in London, 60; in 1793 and 1917, 256; versus gardens, 228; number of, in 1917, 158; policing of, 56; town planning and, 142
 Alpines in a cool glass house, 224
 America, embargo on Dutch bulbs in, 140; Potato crop in, 231; shortage of seeds in, 171
 American blight, method of exterminating, 162
 American Gooseberry milder, 92
 Apiary, the, 5, 99, 144
 Apple sucker and fruit setting, 86
 Apple, the heaviest, 182, 187
 Apples: Grenadier, 107; Norfolk Beauty, 107; Rev. W. Wilks, 172; William Peters, 227
 Apples, auction sales of, in Kent, 70; eaten by slugs, 186; in East Lothian, 111, 142; misshapen, 225; Paradise stocks of, 160; rotting of, 226; sold for Red Cross Fund, 211, 230; sooty blotch of, 212; spot disease of, 121; spotting in, 157
 Apples and Pears in 1779, varieties of, 182
 Aquilegia Stuartii, 137
 Arisaemas, hardy, 127
 Arnott, Mr. S., presentation to 6
 Asplenium Filix-foemina var. Chrissimum, 81
 Auckland Institute, first fifty years of the, 251
 Austin and McAslan, bicentenary of, 109, 141, 147
 Australasia, notes from, 116; weed in, 137; Phoenix canariensis in, 138
- B**
 BACTERIA, soil, 141
 Bagatelle, new Roses at, 2
 Balkans, familiar flowers in the, 188
 Ballantine, Mr. H., 141
 Barham Court Estate Gardens, damage by hail-storm at, 61
 Barley, winter, and Rye, 95
 Barrow, trial of Potatos at, 243
 Basic slag, as a manure for down land, 193; on grass land, 74, 203; supplies of, 140
 Baston, S. Leonard *How to Know the Ferns*, 17
 Beans, Broad, 153; a trial of, 43; to obtain early pods of, 197
 Beans, Dutch Brown, 260
 Beans, Haricot, as food for winter, 216
 Beans, Runner, 42, 197; seeds of, as food, 24; for soups, 14; to preserve, 128
 Bedding, spring, 2
 Bees, the management of, 5, 90, 144
 Beet, a good crop of, 158; lifting, 207
 Beet fly, the, 4
 Beet, Sugar, 17, 29, 85, 104
 Belfast, allotments in, 178
 Belgian horticulture, 181
 Benevolent Institution, Gardeners' Royal, gift to, 90
 Berberis, some choice garden species of, 218
 Berberis virascens, 252
 Bermondsey, allotments at, 231
 Bhendi and Brinjals, 162
 Biennials for spring bedding, 2
 Birds and insects, 19
 Birds and wasps, scarcity of, 143
 Birds, estimated damage by, 7
 Birmingham, allotments at, 208
 Blackleg of Potato, 182
 Blaise Castle, Ginkgo, larch at, 166
 Blenheim, Woodstock, Orchids at, 136, 247
 Blindfold soldiers' children and the seed trade, 250
 Bonin Island, Japan, *Empetrum taxifolia* on, 137
- BOOKS, NOTICES OF:**—Agriculture and the Land, *G. F. Bosworth*, 211; Around the Year in the Garden (*Fredrick Frye Rowwell*), 252; Blossom Wilt and Canker of Apple Trees, a (*H. Wormold*), 17; Botanical Magazine, 257; Commercial Strawberry Culture (*W. F. Emery*), 26; Critical Review of the Genus Eucalyptus (*J. H. Maiden*), 190; Cultivation of Allotments, the (*Percy Elford*), 17; Effect of one Plant on Another, the (*Spencer Pickering*), 121; Fossil Plants (*J. C. Seward*), 17; Fruit and Vegetable Bottling and Storing, 156; Good Living from Poultry for Disabled Soldiers and others, a (*E. C. Poynter*), 17; How to Know the Ferns (*S. Leonard Baston*), 17; Life of the Rt. Hon. Sir Charles W. Dilke, Bart., the (*Stephen Gwynn and Gertrude M. Tuckwell*), 211; Microbiology of Gymnosperms (*J. M. Coulter and J. C. Chamberlain*), 80; Name This Flower (*Gaston Bonnier*), 25; Perpetual-flowering, Carna-
- tion, the (*Montague C. Allwood*), 90; Pig Keeping in War Time (*C. J. Davies*), 121; Potatos Order, 1917, the (*J. L. Anderson*), 191; Practical Bee Guide, the (*J. G. Driggs*), 30; Small Garden, the (*Mary Hampton*), 194; Soil Conditions and Plant Growth (*E. J. Russell*), 26; Some Wild Flowers and How to Name Them (*E. J. Lovreace*), 30; Vegetable Bottling and Fruit Preserving Without Sugar (*F. and G. Banks*), 17; Webster's Practical Forestry (*L. D. Webster*), 90
 Bouquet, a vegetable, 150
 Bordeaux mixture versus lime sulphur as a spray for Potatos, 121
 Bosworth, G. F. (*Agriculture and the Land*), 211
 Botanical names, the comma in, 241
 Bottled fruits, 42
 Bottles for fruit and vegetable preserving, 50
 Boy Scouts as food producers, 24
 Bracken Fern, patch from, 128
 Brassica brachata, 206
 Brassicas, maturing where sown, 168
 Brassia Cattleya Catherine, 115; B. C. Marjorie, 247; B. C. Var 2, 104, 126
 Brassia Laeli Cattleya Nests, 23; B. L. C. Windsor, 76
 Brinjals and Bhendi, 162
 British Army, the, and French agriculture, 25
 British Gardeners' Association registered under the Trade Union Acts, 60
 British Honduras, new plants from, 250
 Broad Beans, 43, 158, 197
 Brown rot disease of fruit, 76
 Bryndir, Boshampton, Orchids at, 168
 Bulbs, Mr. J. K., 132
 Bulb garden, the, 169, 167, 228
 Bulb showing in Lincolnshire, 73
 Bulb show, R.H.S., 54
 Bulbs, American embargo on Dutch, 140; home-grown, 122
 Bullace The Langley, 167
 Burnham Beeches, the botany of, 200
- C**
 CABBAGE crop, the, 133
 Cabbage, disease resistant varieties of, 87; spring, 24, 88
 Cabbage Excelsior, 146
 Cabbage maggot, the, 80
 Cabbage moth, the, scared by champagne bottles, 42
 Cabbages, recuperative powers of, 118
 Cairo, public gardens at, 207
 Callitriche (*Callitriche*), a, 3
 Calories, food, 195
 Camellia Sasanqua at Abbot's Wood, Godalming, 167; C. Thetifera, 67, 82, 92
 Canada, export of nursery stock to, 121
 Canker of Sweet Chestnut, 50
 Canner, the home, 56
 Cantua buxifolia, 13
 Carbon bisulphide as an insecticide, 62
 Carduloxia palmata (Panama hat plant), 100
 Carnations, acid phosphate as a manure for, 60
 Carnations, Perpetual-flowering, R.H.S. trial of, 100
 Carrot Champion Scarlet Horn, 146
 Carrots, a good crop of, 51, 56; lifting, 207; thinning, 201, 216; on the farm, 243
 Casleton, Mr. George, 235
 Catalogues, eighteenth century nursery, 152, 162, 201, 226
 Catalogues, Paper Commission's regulations concerning seeds men's, 142
 Cattle and horse fodder, 253
 Cattle in the yards, 194
 Cattleya Appletoni, 206; C. Charm, 26; C. Danara, 105; C. Egerides, 42; C. Lady Carlisle, 66; C. Mendelii, abnormal flowers of, 13; C. Phaedra, 76; C. Tenebrino alba, 195; C. Venus, 143; C. Zonnebeke, 156
 Cauliflowers, autumn sown, 87
 Celery, 83, 146, 158
 Celery leaf miner, 14
 Centenarian market gardener, 70
 Ceratostigma Willmottianum, 137
- CERTIFIED FRUITS AND VEGETABLES:** Apple Ellison's Orange, 175; Beans: Broad Windsor, 45; Exhibition Longpod, 45; Green Giant, 45; Beets: Brydon's Exhibition, 243; Cheltenham Green Top, 243; Covent Garden Compact Top, 243; Dewar's Northumberland Red, 243; Dewing's Turnip shaped (Globe), 103; Green Top, 243; Nutting's Selected Red, 243; Sutton's Perfection, 243; Onions: Autumn Triumph, 103; Frostfield, 103; Mammoth Red Tripoli, 103; White Leviathan, 103; Yellow Rocca, 103; Peas: Clipper, 43; Latest of All, 145; Longstander, 145; Beaguard, 143; Plums: Uclity, 93; Victor Christian, 153; Potatos: Golden Wonder, 243; Great Scot, 243; King Albert, 243; King George, 243; Langworthy, 243
- CERTIFIED PLANTS:** Anemone vitifolia tomentosa, 53; Aster John Vaughan, 152; Berberis polyantha (awarded F.C.C.), 175; Brassia Cattleya Cliftonii var. Ashworthiae, 223; B. C. Dietrichiana, 192; B. C. Hebe The Bride, 153; B. C. Hebe The Knowle var., 163; B. C. Lady Veitch, 93; B. C. Lisette, 183; B. C. Oberon Sander's var., 223; B. C. Soprano, 182; Brassia Laeli-

Cattleya Ashworthiae, 253; B. L. C. Lady Manningham-Buller, 215; Carnations: Marion Wilson, 235, 234; Mrs. Edward Dooty, 233; Winter Glow, 234; Cattleya Albion, 75; C. armainvilliereae Ashworthiae, 253; C. ashlandense, 253; C. Astrom apterensis, 183; C. A. var. Madonna, 223; C. A. The Doll variety, 192; C. Bowringiana, magifica, 153; C. Coronae, 223; C. D. Dyanthus var. superba, 183; C. Doreen, 163; C. Fabia albo Regina, 253; C. Fabia alba var. Ashworthiae, 253; C. labiata Briggs Bury, 253; C. Fabia var. Prince of Wales, 183; C. F. Imperator, 223; C. Fabiata, 183; 223; C. F. var. Champion, 183; C. fulva aurea, 183; C. Hardy a Houghton's var., 183; C. H. Robiana, 183; C. Harold var. Drapau Blanc, 182; C. Iris Orchidhurst variety, 133; C. Ivernica, 193; C. labiata Pride of Southgate, 223; C. Linda Ashworth's var., 223; C. Marmion, 183; C. Mossiae var. Barlowe Snowdrop, 9; C. M. Madge, 9; C. M. Kitchener, 9; C. Mrs. Pitt Charlesworth's var., 93; C. Mrs. Pitt var. Leana, 163; C. Naida exquisita, 93; C. N. var. superba, 183; C. Portia Heathfield var., 223; C. Prince John var. Dorothy Sharp, 123; C. Princess Royal, 53; C. Princess Royal var. Fire King, 182; C. pumila alba, 183; C. Reineckiana var. Ashworthiae, 9; C. Rosita Orchidhurst var., 53; C. Sava Queen var. Exquisite, 223; C. Schil aurea, 183; C. S. magnifica, 183; C. S. var. Remo de Saba, 123; C. Thebes var. Rev. J. Crombleholme, 123; C. Thora, 163; C. T. var. Leema, 183; C. Tricelotho, 253; C. triumphans var. The Baron, 73; C. Venus var. Colossus, 182; C. V. var. Cyclops, 183; C. V. var. Princess Mary, 123; C. V. The Knowle var., 163; C. Yula (not Zulu), 123; Ceratostigma Will motianum, 132; Chrysanthemums: Alex. Hervey, 192, 193; Brilliant, 212; Crusader, 192; Donald, 192; General Pétain, 192; Lustre, 193; Mrs. George Monro, 193; Princess Mary, 212; Crab Cheal's Crimson, 112; Cypripedium Actaeus, 223; C. Atherton Walker, 182; C. Charlesworthii var. Merle Dene, 183; C. Gen. Allenby, 253; C. Gen. Pershing, 253; C. Golden Fleeces West Point var., 253; C. Horrocksianum, 253; C. insigne var. Louis Sander, 234; C. John Hartley, 223; C. Muriel anthevstimum, 183; C. niveum var. Dorothy Clare, 9; Dahnias: Alma, 112; Autoerast, 133; Bianca, 92; Blush Star, 133; Cambria, 133; Dominion, 112; Eastern Star, 92; Fire King, 113; Golden Rain, 92; Guardian, 112; Harold, 112; Harry Crabtree, 92; Herbert Blackman, 92; Ivy Belle, 112; Mark, 133; Mauve Star, 112; Medallion, 93; Miss Lewis, 112; Mrs. Edward Moss, 133; Mrs. J. A. Jarrett, 92, 133; Penelope, 112; Planet, 133; Primrose Star, 92; Rev. John Hamlet, 112, 121; St. Edwyn, 112; Sea Horse, 112; Sincerity, 133; Snow Cloud, 133; Transport, 133; Delphiniums: Belladonna, 103; Caerri, 103; Col. Sir Wyndham Murray, 103; grandiflorum, 103; Harry Sneatham, 103; Inezton Queen, 103; Lady Georgia Legge, 103; Lady Hamrick, 103; Lamartine, 103; Moehkemi, 103; Mrs. A. J. Watson, 103; Mrs. Shirley, 103; Professor Colman,

103; Rozenlust, 103; Dendrobium Dearii var. superba, 103; D. Sanderæ McBean's var., 103; Eschscholzia, Crocea compacta Mandarin, 103; Mikado, 103; Eustoma Russellianum var. Ellissi, 92; Gladioli: Lady Rosemary Portal, 73; Sunspot, 53; Gentiana Purdomii, 53. Iris Dominion, 9; I. pallida Dalmatica, 9; I. p. Princess Beatrice, 9; I. p. Rev. W. Wilks, 9; Laelio-Cattleya Adrienne, 183; L. C. Alex. West Point var., 253; L. C. Aphrodite Lily Cowan, 9; L. C. Armada West Point var., 223; L. C. Britannia var. Hermione, 183; L. C. Bronze King, 112; L. C. Canhamosa var. Golden Fleeces, 93; L. C. Clive var. Golden Beauty, 183; L. C. Commander-in-Chief, 112; L. C. Doms superba, 9; L. C. G. G. Whitelegge magna, 163; L. C. Gothys, 253; L. C. Hadrian Ashworthiae, 253; L. C. luminosa aurea Rosendale, 103; L. C. luminosa The Knowle var., 183; L. C. Marva var. Dreadnought (not Maronii), 183, 223; L. C. Mita, 183; L. C. Myrrilla var. superba, 223; L. C. Orion Ashworthiae, 253; L. C. Queen Marie ashlandense, 132; L. C. St. George, Bryndir variety, 173; L. C. Serbia var. Princess Patricia, 223; L. C. Zeno, 173; Miltonia Charlesworthii var. Conyngham, 9; M. Isabel Sander, 9; M. Lyoth Conyngham, 9; M. Venus var. Fascinating, 192; O. ontodiola amabilis Ashworthiae, 223; O. Joan var. Cranmore, 183; O. memoria Lionel Crawshaw, 9; O. punctatum var. Princess Maud, 223; Odontoglossum amabile var. Royal George, 163; O. crispum Sintah, 253; O. c. The Premier, 173; O. Edna var. Beauty, 253; O. c. xanthotes var. The Gentlewoman, 223; O. c. xanthotes Nadine, 163; O. c. eximium Conqueror, 9; O. General Allenby, 213; O. Golden Oriel, 253; O. Henry Thompson, 163; O. Lilian, 28; O. Missos, 9; O. Pescatorei grande, 9; O. Phoebe splendens, 9; O. President Poincaré, 163; O. Queen Alexandra memoria Lionel Crawshaw, 9; O. Zulu, 103; O. Queen Maatika, 183; Poppies: Dwarf Scarlet Fringed, 43; Scarlet King, 43; Primula obovata Eureka (strain), 212; Roses: Clarence Goodacre, 113; Edel, 29; E. Godfrey Brown, 29; Emma Wright, 29; Francis Gaunt, 113; Irish Afterglow, 28; J. de Escofet, 113; John Davison, 113; Mermaid, 8, 29; Miss May Marriott, 8, 29; Mrs. George Marriott, 29; Mrs. H. D. Green, 29; Mrs. Redford, 113; Mrs. Stewart Clark, 29; Nancy, 29; Sunstar, 28, 29; T. F. Crozier, 29; Queen Alexandra, 29; Walter C. Clark, 8; Pax, 29; Sambucus racemosa plumosus, 28; Sophro-Cattleya Dorca magnifica, 253; S. C. Fabricis, 163, 233; S. C. Thwaitesiae, 223; Sophro-Laelio-Cattleya Anzave var. Vesuvius, 213; S. L. C. Bryndir, 192; S. L. C. Roehampton, 173; S. L. C. The Belle, 163; Stocks: Old Rose, 103; Queen Alexandra, 103; Thalictrum dipterocarpum, 53; Viticetivifolia, 173.

PRELIMINARY COMMENDATION.
Odontoglossum Adamsi, 173; O. Aspasia, 173; O. Nysa, 173; Champagne bottles as scars to the Cabbage moth, 42.

Chase, Agnes and A. S. Hitchcock (Grasses of the West Indies), 196
Cherries, the pollination of, 23
Chester, garden allotments at, 253
Chestnut, Sweet, canker in, 50
China, new plants from, 240; plant collecting in, 165; tea plant of, 67, 82, 92
Chinese specics-making, 250
Chinese-Tibet borderland, flora of the, 105
Chrysanthemums, propagation of, 224
Cider, Apples for, 114
Claremont, food production at, 98
Climbing plants that turn from left to right, 125
Clubbing, 87, in Turnips, 118
Cobnuts and Filberts, 157
Colorado, food production in, 3
Colour of flowers, the, 130
Colville, F. V. (Directions for Blueberry Culture), 17
Comma in botanical names, the, 241
Conference of lecturers and advisers in vegetable growing, 145
Confessions of a novice, 77
Conifers, notes on, 3
Conserving, fruit and vegetable, a dot for Wales, 231
Cooks, gardeners as, 178
Corn crops, the, 50, 214
"Cory" cup for Dahlias, 121
Cows, autumn grass for, 74; rations for milk, 203
Crab, a hybrid, 221
Cranston, Mr. Charles, 222
Crisp, Sir Frank, golden wedding of, 90; honour for, 140
Critical remarks, 201
Crocus iridiflorus, 167; C. spectuosus, C. s. albus, and C. s. Aitchinsonii, 167; C. zonatus, 167
Crocuses, autumn-flowering, 185, 212, 228
Cropping, continuous, on same site, 147, 216, 274
Crops and stock on the home farm, 16, 44, 54, 63, 74, 83, 93, 103, 110, 114, 124, 134, 143, 152, 163, 174, 183, 193, 203, 213, 223, 234, 243, 253, 261
Cross-breeding for increased production, 257
Cucumber hybrids, superior productiveness in, 257
Cultivation, intensive, 82
Currants, Red, a revision of the, 205, 217, 232, 237
Curtis, Mr. C. H., appointed secretary of the National Chrysanthemum Society, 171
Cushion plants of New Zealand, 210
Cypripedium Baron Schroder, a hybrid form of, 247; C. Etna, 143; C. Frenchy, 247; C. John Hartley, 218; C. Manvridi, 247; C. Miss Ruth Bunsall, 227; C. Muriel var. Amethyst, 195; C. Pyramus var. Black Knight, 247; C. rayonatum, 247
Cypripedium, malformed flower of, 76
Dahlia, origin of the Pompon, 132
Dahlia Rev. John Hamlet, 121
Dahlias, "Cory" cup for, 121
Dampsons, baked, 128
Day, Harry A. (Vegetables), 14
Deceleration in Potatoes, 100
Dendrobium aurantiacum, 66
Dianthus Lindsayi, 177
Dianthus, hybrid, 160
Digging and trenching, 200
Drying Plums and Damsons, 107
Dug-outs in the garden, 177, 222, 233

Dutch bulbs, American embargo on, 140
Dutch Brown Bean, the, 248
Dutch seed firm's jubilee, 17
Dutch seed prospects, 161
Dwarfed trees, the making of, 11
E
EARWIG, the, 90, 132
East Lothian, Apples in, 145
Eden, gardening in, 127, 162
Edinburgh Botanic Garden, new plants at, 240
Educational farming, 184
El-worm, a suggestion for combating, 116
Egypt, a soldier-gardener in, 207; gardening in northern, 127
Electrification of agricultural seed, the, 223
Ellis, E. T. (Jottings of a Gentleman Gardener), 3
Emptage, W. (Commercial Strawberry Culture), 26
Employers, Government regulations concerning, 171
Elford, Percy (The Cultivation of Allotments), 17
Endothia parasitica, a disease of Sweet Chestnut, 50
Eucalyptus, the genus, 190
Eucalyptus verucosa, 27
Eucyphia cordifolia, 126
Eunonymus japonicus, sporting and reversion in, 27
Eustoma Russellianum, 96, 111, 132
Evergreens damaged by frost, 8, 72
F
FARM, crops and stock on the home, 10, 19, 29, 44, 54, 63, 74, 83, 93, 103, 114, 124, 134, 143, 152, 162, 163, 174, 183, 193, 203, 213, 223, 234, 243, 261
Farm pets, estimated damage by, 7
Farm seeds, home-grown, 103
Farming, educational, 184
Farming outlook, 254
Farming scholarships for women, 124
Farming manure, 241
Feeding a nation, 51
Ferns, the protection of wild, 80
Fertilisers, scarcity of, 110; transport of, 221
Ficus stipulata minima fruiting, 194
Finger-and-Toe disease, 87; in Turnips, 118
Flies and manure, 61; killed by Rhododendrons, 185
Flora of Formosa, 150
Flower garden, operations in the, 5, 15, 25, 41, 49, 59, 69, 79, 89, 99, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259
Flower pots, the repair of, 8
Flowers, colours of, 130; in an unheated greenhouse, 84; in season, 40, 160; raising new varieties of, from seed, 212, 222
Fodder, cattle and horse, 253
Food plants in the Philippines, 110
Food, the preservation of, 80
Food production, 55; at Aldenham House, 12; at Claremont, 98; in Colorado, 3; in France, 48; on increased, 3, 14, 24, 42, 51, 55, 77, 87, 97, 107, 117, 128, 138, 145, 158, 168, 178, 197, 207, 215, 228, 238, 240, 247, 256; societies specially concerned in, 4
Food values, 198

- Foreign correspondence, 3, 40, 58
Forestry, 22, 116
Forficula auricularia, the Earwig,
90, 132
Formosa, the flora of, 150
Forrest, Mr. George, plant collect-
ing in China, 105, 165
Foul brood in bees, the cure for,
98
France, a curé's garden in, 77;
food production in, 43; fruit im-
ports from, 90; garden notes
from, 96; gift of fruit trees to,
240; hundred-year-old Potatoes
in, 210; notes from, 23, 77; re-
serves of Potatoes in, 194; saving
the damaged trees in, 17; soldier-
gardener in, 177; trade with,
221
French agriculture and labour from
the British Army, 23
French nursery products, exports
of, 150
Friar Park, royal visitors at, 121
Frost: and evergreens, 72; the
effects of, on plants at Leonards-
lee, Sussex, 57
Fruit and vegetables, bottles for
preserving, 50; the drying of, 96;
the transit of, 19
Fruit conserving, 87
Fruit crops: at Mount Felix, Wal-
ton-on-Thames, 103; reports on
the condition of, the 32, 33, 45,
61, 68, 81, 91, 101, 106
Fruit farming for disabled officers,
221
Fruit growers and military service,
128
Fruit growers, a federation of, 60
Fruit growing in war time, 87
Fruit imports, of, from France,
90; the storing of late, 151; note
on, 128; register, 85, 107, 167,
236
Fruit trees, effect of grass on, 62,
88, 106, 170, 187; gift of, to
France, 240; insect pests of, 26;
scale insects and American blight
on, 163; summer pruning of, 86
Fruiting trees and shrubs, 226, 242,
253
Fruits: in bottles, 42; in season,
61, 80; new or noteworthy, 150;
prices for, 92; under glass, culti-
vation of, 5, 15, 25, 41, 49, 58,
69, 79, 88, 99, 109, 119, 129, 139,
149, 159, 169, 179, 189, 199, 209,
218, 228, 239, 249, 259
Fuchsia, the rising of new, 212,
222
Fumigating a plant stove, 184
Fungi and the fixation of nitrogen,
26
G
GALLOWAY garden, notes from a, 21,
65, 95, 125, 155, 185, 255
Garden allotments at Chester, 255
Garden, an economic, 16
Garden notes from France, 96
Garden Sunday, 26
Gardeners: and the Restricted
Occupations Order, 40; as vege-
table cooks, 178; bequests to, 16,
150; some 17th and 18th century,
235
Gardeners' Chronicle, subscription
to the, 60, 92
Gardener's fifty years' service, a,
222
Gardeners, four veteran, 141
GARDENERS AND THE WAR:—
Killed: Ald, Maurice, 251;
Chapman, Lieut. M. H. 101;
Cobbett, Gunner C. W., 211;
Dewar, Private William, 101;
Digby, Capt. Charles, 121;
Durand, Alexandre, 251; East
Isle, Private W., 161; Hanley,
- Lieut. B., 101. Wounded:
Broadley, Private John, 131;
Errey, Private Gilbert, 161;
Nombrot, Alfred, 121; Pinguet,
Louis, 121
Gardening: by soldiers, 210; fore-
thought in, 69; in Eden, 127; in
India, 200; in Northern Egypt,
127
Gardening lectures for teachers, 250
Gardens, home, 228
Gaut, Mr. Alfred, retirement of,
182
German prisoners on the land, 200
Germany, Potato crops in, 6
Germination, method of accelerat-
ing, 161
Gibson, Mr. James, 100
Ginkgo biloba at Blaise Castle, 160
Glasgow Botanic Gardens, *Poso-
queria latifolia* at, 226
Gooseberry mildew, American, 92
Gordonia and Shorea, 252
Grape industry in New Zealand,
121
Grapes: cultivation of, without fire
heat, 105; dried, 197; from Tre-
vanno, Cornwall, 80; in unheated
vineries, 72; supporting the
shoulders of, 27, 52; the shrivel-
ling of, 214
Grass, autumn, for cows, 74
Grassland, breaking up, 190, 208;
fruit trees on, 83, 106, 170, 187;
garden cultivation of poor, 50;
ploughing, 10, 44, 93; renovating,
261
Grasses, the identification of, by
their vegetative characters, 16
Greece, good garden plants in, 153
Greenhouse, unheated, flowers for
an, 84
Ground operations, 200, 228, 238;
in winter, 215
Gundre and rainfall, 80
Gunneras in the North, 152, 162
Gwynn, Stephen, and Gertrude M.
Tuckwell (*The Life of the Br.
Hon. Sir Charles W. Dilke,
Bart.*), 211
Gales, destructive, 92, 223
H
HAILSTORM damage to Peach and
Nectarine crops, 61
Hardy flower border, the, 2, 116
Hardy fruit garden, operations in
the, 4, 15, 24, 41, 48, 58, 69, 79,
89, 99, 109, 119, 129, 139, 149,
159, 169, 178, 189, 198, 209, 219,
229, 239, 248, 259
Hares, the sale of, 20
Haricot Beans, dried, 216
Harris, Mr. Frank, 181
Hay and Corn crops, the, 214
Hay, crop of, in mid Atlantic, 259
Hedges around arable fields, 152,
253
Hibiscus syriacus, 157, 185, 192
Highland forests, work in, 22
Hitchcock, A. S., and Agnes Chase
(*Gardens of the West Indies*), 196
Holdenby Gardens in the seven-
teenth century, 50
Holland, seed prospects in, 161
Holland House, Kensington, *Pebera
volvulata* at, 226
Holy Land, botany and geography
of, the, 245, 260
Hops, acreage of, 100
Horticultural Club room comman-
deered, 116; fresh arrangements,
221
Horticultural College, Swanley, 26
Horticulture and the Bench, 200;
in Belgium, 181; instruction in,
210
Hot water, heating by, and econo-
mical stoking, 195
Hunter, Mr. A. N., 200
Hybrid Liliiums, 108
Hybrid Orchids, 15, 22, 85, 148,
206, 227
Hybrids, superior productiveness
in, 257
Hybridisation, plant, 40
I
INDIA, *Adansonia digitata* in, 22;
gardening in, 200
Insect pests of fruit trees, 26
Insecticide, carbon bisulphide as
an, 62; vinegar as an, 142
Insects and birds, 19
Intensive cultivation, 82; in Scot-
land, 62
Iris stylosa, early flowers of, 218
Iris, variation in form of, 1
J
Jambosy integrifolia, 227
Jamaica, agriculture in, 80
Japan, letters from, 57, 137; plant
collecting in, 57
Japanese dwarf trees, the making
of, 11
Jemmett, Mr. J., 141
Juan Fernandez, the Sandalwood
tree of, 48
Juniperus taxifolia on Bonin
Island, Japan, 137
K
KATE, Marrow, 171, 182
Koebe, Prof. F., honour for, 90
Kent, the Garden of England, in
wartime, 6
Kew Gardens, increased wages at, 7
"Kew Bulletin" to be published, 7
Kinver Edge, Wordsley, presented
to the National Trust, 140
Kitchen garden, management of
the, 4, 14, 21, 41, 48, 58, 69, 79,
88, 98, 108, 118, 129, 138, 143,
158, 169, 178, 188, 193, 208, 218,
228, 238, 243, 259
Kuhl Rabi, to cook, 158
Kowit, the vegetation of, 50
L
LALLO CUTTEYA, Armada West-
birt var., 105; L. C. Azuel,
125; L. C. Borthe, Fournier,
176; L. C. Carmon, 3;
L. C. Gaton, Princess, 156;
L. C. Glanens, 66; L. C.
Golden Wings, 218; L. C.
Honoria, 195; L. C. Jacinth, 95;
L. C. Lydaurea, 227; L. C. Mrs.
R. P. Murray, 227; L. C. Nardia,
3; L. C. Opal, 126; L. C. Sir
Henry Wilson, 206; L. C. S. O.,
Stevenson, 22
Lafosse, Mons., retirement of, 222
Lattice-leaf plant, the, 223
Lavender, appeal for, in aid of
Y.M.C.A. fund, 46
LAWNETS: Proseutions under the
Seed Potatoes Order, 1917, 93
Leaf miners affecting vegetables, 14
Lecturers: a conference of hortical-
tural, 145
Leonardslee, Sussex, effect of frost
on plants at, 57
Letters from soldier-gardeners, 127,
188, 257
Lilium, a hybrid, 86
Lilium Martagon album at Mon-
treil, 152, 172
Liliiums, hybrid, 103
Lincolnshire, bulb-rearing in, 38
Linnean society for Sweden, a, 230
Linnæus, peonies and rabbits, 192;
L. sabuloides var. nanum, 116
Lizard, the, on a morning in June,
31
Loganberry, pruning the, 52
London, allotments in, 60
Lonicera Maackii, 252; L. trage-
phylla, 40
Lucerne in orchards, 76, 126
M
MYEENONIA, seed-growing in, 40
Maiden, J. H. (*Critical Review of
the Genus Euclyptus*), 190
Maize: as cattle food, 74, 143; as
human food, 14
Malformed Cypripedium, 76
Mangolds, cultivation of, 44, 243;
harvesting, 163
Manure: as a breeding ground for
flies, 61; at Army camps, 241;
effect of, on farm crops, 203;
fairyland, 241
Market fruit garden, notes from the,
1, 11, 67, 76, 86, 106, 121, 126,
156, 188, 225
Market gardener, a centenarian, 70
Market-gardening in the Paris
suburbs, 48
Marrow Kale, 50, 171, 182
Marshall, the late Mr. William,
212, 222
Maxwell, Sir Herbert, "Notes
from a Galloway Garden," 21, 65,
95, 125, 155, 185, 255
May, Mr. Henry B., 40
Mellar seeds as poultry food, 141
Merodon oenestrus, 30
Mesembryanthemum aquiliferale,
31
Milk depots, co-operative, 253
Millaud, J. G. (*Rhododendrons and
the Various Hybrids*), 230
Montbretia rosea, 103
Morisia hypocynea, 105, 125; seed
lings of, 142
Mount Felix, Walton-on-Thames,
fruit crops at, 103
Munition works, growing vege-
tables for, a, 78
Mushroom culture, 233; high prices
for, 241
Mustard as a green manure for
Wheat land, 30, 54
Letters from soldier-gardeners, 127,
188, 257
Lilium, a hybrid, 86
Lilium Martagon album at Mon-
treil, 152, 172
Liliiums, hybrid, 103
Lincolnshire, bulb-rearing in, 38
Linnean society for Sweden, a, 230
Linnæus, peonies and rabbits, 192;
L. sabuloides var. nanum, 116
Lizard, the, on a morning in June,
31
Loganberry, pruning the, 52
London, allotments in, 60
Lonicera Maackii, 252; L. trage-
phylla, 40
Lucerne in orchards, 76, 126
M
MYEENONIA, seed-growing in, 40
Maiden, J. H. (*Critical Review of
the Genus Euclyptus*), 190
Maize: as cattle food, 74, 143; as
human food, 14
Malformed Cypripedium, 76
Mangolds, cultivation of, 44, 243;
harvesting, 163
Manure: as a breeding ground for
flies, 61; at Army camps, 241;
effect of, on farm crops, 203;
fairyland, 241
Market fruit garden, notes from the,
1, 11, 67, 76, 86, 106, 121, 126,
156, 188, 225
Market gardener, a centenarian, 70
Market-gardening in the Paris
suburbs, 48
Marrow Kale, 50, 171, 182
Marshall, the late Mr. William,
212, 222
Maxwell, Sir Herbert, "Notes
from a Galloway Garden," 21, 65,
95, 125, 155, 185, 255
May, Mr. Henry B., 40
Mellar seeds as poultry food, 141
Merodon oenestrus, 30
Mesembryanthemum aquiliferale,
31
Milk depots, co-operative, 253
Millaud, J. G. (*Rhododendrons and
the Various Hybrids*), 230
Montbretia rosea, 103
Morisia hypocynea, 105, 125; seed
lings of, 142
Mount Felix, Walton-on-Thames,
fruit crops at, 103
Munition works, growing vege-
tables for, a, 78
Mushroom culture, 233; high prices
for, 241
Mustard as a green manure for
Wheat land, 30, 54
Notes: from a Galloway garden,
21, 65, 95, 125, 155, 185, 255; from
France, 23, 77; on Conifers, 3
Novelties in vegetables, 42, 108
Novices, confessions of, a, 77
Nymphaea stellata, hardiness of,
142

- O**
- OAK, the Turkey, 218
- Oats, the electrification of seed, 54
- OBITUARY:** Abbey, George, 10; Ashworth, Elijah, 174; Bargery, G. T., 29; Bull, Mrs. W., 213; 261; Clucas, R. W., 213; Drury, Charles T., 63, 73; Fargetton, Gustave, 29; Galt, A., 83; Harriot, M. Paul, 83; Laing, James, 114; MacVinish, Alexander, 83; Marshall, William, 202; Oney, Robert Thorburn, 114; Parton, W. H., 213; Pattington, George, 63; Riseley, E. E., 111; Rozain-Bouchardat, 29; Russell, Harry, 203; Scott, Daniel, 203; Smaile, Fred C., 253; Smith, Worthington G., 180; Thomson, W. A., 213; Wilmorin, Philippe de, 19; Voss, Walter A., 29; Ware, Walter T., 253; Young, John, 44
- Odontiodas, 115
- Odontoglossum ardentiora, 206; O. chiriquense, 67; O. Corinna, 46; O. Ethelreda, 218; O. Nairsiae, 23; O. Hampsonae, 22
- Onion and Potato crops at Heston, 207
- Onion crop, the, 128; at Angerton, Morpeth, 168
- Onions, autumn-sown, 77, holding in, 52, 78, 107; grown on the same lander for twenty-three years, 216; preparing land for, 214; trial of spring-sown, 173
- Orchard trees, the pruning of, 134
- Orchards, grass, 187; Lucerne in, 76, 126; poultry in, 154; renovating, 213
- Orchid houses, the management of, 5, 15, 25, 48, 59, 69, 79, 89, 98, 109, 119, 138, 149, 159, 179, 189, 198, 209, 219, 229, 243, 259
- Orchid notes and gleanings, 3, 13, 22, 46, 66, 76, 85, 105, 115, 126, 136, 148, 156, 168, 176, 195, 206, 218, 227, 247, 259
- Orchids, hybrid, 13, 22, 46, 76, 85, 148, 206, 227; at Bienheim, 156, 247; at Messrs. J. Cypher and Sons, 156; sales of, 115
- Orchis foliosa at Fornakin, Renfrewshire, 58
- Ormskirk Potato show, 202
- Oshima, Japan, the flora of, 57
- Ouvirandra femestratis (Lattice leaf plant), 223
- Oxalis corymbosa, 103
- P**
- PALESTINE, agricultural machinery in, 161; botany and geography of, 235, 260; a soldier gardener in, 56
- Palm-court, a, presented to Swansea, 131
- Panama hat, the, 100
- Paper Commission and seedsmen's catalogues, 142
- Paradise Apple stocks, 160
- Parsley for winter, 197
- Parsnip leaf minter, 14
- Pasture, old, the treatment of, 78, 261
- Pastures, weeds in, 152
- Paynter, F. G. (*A Good Living from Poultry*), 17
- Pea and Bean weevils, method of destroying, 60
- Peas: Distinction, 86; Michaelmas, 168
- Peach and Nectarine crops damaged by hail, 61
- Peaches J. H. Hale, 150; Lady Palmerston, 167; Marquis of Downshire, 236; Pearson, 150
- Peach trees, suckers from, 63; double-flowered, 181
- Pear midge, the, 10
- Pears and Apples in 1779, varieties of, 182
- Peas, drying, 10, 216; early pods of, 197; trials of late varieties of, 143
- Pergolas, a lecture on, 175, 187
- Petrea volubilis at Holland House, Kensington, 226
- Pettigrew, Mr. W. W., new appointment of, 90
- Phaseolus, or Dutch Bean, 243
- Phellodendron sachalinense, 166
- Philippine Islands, food plants in the, 110
- Pilox Iris versicolor, 116
- Phoenix canariensis in the Palace Gardens, Sydney, 138
- Phorbia brassicae (Cabbage maggot), 80
- Phosphate, acid, as manure for Roses and Carnations, 60
- Picea pungens glauca at Chester Horticultural College, 142
- Pickering, Spencer (*The Effect of One Plant on Another*), 121
- Pigeons, wood, 241
- Pigs, the management of, 83, 234
- Pin-apples, canned, from Queensland, 121
- Piquet, M. Louis, 121
- Plant collecting in China by Mr. George Forrest, 165
- Plant, effect of one, on another, 170, 233, 242
- Plant hybridising, 40
- Plant notes, 108, 218
- Planting, "Stringfellow" method of, 254
- PLANTS, NEW OR NOTEWORTHY:—*Nolina Loderi*, 66
- Plants that bloom at night, 64
- Plants under glass, the cultivation of, 5, 15, 25, 49, 59, 69, 79, 89, 98, 109, 119, 129, 139, 149, 159, 169, 179, 189, 199, 209, 219, 229, 249, 259
- PLANT PORTRAITS:**—*Aster fuscus*, 258; *Berberis aggregata*, 258; *Bulbophyllum lilacinum*, 258; *Castilleja miniata*, 258; *Cryptophoranthus Dayanus*, 258; *Daphne Giraldii*, 258; *Grevillea oleoides*, 258; *Mexacarpaea polyandra*, 258; *Odontoglossum chiriquense*, 258; *Odontoglossum platycheilum*, 257; *Oreocochis Forrestii*, 257; *Oreotrophe rufifraga*, 253; *Orthrosanthus chimboracensis*, 258; *Pinus tuberculata*, 257; *Pleione Pricei*, 258; *Polygonum Griffithii*, 258; *Prunella nutans*, 253; *Prunus subhirtella* var. *antunnalis*, 258; *Rhododendron Cuffeanum*, 258; *Rhododendron Fargesii*, 258; *Rhododendron neriflorum*, 258; *Sarcocolla solomonensis*, 258; *Sedchium edule*, 258; *Sinofranchetia chinensis*, 258; *Syringa Wilsonii*, 258
- Plums: Orpington Prolific, 191; Victor Christian, 157; and Dansons, drying of, 107; preserved, 197
- Pompon Dahlia, origin of, the, 132
- Ponds, weeds in, 30
- Poplar, a new hybrid, 157
- Poppies, annual, a trial of, 43
- Populus × *generosa*, 137
- Posoqueria latifolia, 226
- Potash from Bracken Fern, 128
- Potato blossom, effect of removing, 178
- Potato competitions on allotments, 158
- Potato crop of 1918, the, 214
- Potato crop, the North American, 231
- Potatoes, a succession of, 158; of England and Germany, 6
- Potato dealers, registration of, 140
- Potato disease, 67, 87; prevented by deep planting, 118; spread of, 51
- Potato, food value of the, 250; prospects, 3, 56; show at Ormskirk, 202
- Potato spraying, 42, 122, 138, 171, 191, 258; by moonlight, 24; campaign, 258; effect of, on common crops, 3; in 1917, 150; results of, 222
- Potato tuber weighing 4 lbs. 12 ozs., 190
- Potatoes: Duke of York, 172, 182; Great Scot, 208; May Queen, 208; Sir J. Llewelyn, 215; Snowdrop, 138; Star of Reading, 182; The Norseman, 216; Windsor Castle, 198, 228
- Potatoes, alcohol from, 210; and Onions at Heston, 207; and Onions at Kilmarnock, 158; at Newark, 168; black-leg disease of, 182; Bowleaux mixture versus lime-sulphur as a spray for, 121; degeneration in, 100, 122, 128, 132, 138, 210; early, 172, 182; early and second early, 198; fines for illegal sale of, 93, 141; French reserves of, 191; good crops of, 87, 128, 168; hundred-year-old varieties of, 210; immune varieties of, 168; mulch method of growing, 55; new, at Christmas, 191; on grass land at Aldenham, 151; order as to the sale of, 26; prices for early, 6; sale of "immune," for eating, 222; second crop of, 178; storage of, 75; trials of, 158, 238, 248; yields of, 117
- Poultry: in orchards, 134; Medlar seeds as food for, 141; on the farm, 63
- Primula, seed of hybrid, 52
- Primula chionantha, 256; *P. sino-purpurea*, 241
- Printers' wages, increases in, 231
- Prisoners of war engaged in agriculture, 231
- Pruning: Apples, 225; fruit trees in summer, 52, 86; instructions in, 225; orchard trees, 134
- Prunus Pissartii, fruiting of, 90; *P. Pseudo-Cerasus*, 47
- Pumpkins, to cook, 208
- Pyrus arbutifolia var. *erythrocarpa* and wasps, 7
- Pyrus Aucuparia (Rowan tree), 155, 192
- Pyrus Malus floribunda purpurea, 221
- Q**
- QUEENSLAND, canned Pineapples from, 121
- Quercus Cerris, 218
- R**
- RABBITS: in the fruit garden, 124; *Linum perenne* destroyed by, 192
- Raffia and camouflage, 241
- Railway gardens, 70
- Railway rates for land produce, 221
- Rainfall: and gunfire, 80; a record, 40
- Rape and Turnips followed by Wheat, 54
- Raspberries: Empire, 150; November Abundance, 107
- Red Currants: as standard bushes, 42; a revision of the, 205, 217, 232, 237
- Restricted Occupations Order, the, and gardeners, 40
- Rhododendrons: as fly-traps, 185; planting, 212, 233, 242; propagation of, 194
- Rhubarb, 24
- Robins in Monmouthshire, 182
- Robinson, Mr. T., 141
- Rockwell, F. F. (*Around the Year in the Garden*), 252
- Rock garden, the, 56
- Rotents, estimated damage by, 7
- Rollinson's Nursery, a New Zealand-lander's reminiscences of, 116
- Root crop yields for 1917, 241
- Rosa himalayica alba magna, 23; R. Moyesii, 106, 122; R. setipoda, 151
- Rosarian's war shifts, a, 85
- Rosary, the, 2, 23, 95, 129, 196
- Roses: American Pillar, 182, 196; Mermaid, 56; acid phosphate as a fertiliser for, 60; at Bagatelle, 2; climbing and pillar, novelties in, 95; planting, 220; Rambler, failing to bloom, 62
- Rowan tree, the, 155, 192
- Royal Horticultural Society's vegetable campaign, 145
- Ruhleben Horticultural Society, 7, 131
- Rummer Beans, dried, 24; for soups, 14; to preserve, 128
- Rye and Winter Barley, 93
- S**
- SALVIA splendens, a ruddy-purple sport of, 218
- Samoan and Tonga Islands, 100
- Santalum fernandezianum (Sandalwood tree), 48
- Sauerkraut, to make, 80
- Scale insects and American blight on fruit trees, 162
- Scare for Cabbage moths, champagne bottles as, a, 42
- School-gardening at Sherborne, 171
- Science and the nation, 7
- SCIENTIFIC COMMITTEE:** *Actinidia chinensis*, fruits of, 182; *Akebia lobata*, fruit of, 182; ants attacking *Lilium*s, 43, 83; *Arum italicum*, fruits of, 182; *Asparagus*, fasciation in, 42; Barley field, infertility in, a, 42; Black Currant rust, 122; Black-leg of Potato, 83; Blackthorn growing on an Apple tree, 72; *Calceolaria*, hybrid, 43; *Calystegia senariosa*, 245; Carnations, Wheat-ear, 223; *Chimonanthus fragrans* grandiflora, 243; *Colebourne*, interesting plants from, 8, 19, 43, 72, 83; *Coniothyrium* sp. attacking Raspberries, 83; *Convolvulus arvensis hastatus*, 243; *Cronartium ribicola*, 8, 128; Currant, White, change of colour in, 43; *Delphinium*, peloric, 19; *Delphinium*, sporting in, 72; *Diervilla*, sporting in, 72; Drury, the late Mr. C. T., 83; *Enations* on foliage of *Picrasma*, 42; *Fasciation* and light, 243; *Fasciation* in *Asparagus*, 42; *Festuca × loliacea*, 19; *Hail*, damage by, 72; *Hail*, effect of, on Onions, 8; house refuse as manure, 243; *Iris foetidissima* attacked by a mining Dipteran, 225; Light, the supposed effect of, on fasciation and flower production, 243; *Lilium*s attacked by ants, 43, 83; Loganberry, galls on, 223; *Lonicera Hildebrandtii*, fruit of, 182; *Manure* from house refuse, 243; *Mints*, hybrid, 8; Myddelton House, plants from, 182; *Nuttallia cerasiformis*, fruits of, 72; *Onions*, the effect of hail on, 8; *Peloria* in *Delphinium*, 19; *Picrasma aiantoides*, *enations* on foliage of, 42; *Pine*, rust disease of, 8; plants from *Colebourne*, 8, 19, 43, 72, 83; *Populus*

- lasiocarna, 8; Potato Black-leg, 83; Potato spraying, 8; *Pyrus Niedzwetzkyana*, a seedling of, 243; Raspberry canker, 85; Salt water, scorching of plants by, 8; *Staurtia Pseudo-camellia*, fruits of, 243; Sweet Pea Cupid with "Spencer" flowers, 43, 72; *Sycamore* attacked by *Xyloborus dispar*, 8; *Trachycarpus excelsus* fruiting at Duffryn, South Wales, 122; *T. excelsus* immature fruits of, 182; White Currant, change of colour in, 43; *Wistaria*, the fruiting of, 223; *Xyloborus dispar* in *Sycamore*, 8; Scotland, new Seed Trade Association in, 190
- Scottish National Union of Allotment Holders, 230
- Seed, electrified, 29, 223
- Seed-growing, 19; in Macedonia, 40
- Seed-testing station, a national, 171, 211
- Seed Trade Association, a new, in Scotland, 190
- Seed Wheat, 10; Government supplies of, 181
- Seedlings, cure for damping in, 160
- Seeds: for allotment holders, 131; irregular germination of, 7, 35, 87; lost names of, in eighteenth-century catalogues, 226; old and new, 24, 42; new varieties of flowers from, 212, 222; shortage of, 14, 140, 171
- Seventeenth-century garden, a, 50
- Seward, A. C. (*Fossil Plants*), 17
- Shallots, 29
- Sheep for stock, 44
- Sherborne, school gardening at, 171
- Shorea and Gordonia, 252
- Shrubs and trees, winter fruits of, 226
- Slugs, flowering, in Wiltshire, 242
- Sinclair, Mr. A., 141
- Slugs, control of, 122, 162; eat- ing Apples, 166
- Sluis and Groot, fiftieth anni- versary of the firm of, 17
- Small-holding colony, a Welsh, 231
- Snow, simple method of removing, 60
- SOCIETIES**:—Brentford Allot- ment, 123; British Carnation, 234; British Wholesale Florists', 114; Croydon Hort., 231; Derbyshire Gardeners', 101; Freshwater Hort., 60; Glasgow and West of Scotland Hort., 122; Haarlem Bull Growers', 9; Har- leich Agric. and Hort., 80; Hes- ton Hort., 207; Horticultural Club, 221; Horticultural Trades', 114; Hull Garden Village Hort., 101; Irish Rose and Floral, 60; Letchworth Garden City Hort., 231; Linnæan, 201; Liverpool Hort., 103; Manchester and N. of England Orchid, 9, 103, 123, 163, 182, 223, 253; Midland Car- nation and Plecto, 62; National Carnation and Plecto, 43; National Chrysanthemum, 154, 193, 212; National Dahlia, 113; National Rose, 29, 112; National Sweet Pea, 154; National Viola and Pansy, 29; Nutley Cottagers' Hort., 70; Perpetual-flowering Carnation (see British Carnation); Royal Horticultural, 8, 19, 26, 42, 52, 72, 82, 92, 103, 111, 122, 132, 172, 182, 201, 212, 223, 233, 243; (Fruit Show) 153; Royal Hort. of Aberdeen, 183; Royal Scottish Arboricultural, 43; Rulleben Hort., 131; Scottish Hort., 43, 82, 122, 154; South- ampton Royal Hort., 243; South- end Food Production, 123; United Horticultural Benefit and Provi- dent, 9, 29, 93, 123, 154, 163, 222, 223, 253; Woodford Hort., 123; Wood Gren Hort., 60
- Soil-bacteria, 141
- Soil, crops on virgin, 16; infected, 26
- Soldier-gardeners, letters from, 58, 96, 127, 177, 188, 207
- Soldiers, gardening by, 210; on farms, 20
- Sooty blotch of Apples, 212
- Sophro-Laetia *Cattleya Marion*, 176
- South Africa, legislation regulating imports in, 110
- Southern Vegetable Exhibition, 90
- Spain, agricultural machinery for, 231
- Sparrow, an albino, 182; the house, 27, 52, 78
- Spinach, Japanese Prickley, 108; winter, 87
- Smith, Worthington G., the late, 200
- Species-making, Chinese, 250
- Spraying Potatoes, 158, 171; effort of, on green crops, 3
- Spring bedding, binoculars suitable for, 2
- Spring Cabbage, 24, 38
- Stable manure at Army camps, 241
- Standley, Paul, C. (*The Mexican and Central American Species of Ficus*), 31
- Stevenson, Mr. Thomas, 90
- Stocks, Paradise Apple, 160
- Stoking, economical, 195
- Strawberries, to sun det., 80; Good Luck, 150; Lord Suffield, 85
- "Stringfellow" method of plant- ing, 254
- Sugar Beet, 29, 33, 104; cultivation of, in England, 17, 239
- Sulphate of copper, sale of, 55
- Summer pruning of fruit trees, 52, 96
- Sunlight, effect of, on crops, 231
- Superphosphate, the prices of, 151
- Swansen, a Palm court presented to, 131
- Swedes, 253; mildew attacking, 41
- Sweet Pea spike with seven blooms, 162
- Sweet Peas, Spencer Cupid 140
- Spring japonica, 40
- T**
- TAMAR river, on the, 25
- Tea plants, 67, 82, 92
- Thalictrum dipterocarpum, 70
- Village programme for England and Wales in 1918, 160
- Timber, measuring of, 144
- Tobacco, curing and preparation of, 94
- Tomato Bide's Recruit, 56
- Tomatos, canning of, 80; market varieties of, 201; training, 42
- Tomato hybrids, superior produc- tiveness in, 257
- Tonga Islands, 100
- Tonk's manure, composition of, 20
- Tortworth Court, trees at, 115
- Town-planning and allotments, 142
- Toxic influence of one plant on another, 170, 187
- Trade with France, 221
- Transit of fruit and vegetables, 19
- Tree varieties at Aldenham, 171
- Trees and shrubs, 137, 157, 160, 218, 226, 242, 252; the fruiting of, 157, 242
- Trees in the battle area, treatment of injured, 17
- Trials: Broad Beans, 43; Onions, 173; Peas, 143; Perpetual flower- ing Carnations, 100; Poppies, 43; Potatos, 158, 248
- Tritillium incarnatum, cultiva- tion of, 83
- Truffaut, M. Georges, 29
- Tuckwell, Gertrude M., and Ste- phen Gaym (*The Life of the Rt. Hon. Sir Charles W. Dilke*, *Bar.*), 211
- Turkey Oak, 218
- Turnips and Swedes, late, 103
- Turnips, Finger and Toe disease in, 118
- Tying materials, shortage of, 222
- Tylenchus devastatrix, combatting, 116
- U**
- Urtica pumila, 161
- V**
- VACCINIUM Myrtillus, the white- fruited, 84
- Vandates, 260
- Varieties and food values, 70
- Vegetable cooks, gardeners as, 178
- Vegetable growing at Aldershot camp, 97
- Vegetables, novelties in, 104
- Vegetable seeds, scarcity of, 140
- Vegetables and fruit, the drying of, 96
- Vegetables at Fyvie Castle, 4; continuous cropping of, 247; critical remarks on, 201; for
- munition works, 78; for winter, 197; on old pasture land, 55; early, under glass, 63; prices for, 82; seasonable notes on, 146
- Veitch, Sir Harry, gift to the Gar- deners' Royal Benevolent Institu- tion, 90; golden wedding of, 61
- Veronica lobeloides, 92; 103
- Vetches: for seed, 29, 83; winter, 103
- Vine border, method of renovating a, 46, 82
- Vinegar, an insecticide, 142
- Vineries, unheated, 72, 103
- Virgin soil, crops on, 16
- Vitamines, 251
- W**
- WAGES of agricultural workers, 143
- Wales, a fruit and vegetable con- serving depot for, 231; a small- holding colony in, 231
- War and fruit growing, 87
- War Horticultural Relief Fund, 17
- War items, 26, 40, 61, 101, 110, 121, 150, 161, 171, 200, 211, 251
- War shifts, a rosarian's, 85
- Ward, Mr. A. J., 61
- Wasp plant, a, 7
- Wasps and birds, comparative absence of, 145
- Wasp's nest in a Gooseberry bush, a, 172
- Watercress, 204
- Weeds in Australia, 157; in pas- tures, 152; in ponds, 30
- Weevils, Pea and Bean, method of destroying, 60
- Welsh small-holding colony, a, 231
- Westfield, Reading, economic plants at, 16
- Wheat, Government supply of seed, 181; harvesting, 54; in 1918, 243; Mustard as a green manure for, 54; preparing land for, 124; seed, 10; sowing, 174; varieties of, 19, 183
- Whitton, Mr. James, 200
- Whortleberry, the white fruited, 84
- Wilson, Mr. E. H., in Japan, 57
- Winter Spinach, 87
- Witty, Mr. R. A., retirement of, 171
- Women, farm scholarships for, 124
- Women land workers, 163; railway losses of, 26
- Women's Farm and Garden Union, 17
- Women's Institute, the, 171
- Women's National Land Service Corps, 241
- and Sons, Messrs., fire at, 90
- Woodlice, to combat, 84
- Wood Pigeons, 241
- Wormald, H. (*A Blossom Wilt and Canker of Apple Trees*), 17
- Wythop Woods to be felled, 191

LIST OF ILLUSTRATIONS.

A

ADANSONIA digitata on the banks of the Ganges, 22
Aldenham House, Elstree: blanching Celery with paper at, 131; frame made with stakes and boughs at, 13; frames on an enclosed hot bed at, 17; Potatoes planted in the park at, 12

Apple, fruit of, affected with brown rot, 94; diseased shoot of, 76

Apples affected with sooty blotch, 212

Apples Ellison's Orange, 171; William Peters, 227

Aquilegia Stuartii, 137

Arisaema consanguineum, 127; A. Wallichianum, 127

Asplenium Filix-foemina var. Clarissimum, 61

Austin, Robert, portrait of, 147

Austin, William, portrait of, 147

Azalea indica in a Derbyshire garden, 142

B

BALLANTINE, Mr. H., portrait of, 141

Benthamia fragifera, showing effects of frost, 72

Berberis polyantha, spray of, with fruits, 183

Brasso: Laelio-Cattleya Lady Manningham-Buller, 211

Brown-rot disease of Apple, 76, 94

Budde, Mr. J. K., portrait of, 132

C

CALLITRIS oblonga: branch of, with cones, 7

Cantua buxifolia, flowering spray of, 18

Carnations, Wheat-ear, 223

Carrot Champion Scarlet Horn, 145

Celery, paper method of blanching, 131

Chrysanthemum Crusader, 201

Crab, a hybrid, 221

Crocus zonatus, 167

Currants, Red: Fay's Prolific, 216; Fertility, 237; Gondonin, 231; Houghton Castle, 207; Scotch, 232; Versailles, 217; Victoria, 236

Currants, Red, winter shoots of,

205

Cypripedium Sir Redvers Buller, 136

D

DERCERY, Charles T., portrait of the late, 74

Dahlias Eastern Star and Primrose Star, 91

E

ECYRYPHIA cordifolia, flowering shoot of, 126

Eustoma Russellianum, 97; E. R. var. Ellisii, 101

F

Ficus stipulata, fruit and leaf of, 194

G

GALILEE, shores of the sea of, 251

Gethsemane, the garden of, 246

Ginkgo biloba at Blaise Castle, 166

H

HEMIFRACALLIS aurantiaca, var. Major, 156

Hunter, Alexander, portrait of, 147

Hunter, James, portrait of, 147

J

JERUSALEM to Bethlehem, road from, 246

Jennett, Mr. J., portrait of, 141

L

LAELIO-CATLEYA Commander-in-Chief, 111

Lilium, a hybrid, 86

Linum salsoloides var. nanum, 116

Lonicera Maackii, 252

Lonicera tragophylla, 39

M

MCASLAN, John, portrait of, 147

Marshall, the late William, portrait of, 202; in his garden at Auchinraith, Bexley, 196

Merodon equestris, the Narcissus fly, 30

N

NAZARETH, view of, 247

Nerine Bowdenii, 117

Nerine flexuosa alba, group of, 118

Nolina Loderi, 66; details of leaf and flower-bud of, 67

O

OREOCHARIS FORRESTII, 258

P

PALESTINE, views of, 246, 247, 251

Pear affected with scab disease, 124

Pear midge, the, 10

Pergola, Italian, 175; furnished with cordon Pear trees, 187; of stone columns and Oak beams, 177

Phellodendron sachalinense, fruiting branch of, 186

Phillips, portrait of the late John, 123

Picea pungens glauca, 142

Plum Orpington Prolific, 191

Plum Victor Christian, 157

Polygonum polystachum, 96

Posoqueria latifolia flowering in Glasgow Botanic Gardens, 226

Potato, stem tuber of, 164

Potato Warwick Castle, 133 (see also p. 144)

Prunella chionantha, 255; P. sino-purpurea, 241

Prunus Pseudo-cerasus, flowering shoot of, 47; foliage of, 51; type specimen of, 52

Prunus serrulata, type specimen of, 53

Pyrus Malus floribunda: P. M. variety purpurea, and P. Niedzwetzkyana, fruiting shoots of, 221

R

RED CURRANTS (see "Currants, Red")

Ribes petraeum, R. rubrum, and R. vulgare, winter shoots of, 205

Robinson, Mr. T. portrait of, 141

Rosa Moyesii, flowers of, 106; fruits of, 107

Rosa setipoda, fruits of, 151

Roses Margaret Dickson Hamill, 2; Mermaid, 56; Mrs. George

Marriott, 27; Sunstar, 28

S

SINCLAIR, Mr. A., portrait of, 141

Smith, the late Worthington G., portrait of, 180; sketching under difficulties, 181

Sooty blotch on Apples, 212

Spiraea binateata, flowering shoot of, 21

T

THALICTRUM diptercarpum, 71

Tiberias, shores of the lake at, 251

V

VEGETABLES for munition works, 78

Veitch, Sir Harry and Lady, portraits of, 61

Vilmorin, the late Philippe de, portrait of, 19

Vine border, method of renovating a, 46

W

WASPS' nest in a Gooseberry bush, a, 172

X

XANTHOCERAS sorbifolia, fruits of, 161

THE GARDENERS' CHRONICLE

ESTABLISHED 1841.

No. 3993

No. 1593. Vol. LXII. (THIRD SERIES)

SATURDAY, JULY 7, 1917.

{Registered as a Newspaper.} PRICE 3d. {POST-FREE, 3d.

SUBSCRIPTION—Inland, 15-; Foreign, 17 6/22r/10c. {54 26c} per annum Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden W.C. 2.

Telegraphic Address—"Gardchron, Rand, London."

Telephone—Gerrard 1543.

For CONTENTS see page 1.

For Advertisement Charges see page iii

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note that the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week MUST reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

To replace Dutch Bulbs, for next Spring flowering see new British flowers.

SUTTON'S WALLFLOWERS.
Sweet-scented flowers of brilliant colour.
Sutton's Fire King, vibrant orange, per packet, 1s. 6d.
Sutton's Giant Valcan, brilliant crimson, per packet, 1s. 6d.
Sutton's Orange Bedder, a very striking colour, per packet, 1s.
Sutton's Cloth of Gold, bright yellow, per packet, 6d. & 1s.
Sutton's Superb, mixed, per packet, 1s. and 1s. 6d.
Post free.

SUTTON & SONS, The King's Seedsmen READING.

GREENHOUSE PAINTING & GLAZING
"Vandite," superior to White Lead Paint
"Plastine" superdries putty. Full particulars from
W. CARSON & SONS, Glass Works, Birtwistle Agents
throughout the country.

**WATERERS' ALPINES, HERBACE-
OUS PLANTS and WATER LILIES.** Large
stocks of the best and most popular varieties. Descrip-
tive Catalogue free. JOHN WATERER, SONS & CRISP,
LTD., The Nurseries, Taylor, Berks.

J. GRAY, LTD., Builder of Conservatories,
Greenhouses, Kiosks, and Heating Engineers,
Daventry Street, Chelsea, London, S.W. 3. Wire, 261,
Western, London. Telephone: 201, Western.

POTATO SPRAYING. On spot ready for
immediate delivery. Sulphate of Copper 50 per
cent, pure Washing Soda 90 per cent. Write for prices
and quantity required per acre. — G. H. RICHARDS,
251, Borough High Street, London, S.E. 1.

OUR list of Vegetable Seeds, suitable for
summer sowing, is now ready, and will be sent post
free on application. DOBBIE & CO., Seedsmen to the
King, Edinburgh.

SANDERS, Orchid Growers,
81, Albans.

LAXTON'S STRAWBERRIES.
FINE EARLY POT PLANTS, for forcing
of outdoor planting, of King George V. Royal
savoury, 8s.; pots, 20s.; 100; open ground, 6s.; 100.
Laxton, the grand new Mammoth, pots, 30s.; 100; open
ground, 20s.; 100. Illustrated catalogue, with cultural
hints and description of all the new and older sorts
gratis. — LAXTON BROS., Bedford.

GUSHURT COMPOUND — Insecticide
and Fungicide. — Over 50 years' reputation; highly
commended R.I.L.S. Scientifically-controlled Trials at
Wisley, 1914-15. Sold by dealers in Garden Sundries.
Wholesale — PHIPPS' PATENT CANDLE CO., LTD.,
Riverside, London, S.W. 11.

SPRING CABBAGES — The best varieties
to be sown during the early part of August.
Order at once.

SUTTON'S HARBINGER CABBAGE.

The earliest Cabbage for Spring Cutting.
Per packet, 1s. 6 per ounce, 1s. 6d.
This of Average Holdings. A very early variety on an
114 stocks, representing 94 sorts, was made at Wisley last
year. It will be noticed that Sutton's Harbinger is
the only sowing in the list, and that it is the only one
and sowing sowing "The Field," June 17, 1916, and
Cabbage Harbinger is a capital variety. It sowed
some seed in July, and now (January 10, 1917) I am
cutting some lovely heads. — Mr. A. E. Coles, The Gar-
deners, Walla Walla, Croydon.

SUTTON'S APRIL CABBAGE.

The most popular early Cabbage for garden use.
Per packet, 1s. 6 per ounce, 1s. 6d.
The April Cabbage you supplied me with last year
has done wonderfully well, hardly a plant has been
destroyed by the severe winter, and they are now coming
in very useful. — The Rev. E. J. Bruce, May 4, 1916.
The April Cabbage, raised from seed supplied by you
last year, was a wonderful. This year it is a lovely but it
pairs, and not one bolted. — Mr. H. Brought, Framfield.

**SUTTON'S FLOWER OF SPRING
CABBAGE.**

The most suitable for the general Spring crop.
Per packet, 1s. 6 per ounce, 1s. 6d.
My last of Flower of Spring Cabbage was well, with
a photograph, and weeks earlier than any others in this
neighbourhood. — W. Webb, 154, Darbying.
I consider your April and Flower of Spring the best
Cabbage in cultivation. Last September I planted 1,000
of them, and in the whole planting on there were but four
plants not true to character. The bulk of these are
being sent to the States through the Vegetable Products
Company. — Mr. P. H. Schley, Rockstown Gardens.

**SUTTON & SONS, The King's Seedsmen,
READING.**

**WM DUNCAN TUCKER & SONS,
LTD.,** Lancing Road, South Tottenham. Con-
sultants, Market Gardens, Vineyard, Peachhouses,
Perennial Buildings, etc. Croydon, Surrey.

**DECKSON'S HORTICULTURAL
MANURE** and other high-class Fertilisers, also
Deacon's Improved Mushroom Spawn. Packed upon its
base on application to DECKSON'S, Royal Seed Ware-
house and Nurseries, Chester.

EVERY GARDENER'S LIBRARY con-
tains a certain number of indispensable books.
Some gardeners have a small library, others a pretty
complete collection of useful books on cultivation,
some few are the fortunate possessors of books on every
phase of gardening, both old and new, from the early
Herbals to the last new American Cyclopaedia. There
is one little book which should be found on the shelves
of every gardener, young or old, literary, scientific, or
practical, and which is consulted a thousand times a
year by those who possess it. That is the "Hortical-
tural Directory and Year-Book." There is so much in
it. It is a veritable mine of books. This year it is
smaller than usual, because it has cast off a dead
weight of out-of-date, obsolete names, but it is steadily
growing again, and is already having fresh names
added, and old ones corrected, in preparation for the
1918 edition. There are still some copies left of the
present year's issue. The price is 1s. 4d., post free.
Do not let your library remain incomplete for lack of
this indispensable volume. Send for it to the
Librarian, "Gardeners' Chronicle," 41, Wellington
Street, Covent Garden, W.C. 2.

BRITAIN'S GREAT CABBAGE."

WEBB'S EMERALD CABBAGE.
(For July and August sowing.)
Earliest, best, and most popular Cabbage in cul-
tivation. Beautifully free from any
scurfiness to "bit," 6d. and 1s. per packet,
1s. 6d. per ounce, post free.
Mr. G. Ellwood, Head Gardener to W. H.
Myers, Esq., Swanmore Park, writes: "I
should like to testify to the excellence of
your Emerald Cabbage; it is really a gem
for private gardeners or market growers
alike, and of splendid quality."

WEBB'S FAVOURITE CABBAGE.
Early medium sized heads, of splendid quality,
6d. and 1s. per packet, 1s. 6d. per ounce, post
free.

WEBB & SONS, LTD., The King's Seedsmen, Stourbridge.

BARR'S VEGETABLE SEEDS for July
to September Sowing. Special List post free.
BARR & SONS, King Street, Covent Garden, London.

ORCHID PEAT, 6s. and 7s. 6d. per sack;
100 lbs. net, 104, 8d. per yard in trucks; in bags
18d. and 30s. dozen; Oak and Beech Leaf Mould,
100 lbs. net, Stacked and Fresh Cut, Silver Sand,
100 lbs. net for 48s.; C.N. Fibre, 24s. dozen bags; list
free. — J. HANBESKOMME, P.R.H.S., Feltham, Middlesex.

B. FIDY & SONS, Torleven Works,
Borlough, Cornwall. The largest manufacturers
of GARDEN NETTING in the KINGDOM. NEW STOUT
and specially strong SQUARE MESH NETTING, half-
inch and one-inch mesh, at 4d. per square yard. LIGHT
NEW square mesh, suitable for Strawberry Beds, at
3d. per square yard.

These Nets are bound all round with stout cord, and
cover their measured length and width. Any length or
width supplied.

Repaired Nettings in all sizes in stock. State your
requirements, and we will quote lowest prices.

Also makers of TENNIS NETTINGS, RICK COVERS,
GREENHOUSE SHADINGS, WASP NETTINGS, PACK
ING and TARMED TWINES of all kinds.

All Goods sent by PASSENGER TRAIN, CARRIAGE
PAID, on receipt of order.

SPORTSMEN, Farmers, Horsemen, try
our splendid Yorkshire Whipcord Tweed; wear
the leader; shewproof; 7 yards for 17s. 6d. Patterns
free. — BRADFORD WOOLLEN CO., 71, Bradford.

THE reason why advertisers find the
"Gardeners' Chronicle" so good a medium is that it
reaches the best class of people. It is read by people
who do not greatly mind how much they spend upon
a thing, provided it is the best that can be got. Our
advertisers supply the best quality, and therefore they
appeal to those who know good quality when they see it.

600 GLASS CLOCHES, about 17in. dia
net; 50; 3-inch frames, 120; by 40, 6in.,
210; 900 lbs. — WISFARIA Limited, Surrey.

SALES BY AUCTION.

FRIDAY NEXT.
The small, but choice—

COLLECTION OF ORCHIDS

formed by Alfred Bousfield, Esq., of Bournemouth, who is reluctantly compelled to give up their cultivation. The collection consists mainly of ODONTOGLOSSUMS, and includes, amongst others, the following well-known varieties:

- Odon. crispum Pittauum
- “ “ Leonard Perfect
- “ “ Magnum Bonum
- “ “ Rossendale
- “ “ Imperator
- “ “ F. K. Sander
- “ “ Titus
- “ “ Princess May
- “ “ Luciano
- “ “ Cooksonianum
- “ “ Xanthotes
- “ “ Ardentsium Doris
- “ armainvillierense alba
- Also,
- Cattleya Maggie Raphael alba
- “ Trianae alba
- “ Gaskelliana alba
- “ Labiata Mrs. E. Ashworth

Choice Miltonias, Brassia, Cattleyas various, Lycaste Skim terr. alba, and other choice plants.

Great care has been bestowed on the cultivation of the collection, and the whole are in an exceedingly healthy condition. The sale thus affords an excellent opportunity of acquiring these rare and desirable varieties,

together with an assortment of orchids from various collections, including many in flower and bud.

MESSRS. PROTHEROE & MORRIS will sell the above at the Central Auction Rooms, 67 and 68, Cheapside, London, E.C. 2.

On Friday, July 13th, at 1 o'clock.

On view morning of sale. Catalogues on application.

In Bankruptcy, By Order of the Trustee, Re A. W. Ker (trading as R. F. Ker & Son).
AIGBURTH, LIVERPOOL.

Three minutes from Crossington Station (Cheshire Lines). Frequent trains from Liverpool to the Nursery.

MESSRS. PROTHEROE & MORRIS have been favoured with instructions from the Trustee, to sell by auction, on the premises,

THE NURSERIES, AIGBURTH, LIVERPOOL.

On Tuesday, July 17th, 1917, and following day if necessary, at 11 o'clock precisely,

the well-known stock of R. F. Ker & Sons, consisting of 5,000 PALMS, including 20 fine specimens, 3 Japanese Maples, Specimen Bamboos, 10,000 CYLAMEN, Ker's celebrated strain, 1,000 Violes, and other stock. The universally known and unique

COLLECTION OF AMARYLLIS.

which has been so successfully exhibited at the principal shows, also the whole of the General Nursery Stock in the ground, including Hollies, Rhododendrons, Ornamental Trees, Herbaceous Plants, Ac., Contents of Seed Shop and Office, Iron Safe, Office Furniture, Weighing Machines, Tools, and Sundries. Thousands of Flower Pots, Three Urns, Harness, Barrows, and numerous other effects.

The whole of the stock and utensils as described (excepting the Amaryllis) will be first offered in One Lot, including the Name and Goods of the Business, and will not thus be disposed of, other in detail as catalogued. The Amaryllis will also be offered in One Lot, thus affording the opportunity of acquiring the whole collection in its entirety. The outside Stock will also be offered as a whole, with arrangements for removal during the autumn, which may be had on the premises, of the Trustee, Harold Sadler, Esq., Chorlton-a-Mountain (Messrs. Finny, Son & Squires), 31, North John Street, Liverpool, and of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

BUSINESS WANTED.

WANTED, to RENT, small nursery garden, on 1 1/2 acres cultivated land suitable for one part of private Garden might suit N. M. Box 5, 41 Wellington Street, Covent Garden, W.C. 2.

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORISTS' AND SEED BUSINESSSES to be Let or Sold by Auction.

MESSRS. PROTHEROE & MORRIS every month. Copies may be obtained post free on application. Estate offices, 67 and 68, Cheapside, London, E.C. 2.

FOR SALE, as a going concern, **NURSERY BUSINESS**, 600ft. glass, 2 acres land, Southend district R. F. Box 7, 41, Wellington Street, Covent Garden, W.C. 2.

NOTICE.

PUBLIC NOTICE.

THE Partnership of BARR & HUNTER

Gardeners and Florists, having been dissolved by mutual consent, the Subscriber now intimates to his many friends and acquaintances that he is starting business on his own behalf in that commodious shop and warehouse at 65, Borelouch Street, DUMFRIES, under the trade name of BARR & SON, where Vegetable and Flower Stock of only the most superior quality will be stocked, as well as all kinds of Garden Sundries.

DAVID BARR.

PLANTS, &c., WANTED.

WANTED, large, good Nest of Seed drawers, sizes and cash price.—SEEDSMEN, Box 16, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, suitable for stock, cash or exchange. See other advertisements. Catalogues free.—SMITH, London Fern Nursery, Longborough Junction, London, S.W.

WANTED, offers of CYPR. INSIGNE SANDERAE large of small plants, to O.M., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

PLANTS, &c., FOR SALE.

FERNS' FERNS—Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogues free.—J. E. SMITH, London Fern Nursery, Longborough Junction, London, S.W.

DEGONIAS and GLOXINIAS MORLE & CO. can now supply their celebrated strain, in large 60 pots, in flower and bud. Early inquiries, as stock is limited this season.—15/150, Finchley Road, N.W. 5.

TUBEROSES, double African Pearl, just arrived, for under flowering; extra large bulbs, 2s., 4s., 12s., 100, sent free only address, for cash.—MORLE & CO., 150-150, Finchley Road, N.W. 5.

GENTIANA verna, 12 large clumps, 5s.—10s., 3 Bee Orchids, 2/3, 3 Great Orchids, 2s.; 3 Oenothera Kellyn, 5s.; 3 Butterfly Orchids, 2s.—O'KEEJA, Botanist, Ballyvaughan, Ireland.

100,000 LARGE GARDEN FERNS.—Drosera, Ruscus, Eriops, Gloxinias, Lilies, Hyacinths, Ac., catalogues free. J. E. SMITH, London Fern Nursery, Longborough Junction, London, S.W.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

PRIVATE

THE UNIVERSITY OF LEEDS

DEPARTMENT OF AGRICULTURE

Applications are invited for the position of additional instructor in Horticulture, commencing salary £150 per annum, a two or woman with sound horticultural training is required. Applications will be received up to 5th July, 1917, and should be addressed to The Secretary, The University, Leeds, to whom further particulars may be obtained.

WANTED, UPPER GARDENER of

Two for compact Garden. Vegetables, Flowers, Grapes and Paches, under Glass, must be over 45 or ineligible.—Apply stating qualifications, to MRS. DAUNTNEY, Portseahead House, Portseahead, Somerset.

WANTED, HEAD WORKING GAR-

DENER (inside and out). State full particulars, age, number in family, wages (optional), good bell. Also wanted, a **SECOND MAN**—SIR JOHN CELLE, Stoke Poges, near Slough.

WANTED, GARDENER (HEAD WORK-

ING) must be good all-round man, inside and outside work. Apply, MORTON, Sandhurst Court, Sandhurst, near Croydon.

WANTED, HEAD WORKING GAR-

DENER, inside or outside, 3 employed; understands stock. Also one of two 1 1/2 acre, outside, unimproved. Send full particulars, wages, Ac., AIGERS, Holfordale, Keston, Kent.

WANTED, HEAD WORKING GAR-

DENER, thoroughly experienced in up-to-date gardening, inside and out, reference to last employer indispensable, state age, wages (five out), Ac.—CHARLES THOMAS, Esq., Plas-y-nllyn, Wrexham.

SINGLE-HANDED GARDENER wanted

for London, S.W., rooms, light, and firing provided, required to be generally useful.—Call or write, sending full particulars, to MRS. HUNT, LTD., 26, High Street, Mynlebone, No. for whatever to Gardeners.

WANTED, GARDENER (SINGLE-

HANDED), capable and industrious; Flower and small Vegetable Garden; good cottage and electric light.—MRS. PERCY, 13, Hanger Lane, Ealing, W. 5.

WANTED, SECOND GARDENER:

single; indigible; good experience with Carnations, Begonias, Chrysanthemums, and House Decoration, good wages to suitable man.—Full particulars to R. DAVIDSON, Kingswood Manor Lodge, near Regent.

WANTED, SECOND MAN, chiefly inside:

Fruit and Plants; single preferred; wages 30s.; duty and overtime paid.—Full particulars to J. BLACK WOOD, Sutton Park Gardens, Slough.

WANTED, UNDER-GARDENER having

good experience and references; single and ineligible; liberal wages.—Apply, T. ELLIOTT, Norton Manor, Sutton Steadley, Hants.

WANTED, UNDER GARDENER: inelig-

ible, single, over military age; Fruit, Flower, and Decorating; Botchy, milk, and vegetables. LEGGIE, Castle Gardens, Armdale.

WANTED, GARDENER (ineligible);

experienced Inside and Out; Viney, Orchard House, some Orchids; second man kept.—Apply, with full particulars, to E. T. BOWLE, Mill House, Salisbury.

WANTED, good all-round GARDENER

(single-handed), must have first-class experience.—Write, R. A., Box 4, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, good all-round GARDENER,

ineligible, for Harrow-on-the-Hill; cottage provided, good wages and help given.—MR. A. K. CALDYON, Mount Park, Harrow-on-the-Hill.

WANTED, GARDENER (Inside and

Out); ineligible, wages 25s. per week, with Botchy, duty every third week.—R. E. STREET, The Lodge, Eppingham, Surrey.

WANTED, GARDENER, at 10, Augustus

Road, Elgloston, Birmingham, lodge (4 bedroom), gas and coal, wages 35s., 6d.

WANTED, a Man as KITCHEN GAR-

DENER; must be either discharged from or ineligible for the Army; no Botchy; wages 30s. per week. Apply, ALFRED WILLIAMS, Willoughby, Oxshott.

WANTED, FOREMAN (married); ex-

perienced; good wages offered; must be ineligible or over military age. Apply, J. ELDER, Hursley Park, Winchester.

WANTED, FOREMAN or UNDER GAR-

DENER, only place, 50 miles from London, no overtime paid, R. E. BRIDFORD, Leywood Gardens, Cambridge, Cambridge Wells.

WANTED, FOREMAN or good JOUR-

NEYMAN (ASSIDE); 30s. per week, Botchy, Ac.; overtime paid, R. E. BRIDFORD, Leywood Gardens, Cambridge, Cambridge Wells.

WANTED, FOREMAN, for Inside, well

up in Fruit, Carnations, and decorative plants; ineligible or discharged; good wages suitable man.—Apply, J. BAKER, Goldings Gardens, Great Watling, Essex.

WANTED, JOURNEYMAN, ineligible,

for Inside and Out; also IMPROVER for Inside and Out; wages 25s. and 21s. per week and Botchy, duty and overtime paid. Apply, with full particulars, to H. A. PAGE, The Gardens, Bell-size Court, Hampstead, N.W. 5.

WANTED, JOURNEYMAN (Inside);

ineligible, 24s. per week; Botchy and vegetables, duty every third Sunday.—C. EARL, Somerhill Gardens, Tonbridge, Kent.

WANTED, JOURNEYMAN or YOUTH

for Inside work. State experience and wages, with Botchy, milk, and vegetables, J. FRENCH, Lower Hat Park, Newmarket.

WANTED, ELECTRICIAN: charge of

Tongue of engine, dynamo, Ac., rough carpentering, married; wife or man to milk 3 cows. VIS. COLNESS K, Knivesworth Hill, Royston, Herts.

LADY GARDENERS wanted; all suited especially fine of charge—Head and Under for (1) Horticultural good cottage in grounds, Garden, 2½ acres, 12 small Gossiesons, 11 Bushes; boy kept; (2) Park, N.R., 2½ and 20s., 20 s. of cottage, coal, vegetables, light, and milk; lady seen in town; (3) Westons, good soil, and accommodation, vegetables, good; must have good training, mostly Fruit and Vegetables; no Glass—Gardener (Cheshire for 1) Bucks., small Garden, on which lady has; or not much used; (2) Hunts, new garden, no Glass, Vegetables and Borders, wood, not dry; if underpaid mechanism; 2 men kept; (3) Sussex; 20 s., week; 14 acres, all outdoor work, only small part drained, slight experience of war would do. Two ladies for (1) do work of garden between, furnished cottage, 20 s. salary, milk, and vegetables, take friends or sisters; (2) Shughborough, for (1) Leeds., compact Garden, little poultry; (2) Tewkesbury, 25s. week; little Glass, no Vines; (3) Tamton; small Garden, in good order, all outside work, could live in house; only 2 ladies in family; (4) Tisbury, 20s. and 20 s. of cottage; work between farm and garden; Head Man and another lady worker kept.—**MRS. HUNT, LTD.**, 90, High Street, Marlborough, W. 1. No engagement, no fee.

WANTED, LADY GARDENER for Inside; live in Bothy. Wife full particulars, **M. NICHOLLS**, The Gardens, St. Clare, Roussing, near Sevenoaks, Kent.

WANTED, LADY GARDENER: must have had previous experience under Glass, good wages and war bonus 12 s. week Saturdays. For further particulars, apply to **MAXFIELD**, Daley Abbey, Derby.

WANTED, LADY GARDENER for the House and Home garden Borders, under Fine woman; Bothy, studio, dining, and veranda, pool, **PARKWELL**, Gardens, London, Fins. Hill, Cobham, Surrey.

WANTED, TWO LADY GARDENERS for Inside and Out; some experience necessary, Bothy, Acc. Appl. starting, age and full particulars to **W. WILKINSON**, Langley Park, Slough.

WANTED, WOMAN GARDENER or **DISCHARGED SOLDIER** for the House, for 40 s. of cottage, full particulars, **A. R. Box 12, 41, Wellington Street, Covent Garden, W.C. 2.**

WANTED, IMMEDIATELY, TWO WORKING WOMEN GARDENERS for Inside and Outside; Apply, start, age, and full particulars, to **MISS MACKELSON**, W. 10, Grove, Piccadilly, S.W. 1.

WANTED, AN EXPERIENCED FOREWOMAN for the Glass department of a Large Garden, good Plant Grower and Designer. A party, only 20 s. per week, comes copies only, to **J. H. WINTON**, Kingsford Park Gardens, Ashford, Kent.

WANTED, STRONG LAD or **DISCHARGED SOLDIER** some experience, good wages, holdings, milk, very good. **WILLIAM J. SHORT**, Middleton Park, Gird. to Bicester, Oxon.

WANTED, STRONG LAD for Inside, to a farm; daily wages. For full particulars, vegetables, **J. L. WATERMAN**, 85 and 87, Gresham, London, E.C. 1.

TRADE.

WANTED, A FOREMAN for Inside, well up in Gardens, and Farms, and able to make up designs, also a **MAN** for Building and Grating outside; Apply, stating full particulars and wages expected, to **LEWIS & SON**, Nurseries, Wilton.

WANTED, WORKING FOREMAN for small Marlow Nurseries, in Obsshire; 15 s. per week, and London, some experience as well; apply, stating full particulars, to **W. W. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**

WANTED, FOREMAN GROWER: intelligent, must be able to take charge in employer's absence. **G. BENNETT & SON**, Hanwell, W.

WANTED, WORKING FOREMAN, experienced with Fruit Trees, Tomatoes, Chiswick, State wages. — **Z**, Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, A GROWER for Caladiums, Gloxinias, and other Greenhouse plants—Please apply, stating previous experience and wages required, to **JOHN PEED & SON**, The Nurseries, West Norwood, S.E.

TRAVELLER WANTED, for the North of England and Scotland; splendid opportunity for a representative with a income from amongst trade and private establishments. Full particulars of experience, salary required, &c., to **JOHN WATERER, SOSS & CRISP, LTD.**, The Nurseries, Bagshot, Surrey.

AUDIT or CHECKING CLERK (experienced) wanted; intelligent, quick and accurate, **T. J. FOOT & SOSS**, The King's Cross, Southampton.

WANTED for retail business, **EXPERT** **SIDE-SMAN**, with good general knowledge, 4 s. weekly, and Horticultural studies, intelligible for work. Full particulars, age, experience and wages required, **KING'S ACRE NURSERIES, LTD.**, Hareford.

WANTED, Nursery Order and Correspondence **CLERK** within 20 miles of London; Apply, stating full particulars, **A. L. Box 42, 41, Wellington Street, Covent Garden, W.C. 2.**

WANTED, FLORIST, Male or Female, to manage shop, age about 40, must be a good maker-up, 2 s. 4 wages and pair (Middlers), Apply, **INGAMELLS**, Covent Garden.

WANTED, IMMEDIATELY, For Market Garden, experienced, capable man, plough work and horticultural, good wages—Apply **SANDERS**, Little, 5, Dale Gardens, West Cross, Glam.

WANTED, EXPERIENCED WAREHOUSE MAN for wholesale London, good warehouse; Apply, **WATKINS & SIMPSON, LTD.**, 27, 28, 29, Henry Lane, Covent Garden, London, W.C. 2.

WANTED, WAREHOUSEMAN for 2 s. 4 nursery near E. London, with some knowledge of the handling of Bulbs and packing. Apply, stating full particulars, **N. B.**, Box 23, 41, Wellington Street, Covent Garden, W.C. 2.

SHOPMAN WANTED: General, Seed and Plants. Apply, **BRUCE & BOBBIE**, South Parade.

SITUATIONS WANTED.
Twenty-six words for 1s. and 6d. for each succeeding eight words or less.

PRIVATE.

FARM BAILIFF or BAILIFF and GARDENER for 12 s. of cottage, full particulars, **G. BENNETT & SON**, Hanwell, W. For full particulars, apply to **W. W. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**

HEAD GARDENER, experienced, for 20 s. of cottage, full particulars, **A. R. Box 12, 41, Wellington Street, Covent Garden, W.C. 2.**

HEAD GARDENER, 25 years, practical experience, 12 s. of cottage, full particulars, **W. W. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**

HEAD GARDENER, 44 years, full particulars, **W. W. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**

GARDENER (HEAD WORKING) and GARDENER BAILIFF for 20 s. of cottage, full particulars, **W. W. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**

GARDENER (HEAD WORKING), when in work, 12 s. of cottage, full particulars, **W. W. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**

GARDENER (HEAD WORKING), 15 years, full particulars, **W. W. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**

GARDENER (HEAD WORKING), practical (15 years), experienced, stone and greenhouse plants, (house) in Kent, full particulars, **W. W. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**

GARDENER (HEAD WORKING) of the ground, 15 years, full particulars, **W. W. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**

GARDENER (WORKING) when full particulars, **W. W. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**

SITUATION OFFERED as **FOREMAN** in a nursery, 15 years of age, 12 s. of cottage, full particulars, **W. W. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**

DISCHARGED SOLDIER, partially disabled, 30 years, 15 years experience, 2 s. 4 wages, full particulars, **A. R. Box 12, 41, Wellington Street, Covent Garden, W.C. 2.**

YOUNG MAN wants work in Gentleman's Garden or Nursery, good wages, discharged; man only, age 20. **W. BAKER**, Tisbury, Dorset Road, Mottingham, Kent.

P. R. MURTON, Penton Gardens, Helston, Cornwall, can highly recommend young lady for Gardens Inside and Out; some experience; good worker; age 22.

A LADY GARDENER, one year's College training, requires post as **UNDER GARDENER** or in Nursery—**VERKIN**, Hazeleaves, Southsea-Weston-super-Mare.

TWO LADY GARDENERS wish Position as **HEAD** and **UNDER**, well trained and thorough experience, Inside and Out. Please state full particulars, **F. B.**, Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

LADY GARDENER seeks re-engagement near London, 14 years' experience, Vegetables, Fruit, Flowers, Glass, single-handed, or with others, 2 s. 4 wages, cottage. **MISS FULLER**, 71, Dorset Road, Bath.

A LADY GARDENER, 2 years' training, requires re-engagement as **SECOND GARDENER** for a good Head, Hampshire or Sussex preferred; good wages, cottage, comfortable home, 1 s. 6d. essential. **GALBY**, 38, Cecil St. Station, Nottingham, Notts.

LADY requires Post as **UNDER GARDENER** some experience, **MISS E. RICHARDS**, Kenilworth Hill, Southampton.

TRADE.

AS HORTICULTURAL AGENT, TRADE MANAGER or **MANAGER**, 20 years, practical as personal large houses and Covent Garden Market; excellent references, age 44 years. **F. GILMORE**, High Street, Eastly, Kent.

MANAGER or FOREMAN: age 35; 22 years' experience, Budding, Grafting, Climbers, Roses, Fruit Trees, Ampelopsis, &c.—**discharged Army**, 2 s. 4 wages, good references. **H. W. BULLOCK**, Cottage, White Street, Hove, Worthing, W. Sussex.

OPEN for Engagement as **HEAD SHOP MAN**, Manager of Traveller; life experience, both wholesale and retail, over military age. Write, **M. A.**, Box 6, 41, Wellington Street, Covent Garden, W.C. 2.

SEED TRADE, SHOPMAN (HEAD) or FRANCHISE MANAGER, over military age, experienced in all departments. For references, &c., write **STUCHMAN**, Box 9, 41, Wellington Street, Covent Garden, W.C. 2.

SHORTLY OPEN for Engagement as **TRADE MANAGER, MANAGER** or **HEAD SHOPMAN**, 22 years' experience in all branches, wholesale and retail; age 22, good seeds in speciality. Write, **M. A.**, Box 13, 41, Wellington Street, Covent Garden, W.C. 2.

The Gardeners' Chronicle
SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER NOT LATER THAN WEDNESDAY, 5 p.m.

Only any Position	per page	10 s. 6d.
Facing matter and Back Page	per page	12 s. 6d.
Half and quarter pages, column and half column spaces pro rata.		

4 line space not exceeding 20 words	£ 9 d.
Per inch, single column	7 0
Per inch across 2 columns	14 0
Per inch, across 3 columns	17 6

Print page (no display allowed) 1/2 per line space (Headline counted as two lines)
For discounts apply to address below.

SITUATIONS WANTED.

2s. words 1s., 6d., and 3d. for every additional 8 words or fewer.

These Advertisements must be prepaid, and APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.
THE UNITED KINGDOM 15s. per annum.
ABROAD 17 6s. per annum.
Cheques and P.O.s. only made payable to "GARDENERS' CHRONICLE, LTD."

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2
Telegrams: 1545 GARDENERS, RAMS, LONDON.
Telephone: 1643 GERRARD.



“SANITAS” POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (1,000 lbs.) of all Chemists, Stores and Nurseries.

THE “SANITAS” CO., Ltd.

Limehouse, London, E.

Awarded Medal at Royal Horticultural Exhibition, 1911.

BENTLEY'S WEED DESTROYERS :

Liquid: Concentrated Strength 1 to 80.
Double Strength 1 to 50.
Patent Powder: 1 to 25.

BENTLEY'S INSECTICIDES.

BENTLEY'S FUNGICIDES.

BENTLEY'S FUMIGANTS.

BENTLEY'S MANURES.

Catalogue on application.

JOSEPH BENTLEY, Ltd.,

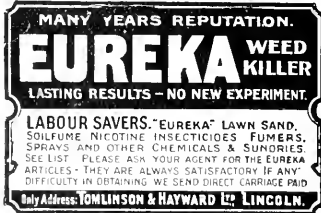
Chemical Works,

Barrow-on-Humber, HULL.



ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties. **STOVE AND GREENHOUSE PLANTS OF ALL KINDS.** Kindly send for Catalogue. **JAMES GYPHER & SONS,** Exotic Nurseries, CHELTENHAM.



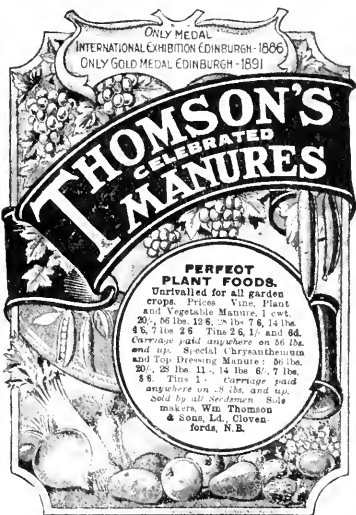
POLYANTHUS v. FLOWERING BULBS

With the restricted trade in Flowering Bulbs, and to those who still wish to have a few bright flowers, we suggest as a war time change that **Polyanthus** should take a leading place this next Spring, and would draw your attention to our stocks of the **Famous Clovenfords Strain of Polyanthus,**

Specially selected and saved by ourselves.

White, Dark Yellow, Primrose Yellow, Crimson and Mixed, *all at 1/-, 2/6, 5/- and 10/- per packet.*

LAING & MATHER, The King's Seedsmen, KELSO.



Sample CRET Pot FREE with Booklet will convince you that the Drainage Porosity, Healthfulness of CRETS would help your plants. Write: **PETER BAILEY & SONS, Ltd.** 2 Heaton Mersey Pottery, near MANCHESTER

Gardeners' Chronicle

No. 1593 - SATURDAY, JULY 7, 1917

CONTENTS.

Biennials for spring bedding	2	Ordinary	—
Books, notices of—	2	George Abbey	19
Jottings of a Gentleman Gardener	3	Orchid notes and gleanings	—
Conifers, notes on—	3	Potato in Ayrshire	6
Callitris oblonga	3	Roberts and birds, damage by	—
Evergreens damaged by frost, treatment of	3	Rosby, the	—
Farm, crops and stock on the home	10	New Roses at Epsallien	—
Food production, on increased	3, 4	Rubben Horticultural Society	—
Foreign correspondence—	3, 4	Science and the nation	—
Food production in Colorado	3	Seeds, irregular germination of	—
Garden of England in war time, the	—	Societies—	—
Variation of form in "Kew Bulletin," the	7	Horticultural	—
"Kew Bulletin," the	7	Manchester and North of England General	—
Kew, improved ways at	7	Royal Horticultural	—
Market fruit garden, the	1	United Hort. Benefit and Provident	—
		Week's work, the	—

ILLUSTRATIONS.

Callitris oblonga; branch with cones	3
Pear Midge, the	7
Rose Margaret Dickson Hamo	10

VARIATION OF FORM IN IRIS.

IN an article on teratology in Iris flowers by Miss Armitage (*Gard. Chron.*, Oct. 25, 1916) the conclusion is reached that flower anomalies are the outcome of a sporting tendency, or strong expression in particular individuals. Among crossed seedlings abnormal flowers often appear, those noted in the article being the most common, and my experience confirms her conclusion. The tendency to sport indubitably can produce malformations in characters of certain varieties, such as Queen of May and Grandeur, and is inherited to a greater or lesser extent in other seedlings, but it is not invariably seen in hybrids or some crosses giving perfect normal flowers.

Of the abnormalities noted, the two most interesting from the florist's point of view are the tetra-loom flowers and those with six equal and similar segments.

With regard to the former, nutrition seems to have some influence. In many varieties and seedlings, especially of the Pallada type, the first flowers at the top of the spike on the strongest stems are tetra-loomed, the succeeding flowers and those on weaker stems being all normal, with an occasional exception. In tetra-loomed, these tetra-loomed flowers, when perfectly regular, as they usually are, are often as beautiful and graceful as the normal numerous flowers. In the border they simply appear as large and fine flowers, and for notice the departure from the normal form until it is pointed out, but it is, perhaps, psychologically interesting that when it is real seed disapproval is generally expressed.

The "Clematis"-flowered Iris, with six segments alike, is more interesting, and though in appearance it departs even more from the typical form, seems to me to be beautiful in its own way. It is quite regular and uniform both in form and colouring, and if all the flowers of the variety are of this type. But even when this is practically the case flowers will always be found in which the modification is incomplete, and occasionally even quite normal flowers will occur, from which it appears that it is not a true varietal or Mendelian unit character, but rather a phenomenon of the same nature as polyploidy, as I have suggested in the case of the florist's Gladiolus. It is interesting to compare it with the florist's Gladiolus, and to observe in the Iris also how the changes in form, colour and markings are linked together with reference to their function. As in the Gladiolus, it is the inner segments or standards which are modified, being transformed into falls, assuming the same position, either spreading or hanging, and with the colour and markings

characteristic of the variety, and also developing a beard. The change then may be considered, apart from aesthetic considerations, as a progressive one, and even more so than in the Gladiolus, since the falls are more highly specialised than the standards, and whereas in the Gladiolus there is a less of colour marking in the Iris there is, besides the production of a beard, an assumption, or, at any rate, an increase in intensity of colour and markings, either absent or less developed in the standards.

It might also be useful to compare closely and critically the phenomena of doubling and polyploidy. I venture to suggest only one broad general contrast. The most common form of doubling consists in the conversion of the stamens, and even sometimes of the pistils, into petals, and may, therefore, be looked upon as a centripetal tendency. On the other hand, polyploidy very often occurs either in a transformation of the inner whorls of segments to the form and colour of the outer segments, or to an increase in number of these outer segments, and so appears to consist of centrifugal tendency in petal formation.

Reading the malformations noted in the article, another may be mentioned of a somewhat different nature, but which appears to be more definite, and to be inherited as a distinct unit character. In Iris *pallada* Mme. Chéreau, and several other Plectra varieties, the falls are cockled at the tips, and the blade is lopsided or laterally unequal. All the flowers are affected, though in varying degrees, and only very occasionally can a fall be found with perfect or nearly perfect falls. This malformation, or one more or less similar, also occurs, but, in my experience, more rarely, in varieties and seedlings of other sections of bearded Irises, and seems to be generally associated with the Plectra type. Among seedlings from Mme. Chéreau many will show similar malformed falls, but some cases are so marked that the whole blade is contorted and crumpled up and partly aborted, but only in those which also display the Plectra type of form and colour. Non-plectra seedlings from the same cross and the same pod of seed have normal flowers, with no cockling of the tips of the falls, though occasionally there is some crumpling or crumpling of the petals, and the blade is curved and lopsided. Although this may manifest a variation in so slight a degree in the best and worst Plectra varieties, that from a garden point of view it is negligible, it is always present when the form of the flowers is that of the Plectra type, and the only Plectra colour type that I have seen entirely free from it is one of the most flowers of the Variegata or Negatif type, that is, with oval instead of pointed falls.

The lopsidedness of the blade of the falls may be associated with this cockling of the tips, but is a much more general malformation; few, if any, bearded Irises of the Pallada type are free from it. It is, in fact, so general that perhaps it may be due to the development of the flower, and the folding of the segments in the bud, as the shorter half of the blade is always to the right. This imperfection in the individual flower is noticed by few, and, perhaps, does not detract from the general effect in the border, but it is an eye-sore to the florist. The fact is that, in the case of bearded Irises as in the making, and present for all their general beauty, there are none among the standard varieties that do not show some imperfection or other. Among the newer varieties there are some now, such as Monarque and Ed. Michel, and some of Sir M. Foster's later seedlings, that are approaching an ideal standard of form and colour. But what is more such as those who have given us the Amélie and Dadaïa, Chrysanthemum and Rose, to perfect the individual flower, and we may hope that among those who come back from the war there will be many to whom such work will appeal. A. J. Bliss.

THE MARKET FRUIT GARDEN.

QUITE an old-fashioned June has been enjoyed this season, for the first time for some years. The weather was mainly sunny, and either warm or quite hot, while rain fell abundantly at wide intervals, on two occasions accompanied by thunder and lightning. The heaviest fall was 1.24 inch, on the 28th, mainly at night. Very seldom is there so great a fall in twenty-four hours at my station, and on looking at my rainfall record, I have to go back to May 15, 1915, to find an equal or greater one; the measurement on that date having been 1.70 inch. In the interval the only re-calls of an inch or more are 1.22 inch on July 16, 1915, and 1.08 inch on November 12, 1915. Rainy though 1916 was, it did not supply one day's rainfall quite up to one inch. My total for last season was 5.5 inches, contributed on only seven days. The month ended with two days of overcast sky and a cold north-east wind.

APPLES DENTED BY HAIL.

Hail storms are uncommon in my district, but there was one on June 22 sufficiently heavy to dent Apples to a considerable extent, although it lasted only about ten minutes. This is the first time that injury has been done to my fruit by hail. The dented spots are now red in colour, and, no doubt, the spots will show up to the time of marketing the fruit. Whether the injury to the skin will affect the keeping quality of the Apples or not remains to be seen.

A DEFENCE OF THE SPARROW.

MR. Stanbury's eulogy of the house-sparrow on p. 254 is the first that I can remember to have seen, while I have read many entire denunciations of this bird, some of them based on systematic investigations as to the contents of birds' crops at different seasons of the year. Even the writers of the two essays on "Farm, Garden, and Birds: How to Protect Crops Without the Destruction of Bird Life," who were awarded the first and second prizes given by the Royal Society for the Protection of Birds in 1912, did not defend the house-sparrow. Mr. E. Parnell Jones, who was awarded the first prize, admits that it is necessary to keep sparrows in check by taking the eggs, as they multiply rapidly, have a wonderful faculty for adapting themselves to circumstances, and drive away very much more useful birds, such as swallows and martins. Mr. E. J. Platt, winner of the second prize, admits that the sparrow, as well as the bullfinch, eats the buds of Plums, Damsons, Gooseberries, and Red and White Currants. It is curious that neither writer distinguishes between the omnivorous house-sparrow and the valuable insectivorous hedge-sparrow. As Mr. Stanbury quite says that it is not the latter, together with numerous other birds, to which he is indebted for clearing his trees of insects? When he says that "the house-sparrow destroys more fruit tree pests than all other birds combined," he makes a statement which seems to me entirely unfounded and incredible. Certainly it is very far from the fact so far as my orchards are concerned, as there are very few common sparrows on my farm, although enough to do harm to germinating seeds in the garden and to fruit buds. Hardly any sparrows' eggs have been brought to me since the offer to pay for them, as well as for the eggs of blackbirds and mixed thrushes, was made.

AS APPLIED TO THE BOARD OF AGRICULTURE.

In connection with the suggestion as to the best plan of guarding against a recurrence of this season's devastation by caterpillars, it is desirable to call attention to the possibility of controlling aphids and Apple-sucker attacks by some operation. The suggestion was that of dipping the so-called "winter" spraying of Apple trees into the blossom buds were showing in clusters, but unopened, and adding arsenate

of lead to the wash. My further suggestion is that another addition should be made with the object of killing mother-queen aphides, and possibly newly hatched suckers. In experiments carried out at the New York Experiment Station in 1915 and 1916, it was found that aphides could be effectually controlled by spraying at the time indicated, before the pests had had time to cause leaves to curl, after which spraying against them had but little effect. The most successful addition to the winter wash of lime-

the leaves around the clusters of unopened blossoms in buds were showing about a quarter of an inch in length, it is important to avoid anything which would scorch them. It seems to me, then, that fruit-growers might well appeal to the Board of Agriculture to obtain a good supply of cheap nicotine from the United States, free from duty, if there be a duty on it. Lime wash would not harm the young leaves, if not applied when too hot, and lime-sulphur can be used at a safe strength. *Southern Grower*

Queen (syn. Ruby Gem), Eastern Queen (syn. Salmon Queen), Fire King, Veitch's Select of Yellow, and Veitch's Dark Red; there are various intermediate colours, such as Fairy Queen, Ivory White, and Ellen Willmott; the early varieties Phoenix and Yellow Phoenix are very useful for planting near a south wall, as they flower in December and January; the double varieties, when well grown, produce very large spikes of flowers in spring, and are useful for dotting in among dwarfed-growing subjects, such as *Violas Comtesse of Hopetoun* or *Belvoir White*.

A nearly allied plant, *Cheiranthus Allioni*, is a great favourite of mine, and was admired by everyone at Belvoir Castle for its bright orange colour and neat habit. *Erysimum compactum* is useful to give variety, and it gives an abundance of its clear yellow flowers, and is of neat habit of growth. Stocks cannot be relied upon to stand the winter north of London; if required for flowering out-of-doors they may be wintered in 4-inch pots, grown in a cool glass-house or pit, and freely ventilated, to be planted out in March. Stocks are appreciated by everyone for their sweet perfume; many varieties will give about 90 per cent. of double flowers. *Empress Elizabeth* is one of the best rosy-pink varieties; all of the Brompton varieties can be grown in this way. The new *Myosotis Indigo Queen*, should be grown in every garden; its habit is similar to *Royal Blue*, which it greatly excels in the intense blue of its flowers; *M. dissitiflora* is valuable in warm districts, as it flowers early, and *M. Ruth Fischer* is valuable for its fine, large flowers; both are more tender than the taller varieties. The pink-flowered sorts produce but little effect, owing to their washed-out appearance. For dotting in the centres of large beds the variegated *Honesty*, *Lunaria biennis variegata*, is very useful; owing to the purple colour of its flowers it looks best above a white groundwork, such as *Double Arabis*. The plant may also be associated with a dark-coloured wallflower, such as *Purple Queen* or *Dark Red*; the variegation of the leaves does not appear until the plant is preparing to flower.

All of the above should be sown in shallow drills 1 foot apart, and be transplanted when large enough; if the ground is dry it is best to water the drills half an hour before sowing the seeds. *W. H. Divers, "Westdean," Hook, Surbiton.*

THE ROSARY.

NEW ROSES AT BAGATELLE.

THE report of the annual trial of new Roses at Bagatelle, near Paris, has just come to hand. The Gold Medals have been awarded to two yellow Roses, one from Messrs. Permet-Ducher, named *Mme. Caristie Mattel*; the other from Messrs. Alexander Dickson, of Newtownards, viz., *Margaret Dickson Hamill* (see fig. 1). The judges report that both these Roses have shown, during the period of their cultivation at Bagatelle, all the points of good Roses, including continuous flowering from spring to autumn. Certificates were awarded to the following: *Mrs. Mackellan* (canary yellow), *Red Star* (brilliant red, from a Dutch grower named Verschmiedt), *Henriette* (hybrid Tea, orange-coloured, from Messrs. H. Merryweather and Sons).

In spite of difficulties of transit, seventy-six Roses have been received at Bagatelle this year to be judged in 1918. Two were from America, one of which has not yet flowered. The other, Los Angeles, was raised from *Mme. Sigmond Weber* crossed with *Lyon Rose*. It appears to be a valuable Rose, with the good points of both parents combined. *Imogen*, sent by Messrs. W. Paul and Sons, Waltham Cross, has maintained its pale yellow colour very well, even during the hot sunshine of the past few weeks.

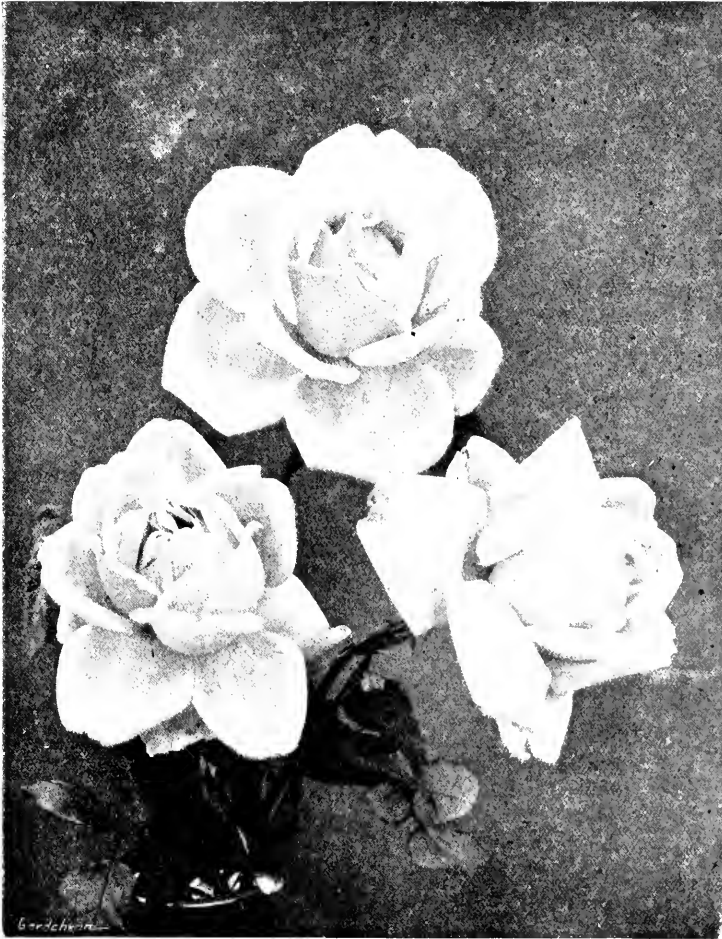


FIG. 1.—ROSE MARGARET DICKSON HAMILL, AWARDED A GOLD MEDAL AT THE BAGATELLE TRIALS; COLOUR ORANGE-YELLOW FLUSHED WITH SALMON.

sulphur was a small quantity of nicotine, which is comparatively cheap in the United States, while its price in this country is almost prohibitive for the profuse spraying needed. Herein lies the great difficulty of carrying out the campaign against caterpillars, aphides, and possibly suckers also, in one operation, while also effecting the objects aimed at by the ordinary winter spraying. For no wash containing soap can be added to lime-sulphur or lime alone, because the lime coagulates the soap, rendering it innocuous to insects. So far as I know, there is no spraying stuff other than nicotine at once free from soap, fatal to aphides and suckers which it wets, and harmless to vegetation. As the best time for spraying was found in the American experiments to be when the tips of

THE HARDY FLOWER BORDER.

BIENNIALS FOR SPRING BEDDING.

SEEDS of biennials for spring bedding should now be sown; a few of each kind should be grown, if possible, in order to keep our good varieties, although, in these times of warfare, it is not advisable to grow as large a quantity as before.

Wallflowers failed in many places last winter; in others they did well. The chief points in their cultivation are to grow the plants hardily and not to sow the seeds too early; moving them in the autumn aids them to withstand severe weather, provided it is done early in November. The most distinct kinds are *Purple*

FOREIGN CORRESPONDENCE.

FOOD PRODUCTION IN COLORADO.

WHEN the United States declared war, it was clearly recognised that success would depend very largely on the farmer. One of the papers published a cartoon, showing a rifle, a spade, and a hoe, with the legend, "Take one." It is fortunate for the nation that this condition exists, in so far as it gives practically every able-bodied person an opportunity to do something of value in relation to the war. Although Colorado is so remote from the scene of hostilities, it is recognised that whatever it can do counts for ourselves and our Allies, and organization for food production and conservation is rapidly going forward. The Central Committee on Food Supply is in Denver, and each county has its own committee, under which numerous special committees are working. These are on Ways and Means, Finance, Organisation, Co-ordination, Publicity, Seed, Live Stock, Tractors, Farm Labour, Marketing, and Home Economics. Already the acreage under cultivation has been greatly increased, and in the towns vacant plots are being made into gardens. Lecturers from the Agricultural College are touring the State, teaching people how to put up fruits and vegetables for home use. It is well known that for years past large quantities of fruits and other products have been wasted, either from lack of pickers or inability to market them without loss. We expect now to see this material saved, and steps are being taken to organise college girls and other young people to pick and can fruit, and do other useful things during their summer vacation. Wherever possible, arrangements will be made for drying fruit. A considerable labour is being registered, and steps are being taken to place the workers where they can be most good for themselves and others. Business men and others are urged to work on the farms during their vacations, the Governor of the State setting the example.

In Boulder the war activities of the town are illustrated by a large map placed on an exhibit. A red flag shows every home from which a man has enlisted, a blue flag indicates a purchaser of a Liberty Bond the U.S. War Loan, and a green flag a new garden plot. In portions of the town it is hard to find room for the flags. I am informed that in Denver many nationalised Germans are subscribing freely to the War Bonds. There is great unanimity and singleness of purpose throughout the State, although our people must universally detect war as an institution, and are only willing to go into it because they see no honorable or indeed, possible alternative. *T. D. A. Cockrell, Boulder, Colorado.*

ORCHID NOTES AND CLEANINGS.

NEW HYBRIDS.

LABELO CYTILLYA CARMEN. An effective hybrid raised between *L. C. Demareeana* × *Doviana* × *L. purpurata* and *L. C. Welliana* × *C. Trianae* × *L. purpurata*, named Labeo-Cattleya Carmen, is sent by Messrs. Mansell and Hatcher, Rosvold, Yorks. The sepals and petals are silvery-white, tinged with pale lilac, and the broadly-expanded lip ruby red, shading to light purple towards the margin, the base being beautifully marked with branched, gold-colored lines.

LABELO CYTILLYA NYDIA. This hybrid was also raised by Messrs. Mansell and Hatcher between *L. C. Amazeana* × *C. maxima* × *L. purpurata* and *L. C. Lycidas* (*C. Schroderae* × *L. tenebrosa*). The large, rather narrow petalled flowers are of clear cowslip yellow, the labellum, which partakes much of *L. tenebrosa*, being purple with a white base, on which are thin purple lines. The flower is in effect a large and darker-colored *L. tenebrosa* Walton Grange variety.

NOTES ON CONIFERS.

XVII.—*CALLITRIS OBLONGA.*

FEW, if any, of the Australian Conifers are suitable for open air cultivation in these islands, except under peculiarly favourable climatic conditions such as prevail in the extreme south-west of England and in Ireland. At Rostrevor, where the climate is an ideal one for tender Conifers, Sir John Ross has had this rare Tasmanian species in cultivation out-of-doors for more than twenty years, and, so far as I know, it is the only plant of its kind in Europe. Sir John tells me he obtained the plant by chance many years ago under the following circumstances. A nurseryman in the vicinity of Rostrevor procured seed of *Abies amabilis*, he believes from California, and among the seedlings which came up were four of an unknown plant. The stock on the nursery was sold shortly afterwards, and Sir John purchased one of these seedlings, the other three being unluckily destroyed by a sharp frost soon after the sale. The one plant was put out in a sheltered spot at Rostrevor in 1875, where it grew fairly well, and as soon as it formed a branch was sent to Kew and the tree identified as *Callitris oblonga*, which had not previously been known in cultivation. How seeds of this out of the way Tasmanian Conifer came to be associated with Californian seed of *Abies amabilis* is a mystery.

The plant has been in the open air for about twenty-five years, and is now 14 ft. a little over 6 feet high, with a stem about 5 inches in diameter. The tree passed unscathed through the recent severe winter, and is in excellent health, though its habit of coming profusely every year probably checks its growth considerably. A seedling has been raised which is doing as well as, if not better than the parent tree, and is now about 7 feet high. I have heard of no other specimens in England or Ireland, which is some what surprising, as the seed from the Rostrevor tree germinates freely, and samples have been sent to various nurseries, as well as to a number of private growers.

The species is extremely rare in a wild state, being only known to occur in Tasmania. It was discovered by Robert Brown at Port Dalrymple, and on the gravelly banks of the South-Essex River, Linnecoston, in 1804. A specimen collected by Brown at Port Dalrymple is in the British Museum herbarium. This Conifer was subsequently seen there by other distinguished botanists, including Sir Joseph Hooker, whose specimens from Linnecoston, with notes and sketches for the plate which appeared in his *Flora Tasmaniae*, are preserved at Kew. It is also found by the St. Anne's River, near Avoca, Tasmania, always growing close to the bank. Known locally as "Native Cypress," *Callitris oblonga* is one of the smallest species of the genus, and, according to Baker and Smith in the *Atlas*, rarely attains a height of 25 feet, being more often a mere shrub 3 or 6 feet high, with an erect habit and dense foliage. The stem is rarely more than two or three inches in diameter. When in fruit this *Callitris* is easily distinguished from all the other species by the very prominent dorsal points of the cone valves.

Mr. Wallis's photograph (fig. 2) represents a branch from the Rostrevor tree, which Sir John Ross sent me two or three years ago. *A. Bruce Jackson, Kew.*

* *Callitris oblonga*, Rich., *Trans.*, 4, p. 135, t. 23 (1805) Baker and Smith, *Atlas of Australia*, 51 (1910), with *Atlas of Great Britain*, t. 1 in *Hook. Book Journ. Bot.*, 33, 142 (1850).

Phenicia australis, R. Br., ex Mirb., in *Mem. Mus. Paris*, XII., 74 (1825); non *Eufratica*, Hook., *L. Fl. Pers.*, 1, 533, t. 97 (1847); *Benth.*, *Fl. Austral.*, VI., 238 (1853); *P. Grangei*, Hook., *Son. Conif.*, 35 (1857); *Farlati in DC. Prodr.*, XVI., 62, 450 (1868).

NOTICES OF BOOKS.

"JOTTINGS OF A GENTLEMAN GARDENER."

THE gentleman who is responsible for these jottings anticipates criticism, and cares not how sharp it may be. But as he was to a large extent induced by the opportunity of friends to have them printed, and as the jottings are above everything remarks of an amateur of gardening written for the benefit of brother amateurs, he would be critic is dismissed before he is prepared to trace his victim. An old objector to whom I mentioned recently how professional gardeners are engaged in teaching cottagers the way to top their plots, laughed heartily at the idea of a gentleman's gardener being capable of teaching him anything. Similarly, one feels how inadequately a gardener is able to comprehend the expletives of an amateur. However, it may be remarked that, apart from certain limitations, there is not a little in the book that will be useful to the amateur cultivator of flowers. He will find what the author claims to be a new style of flower gardening, superior to anything in vogue. The chapters on stones for rockwork, and the notes on soils and manures, are among the best in the volume. The food question is treated in a chapter of two, in which the comparative values of vegetables as "feeding" plants, are discussed, and methods of employing them in place of flowering plants. Not that the author would ever be for Flora to Ceres, he would let them have a place together, with the latter predominating. *B.*

ON INCREASED FOOD PRODUCTION.

SPRAYING POTATOS AND THE EFFECT ON GREEN CROPS.

MASS allotment holders are in the habit of planting their main crop Potatoes in rows 50 inches or more apart, and putting out between the rows various kinds of green vegetables for autumn winter spring use. In spraying them in 1916 this year for the first time, some are doubtful as to the effect which Burgundy mixture or Bordeaux mixture may have upon them. Broccoli, Kale, Brussels Sprouts, and other winter crops. If the rules laid down by the Food Production Department are in force (2 lb. of copper sulphate and 2½ lb. of washing soda, to make 20 gallons of Burgundy mixture, not 10 only, as is often stated), and the spray delivered in the form of a fine mist, no injury should be done to the green-stuffs growing between. Where Cabbages and Lettuces are planted between the Potatoes, very great care must be taken to wash them well before eating, especially Lettuces, to be eaten raw. The spray stuff should not be allowed to fall on such crops at all if it can be avoided. All green-stuff must be thoroughly washed before eating, whether it is to be eaten raw, or cooked, or fed to stock. Immature plants of greens need cause no anxiety; the spraying should do them good rather than harm.

POTATO PROSPECTS.

GENERALLY speaking, the outlook for main crop Potatoes is excellent. A little disease has been reported in Ireland, and Wales also has had its highly susceptible cases, but throughout England as a whole the harvest is looking extremely well. From the more important Potato growing areas reports are uniformly satisfactory. In some quarters a disposition has been shown to undervalue the reserves rendered in supplementing the national food supply by the multitude of small growers who this year are cultivating allotments. An estimate, which errs on the conservative side because it calculates that the eight planted will, on an average, produce only eight times its own weight of crop, has just

Jottings of a Gentleman Gardener. By E. T. Ellis, F.R.H.S. (London: L. Reeve & Co. Ltd.) Price 3s. 6d. net.

been completed with reference to the allotments in and around Glasgow. On this basis these allotments will produce over 2,500 tons of main-crop Potatoes, which is ten days' consumption of the city at its highest recorded figures, and would provide a moderate supply to the inhabitants for a month. Glasgow is less fortunately situated in the matter of allotments than the majority of towns in the United Kingdom, and it is at least possible that the average yield will be twice that taken as a basis for the Glasgow calculation. On some ground that was before the war used for Association football in Yorkshire, the crop this year is stated to be likely to produce from 20 to 25 tons of Potatoes to the acre.

FOOD PRODUCTION SOCIETIES.

SOME of the Food Production Societies (of which the Norwich Food Production League is the best known) have organised practically all the gardeners and allotment-holders in a township. In some places the old Flower Show Committee or the Horticultural Society is co-operating in the work, owning a knapsack sprayer, buying seeds, tools, and fertilisers collectively, and setting up the beginnings of a system for disposing of surplus produce.

VEGETABLES AT FYVIE CASTLE.

THE gardens at Fyvie (a-tle, Aberdeenshire, the Scottish seat of Lord Leith of Fyvie, are now devoted wholly to the cultivation of vegetables, and the surplus produce is sent by Lord Leith to the Fleet and military hospitals. Mr. Simon Campbell, the gardener, is growing several new Potatoes raised by the late Mr. William Sim, Slack of Causeway, the raiser of the well-known early variety Duke of York. One named the Hero King is at least a fortnight earlier than Duke of York, and was ready for lifting on June 23, having been planted on April 14.

THE BEET FLY.

JUDGING by the fact that many insects are more numerous in some years than others, we must conclude that the weather during the previous or present year was favourable to the multiplication of the species that proves particularly troublesome. This year I have seen more plants of Beet attacked by the Beet and Mangold Fly, *Anthomyia betae* (Curtis), and had more specimens sent me, than I remember in any other season. The method of the injury is very similar to that of the Celery and Parsnip Fly, *Zephantia oenopordis* (Curtis) (see June 30, 1917, p. 261), and similar remedies would apply. I also suggest dusting the leaves of Beet with soot, or spraying them with strong-smelling Tobacco water, or N.L. All liquid insecticide, to prevent the flies from laying more eggs, because two or more broods are produced during the season. The first brood has already passed into the pupal stage, or commenced to do so by the third week of June. The pupa is small and reddish-brown, and may pass through its resting period in the leaves or in the ground, for the thin and pale patches of the leaves readily crumble in dry weather and set them free. Curtis got his first specimens of the insect from Surrey, and though the maggots destroyed the Mangold plant, he did not suggest any other remedy except pinching. He found his own Sugar Beet attacked, and employed boys to pinch the leaves, thus stopping the attack. The Beet Fly had not been much noticed in this country till 1860, when there were severe attacks over more than a thousand acres in various parts of England from the Solway Firth to Cheshire; yet Miss Ormerod said that "remedies seem to be little needed." In my opinion, the early attack is the worst to be feared, and the one that should be checked, because the loss of foliage to small plants may seriously affect the crop. The ground by autumn would get filled with pupae, while late-developed flies also hibernate. J. F.



THE KITCHEN GARDEN.

By J. DENN, Foreman Royal Gardens, Windsor.

TOMATOS.—Tomato seeds should be grown now to raise plants for fruiting in late autumn and winter. Sow the seeds thinly in pans containing fine soil, which may consist of a mixture of two-thirds loam and one-third sifted leaf-mould. Place the seedlings in a position near the roof glass in order that they may grow sturdy, and as soon as they are large enough for transplantation pot them singly into small pots. Later, they should be transferred to 6-inch pots, and grown in a cold pit, where plenty of ventilation can be given them. Remove all the side shoots and stake the plants at an early stage. When they are of a sufficient size, they may be potted carefully into large, well-drained pots. The soil for the final potting may consist of three-parts turfy loam, one-part decayed horse-manure, and a good sprinkling of bone meal. When the plants are thoroughly established in their fruiting pots, they should receive plenty of light and air; if house room is limited, they will succeed in the open, provided the weather is favourable. Plants which are carrying a crop should be given a liberal supply of liquid manure or a surface dressing of guano previous to watering. Pinch off the side shoots and remove useless leaves. Ventilate the house freely on warm, sunny days.

MUSHROOMS.—To have Mushrooms in September and October, collect and prepare the materials for the first bed. Horse-droppings should be collected daily and placed in a dry, open shed, where they can be turned every other day, until a sufficient quantity has been obtained. If the manure is allowed to become sour through want of attention, the prospect of a successful crop will be very slight. Mushroom beds at this season should be in an open shed facing north; the sides may be protected from wind by mats, if necessary. The bed should be at least 14 inches deep, and trodden or rammed tightly. When the temperature of the bed is 80°, and not likely to rise, the spawn should be inserted two inches beneath the surface, and the bed made firm by beating with a spade. After a few days, a covering of fresh loam should be spread over the surface to the depth of one inch. If the bed begins to cool, a light covering of straw will help to retain the heat, and prevent evaporation of moisture. In order to maintain an unbroken supply, fresh beds should be made at intervals of three or four weeks.

LEEKS.—Leeks which were planted early in May should be given liberal supplies of manure water at the roots. Keep the soil stirred between the rows, and draw a little fine soil up to the stems as it becomes necessary. Leeks should be planted for spring use as ground becomes vacant until the full quantity has been put out.

SHALLOTS.—The cloves are ready for lifting. Place them under cover until they are thoroughly dry before removing them to the store-room.

CELERY.—Continue to plant Celery as the plant becomes ready. Give liberal supplies of clear water to plants growing in the trenches, and dust them lightly on frequent occasions with soot. Overhead syringings during dry evenings will do much to promote clean, healthy growth.

VEGETABLE MARROWS.—Marrow plants need plenty of water at the roots during hot weather, and weak liquid manure from the farmyard may be given twice weekly. Keep the growth moderately thin by removing all worthless shoots and leaves. Cut the fruits before they become very large; if not required for immediate use, store them in a cool cellar.

CHICORY.—The latest batch of Chicory should be ready for thinning, and this is best

done while the plants are very young. Afterwards hoe the ground between the rows lightly, in order to destroy weeds. Water the crop freely in dry weather.

ONIONS.—Onions which were transplanted in April with a view to producing large bulbs should be freely supplied with a weak stimulant. Soot is an excellent fertiliser for this crop, and should be dusted along the rows during showery weather.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbots Wood, Godalming, Surrey.

RECENTLY GRAFTED TREES.—Where the grafts are growing freely, the ties may be loosened to allow for the swelling of the wood. Keep the shoots tied securely to the rods or stakes. Remove all root suckers from the base, and shoots that are growing below the point where the scion has been inserted. If the roots are dry, water them very thoroughly, and afterwards spread a mulch of littersy material over the soil. The watering of trees ought not to be deferred until it is absolutely a necessity.

SUMMER PRUNING.—This operation may now be completed. The trees and fruit gain considerably in a very short time by having superfluous growths cut away. The shoots should be taken off with a sharp knife about three to five eyes from the base, taking care to make clean cuts. Apples, Pears, Plums, Cherries may be treated similarly. There are a few varieties of Apples and Pears which bear fruits on the end of the shoots, and these must be treated accordingly. As soon as the work of pruning wall trees is finished the shoots that are left should at once be nailed in position, or they may get broken. Give the roots a good watering when the operation is finished, and vigorously syringe the foliage.

YOUNG STRAWBERRIES.—Strawberries layered for potting will probably require water twice daily during hot weather. As soon as the runners are rooted they can be severed from the parent plant, put in partial shade, and the pots plunged in coal ashes or leaf soil to keep the soil moist.

FIGS.—Fig trees are making rapid growth, and should have their main branches secured to the wall or fence. When the leading shoots have made sufficient growth, stop them, as this will hasten the ripening of the fruits, and assist the growths at the base of the tree to develop. See that trees growing in dry situations are not suffering from lack of moisture. Dishud the trees again if they are making too many growths. Pinch out the points of extra vigorous shoots to throw more sap into the weaker ones. It is a good plan to place the fruits in muslin bags when they are ripening, and if the bags are tied fairly lightly about the stalks, they will exclude insects. Give the roots a soaking from the sewage tank when the fruits are swelling, or, failing this, a dressing of Clay's fertiliser.

APRICOTS.—The fruits on Apricot trees are swelling rapidly. Shorten the laterals that are growing outwards, and nail in the shoots needed for extension, and also a few promising shoots in the centre of the tree. Keep a sharp watch for such insects as earwigs and woodlice. See that the roots are well supplied with water, and if necessary apply another mulching; this will keep the ground from cracking. Continue to use the syringe until the fruits begin to show colour. The variety Frogmore Early will soon show signs of ripening. These fruits are splendid for boiling and preserving, and advantage should be taken to use all surplus fruits in this way. The fruits should be gathered as soon as ripe, laid on tissue paper over wool wool, and placed in a cool fruit-room.

PEACHES AND NECTARINES.—Keep the roots of Peaches and Nectarines well supplied with water, and syringe the trees freely, using water in which a bag of soot has been immersed.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

VANDA.—As plants of *Vanda teres* pass out of flower they should receive attention at the roots. Specimens that have lost a number of their bottom leaves may be severed at a desired length below some of the aerial roots, and the upper portion potted singly, or three or more stems may be placed together in pots of a suitable size or in narrow boxes or troughs. The receptacle should be provided with ample clean crocks for drainage. Use a compost consisting of equal parts *Osmunda*-fibre and *Sphagnum*-moss with a sufficient quantity of crushed crocks and small lumps of charcoal added to render the mixture porous. Plants that do not require this treatment should have all the old soil washed from the roots and fresh compost substituted. Secure each plant firmly to a neat Teak wood stake. When the potting is finished, water the roots copiously and place the plants in a house with a southern aspect, keeping the atmosphere humid and shading from bright sun for a few days. Later the plants may be exposed fully to the sunlight and syringed overhead frequently. This treatment should be continued throughout the growing season, but when growth is completed, water should be withheld gradually from the roots and the plants allowed a period of rest for at least four months. No direct watering of the roots should be done when the plants are resting, but they should be syringed occasionally to prevent the leaves and stems from shrivelling. The lower parts of the stems from which the tops have been removed may be left in the receptacles, and, if grown in moist conditions, will soon form new top growths and roots, when they should be re-potted. The stock may be increased by placing portions of the stem in *Sphagnum*-moss; when they have formed new growths and roots they may be potted and grown in the usual way.

FRUITS UNDER GLASS.

By JAS. HENSON, Head Gardener at Ginnerysbury House, Aston, W.

MELONS IN FRAMES.—The weather during most of June was favourable to Melons in frames, and plants that have been well looked after should now be showing signs of fruit. See to it that two flowers at least are fertilised at just about the same time, and, if possible, on strong plants, two additional ones. The fruits may not grow to such abnormal size as those in pits or houses, but the flavour should be equal, if not better. Two medium-sized fruits are more economical than one large one. A piece of a broken roofing tile is very suitable for placing under the fruits in frames. Do not use Strawberry pans or saucers, as, being concave in shape, they hold water. Keep the growths frequently pinched as soon as the fruits are set, but never remove a very large amount of foliage at one time. Damp the foliage freely at the time of closing the house in sunny weather. See to it that sufficient tepid water is given at the roots, early in the day, before the sun is hot. Canteloupe Melons need not be grown in quite so much warmth as ordinary Melons; in fact, a little air at night in hot weather will be beneficial when the fruit is swelling.

MELONS IN PITS AND HOUSES. A slight amount of warmth in the pipes will be advisable. Cutting a notch in the growth is a very good way to check splitting at the base of the fruit. From the time of planting onwards take every opportunity, by closing the house early, to hasten growth. Little warmth will be needed beyond what is sufficient to keep down superfluous moisture. See that the roots are never dry. If a few plants are available, and pots of fairly good size or inverted Seakale pots are to hand, some very good fruits can be secured in the autumn by growing these late plants in full sunlight near the roof-glass.

GATHERING PEACHES AND NECTARINES.—Peaches and Nectarines to be packed for transit should be gathered whilst the flesh is fairly firm,

and this is the more necessary in the case of Peaches. Ripe Nectarines keep somewhat longer than Peaches in the same condition. Again, the Peach sometimes has a tendency to become woolly in the flesh if it remains on the tree for too long, more especially in the case of late varieties such as Sea Eagle. Peaches that have this tendency should be gathered early; it rarely, if ever, occurs with Nectarines. In gathering these stone fruits, sufficient care is not always taken to prevent bruising. The old-fashioned plan of gently twisting the fruit in the palm of the hand answers in some cases, but not in all. Take as an example Early Rivers' Nectarine; the fruits of this variety swell up tight to the stem, and to gather them requires more than ordinary care. The best method is to use a stout pair of Grass scissors to sever the stalks, and that without any semblance of a twist. This method must also be adopted with some varieties of Peaches, the newer Peregrine for example. The early Peaches, Duchess of Cornwall and Duke of York, have, on the contrary, a tendency to drop readily when ripe. In their case the fruits should be enclosed in small nets. Morning gathering is preferable, as the fruits are then firmest, and the packing should also be done in the morning. For dessert, the fruits should be gathered early in the day, when they are cool, and kept in a cool place.

THE FLOWER GARDEN.

By W. J. GIBSE, Gardener to Mrs. DEMESTER, Keele, Hall, Staffs.

FLOWERING SHRUBS.—Directly flowering shrubs pass out of bloom they should be pruned. Remove weak growths and cut back the old flower branches to a strong shoot. The young shoots must be fully exposed to sun and air, to ripen the new wood. Shrubs that require attention at the present time are *Deutzia*, *Wigwaga*, *Ribes*, *Philadelphus*, *Kerria*, *For-sythia suspensa*, and *Chimonanthus fragrans*. The young growths of flowering shrubs on walls and pergolas should be tied after the weak and straggled wood has been removed. Copious supplies of clear water and liquid manure and mulchings of some moisture-retaining material will assist the young growths considerably.

AZALEAS. The seed vessels should be poked off as the plants pass out of flower, but care must be taken not to destroy the embryo flower buds. It may be necessary to reduce or cut out some of the most vigorous shoots if a symmetrical shape is desired. To encourage the young growths, take the surface soil lightly, apply liberal mulchings of decayed manure, and water copiously to wash the mineral properties to the roots. During a dry period Azaleas soon show the beneficial effects of this treatment.

RESERVE BORDERS. Any surplus bedding plants may be utilised to fill spare beds in the reserve garden. These beds or borders may be planted with suitable varieties to provide cut flowers for decorative purposes. Scabious, Aster, Larkspur, Zinnia, Verbena, and similar plants may be used. The thinnings of annuals are excellent for the same purpose, but they should be set out during showery weather. The plants that were used for spring bedding should be divided and replanted without delay. *Dianthus*, *Polyanthus*, *Aubretia* and *Arabis*, planted in rows 9 inches apart, will make suitable plants for next spring's display. The flat hoe must be used continually between all reserve plants, and during dry weather they should be watered.

ANCHUSA ITALICA.—In staking the plants, take care that the ties do not cut the branches. The shoots should be hooped up with some soft material to a strong central stake. Seed grown now will provide good flowering plants next year, or the stock may be increased at a later period by root propagation.

WALLFLOWERS. The flat hoe should be often used between the young plants of Wallflowers. There is still time to sow seed if not previously done. Bulbs will be very scarce in the coming autumn, therefore it is advisable to increase the stock of spring bedding plants.

PLANTS UNDER GLASS.

By J. G. WESLEY, Gardener to Lady NORTHCOLE, Eastwell Park, Kent.

WINTER-FLOWERING BEGONIAS.—Begonias are almost indispensable in any garden where decorative schemes are carried out during the winter months. That most popular variety, *B. Gloire de Lorraine*, can be kept in flower for more than six months in the year if successive batches of plants are grown. The earlier struck cuttings should be potted in small pots, and another good batch of cuttings inserted. After this time of the year this section of Begonia always appears to grow faster. The cuttings strike readily in a light, sandy compost, which should also be used (but with less sand) for re-potting. Grow the plants in a light, warm house, and shade them from bright sun, but do not use permanent shading. Keep the house and plants syringed regularly to ensure a damp atmosphere. Fumigate at frequent intervals to keep down thrips. There are several varieties of the Lorraine type of Begonia, the best being *Gloire de Cincinnati*, *Mrs. Leopold Rothschild*, and *Mrs. Bedford*. The white variety, *Thurford Hall*, is a good companion to these named.

ALYSSIA CITHIODORA.—The Lemon-scented *Verbena* is a favourite in most gardens, and at least a few plants should be grown in pots for use in the conservatory or cool greenhouse. Grown as a standard, it is useful for grouping with other plants, and half-standards and bushes are seldom out of place. Established plants require plenty of water, and should never be allowed to become dry at the roots, or the foliage will quickly assume a yellow, starved appearance. To keep the plants in good condition, the joints of the shoots should be pinched regularly. Syringe the plants to keep down red spider.

THE APIARY.

By CINCINNUS

SWARMS. As bee-keeping is being taken up by many who have not previously kept bees, it may not be out of place to describe how to start bee-keeping from the issue of the swarm. After the swarm issues from the parent hive the air is filled with apparently wild bees, which seem to float about in clouds. Within a few minutes they begin to settle in a bunch on a bush or tree. Sometimes the whole swarm descends for no apparent reason. To prevent this, take the garden syringe, and after putting on the fine rose, spray the bees in the air. Thinking it is a shower of rain, they will soon begin to settle. Do not interfere with the cluster until quietness reigns. The bees will cluster more tightly if they be sprinkled with cold water. Under the swarm put a sheet or sack with a large stone on it. Take the skep and place it directly under the swarm, mouth upward, as close as possible round the great mass of bees. Hold the receptacle tightly, and give the bunch on which the bees are clustered a few very sharp shakes to dislodge the bunch. Overturn the skep carefully on the sheet below, placing the stone underneath the edge to admit the bees freely, and shade with leafy branches or an umbrella to keep them cool, and so prevent desertion. After 6 p.m. remove the swarm to a previously prepared position, having fitted up the frames with starters about an inch and a half deep, and if the season be good, put on sections or shallow frames fitted with full sheets of foundation in which to store surplus honey, always separating the brood chamber from the supers by using queen-excluder zinc. Should the weather be unfavourable, feed the bees on syrup, slowly giving sufficient for daily needs until better weather prevails. Use plenty of quilts in the hive and leave the entrance widely open. Should a swarm desert, remember the bees are yours as long as you keep them in view, so that you can follow them wherever they go. Sometimes bees do not settle in such convenient places as one would like. Occasionally, they settle in a thick hedge, in which case it would be necessary to place the hive above them, and induce them to rise by gently using the smoker.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher:—Our correspondents would obviate delay in obtaining answers to their communications and save us much trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused manuscripts or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matter which it is desirable to bring under the notice of horticulturists.

Letters for publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, JULY 11
Wellington Royal Horticultural Society: Flower Show.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last 60 years at Greenwich, 62.6.

ACTUAL TEMPERATURE:
Gardener's Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, July 5, 10 a.m.: Bar, 30.2; temp, 58; Weather, Dull.

SALES FOR THE ENSUING WEEK.

FEDERAL
The collection of orchids formed by A. Bonfield, Esq., by Protheroe & Morris, at 67 and 69, Chespond, London, E.C., at 1 o'clock.

The Garden of England in War Time.

In few places has the war wrought greater changes in agricultural practice than in Kent, and certainly no county has shown greater resource in modifying its agricultural methods.

Not long after the outbreak of war it became evident that the Hop-growing industry must be curtailed. Even in peace times that industry, though rich in prizes, was also rich in surprises, and, with the added uncertainty of war and the prospect of less beer, to continue to devote the whole acreage to the cultivation of this crop appeared to Kent Hop-growers to be not only unpatriotic but unbusinesslike. In spite, therefore, of the fact that the established Hop gardens, with their attendant oast houses, represent a large amount of capital, many hundreds of acres of Hops were grubbed up and the oast houses turned into Potato and other stores, or left to lie idle.

It is interesting to observe that the place of Hops is being taken in large measure by market garden crops; among these the Potato comes first, and in the excellent soil of the Hop gardens, well cultivated and

manured and weedless, the crops are doing extremely well. Potatoes, Carrots, Parsnips and Brassicas have been planted on a large scale. The fields under these crops are often of considerable extent, and one may see seventeen acres of Carrots, and even larger breadths of Parsnips, both of which crops are, generally speaking, remarkably promising.

Labour difficulties are responsible for somewhat late planting of some of the Potato crops, but the weather this year has been kindly, and lateness of planting is not likely to turn out a disadvantage. The only crop, indeed, which appeared to be suffering from late planting was the Onion. Judging from the admirable examples of crops growing on the rich brick earth in the neighbourhood of Faversham, it may be predicted that the war will leave a permanent impress upon the cultivation of Kent, and that market garden crops have come to stay.

Nowhere is the response to the changed conditions brought about by the war more remarkable than in the gardens and on the farms of Messrs. Mount and Sons, of Canterbury. The Roses for which this firm is famous have been in large measure replaced by market garden crops, only enough Roses having been kept to maintain the stock of varieties. Both out-of-doors and in the houses previously devoted to Roses market garden crops have been planted, and the Tomatos under glass would be a credit to a grower who had specialised in that crop and nothing else. Plants of Kondine Red and Ailsa Craig varieties are bearing large trusses almost to the ground level, whilst in trial grounds Potatoes and other crops already mentioned demonstrates that men who have learnt how to grow Roses and Carnations to perfection can turn their knowledge swiftly to good account in the cultivation of any other crop.

In one direction, at all events, fortune appears to be favouring the Kent growers, for Cherry and Apple crops, if we may judge from those on Mr. W. W. Berry's farms at Selling and on Messrs. Mount's at Canterbury, are very heavy indeed.

The Cherry orchards at Selling, consisting of large trees, are covered with rapidly ripening fruit, and present a wonderful sight. The fruitfulness of these trees may be judged from the fact that certain of the largest are bearing, according to expert estimate, not less than 12 cwt. of Cherries, whilst many of the lesser trees have crops of between 4 and 5 cwt. Early Rivers, Black Circassian, and Governor Wood, are among the numerous varieties of Cherries which are producing fine crops. The Cherry orchards are under grass, but the grass is kept cropped close by sheep, the ideal aimed at and achieved being that the grass shall not wet the visitors' boots. It is to this cropping by sheep that Mr. Berry attributes the absence of damage to the Cherry trees by caterpillars, and for confirmation he pointed to contiguous Cherry orchards, in one of which the grass is close cropped by sheep, and the trees undamaged and fruitful; in the other the grass is long,

and the trees showing in damaged leaf and shortness of crop the effects of the ravages of the caterpillars.

In the Plum orchards of Messrs. Mount, where also heavy crops are borne, pigs are used with good effect as ground cultivators. The pigs, kept on half-rations of sharps and bran, have their naturally voracious appetites so whetted that no weed except the dock is left after they have loosed the ground with their snouts.

In spite of labour difficulties, the excellent practices of normal times are being maintained; the fruit trees are banded with Tanglefoot and have been sprayed as usual, and to these measures are to be attributed the excellent Apple and Plum crops which should in some measure compensate for the sacrifice of the Hop yards.

Anyone who doubts the value of banding with Tanglefoot and spraying should pay a visit to Messrs. Mount's Plum orchards and note that here and there among the branches heavily laden are some which have been missed by the sprayer and are barren of fruit. Indeed, those who find a luxury in encouraging that self-depreciation which has become a national habit would do well to make a tour to the Garden of England and learn of the resourcefulness with which the men of Kent are meeting the changed and difficult circumstances of the present time. The high standard of cultivation is to be attributed no doubt to the energy and capability of the growers as well as to a naturally fertile soil; but in part also to the admirable work in education which has been carried on for many years by the South-Eastern College at Wye. It is indeed a pleasure to hear from some of the growers themselves the ready admission of the very beneficial influence which the College has exercised on cultivation in the county. It encourages the hope that colleges of this pattern may be established in other of the fruit-growing districts of the country.

PRESENTATION TO MR. S. ARNOTT.—The members of the Maxwelltown Allotment Holders' Association, at the formal opening, on June 30, of the five fields of allotments in the hugh provided through the Town Council, presented Provost S. ARNOTT with a silver key. The presentation was made by Mr. R. WIGELMAN, the chairman of the association, who stated that the local plot-holders were indebted to Provost ARNOTT, not only for starting the scheme, but for much useful work in connection with it.

THE POTATO CROPS OF ENGLAND AND GERMANY.—In an interesting article contrasting British and German agricultural methods, Mr. A. E. V. RICHARDSON draws attention to the fact that, whereas between 1888 and 1915 the Potato yield of Great Britain increased 20 per cent., that of Germany increased 109 per cent.

PRICES FOR EARLY POTATOS IN AYRSHIRE.—Very high prices were realised at the first auction sales of growing crops of Early Potatoes on the Carrick coast of Ayrshire on the 26th ult. The highest price obtained was for 2 acres 3 rods at James-town, which realised £165 per acre. The highest price at Warren was £127 per acre for upwards of five acres, and at James-town £125 per acre was paid for about six acres. The average prices per acre were as follows:

The *Journal of Agric.*, Victoria, Australia, April, 1917, p. 98.

follows:—James (600), £ 7 7s.; White (£117 14s. 7d.; Marston, £9 12s. 4d.). The lowest price was £7 per acre, and £4 for three lots at Marston.

ESTIMATE OF DAMAGE BY RODENTS AND BIRDS. Various estimates have been made at different times as to the loss to the nation caused by farm pests, including the rat, the mouse, the house sparrow, and the wood-pigeon. One of the latest estimates has placed the amount of damage at £40,000,000 annually, or about £1 per head of the population. This sum includes a loss of £15,000,000 due to the brown rat, and £8,000,000 to that of the house sparrow. These calculations, of course, may be on the extravagant side, but that an enormous amount of food value is lost to the country through these pests is beyond dispute, and it is especially so here at the present time.

RULHÉBEN HORTICULTURAL SOCIETY.—The secretary of the Royal Horticultural Society has received the following interesting communication from the secretary of the Rulhében Horticultural Society:—"You will be interested to know that we had our first flower show last month, when we staged some 200 pots of spring flowers, which had been grown in frames in the market. The exhibition was in every way successful, and was much appreciated by our fellow prisoners. We had photographs taken of the two tables, and have ordered copies for you, which I hope to send off very soon. We have also a book of photographs of some of our barracks gardens as they were during the summer of 1915, this has been bound in leather by our own bookbinding department, ready to send off, but we are at the present unable to do so owing to regulations regarding mounted photographs being a short time ago by the military authorities. We are sending a similar book to the Crown Princess of Sweden, and you would suggest that you communicate with her Royal Highness at a later date. From this book of photographs you will be able to form a very good idea of the interest which has already been taken in the camp in horticultural work. At a committee meeting held recently, it was resolved to hold a competition for the best barracks garden of plants raised from seed in the camp in conjunction with a summer flower show and competition of various classes, and also an exhibition of vegetables grown in our vegetable garden. We should like very much to award a certificate for the various classes, and I have been instructed to inquire if you have any cuttings for allied societies, and if you could let us have the required number. As soon as the schedule has been drawn out, I will communicate further with you on this subject."—S. Good, F. Hower, Hon. Sec., Rulhében Horticultural Society."

IMPROVED WAGES AT KEW.—Journymen and women gardeners employed in the Royal Gardens, Kew, are now paid 7s. and 5s. per week and 9d. per hour for all overtime and Sunday duty.

"KEW BULLETIN."—In reply to a question by Sir WILLIAM BRIDE in the House of Commons, Mr. STANLEY BODWIN stated that the Select Committee on Publications and Debates' Reports recommend that the *Kew Bulletin* should be continued, but with due regard to economy. The *Bulletin* will probably be curtailed by withholding certain classes of information, the publication of which it is considered can be postponed without detriment to the welfare of the State."

PUBLICATIONS RECEIVED.—*Report of the Tulip Nomenclature Committee of the Royal Horticultural Society, 1914-15.* (London, Spottiswoode, Ballantyne & Co. Ltd.) Price 2s. 6d.—*Standard Cyclopedia of Horticulture.* By I. H. Bailey. Vol. V.—S to Z, and supplement Price 25s. (New York: The Macmillan Co.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

IRREGULAR GERMINATION OF SEEDS.—On p. 204, 1st 1914, a single plant of *Perithrium arvense* Golden Feather produced seed here. The seed was sown under glass in February, 1915, and the first seedlings that appeared were lost; but a second batch came up afterwards, and a third later still. All the seed was from the one plant. Many times have I said, when sowing seeds that were purchased germinat-

ing, berries are attractive in winter. *Prunella Jones, Delaware Co. Warblers.*

"SCIENCE AND THE NATION."—The article on p. 259, over the signature initials J. R. P., reviewing the recent volume bearing this title, was inspiring, commendable as well as scientific. Horticulturists must think seriously about the future. J. R. P. says: "We are at the parting of the ways. If we do not now learn and profit by the lesson which it has needed a great war to teach us, the writing on the wall will be written for us, as it has already been written for many another great



FIG. 2. BRANCH OF CALLITRICHE OREGONICA, WITH CONES. (See p. 10.)

ing after another, that such seed was old, and would take a thousand or so years to plant. If Golden Feather were in the open, and they came up in two distinct batches, do the outer flowers of the head produce ripen seed than the centre flowers, or do the first flowers ripen seed better than the later ones?—*W. B. A. A. A.*

A WASP PLANT.—*Pezomachus* has a peculiar fascination for open spaces, and I have lately captured many swarms of the insect in a bed of these plants. The tree is very attractive in its glossy foliage, which assumes brilliant autumnal tints, whilst the black

action before us. Pure science is the stream of knowledge which fertilises practice. Pure science cannot be expressed in terms of pounds sterling and the ordinary Englishman likes to act on the principle of putting down six pence on Monday and picking up a shilling on Tuesday. Thanks, J. R. P. I thought it was only Salsman who did this! But I think we are all now taking longer views. The question, like most others, turns on £ s. d. Professor Pope, writing on "The National Importance of Chemistry," says: "In the future money will have to be provided from public fund-

(Photograph by E. J. Wallis)

SOCIETIES.

ROYAL HORTICULTURAL

Scientific Committee

for the stimulation and prosecution of chemical research, whether of purely academic or practical technological interest, and in amounts which bear no comparison with the few thousands of pounds per annum which have been available in the past. . . . If recent events have not demonstrated that the national will being requires the devotion of vast sums to the prosecution of scientific research no printed words will make the truth more evident. . . . I am glad the volume contains two articles by writers well known in the horticultural world. Dr. Keeble writes most lucidly on "The Science of Botany and the Art of Intensive Cultivation." Only two sentences I quote: "Cultivate the laboratory a little less and our gardens rather more. Discourage the modern sessile habit assumed by students, and see to it that the men who are to replace us have wide as well as deep experience." The other writer will be known to horticulturists as Professor Biffen. His subject is "Systematised Plant Breeding," and one rises from a perusal of his article with the feeling not of how much has been discovered, but how much there is still to know, which is the best plea of all for enlarged resources being available for research work. The writer on "Science in Forestry," Mr. W. Dawson, concludes by saying: "Forestry is a composite subject applying the principles of many sciences, and the only hope for its advancement lies in the close partnership of the laboratory investigator and the practical forester." Change "Forestry" to "Horticulture," and the sentence accurately expresses, I believe, the sentiments of all the best minds in horticulture to-day. W. Cuthbertson, *Duddingston, Edinburgh.*

REPAIR OF FLOWER POTS.—It may be of use to note that I experimented on two seed pans (one 12 inch) which were broken into three pieces each, and which have stood two seasons since repair. They were well soaked in clean water and a thick cream or thin putty of Portland cement spread on the cut surfaces; after tying with string to keep in place a fillet of thicker cement was laid along the crack. The pots were then slowly dried under old sacking. D.

TREATMENT OF EVERGREENS DAMAGED BY FROST.—It often happens that when half-hardy, or even hardy, evergreens have been badly caught by frost, they can be saved by cutting down the stems with the withered, frosted leaves, since new shoots may then spring up again from the stool. Possibly the principal damage done, apparently by the frost, is really due to the unchecked depletion of the water reserves in the wood, consequent on the evaporation from the withered leaves after the frost has actually passed. There are, it is true, some objections to this hypothesis, and they are based on newer observations tending to indicate that the stomata are less efficient in regulating transpiration than has been generally believed. But however this may be, I had, unfortunately, several opportunities of testing the effects of removing the damaged leaves from shrubs injured by the frost during the earlier part of this year. Thus, *Berthamnia fragifera* had every leaf killed, and I cleared them all off two main branches springing from close to the ground level, whilst leaving the rest of the specimen (about 12 feet high) untouched. For some time the effects were not striking, but now, at the end of June, the axillary shoots have pushed vigorously on the two treated branches, whilst the whole of the rest of the plant seems in a very purling state. It appears, from this and other observations, that it might be worth while to experiment further in the same direction, especially in the case of rare or valued shrubs. The labour of stripping the leaves is very small, but it must be done immediately the frost damage indicated by wilting of the leaves becomes apparent. Of course, too much must not be expected, for if the soft tissues outside the wood are killed, probably nothing could save the plant. Nevertheless, it is not unlikely that a good many trees which might have been saved are really killed by the after-act of its severe frost. Everyone who knows how fatal a sunburn following on a hard frost is apt to be over-zealous in plants, whereas the deciduous trees, and shrubs often come through it untouched. J. B. F.

JUNE 19. *Present:* Mr. E. A. Bowles, M.A. (in the chair), Sir John Llewellyn, Col. H. E. Rawson, Messrs. J. Fraser, A. D. Cotton, W. Hales, J. T. Bennett-Poe, W. J. Bean, F. J. Clattenfield (hon. secretary), and R. Farmer (visor).

Pine Rust. Mr. A. D. Cotton showed specimens of Pine blister rust on *Pinus Strobus* from Haslemere. This disease is due to the fungus *Cromatium Rubicola*, and has its alternate stage on Black Currant or some other species of Ribes, occurring at times on the Red Currant, and rarely, in this country, on the Gooseberry. It has occurred on the Gooseberry at Oxford.

Potato Spraying. Some discussion took place with regard to the relative values of Bordeaux and Burgundy Mixtures for spraying Potatoes. In the former quick-line is required, in the latter washing soda; usually washing soda is of more constant composition than quick lime, and the spray is therefore easier to make. In both cases the more dilute the two materials to be mixed before the mixture is made the better, and in both cases also the mixture should be done immediately before the spray is used. The experimental spraying in Ireland during the past few years, as well as other experiments, shows that the 1 per cent. Burgundy Mixture is an excellent and safe preventative of the disease caused by *Phytophthora infestans* beetle. The proportions of the materials used are 4 lb. copper sulphate, 5 lb. washing-soda, and 40 gallons of water.

Various Plants. Mr. Bowles showed, on behalf of Mr. Elwes, *Orchis foliosa*, a fine-flowered form of *O. latifolia*, *O. uncinata*, *Arisaema consida* (from Himalaya and the Tibet border), a smaller plant of a species of *Arisaema*, *Polygonatum* with a fallacious inflorescence which is constantly produced, and *Roscoea* (Caulion) lutea, a hardy plant from the Himalaya belonging to the Scitamineae. He also showed from Miss Willmott's garden at Warley the uncommon Iris *Syrdenensis* from Asia Minor; from his own at Calesham Meconopsis latifolia, the semi double form; blue and white forms of *Campylopus patula*, and a form with six petals; a pale blue form of *Ranunculus*, and the uncommon *Centranthus angustifolius*, which he had collected at Lauteret.

Hybrid Mints. Mr. Fraser showed a hybrid of *Mentha rotundifolia* × *viridis* which had been collected near Swanage; it was nearer to *rotundifolia* than to its other parent.

Uall: Effect on Onions. Mr. Fraser also drew attention to the effect of hail upon Onions, the leaves of which show white bruises caused by recent hailstorms.

Xyleborus dispar in *Sycamore.* Mr. Cheal sent specimens of the common *Sycamore*, *Acer pseudoplatanus*, from the Crawley district, bored by the shot-hole borer, *Xyleborus dispar*, and containing the larvae of the beetle in great numbers. This pest also attacks fruit trees, including Plums, Pears, and Apples, and is a difficult one to deal with, the complete destruction of infested trees being probably the best course to pursue.

Effect of Salt Water. Dr. Voelcker sent a note upon a case of scorching of Peaches and vines where, the supply from a well having given out, water from a lake had been used; the analysis of the lake water showed no less than 162 grains of salts to the gallon, magnesium being present also, and suggested the dilution of sea water. The well water contained only 5 grains of salts to the gallon.

Populus lasiocarpa. Mr. J. C. Allgrove showed a fruiting specimen of this fine tree from Langley.

JULY 5. The usual fortnightly meeting of this Society was held at the London Scottish Drill Hall, Westminster, on Tuesday last.

The National Sweet Pea Society arranged, in conjunction with the exhibition, a special show of Sweet Peas grown by its members, but the response was only moderate.

The Floral Committee inspected several novelties, but the only awards were made to three new Roses. Several excellent groups were staged.

Messrs. R. WALLACE AND CO., Colchester, arranged an imposing collection of many excellent Ferns, including several promising seedlings: Delphiniums, Japanese Irises and *Primula Litolomiana*. A fine corner group of miscellaneous border flowers was arranged by Messrs. BAKER, LTD., Wolverhampton, in which magnificent Delphiniums, Erigerons, and Primulas were conspicuous. Mr. J. C. ALLGROVE, Langley, showed the recently certificated *Spiraea Veitchii*; *Fremontii*, Delphiniums, and the dwarf deep pink *Acantholimon venustum*. Such Delphiniums as *Statuaria Rude*, *The Alake*, and *Rev. Lascelles*, were included in a fine group of these flowers staged by Messrs. G. BUSBY AND CO., Maidstone.

Several good collections of border flowers were arranged on tables, the exhibits from Messrs. J. PIER AND SONS, Bayswater, Mr. G. W. MILLER, Wisbech, and Mr. G. REUTHE, Keston, being meritorious. An interesting collection of Liliiums was arranged by the ALDER RIVER NURSERY CO., Ivor Heath, Buckinghamshire. Special prominence was given to plants of *L. Willmottiae*, which received a Card of Cultural Commendation.

Roses again formed a prominent feature of the exhibition. From Messrs. B. R. CANT AND SONS, Messrs. WM. PAUL AND SON, Messrs. F. CANT AND CO., and Mr. E. J. HICKS. Of the numerous varieties *Annie Penrice*, a brilliant pink garden Rose of good size, shown by Messrs. F. CANT AND CO., and *Prima Donna*, a smaller and more compact bloom, heavily flushed with deep red, shown by Messrs. WM. PAUL AND SON, are deserving of mention. The variety *H. V. Machin* was well shown by nearly all the exhibitors.

Among other new Roses in Messrs. B. R. CANT AND SON'S group, was the variety *Emily Gray*, which was awarded the Gold Medal of the National Rose Society in 1916. It was a yellow Wichuraiana hybrid, with glossy, mildew-proof foliage.

Stove plants were shown by Mr. L. R. RYSELL, Richmond. The group contained *Caladiums*, *Marantas*, foliage *Begonias*, and *Medinilla magnifica*. An excellent strain of *Gloxinia* was shown by Messrs. R. AND G. CUTBERT, Southgate. Messrs. H. R. MAY AND SONS, Edmonton, brought their customary collection of Ferns, in which were arranged *Lantanas*, *Verbenas*, and other flowering plants.

The Orchid Committee gave an Award of Merit to a new *Odontoglossum*, and awarded two Medals to Collections.

Floral Committee.

Present. Messrs. H. B. May (chairman), A. Turner, John Heal, C. Dixon, J. Green, G. Reuthe, G. Paul, W. J. Bean, Chas. E. Shea, F. Page Roberts, W. P. Thomson, J. F. McLeod, W. H. Page, J. W. Moorman, E. H. Jenkins, James Hudson, John Dickson, W. Howe, W. Blakey, C. R. Fielder, W. Cuthbertson, A. G. Jackson, H. J. Jones, S. Morris, R. C. Notcutt, E. A. Bowles, and Chas. E. Pearson.

AWARDS OF MERIT.

Rose Miss May Marriott. A delightful Rose which originated as a sport from the popular *Madame Edouard Herriot*. In shape, size, and style of growth it is like its parent, but the colour is rich, bright golden apricot, with a little orange shading on the outside of the petals. Shown by Mr. THOS. ROBINSON, Nottingham.

Rose Vermoid. A large, single-flowered, climbing Wichuraiana variety with ample, highly-polished leaves. The blooms are light yellow, shading to golden yellow at the base of the petals; the ring of stamens and anthers is also golden yellow.

Rose Walter C. Clark. A beautiful new Hybrid Tea Rose of medium size (as shown) and exceptional fragrance. The colour is deep velvety crimson, and in the bud stage and just as the blooms begin to expand the appearance is very fine, but the fully opened flower often shows the centre. Both these varieties were shown by Messrs. WM. PAUL AND SONS, Waltham Cross.

GROUPS.

The following Medals were awarded for cool lectures:—

Silver-gilt Banksian Medal, to Messrs R. WALLACE and Co., Messrs. J. PIPER and SON, Messrs. BAKER, LTD., Messrs. BLACKMORE and LANGDON, and Mr. W. H. HOLLOWAY.

Silver Flora Medal to Messrs. B. R. CANT and SONS, Messrs. R. and G. CUTBERT, Messrs. H. B. MAY and SONS, and Mr. L. R. RUSSELL.

Silver Banksian Medal to Messrs. F. CANT and Co., Mr. E. J. HICKS, Mr. G. W. MILLER and Messrs. WM. PAUL and SON.

Bronze Flora Medal to Mr. J. C. ALLGROVE, Messrs. ALLWOOD BROS., Messrs. J. CHEAL and SONS, Messrs. G. BUNYARD and Co., and Mr. J. STEVENSON.

Bronze Banksian Medal to the ALDER RIVER NURSERY Co., Messrs. H. CANNELL and SONS, Mr. J. DOUGLAS, and the Rev. J. H. PEMBERTON.

SWEET PEAS.

Mr. W. H. HOLLOWAY, Port Hill, Shrewsbury, staged charming bunches of clear blooms, his exhibit being the best in the Hall. The principal varieties were Hope, a rich crimineo-rose-coloured flower; Adelaide (syn. Anzac); Warrior, which contrasted well with Felton's Cream; the soft pink Beryl; Melba, Golden Glory, Dobbie's Orange, President, and Mrs. C. P. Tomlin. R.H.S. *Silver-gilt Banksian Medal* and National Sweet Pea Society's *Gold Medal*.

Mr. J. STEVENSON, Wimborne, exhibited a collection, but the many unopened flowers reduced the colour value of the large stands of bloom. Royalty, a purple variety, was conspicuous, whilst others of merit were King Maize, Peace (pink), Faith (light lavender blue), and Charity (deep red). R.H.S. *Bronze Flora Medal* and National Sweet Pea Society's *Silver Medal*.

Messrs. PIPERS, Bayswater, had a good exhibit of bright flowers set up in dainty and artistic baskets and vases. Freda (pale blue), Mr. Gentle (deep apple-blossom), Max Unwin (scarlet), Margaret Fife (blue), Sincerity (crimson), and R. F. Felton were a few of the finer varieties. *Silver-gilt Medal* of the National Sweet Pea Society.

Small exhibits were shown by Mr. R. F. BARKER, Muswell Hill; Mrs. FARNHAM, The Heights, Wisley; Mr. C. COLVIN, Edelehan; Mr. ROBT. BOLTON, Birkbrook, Essex; and Messrs. A. DICKSON and SONS, Belfast, who showed a fine bluish variety in Elegance.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Veitch, Messrs. Jas. O'Brien (hon. secretary), J. Wilson Potter, Stuart Low, Frederick J. Hanbury, Pantia Ball, T. Armstrong, A. McBean, Arthur Day, C. H. Curtis, Walter Cobb, W. H. White, Fred K. Sander, R. Brooman White, J. Charlesworth, R. A. Rolfe and C. J. Lucas.

AWARD OF MERIT

Odontoglossum Queen Beaudant ("Memoria Lionel Crawshaw" (Harrington × transplants Lionel Crawshaw), from Dr. BARRI CRAWSHAY, Esq., Rosefield, Sevenoaks (2r Mr. Stubbs). A noble *Odontoglossum* and the best of a fine strain for which Mr. Crawshaw has already secured one First class Certificate and two Awards of Merit. The new variety is the largest and best in every respect. The broad sepals and petals are blotched and tinged with dark red brown, the yellow ground-colour showing through at the margins. The almost circular lip is white in front, the base light violet, and the crest yellow.

PRELIMINARY COMMENDATION

Odontoda Memoria Lionel Crawshaw (*Odin Ceruus* × *Odin Charlesworthii*), from Dr. BARRI CRAWSHAY, Esq. A distinct new hybrid, flowering for the first time, the single large bloom being of fine substance. The colour is light brownish orange, changing to cream colour towards the margin of the lip, which has a well defined yellow crest.

GROUPS.

Messrs. ARMSTRONG and BROWN, Orchidhurst, Tunbridge Wells, were awarded a Silver-gilt Flora Medal for a group rich in hybrid Miltonias, *Odontoglossums*, and brilliantly coloured *Odontodas*. Among the Miltonias the handsome M. J. Gurney Fowler, for which a First class Certificate was given on May 19, 1914, showed prominently, its large rose-pink flowers, with deep maroon mask on the lip, being very effective.

Messrs. CHARLESWORTH and Co., Haywards Heath, were awarded a Silver Flora Medal for a group of excellent specimen Orchids, each bearing many flowers. *Cattleya Warscewiczii* Mrs. E. Ashworth had six large bluish white flowers; we also noticed a fine white petaloid, and a very large dark form of *Cattleya Gaskelliana*, each with nine flowers.

Messrs. SANDERS, St. Albans, staged a small group, which included the new *Odontoda Aphrodite* Miltonia Warscewiczii × *Odin Magali Sanderi*, with prettily-marked flowers of good shape, and Miltonia Isabel Sander, white, with dark maroon base to the lip.

Dr. BARRI CRAWSHAY, Esq., showed *Odontoglossum Cleopatra*, *Memoria Lionel Crawshaw* (Carnegie × Vaylsteckel), a large, showy flower the character of which is dominated by *O. Harringtonii*, which was one of the parents of *O. Carnegiei*. The sepals and petals are sepia brown with lighter margins; the large lip is purple at the base and white in front.

H. T. PITT, Esq., Rosslyn, Stamford Hill (2r Mr. Flougeod), showed a fine plant of the remarkable *Ballophyllum Balfourianum*, with large, fleshy cream white flowers, heavily blotched with claret red.

Fruit and Vegetable Committee.

Present: Messrs. J. Chad, vice-chairman, G. P. Berry, E. Bayard, W. H. Divers, Geo. Kell, J. C. Allgrove, E. Beckett, A. Bullock, John Harrison, Owen Thomas, J. W. Bates, Wm. Peart, F. Jordan, and the Rev. W. Walls.

The only exhibit before the Committee was a new Red Currant named Titchcroft Beauty, discovered by Mr. H. Cross, Ovington Kent. The branches were very fruitful, and the berries large and brightly coloured.

TRIALS OF ORIENTAL POPPIES AND TALL BEARDED IRISES

The following Awards have been made by the Royal Horticultural Society to Oriental Poppies and Tall Bearded Irises after trial at Wisley.

ORIENTAL POPPIES

HIGHLY COMMENDED. Beauty of Livorno, sent by Messrs. R. Wallace and Co.; Bobs, sent and raised by Mr. Nottcutt; Boudicca, sent and raised by Messrs. Barr and Sons; Cerise Beauty, sent and raised by Messrs. Barr and Sons; Elsie G. Harkness, sent and raised by Messrs. R. Harkness and Co.; Felix, sent and raised by Mr. R. C. Nottcutt; Hesperia, sent by Messrs. G. Bunyard and Co.; Mrs. J. Harkness, sent by Messrs. R. Harkness and Co.; Mrs. Perry, sent by Messrs. Barr and Sons; raised by Mr. Amos Perry; Orange Globe, sent and raised by Messrs. R. Veitch and Son; Rose Queen, sent by Messrs. R. Wallace and Co.; Royal Scarlet, sent and raised by Messrs. Barr and Sons; Taplow Scarlet, sent and raised by Messrs. Barr and Sons; V. L. Harkness, sent and raised by Messrs. R. Harkness and Co.

COMMENDED. Silverbick, sent by Mr. R. C. Nottcutt.

TALL BEARDED IRISES

AWARDS OF MERIT. *I. Danianus*, sent and raised by Mr. A. J. Bliss, Tavistock; *I. pallida Dubouardii*, from Messrs. Forbes, Ltd., R. Veitch and Sons, and Wisley Gardens; *I. pallida Princess Patricia*, from Messrs. Barr and Sons and G. Bunyard and Co., Ltd.; *I. pallida Rev. H. Wells*, sent by Messrs. G. Bunyard and Co., Ltd.

HIGHLY COMMENDED. Le Réve, sent by Mr. Amos Perry; Mary, from Mr. G. Routh.

COMMENDED. Calypso, sent by Messrs. Barr and Sons and Mr. Amos Perry; Dawn, sent by Messrs. R. Wallace and Co.; Imogenza, sent by Mr. A. Perry and Messrs. J. Forbes, Ltd.; Rosa Lind, sent by Mr. A. J. Bliss.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JUNE 7.—Committee present: The Rev. J. Crombhelme (in the chair), Messrs. D. A. Cowan, J. C. Cowan, Dr. Craven Moore, J. Cypher, A. G. Ellwood, J. Evans, P. Foster, A. R. Handley, A. Hamner, A. Keeling, J. Lupton, D. McLeod, J. McNab, W. Shackleton, H. Thorp, and H. Arthur (secretary).

AWARDS.

FIRST-CLASS CERTIFICATE.

Miltonia Charlesworthii var. *Cynophum*, with flowers 3½ inches across, and *M. Isabel Sander*, with petals flushed with bistrotte and a mask of oriental purple, both from Dr. CRAVEN MOORE.

Cattleya Brinckiana var. *Ashworthiae*, flower white, with lip of brilliant colour, from R. ASHWORTH, Esq.

Cypripedium niveum var. *Dorothy Clare*, from the Rev. J. CROMBHELM.

Cattleya Mossiae var. *Barlow Snowdrop*, a large flower of good shape and colour, from S. GRAVIER, Esq.

Lobelia-Cattleya Domos Superba (*C. Mossiae* × *L. C. Dominiana*), a fine flower with lip of brilliant colour and nearly 3 inches across, from P. SMITH, Esq.

Odontoglossum Phoebe splendens (*viridulum* × *viridum*), from Messrs. J. and A. McBEAN.

AWARDS OF MERIT.

Cattleya Mossiae Madye and *Odontoglossum Prescottii grande*, both from P. SMITH, Esq.

O. Myos (*Harringtonii* × *Lambertianum*) and *Cattleya Mossiae Kitchener*, both from R. ASHWORTH, Esq.

Odontoglossum ciliatum Compueror, from J. J. BOLTON, Esq.

Miltonia Lyoth Cynophum, from Dr. CRAVEN MOORE.

Lobelia-Cattleya Aphrodite Lily Cowan, from S. GRAVIER, Esq.

CULTURAL CERTIFICATE.

To Mr. S. DAVENPORT, for a fine plant of *Cattleya Mendellii*.

GROUPS.

A *Silver-gilt Medal* was awarded to R. ASHWORTH, Esq., Newchurch (2r Mr. DAVENPORT), a *Large Silver Medal* to Messrs. CYPHER and SONS, Cheltenham; and *Silver Medals* to the Rev. J. CROMBHELM, Clayton & Moore (2r Mr. E. Marshall) and Messrs. SANDER and SONS, St. Albans.

HAARLEM GENERAL BULB GROWERS'.

The following Awards have been made by the various Committees of the General Bulb Growers' Society of Haarlem during February, April and May, 1917.

FIRST-CLASS CERTIFICATE.

Tulip Janice Watt.

AWARDS OF MERIT.

Narcissus pector *Olympa Globe* (creamy white, with dark orange-coloured cup); *N. p. Helios* (Single) (sulphur yellow, cup yellow); *Tulip The iris* (Single) (white); *Tulip Duo maximus* (Single) (yellow and white form); *Tulip albino* (Single) (large, white flower); *Tulip Orient* (Single) (copper salmon, striped); *Carnegie rose* and white, the petals on the outside shaded carmine rose); *T. Hesperia* (Single) (brilliant carmine); shaded, single); *T. Dalciana* (Single) (orange red, base yellow); *T. Sans pareille* (Double) (dark violet); *Tis pallida Inca* (standards clear violet, falls velvety violet); *Hyacinth Mr. J. H. Kersten* (Single) (orange red); *Hyacinth Cedra* (Double) (dark blue, shaded purple); *Narcissus Debora* (peri anth broad and round, crown pure yellow).

CERTIFICATE OF THE HAARLEM TRIAL GARDEN. Single *Hyacinth Petrusken* (blue); Single *Early Tulip Platressante*.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

JUNE 11. The monthly meeting of this society was held in the R.H.S. Hall on Monday, June 11, 1917. Mr. Chas. H. Curtis presiding. Two new members were elected. Two members over

the age of seventy years were allowed to withdraw £45 from their deposit accounts, and two members withdrew double amount of interest, amounting to £5 19s. 6d. Notifications of death were received of Privates G. F. Sanders and W. F. Bull, and the anns standing to their credit were passed for payment to their nominees.

The sack-py for the month on the ordinary side amounted to £50 18s., on the State Section to £18 16s. 8d., and maternity benefits to £9. Owing to the Registrar-General disapproving of a separate rule-book for the admission of juveniles, a special general meeting will be held on July 9, 1917, at 8 p.m., at the R.H.S. Hall, for the adoption of partial amendment of the existing rules.

Obituary.

GEORGE ABBEY.—We regret to announce the death, on the 1st inst., at St. Albans, of Mr. George Abbey, one of the best known of the older school of horticulturists. He was a keen gardener from his earliest years, and while still a young man attained considerable success in his profession. In later life his work was chiefly literary, and he contributed freely to the horticultural Press, principally to the *Journal of Horticulture*. He assisted the late John Wright in his popular work *The Flower-grower's Guide*. During recent years he made a special study of garden pests and diseases, and wrote freely on that phase of gardening, illustrating his notes by simple diagrams. Mr. Abbey attained some time since to the ripe age of eighty-one, and retained to the last all his faculties. His illness was very short, having become serious only a week before his death. His wife died some seventeen years ago; he leaves three sons and one daughter.

CROPS AND STOCK ON THE HOME FARM

THE PLOUGHING UP OF GRASS LAND.

THE appeal to farmers by the Government to increase the amount of arable land in the country by 5,000,000 acres for the season 1918 presents difficulties to the farmer. Each county has been asked to plough a certain acreage; in this county, Hampshire, the amount is 90,000 acres. Many persons set too much store on grass land for hay, whereas in many instances the land could be made much more profitable under arable cultivation. A much greater bulk of hay can be obtained by high cultivation and the growing of rotation grasses such as Clover and Italian Rye, than by ordinary methods. Many acres of permanent pasture produce only one ton of hay per acre, or less, whereas as much as three tons per acre can be obtained from rotation crops. The hay from the latter, too, is of much more value to the Army than meadow grass. For milk cows grass must be provided. In this county the allowance is three acres per cow; in some instances—for cheese-making 3½ acres is the rule.

If the pastures are rich in herbage, and other foods, such as Mangold and Cabbage, can be obtained from arable land, two acres per cow are ample. On this principle there need be no hesitation in ploughing up certain grass fields, even where cows are an important item of the farm; but the needs of young stock must be considered also. Many persons cling to their pastures on the score of economy in cultivation, which was a matter for consideration when crooks were a low price. Land under arable cultivation is much more productive when in corn and cattle food than in grass, and on that principle farmers should not hesitate to alter their methods. The Government do not wish that grass should be ploughed up indiscriminately; they know quite well that good pastures cannot be made without expense. At one time it was thought the bulk of the 7,000,000 acres was required for Wheat alone for 1918. That impression is not true, as any cereal crop may be grown. This option renders the work of preparation easier.

PREPARING FOR THE 1918 WHEAT CROP.

For Wheat to be grown during 1918, no time should be lost in preparing the land. There are

two methods of preparation: (a) First plough the sward 2 inches deep with a view to killing the grass by exposure to the sun and wind; plough again, this time crosswise, at the same depth, and in the disintegration of the ground. If this work is well done during the next three months, there is a good prospect of success, as much labour for wireworm will have been removed. A dressing of farmyard manure at the rate of 15 to 20 tons per acre should be evenly spread and ploughed in this time to a depth of 5 inches, which will be sufficient to bury the loose turf. Press the land firm as the ploughing proceeds, and sow the Wheat as soon in October as convenient. The above method is a good way of dealing with stiff land. (b) Soil of a light character should be dealt with as follows: Skim the surface, plough and press the land at once 5 inches deep, and sow with Mustard at the rate of 20 lb. per acre. In ten weeks the Mustard should be from 1 foot to 2 feet high; it can then be felled off to sheep or ploughed in, pressed, and sown with Wheat at will. Mustard, even without manure, is a good preparation for Wheat. Mustard, too, beyond its manurial properties, counteracts the attacks of wireworm. Sulphate of ammonia applied at the rate of 1 cwt. per acre at sowing time would accelerate growth, and thus mitigate wireworm attack. Where Oats or Barley are to be sown, there will be more time for the necessary preparations, as the land need not be ploughed until February. The grass in the meantime can be fed to stock *E. Molyneux*.

SEED WHEAT OF THE 1917 CROP.

IN view of the importance of providing seed Wheat for next year's harvest, the Government propose to acquire pure stocks of certain of the best plentiful varieties of autumn Wheats. Crop in adequate quantity found after inspection to be suitable for seed will be purchased at a substantial premium above the milling price. Farmers with pure crops of not less than 20 acres of the following varieties, viz. Wellington, Victor, Little Bess, or Browick, are requested to communicate in care with the Director-General, Food Production Department, 72, Victoria Street, London, S.W. 1.

In writing to the Department, the correspondent should state his name and address, the variety of Wheat, the area sown, and the location of the crop.

ANSWERS TO CORRESPONDENTS.

ARABIS SEROTINA. *W. D.* There is no fungous disease present on the plant of *Arabis serotina*. The unsatisfactory condition of growth is due to some wrong cultural treatment.

CHERRIES DROPPING. *C. M. L.* Cherries often turn yellow and drop after they have grown about the size of Peas. The trouble may be due to one or more causes. If growth is enfeebled, the fruits may fall at the storing period, whilst a lack of lime in the soil may be responsible. Let the wood receive plenty of sunshine to favour its ripening, training the shoots well apart to allow the sunshine to enter the tree. Fork old mortar rubble or other material containing lime into the soil.

DYING PEAS. *J. B.* Certain varieties of Peas can be dried for winter use, including Little Marvel. The Peas can be left, pods and all, on the plants, and dried by the sun, or, if the season is wet, either the whole plant can be pulled up and dried hanging in an airy shed, or the pods can be gathered and the Peas dried in trays. The former method results in most success, but in any case the dried Peas, when cooked, will not have the colour or flavour of fresh ones. They must be soaked in water with a little carbonate of soda for twenty-four hours before cooking, and be boiled for about an hour in water alone.

INSECTS ON BOX. *J. H. S.* The small greenish-yellow fly present on your bushes is a common pest of the Box. Spray the plants with a nicotine compound.

NAMES OF PLANTS. *J. J. H.* *Hyoscyamus niger* (Hebanth). *G. E. C.* 1, *C. Coenocentrum frigidum*; 2, *Pyrus rotundifolia*. *C. Carlisle*,

Aesculus flava var. *sanguinea*. *Caplain* 1, *F. B.* *Prunus cerasifera*, the Cherry Plum; 1, *L. L.* 1, *Robinia hispida*; 2, *Deutzia crenata* *flora plena*; 3, *Clematis* sp.; 4, *Clematis recta*; 5, *Codonaster Simonsii*; 6, *Spiraea canescens*. *J. D. H.* *Polystichum venustum*. *O. B.* *Kent*, 1, *Amaryllis reticulata*; 2, *Zephyranthes carinata*; 3, *Maranta regalis*; 4, *Dieffenbachia speciosa*. *F. F. H.* 1, *Jasminum Sambac flore pleno*; 2, *Peperomia arifolia*; 3, *P. recliniflora*.

PEAR MIDGE. *J. P.* The Pear tree is attacked by the Pear Midge. You cannot usefully do anything this year, but next spring hand-pick all abnormally swollen fruits. If possible, remove and sterilise the surface soil; or, as an alternative, apply a good dressing of Kaint to the ground, or an application of ground insecticide immediately before the perfect insects emerge in the spring.



FIG. 3.—THE PEAR MIDGE. (1) Young larva cut open, showing larvae inside; (2) larva, not so large; (3) larva, magnified; (4) male terminal joints of the antennae; (5) male terminal joints of the wing; (6) middle joints of female antennae; (7) female ovipositor.

PEAS FAILING. *I. C. N.* Edworms were present in some of the plants, and the mycelium of a fungus was also present. Destroy all badly affected plants by burning.

POTATO FAILING. *H. S. E.* The Potato is not affected by specific disease due to fungous or insect pest. The failure of the foliage to develop is probably due either to some error in cultivation, or to inherent weakness in the seed.

POTATO EATEN BY MOTH. *T. L.* The Potatoes are attacked by the Rusty Moth (*Hydracra nuceana*), which is now in the larval or grub stage. It is not a very serious pest, but you should pick off all the parts of the haulm which are attacked and burn them.

Communications Received. W. S. R. (Thanks for 25, 30, 40, 50) D. N.—F. A. F., M. N., N. G., G. A., W. E., B. E., C. S. M., R. S. and G. P. H. C. R. D. W.—J. E. H., B. D., J. G.—W. J. G., C. A. B., T. C.—J. H. H. F. A. W., W. J. H., A. L. C. S.—E. K. H. M., P. E. M., W. F. R. J. M., W. T. S., D. C. C. S. S., W. T. F. H. H. J. L., H. T. S., A. B., G. W., B. C.

MARKETS.

COVENT GARDEN, July 7.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots such as Aralia Sieboldii, Asparagus, and various ferns with their respective prices per dozen or per pot.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers such as Achillea, Aist-cornelia, and various carnations with their prices per dozen or per bunch.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage such as Adiantum, Asparagus plumosus, and various ferns with their prices per bunch.

REMARKS.—White Pinks are practically over, and the only white flowers available are Anthea The Pearl, white Stocks, and Pelargonium. The first arrivals of Asters are expected in a few days. Hardy flowers are in demand,

and the supply is only moderate. Spanish Irises are over, and Gladioli are of very poor quality. White and mauve Sweet Sultan are arriving in excellent condition, and find a ready sale. There is a limited supply of Scotch Peas, and prices are a trifle higher. Libanus longiflorum and L. lanceifolium are arriving in better condition, but prices remain firm.

Vegetables: Average Wholesale Prices.

Table listing vegetables such as Artichokes, Asparagus, Beans, Beetroot, Cabbages, Cauliflowers, Carrots, Cucumbers, Garlic, Greens, Herbs, Horseradish, Leeks, Melons, Onions, Peas, Potatoes, Radishes, Shallots, Spinach, Turnips, and Watercress.

Fruit: Average Wholesale Prices.

Table listing fruits such as Almonds, Apples, Aubergines, Cherries, Currants, Dates, Figs, Gooseberries, Grapes, Lemons, Melons, Nuts, Peaches, Raspberries, Strawberries, Tomatoes, and Walnuts.

REMARKS.—A good supply of Victoria Apples and Peas are still on offer, they have not sold so readily as anticipated owing to the fact that many other fruits are in season. Grapes, Peaches, Nectarines, and Figs are plentiful but Melons are scarce and dear. Supplies of Strawberries are well in demand and Raspberries are coming in. Grapes, Peas, and other vegetables are plentiful. With regard to cherries there are some good supplies of the following varieties: Early Hovey's, May Duke, and Lion Heart. Marrow and cucumber are in limited supply. Early Potatoes are very plentiful. F. H. E. Covert, Covent Garden Market, July 7, 1917.

GARDENING APPOINTMENT.

Mr. J. Bowyer, 20, Goodwood Street, LAMBETH, E.C. 4, has a large stock of Garden Appliances, Garden Tools, Garden Hose, Garden Sprayers, Garden Rollers, Garden Carts, Garden Arches and Hand Lights, which he shall be pleased to clean at special prices, subject to being used.

SCHEDULE RECEIVED.

Vegetable Fruit and Flower Show to be held at Hampton Park, Bury, on September 1, 1917, in aid of the funds of the Red Cross Society. Hon. Sec., Mr. H. G. Brown, Hampton Park Estate Office, Putney, Bury.

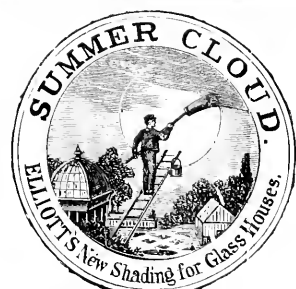
ROSES (Vol. 10 of PRESENT DAY GARDENING), by H. R. DARLINGTON

Edited by R. HOOPER PEARSON, Managing Editor of "Gardeners' Chronicle."

A good practical book for all Rose lovers. Contains much valuable information. 8 full-page coloured plates. A double volume. Price 2/10, post free. Special presentation edition with beautiful cover design, in cloth gilt, gilt top, price 3/10, post free.

THE PUBLISHER

"Gardeners' Chronicle" Offices, 11, Wellington Street, Covent Garden, London, W.C. 2.



Registered No. 14629.

AND FOR ALL GLASS STRUCTURES THAT REQUIRE OUTSIDE SHADING.

The only Genuine, Original, and Improved Article. It has been in general use for OVER 35 YEARS.

BE SURE TO ASK FOR SUMMER CLOUD AND SEE THAT YOU GET IT!

Sold by all Dealers in Horticultural Sundries throughout the Kingdom. In packets containing 8 ozs., for 100 feet of glass, 1s.; 24 ozs., 2s. 6d.; and in bags of 7 lbs., 10s. 6d.; 14 lbs., 20s.

CORRY & CO., Ltd., Bedford Chambers, Covent Garden, LONDON, W.C.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being used.

Particulars on application. BOULTON & PAUL, Ltd., ROSE LANE WORKS, NORWICH.

THE Vegetable Garden.

This is an English translation, made by Mr. W. Robinson, of the celebrated work by the world-famous growers,

MESSRS. VILMORIN, ANDRIEU & CO.,

of Paris. There are no market growers to equal the French, and in this work English readers will find placed at their disposal, in readable and interesting form, all the experience and knowledge of centuries of successful cultivation. All the principal vegetables, including many which are at present unfamiliar to English growers, are fully dealt with; and numerous clear and informative illustrations give point to the instructions contained in the text.

EVERY FOOD PRODUCER

should obtain a copy of this book, which will enable him to get the very best results out of the ground at his disposal.

PRICE 15s. NET.

From THE LIBRARIAN, 41, WELLINGTON ST., STRAND, W.C. 2.

By Special Appointment to  His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

THE HORTICULTURAL DIRECTORY AND YEAR BOOK.

INDISPENSABLE to EVERY GARDENER and NURSEYMAN.

In this, its Fifty-Eighth Year of Publication, this indispensable work has undergone a thorough revision. Every page has been purged of out-of-date, obsolete names, fresh ones added, and the whole work brought up to date. Numerous Fresh Features have been introduced, including a

CALENDAR OF GARDEN OPERATIONS
AND A LIST OF
NEW PLANTS FOR THE YEAR.

Another interesting feature is a set of Short BIOGRAPHICAL NOTICES of **PROMINENT HORTICULTURISTS and NURSEYMEN** who have passed away during the year. Thus, by obtaining this DIRECTORY at the beginning of each season, one is enabled to keep pace with passing events in the horticultural world. There are still for sale a few copies of the current edition.

SEND FOR ONE AT ONCE TO

The LIBRARIAN, 41, Wellington Street, Strand, W.C. 2.

PRICE 1s. 4d. Post Free.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841.

No. 3994

No. 1594, Vol LXII. {THIRD SERIES}

SATURDAY, JULY 14, 1917.

{Registered as a Newspaper.} {PRICE 3d. POST-FREE, 3jd.}

SUBSCRIPTION—Inland, 15/-; Foreign, 17/6 {22/6 per annum} Entered at New York Post Office as second-class matter. Telephone—Gerrard 1543.

For CONTENTS see page 11.

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note that the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week MUST reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

To replace Dutch Bells for next Spring flowering six new British flowers.

SUTTON'S WALLFLOWERS.

Sweet-scented flowers of brilliant colour.
Sutton's Fire King, vivid orange, per packet, 1s. 6d.
Sutton's Giant Vulcan, brilliant crimson, per packet, 1s. 6d.
Sutton's Orange Bolder, a very striking colour, per packet, 1s.
Sutton's Cloth of Gold, bright yellow, per packet, 8d. & 1s.
Sutton's Superb, mixed, per packet, 1s. and 1s. 6d. Post free.

SUTTON & SONS, The King's Seedsmen, READING.

LAXTON'S STRAWBERRIES

FINE EARLY POT PLANTS for forcing or outdoor planting, of King George V, Royal Sovereign, Arc, jets, 20s, 130 (jet) ground, 6s, 100 (Laxton), the grand new Mar jet, jets, 20s, 100 (jet) ground, 20s, 100. Illustrated catalogue, with cultural hints and description of all the new and older sorts gratis—LAXTON BROS., Bedford.

BARR'S VEGETABLE SEEDS for July to September Sowing. Special list post free—BARR & SONS, King Street, Covent Garden, London.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilizers; also Dickson's Improved Mushroom Spaw, Fished on manure free on application to DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.

WAL DUNCAN TUCKER & SONS, LTD., Lawrence Road, South Tottenham, Conservatories, Winer Gardens, Vines, Peach-houses, Portable Buildings, &c. Catalogues gratis.

OUR list of Vegetable Seeds, suitable for summer sowing, always ready, and will be sent post free on application. DOBBIE & CO., Seedsmen to the King, Edinburgh.

WATERER'S ALPINES, HERBACEOUS PLANTS and WATER LILIES. Large stocks of the best and most popular varieties. Descriptive Catalogue free.—JOHN WATERER, SONS & CRISP, LTD., The Nurseries, Twickenham, Berks.

POTATO SPRAYING. On spot ready for immediate delivery. Sulphate of Copper 98 per cent., pure Washing Soda 98 per cent. Write for prices and quantity required per acre.—G. H. RICHARDS, 234, Borough High Street, London, S.E. 1.

J. GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3, Wye, 201, Western, London, Telephone 201, Western.

SPRING CABBAGES.—The best varieties to sow during the early part of August. Order at once.

SUTTON'S HARBINGER CABBAGE.

The earliest Cabbage for Spring Cutting. Per packet, 1s. 6d. per ounce, 1s. 6d.
Trial of Autumn Cabbages. A trial of no less than 114 stocks, representing 94 sorts, was made at Witley last year. . . . It will be noticed that Sutton's Harbinger is the only sort that did not show any signs of autumn rot and spring-sowing. "The Field," June 17, 1916.
Cabbage Harbinger is a capital variety. I sowed some seed in July, and now (January 10, 1917) I am cutting some lovely heads. —Mr. A. F. Coles, The Gardens, Wallasefield, Creydon.

SUTTON'S APRIL CABBAGE.

The most popular early Cabbage for garden use. Per packet, 1s. 6d. per ounce, 1s. 6d.
"The April Cabbage" you all possess me with last year have done wonderfully well, hardly a plant has been destroyed by the severe winter, and they are now coming in very useful."—The Rev. F. J. Briggs, May 4, 1917.
The April Cabbage, raised from seed sown by you last year, was wonderful. They were a really heavy batch of plants, and not one bolted! —Mr. H. Bryant, Framfield.

SUTTON'S FLOWER OF SPRING CABBAGE.

The most suitable for the general Spring crop. Per packet, 1s. 6d. per ounce, 1s. 6d.
My bed of Flower of Spring Cabbage was well worth a photograph, and looks better than any others in the neighbourhood. —W. Webb, Esq., Dursley.
"I consider your April and Flower of Spring the best Cabbage in cultivation. Last September I planted 2,000 of each, and in the whole plantation there were but four plants not true to character. The bulk of these are being sent to the Food through the Vegetable Products Committee."—Mr. T. R. Scholey, Kilsython Gardens.

SUTTON & SONS, The King's Seedsmen, READING.

GISHUR'S COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Green American Blight and Brown Fly, &c. Sold in boxes about 1lb., 3lb., and 12lb., by Dealers in Garden Supplies. Wholesale: PHOENIX PATENT CANDLE CO., LTD., Battersea, London, S.W. 11.

EVERY GARDENER'S LIBRARY contains a certain number of indispensable books. Some gardeners have a small library, others a pretty complete collection of modern books on cultivation, some few are the fortunate possessors of books on every phase of gardening, both old and new, from the early Herbals to the last new American Crispia. There is one little book which should be found on the shelves of every gardener, young or old, literary, scientific, or practical, and which is consulted a thousand times a year by those who possess it. That is the "Horticultural Directory and Yearbook." There is so much in it. It is a veritable mine in parvo. This year it is smaller than usual, because it has cast off a dead weight of out-of-date, obsolete names; but it is steadily growing again, and is already preparing fresh names for the 1918 edition. There are still some copies left of the present year's issue. The price is 1s. 4d., post free. Do not let your library remain incomplete for lack of this indispensable volume. Send for it to the Librarian, "Gardeners' Chronicle," 41, Wellington Street, Covent Garden, W.C. 2.

BRITAIN'S GREAT CABBAGE.

WEBB'S EMPEROR CABBAGE. (For July and August sowing.)

Earliest, best, and most popular Cabbage in cultivation. "Remarkably free from any tendency to 'bolt.'" 6d. and 1s. per packet, 1s. 6d. per ounce, post free.
Mr. G. Ellwood, Head Gardener to W. H. Myers, Esq., Swanmore Park, writes: "I should like to testify to the excellence of your Emperor Cabbage; it is really a gem, fit for private gardeners or market growers alike, and of splendid quality."

WEBB'S FAVORITE CABBAGE. Early medium sized heads, of splendid quality. 6d. and 1s. per packet, 1s. 6d. per ounce, post free.

WEBB & SONS, LTD., The King's Seedsmen, Stourbridge.

BUNYARD'S STRAWBERRIES.

Our new 4-shilling list is now ready, and will be on receipt of card.
ALPINE STRAWBERRIES a specialty.
GEO. BUNYARD & CO., Ltd., Royal Nurseries, Midsalme.

SANDERS, Orchid Growers, 81, Abchurch Lane, London, E.C. 4.

GREENHOUSE PAINTING & GLAZING.

"Vitreum," superior to White Lead Paint. "Pistone" super-durable putty. Full particulars from W. CARSON & SONS, Grove Works, Battersea, Agents throughout the country.

B. EDDY & SONS, Torloven Works.

Bathelven, Cornwall, The largest manufacturers of GARDEN NETTING in the KINGDOM, NEW STOUT and specially strong SQUARE MESH NETTING, half-inch and one-inch mesh, at 4d. per square yard. LIGHT NEW square mesh, suitable for Strawberry Beds, at 5d. per square yard.

These Nets are bound all round with stout cord, and over them measured length and width. Any length or width supplied.

Repaired Nettings in all sizes in stock. State your requirements, and we will quote lowest prices.

Also makers of TENNIS NETTINGS, RICK COVERS, GREENHOUSE SHADINGS, WASP NETTINGS, PACKING and TARKED TWINES of all kinds.

All Goods sent by PASSENGER Train, CARRIAGE PAID, on receipt of order.

SPORTSMEN, Farmers, Horsemen, try

our splendid Yorkshire Whippoor Tweed; wears like leather; showerproof; 7 yards for 17s. 6d. Patterns free.—BRADFORD WOOLLEN CO., 71, Bradford.

FOR SALE, 300 400 strong Wooden Boxes,

2 iron hinges, hasp, and fastener; assorted sizes, 22 by 14 by 5, 22 by 14 by 24, 15 by 15 by 7, 15 by 15 by 5, 12 by 8, 12 by 8, 12 by 15, 21 by 15 by 5. Best offers. Will send samples. HENSTER'S DAIRIES, LTD., Chair, Somerset.

100,000 LARGE GARDEN FERNS.

200,000 100, Palms, Begonias, Crotons, Dracenas, Roses, Knives, Gloxinias, Lilies, Hydrangeas, &c., catalogues free. J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

SALES BY AUCTION.

In Bankruptcy. By Order of the Trustee.
Re A. W. Ker (trading as R. P. Ker & Son).

AIGBURTH, LIVERPOOL.

Three minutes from Cressington Station (Cheshire Lines).
Frequent trains from Liverpool pass the Nursery.
MESSEURS. PROTHEROE & MORRIS
have been favoured with instructions from the
Trustee, to sell by auction, on the premises,

**THE NURSERIES, AIGBURTH,
LIVERPOOL.**

On Tuesday, July 17th, 1917, and following day
if necessary, at 11 o'clock precisely,

the well-known stock of R. P. Ker & Sons, consisting of
5,000 PALMS, including 200 fine specimens, 4 to 12ft.,
Japanese Maples, Specimen Bamboos, 10,000 CYCLAMEN,
Ker's celebrated strain, 1,000 Ties, and other stock. The
universally known Amaryllis

COLLECTION OF AMARYLLIS.

which has been so successfully exhibited at the
principal shows; also the whole of the General Nursery
Stock in the ground, including Hollies, Rhododendrons,
Ornamental Trees, Heraceous Plants, &c. Contents of
Seed Shop and Office, Iron Safe, Office Furniture, Weighing
Machines, Tools, and Sundries. Thousands of Flower
Pots, Three Curts, Harness, Barrows, and numerous other
effects.

The whole of the stock and utensils as described (ex-
cepting the Amaryllis) will be first offered in One Lot,
including the Name and Goodwill of the Business, and if
not thus disposed of, then in detail as catalogued. The
Amaryllis will also be offered in One Lot, thus affording
the opportunity of acquiring the whole collection in its
entirety. The Outside Stock will also be offered as a
whole, with arrangements for removal during the autumn.

May be viewed one week prior to the sale. Catalogues
may be had on the premises. The Trustee, Harold
Sedler, Esq., Chartered Accountant (Messrs. Finney, Son &
Sedler), 51, North John Street, Liverpool; and of the
Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

ORDER of ALFRED NEILL, ESQ., TRUSTEE for MR.
and MRS. GARFORD

**Station Approach Floral Nursery, at rear of
Stoke Newington Station (G.E.R.), N.16.**

FISHER, STANHOPE & CO are in-
structed by the Trustee to Sell by Auction on the
premises as above.

On Thursday July 19th, 1917, at 1 o'clock.

Five large Greenhouses, with 44 and 4in. hot-water pipes
and fittings, a 6ft. Reclining Tubular Boiler, by Kinnell
and Co., 34 6ft., 4 4ft. LIGHTS and FRAMES, 6
Sheds, 1 Lawn Mower by Kinsmen and Green, 2 Iron
Rollers, Water Tanks, Tools, Barrows, Garden Ties,
quantity of Flower Pots, &c., 20 Standard Bay Trees, 20
Palms, 50 Hydrangeas, Geraniums, Arabis, Ferns, &c.,
&c., 8 reams White Tissue Paper, 12 packets Brown
Paper Bags, 12 dozen Folding Waddy Boxes, &c., 100
top Containers, Mirrors, Scales and Weights, Typewriter,
a 5ft. bin, hinged and glazed Show Case, National Cash
Register, large quantity of coloured Ball Bowls and
Fern Pots.

On view day prior, 10 to 4. Catalogues of the Trustee,
Alfred Neill, Esq., 76, Kingsland High Street, E. 8, and
of the Auctioneers, Fisher, Stanhope & Co., next Stoke
Newington Station (G.E.R.), and Commercial Street
Chambers, E.C. Tel., Dalston 1873.

BUSINESSES FOR SALE.

**FOR SALE, as a going concern, NURSERY
BUSINESS, 500ft. Glass, 2 acres land; Southend dis-
trict, R. F. Box 7, 41, Wellington Street, Covent Gar-
den, W.C. 2.**

**LET or SOLD, low rental, Stocked Nur-
sery, Tomatoes, &c., Orchard, 6 acres land in profit,
death of owner, Fallowton, Cants. MR SHIRBURN,
Huxton.**

NOTICES.

**FAMOUS GARDENS IN
WAR TIME**

How they are being maintained with reduced staffs.
An exceedingly interesting series of interviews now
appearing in the popular gardening weekly,
"GARDEN LIFE."

This week's interview is with Mr. Bustin, of Biscot
Park, Farnham. Get a copy today, it will interest
and help you. Price 2d. of all newsagents, or post free,
2d. of The Publisher, Hatton House, Great Queen Street,
London, W.C. 2.

PUBLIC NOTICE.

THE Partnership of BARR & HUNTER
Gardeners and Florists, having been dissolved by
mutual consent, the Subscriber now intimates to his
many friends and acquaintances that he is starting busi-
ness on his own behalf in that conspicuous shop and
warehouse at 66, Blandford Street, Duffries, under the
trade name of Barr & Son, where Vegetable and Flower
Stocks of only the most superior quality will be stocked,
as well as all kinds of Garden Sundries.

DAVID BARR

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS,
old plants suitable for stock; cash or exchange
See other advertisements; catalogues free.—SMITH,
London Fern Nursery, Loughborough Junction, London,
S.W.

PLANTS, &c., FOR SALE.

FERNS! FERNS!—Tree Ferns, Climbing
Ferns, Basket Ferns, Stove and Greenhouse
Ferns, Hardy Garden Ferns; catalogues free.—J. E.
SMITH, London Fern Nursery, Loughborough Junction,
London, S.W.

PALM (Chamaeops Fortunei), height 9
feet; perfectly hardy; outgrowing Greenhouse
reason for selling. FLEWIN, Gardener, Stowell Park,
Denbury, Wilts.

TUBEROSES, double African Pearl, just
arrived, for winter flowering; extra large bulbs,
2s. doz., 15s. 100, sent free any address, for cash.
MOORE & CO., 150-156, Finchley Road, N.W. 3.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two),
6d. for each succeeding line.

PRIVATE.

**THE UNIVERSITY OF LEEDS
DEPARTMENT OF AGRICULTURE.**

Applications are invited for the position of additional
lecturer in Horticulture, commanding salary £350 per
annum, a man or woman with sound horticultural train-
ing is required. Applications will be received up to 25th
July, 1917, and should be addressed to The Secretary,
The University, Leeds, from whom further particulars may
be obtained.

WANTED, HEAD GARDENER: must
be married (without family) and thoroughly ex-
perienced, good cottage provided. Address with full
particulars to S., Buckhurst Park, Assot.

**WANTED, HEAD WORKING GAR-
DENER,** 2nd-all-round man; able to maintain
supply of Vegetables for large establishment, under Glas-
house, Peaches, Grapes, Tomatoes, Cucumbers. Plants
(including orchids) for house and bedding; good wages,
cottage, coal, and vegetable provided (not milk or light).
Applications, with testimonials (copies), in first in-
stance, to H. W. EVANS, Nurseries, Llanishan, Cardiff.

**WANTED, WORKING HEAD AS GAR-
DENER** BALFHEE, for private estate of 60 acres,
in Kent, must have knowledge of stock, able to milk,
pontry, cottage, coals, vegetables, and milk supplied.
State wages, personal references essential. M. T. Box 2,
41, Wellington Street, Covent Garden, W.C. 2.

**WANTED, WORKING HEAD GAR-
DENER;** thoroughly experienced in all branches
and ineligible for military service, wages 35s. per week,
with cottage and coal. Apply, giving references and
copies of testimonials, to MESSRS THOS FAIR & SON,
Estate Offices, Lytham.

**WANTED, HEAD WORKING GAR-
DENER,** thoroughly experienced at inside and
outside work; personal reference from last employer
required, good wages and cottage. State full particu-
lars, age, &c. MRS LECAS, Bramblehurst, East Gun-
stead, Sussex.

**WANTED, HEAD WORKING GAR-
DENER;** man and boy kept, cottage provided,
must have excellent references. Apply, C. L. G. MOORE,
Apples, Hall, Atherton.

**WANTED, HEAD GARDENER (WORK-
ING);** ineligible; good knowledge Vegetables, Fruit,
Vines, &c. country, half-hour's train London.—ADDRESS, stating
age, single or married, family, experience, height,
locality, wages required, inclusive of cottage, ADVERTISER,
Ridgeland, Shenley, Herts.

GARDENER; ineligible; good Head Work-
ing; Fruit, Flower, and Vegetable Gardens, Green-
house; cottage provided; preference given to man under-
standing electric light plant.—Write, P. BURNES,
Ridings House, Detham, Bucks.

WANTED, GARDENER, Cheshire, to
take charge, with 2 assistants, must be thoroughly
qualified; Vines, &c., motor mower, cottage. State par-
ticulars, experience, references, &c., and wages expected,
to Box E, 222, Lee & Nightingale, Liverpool.

WANTED, GARDENER (ineligible);
experienced Inside and Out; Vinery, Orchard
House, some Orchids; second man kept.—Apply, with full
particulars, to E. T. BOWLE, Mill House, Salisbury.

WANTED, good GARDENER; help
given; ineligible; must be experienced Inside and
Out, good cottage, State wages and all particulars.—
H. A. MATTHEWS, Torwood, Northwood, Middlesex.

**WANTED, good WORKING GAR-
DENER** for near Swansea; one other man kept;
no family; small cottage.—Write, stating full particulars
of age, wages required, to MRS. HENFAGE, 12, Wilton
Crescent, S.W. 1.

**WANTED, GARDENER (Inside and
Out);** ineligible; wages 25s. per week, with Beds;
—Apply, every third week, R. E. STREET, The Lodge,
Ebbingham, Surrey.

WANTED, good all-round GARDENER;
over military age; Fruit, Vegetables, Flowers,
small Greenhouse, help given; good wages.—Apply, with
particulars, SIR MARSHALL BETH, Woodcote Lodge,
Epsom, Surrey.

**WANTED, GARDENER, at once; single-
handed, handy man; experienced; 25s. and a
large, VICAR, Gerrards Cross, Bucks.**

**WANTED, GARDENER, an experienced
man, for about 1 acre under cultivation, no Glass;
Herbaceous Borders, Lawns, Vegetables, and Fruit—
Apply, Woodlands, Sanderstead Road, Croydon.**

**WANTED, SINGLE-HANDED GAR-
DENER;** Kitchen and Flower Hand; small
Greenhouse; wages 25s.—Apply, MISS WIGRAM, Chestnut
Lodge, Cobham, Surrey.

**WANTED, SINGLE-HANDED GAR-
DENER,** wages 32s. 6d.—BIRKENSHAW, Rose-
walk, Purley, Surrey.

**WANTED, an experienced married man
to take charge of Pleasure Grounds; ineligible or
over 45; permanency to good man; a modern cottage
provided, also Man to assist in Houses.—Please state full
particulars and wages required to J. L. MARWOOD, The
Gardens, Busbridge Hall, Goldingham.**

**WANTED, a MAN, to work chiefly under
Glass, discharged soldier or ineligible. Apply,
with full particulars and wages required, with hobby,
milk, and vegetables—F. C. PUDDLE, Stumpston Hall
Gardens, Rillington, York.**

**WANTED, a good MAN, to take charge
of Glass, Fruit, and Plants, state past experience,
30s. and furnished room. W. SMITH, Bookham Grove,
Bookham, Surrey.**

WANTED, SECOND GARDENER; over
military age; must be experienced Inside and
out, 25s. and Beds. Apply, giving full particulars, to
HON MRS F. COLBORNE, Nonsuch Park, Chessin,
Surrey.

WANTED, SECOND GARDENER for
Pleasure Grounds and Kitchen Garden; married;
ineligible. Full particulars to E. DERRHAM, Holme Park,
Ashington, North Devon.

WANTED, UNDER-GARDENER having
good experience and references; single and in-
eligible; liberal wages—Apply, T. ELLIOTT, Norton
Manor, Sutton Seeotney, Hants.

WANTED, UNDER GARDENER for
house; outside; duty alternate Sundays, pumping in
house, wages 25s. per week, good cottage and garden,
milk.—Apply, stating age, particulars, to ALFRED
CHILD, Cately House Gardens, Daventry, Northants.

WANTED, UNDER GARDENER, to
run paraffin engine, electric light, and general
utility, live out; wages 30s., 35s.—OWNER, Bakenham
House, Englishfield Green.

WANTED, UNDER GARDENER;
Flowers, Fruit, and Vegetables. Full particulars
to PERSELL, Sutherland House, Weybridge, Surrey.

**WANTED, UNDER GARDENER (inelig-
ible), with good general knowledge; married or
single; house or lodgings found, wages 25s. per week,
overtime and Sunday duty paid.—Full particulars, with
copies of references, to G. HATCH, Conenham Park
Gardens, Aldenham, Suffolk.**

WANTED, UNDER GARDENER;
single, 2nd-aid wages.—Apply, with all particulars,
to A. GROSS, The Firs, Glaston.

COAL

WARNING!

THE
GOVERNMENT
PROPOSES TO

**X RATION
COAL X**

LATER ON.

Large Horticultural Anthracite and Cobbles.

Get YOUR Winter Stock in NOW!!!

Now is the time to place your order - PRICES are LOWEST and DELIVERIES are PROMPT. You can easily secure a full supply NOW, but later on supplies will be uncertain, deliveries will be uncertain, while prices will go up—in fact, you may not be able to get coal at all. Be on the safe side and get YOUR supplies in NOW. OUR coals do NOT deteriorate by being stored.

NOW—while you read this advertisement is the time to take the matter in hand and send in YOUR enquiry for PRICES.

T. T. PASCOE, York Chambers,
SWANSEA.

Sole Agent for the
AMMANFORD and PONTYBEREM COLLIERIES.

For Greenhouses and House Furnaces.

SCW
Bull's
THE FOOD FOR PLANTS

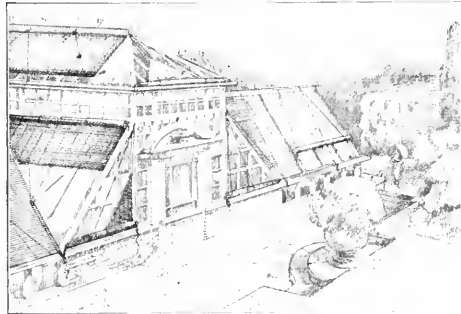
SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
*State quantity of each size required and name "carriage pass" quotation ("carriage" frequently amounts to half value of goods) or write for Price List, free.
SPECIAL POTS of all descriptions. Bulb Bowls and Fern Pans from 2d. each.
RICHARD SANKEY & SON, LTD.
Bulwell Potteries, NOTTINGHAM.

PRIMULA.

Extra Strong Flowering Plants of Primula Carpata 4 - doz.
KEYWOOD, Burnfoot Nursery, Cardross, N.B.

BAMBOO BLINDS for GREENHOUSES.

SIZES
IN STOCK
FROM
10ft. x 8ft.
TO
15ft. x 15ft.



PRICE LIST
SENT
POST FREE
ON
APPLICATION

J. AVERY & CO, Horticultural Blind Makers

51, GREAT PORTLAND STREET, LONDON, W. 1.

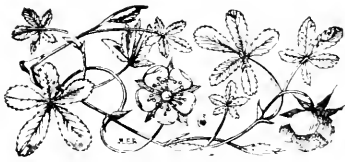
**EVERY
GARDENER
KNOWS
THAT**

Clay's gets there
and makes the Garden
gay all the year round

Sold everywhere in TINS at 6d. 1/6, and in BRANDED & SEALED BAGS: 7lbs. 2s. 6d., 14lbs. 4s. 6d., 28lbs. 7s. 6d., 56lbs. 12s. 6d., 112lbs. 20s. Or direct from the Works. Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mfrs. & Bone Crushers, STRATFORD, LONDON E.

**IT IS THE
STANDARD
FOOD FOR
PLANTS.**



THE
Gardeners' Chronicle

No. 1591.—SATURDAY, JULY 14, 1917

CONTENTS.

Alldenharn, food production at ..	12	Market fruit garden, the ..	11
Requests to gardeners ..	16	Natural diploma in horticulture ..	16
Banberry culture ..	17	Obituary ..	19
Books, notices of—		de Villemorin, Philippe ..	19
Vegetable ..	14	Orchid notes and gleanings—	
Vegetable Culture for All ..	14	Cattleya Mendibit, a normal flower of ..	13
Cantua barxifolia ..	18	Hybrid Orchids ..	13
Economic garden, an ..	18	Seed growing ..	19
Farm, crops and stock on the home ..	19	Societies—	
Food production, on increased—		Royal Horticultural ..	19
Leaf miners ..	14	South African ..	19
Runner beans for soups ..	14	Malvern ..	14
Seeds, shortage of ..	14	Sugar beet, the cultiva- tion of ..	17
Fruit and vegetables, transit of ..	19	Wart Horticultural ..	16
Fruit trees in the battle area ..	17	Robert Lind ..	16
Grasses, identification of ..	16	Week's work, the—	
Horticultural Club ..	16	Flower garden, the ..	1
Insects and birds ..	19	Fruits under glass ..	1
Japanese dwarf trees, the making of ..	11	Hardy fruit garden, the ..	1
Publication of a seed firm ..	17	Kitchen garden, the ..	1
		Orchid houses, the ..	13
		Plant under glass ..	1
		Women's Garden and Garden Union, the ..	1

ILLUSTRATIONS.

Cantua barxifolia ..	18
de Villemorin, Philippe, portrait of the late ..	19
Forcing bed at Alldenharn House gardens ..	14
Frame for forcing vegetables, a simple ..	14
Potatoes in the park at Alldenharn House, Elstree ..	12

THE MAKING OF JAPANESE DWARF TREES.

THE little pot grown dwarf trees, which in recent years have been imported from Japan in such large numbers, are essential to call forth exclamations of admiring astonishment.

Yes, quaint they certainly are, and some of the better examples are very attractive. But to me the mystery is not so much how they are kept so small as how they are made to look so extraordinarily old.

I have a dwarf Maple which my father brought from Japan twenty-one years ago. It was then reputed to be twelve years old. I have had no difficulty in keeping it dwarf, and it has lived in the same pot all the time. I prune the tree every spring, shaping and training it as best I can to retain its original lines and character.

About every second year I take it from its pot, remove some of the old soil, and replace it with fresh. And I water it when I happen to think of it. After twenty-one years of this treatment, it is a shade smaller than when I first had it, and I do not think it looks a day older.

The dwarfing of the tree is no great mystery. It is simply a matter of keeping them pot bound, with just enough soil and water to support an annual crop of leaves, and a minimum of stem growth, and no more; that, and careful pruning and training. The same trees planted out in open ground would soon run away into large, normal, vigorous specimens. I have seen this happen. Only a few of the kinds grown as dwarfs are naturally small-growing. I have myself produced a little tree of the winter flowering Jasmine (*Andromeda nudiflora*), by growing it in a small porcelain pot for five or six years. It has six or seven twisted roots, which cling round a piece of cork before entering the soil, and a little bent trunk the thickness of one's thumb. In winter its tiny branches are laden with yellow blossom, when it makes a charming ornament in

the house. Although five or six years old, it is only eighteen inches high, and it is mistaken by most people for an imported Japanese specimen.

But some of the dwarf Japanese trees, including Oaks, Pines, and Retinosporas, although only a foot or two high, have gnarled trunks as thick as one's arm, and an appearance of very great age.

Are these trees as old as they appear, and as they are reputed and labelled to be? Fifty, a hundred, two hundred and fifty years? There are folk whose aim and object it is to look young, who grow younger and younger, until at about fifty they settle down to a permanent youth. But there is generally something which gives these people away, some feature from which age peeps out.

The object of Japanese dwarf trees is, on the contrary, to look as old as possible, but to me they always suggest the appearance of premature old age.

I have always been a little suspicious of them, and have often wondered how it was done. Then one day I was examining a dwarfed Retinospora, reputed to be several hundred years old, and offered for sale at a price which had apparently been assessed at the rate of a guinea for every year of its reputed age.

This tree was some four feet high. Its gnarled and venerable trunk, whose girth at the base must have been twelve or fifteen inches, rose from a carpet of velvet moss, and was soon lost amid the sombre green of flattened branches which lay, shelf above shelf, in perfect outline.

The illusion of a perfect ancient tree in miniature was so complete that one could easily, even in imagination, the gradual tapering away of the trunk as it neared the summit. A closer examination showed that nothing of the sort happened. A few inches beneath the topmost greenery the trunk was R.R. thinner than it was at the base, and ended abruptly by having been sawn off. Obviously that trunk had at some time run on to a much greater height, possibly eight or ten feet. That tree had not always been a dwarf. How, then, had it been produced? Possibly it had originally been grown in open ground and induced to form a thick trunk proportionate to its height of eight or ten feet, afterwards to be sawn off at three or four feet from the ground. Then probably its roots were pruned to make it amenable to potting, and its branches were trained up to hide the abrupt and rapid ending of the trunk. Normal rapid growth in open ground would obviously give the thickened trunk, which was the tree's chief asset towards an appearance of great age, and give it quicker than by growing the tree in a pot from the beginning.

To produce the girth that this specimen had attained by restricted pot culture alone might take the several hundred years which was the tree's reputed age; indeed, to produce the growth which the sawn-off trunk proved would probably, in a pot, have taken two or three times that number of years. But I think these old looking dwarfs may possibly be produced by quite another method. Perhaps they are not complete trees at all, but merely branches of aged forest trees artificially rooted and detached, potted up, pruned, trained, and then labelled as so many hundred years old. The process would not be difficult. A gnarled and stunted branch of some forest tree might be selected, and ring barked at a convenient spot by bandaging with wet moss and soil at the ring-barked spot, adventitious roots could be induced, after which the rooted branch could be detached from the main tree and potted and trained. By this method both girth and rugged bark would be obtained readily, and would at once give the "dwarf tree" a venerable and aged appearance. The subsequent process of adding the age of the parent tree to that of the detached branch and fixing the price accordingly would be a no less simple matter.

I may be wrong in my theory of how these trees are produced, but I think it is very doubtful

whether some of them have been in their pots as long as they are supposed to have been. But, however this may be, I think it only fair to add that they come to this country with ages already attributed. *Charles Elliott, Stevenage.*

THE MARKET FRUIT GARDEN.

HOME-MADE NICOTINE WASH

AS an alternative to the importation of cheap nicotine, the growing of a small patch of Tobacco plants might be allowed to every fruit-grower, without the extremely vexatious and almost prohibitory restrictions now imposed. It would be a simple matter to guard against the sale of Tobacco thus grown. The grower might be required to spray his Tobacco crop in the presence of a police-officer, shortly before cutting it, with lime-sulphur or some other stuff of such strong and offensive scent that the Tobacco leaf would be quite useless for smoking. A heavy penalty could be imposed upon the evasion of this requisition, or the sale of any Tobacco leaf, or its removal from the farm on which it was grown. Growers could make their own nicotine wash by cutting up the Tobacco plants, stalks included, and boiling them. A few trials would show the proportions of Tobacco and water necessary to produce a wash fatal to aphids and suckers. It would be much simpler, however, to obtain nicotine made in a country where there is no duty on Tobacco, and to sell it to fruit-growers at the cost of purchase, ocean freight, and delivery. The great importance of a full supply of cheap nicotine for spraying purposes would fully justify the arrangements suggested.

ATTENTION TO TOP-GRAFTED TREES.

Top grafted Apple trees have to be gone over several times in June and July to rub off the shoots that develop from the stocks below the grafts, which are astonishingly numerous, particularly where the stock trees were comparatively young when they were topped. By the way, this growth of shoots from branches which from cursory notice might have been supposed to be bare of even dormant buds, shows how little need there is to fear lack of fresh growths when trees for any reason are cut back severely. When rubbing off the shoots below grafts, the grafts themselves should be examined, in order to detect any beginning of aphid attack upon them. If such an attack is only slight and partial, it may be stopped by crushing the insects by hand; but if extensive, spraying at once is desirable. Some trees top-grafted here in the spring of 1916, and some done in 1915, have had to be sprayed for aphids. As the leaves had not curled, the operation was entirely successful. This season's top-grafting has been very successful much more so than that of last year. The small proportion of failures is now seen to have been due mainly to the covering of wax having been too thin in places, so that it opened, letting draught in to the junctions of scions with stocks, or to insufficient care in the selection of scions. As we were out of wax for a day or two an experiment on six trees was made by covering the graft junctions with Stockholm tar. This proved successful where the raffia fibre was bound so closely around the junction that the tar could not penetrate it, but failed badly where the binding was no more compact than it needs to be when wax is used. Another small experiment which failed to a considerable extent was that of covering with clay. This succeeded only where the clay was bound round with raffia fibre. Where this binding was not done, the clay was first cracked by draught, and afterward's heavy rain caused it to drop off. As soon as this was noticed, the application of clay was renewed, but results show that the patching up was too late to save the grafts. *Southern Grower.*

FOOD PRODUCTION AT ALDENHAM.

The gardens at Aldenham House, Elstree, have long been famed for the high quality of the vegetables grown there, and in these times of shortage it is not surprising that the

Vegetable Marrows were sown early in February and grown in 10-inch pots in a roomy house. Bushels of fruit have been gathered from the plants during May and June, and they promise to continue cropping for some time to come. The plants are trained under the roof

Content. The seed was sown in December in boxes 5 feet long, 9 inches deep, and of the same width. The plants were grown in cool houses until they were 4 feet high. Later in the season the boxes were plunged in the open on a warm border, and the roots grew through the bottom of the boxes into the soil of the border. Some of the plants are 6 feet to 7 feet high, and bear large pods, well filled with fine Peas. Peas are also grown in 10-inch pots, but the results are not giving the same results as those in boxes, owing possibly to the greater bulk of soil in the latter. The successional rows of Peas in the open are mainly from box-grown plants, except the latest sowings. It is found that more uniform rows are obtained by this method, and the seed germinates quicker, especially when the weather of April is wet and cold. The plants are put out 4 inches apart in double rows, 10 inches wide and 100 yards long.

Half an acre of ground is devoted to Parsnips. The varieties principally grown are Student, and Tender and True, and they are growing luxuriantly in deeply-trenched soil.

Much frame space is occupied by Cauliflowers. For the early batch in April and May, seeds of Early Foreing and Magnum Bonum were sown in September, and the plants put out in February on a gentle hotbed of leaves. These varieties are followed by others grown in cold frames, which are afterwards used for growing Short Horn Carrots, Turnips, Beet, and later with Endive and Lettuce. Cauliflowers are extensively grown in the open, including Mr. Beckett's new variety, Devoncourt, which is close-headed and pure white. It fills in a gap between Walden and Early Giant. The variety Autumn Giant is extensively planted.

The Carrot is another important crop. The variety Chien on Hen is ready to be put in frames in April, followed by larger varieties in pots. In the open there are rows 100 yards long of New Red Intermediate, Favourite, New Model, and Scarlet Model.

Potatoes are grown on a large scale in frames, principally Mallothian Early and May Queen; the former has given tubers of especially good quality this season. A white kidney variety,



FIG. 4. PLOUGHING PARK LAND AT ALDENHAM FOR POTATO PLANTING.

Photograph by R. A. Malby.

Hon. Vicary Gibbs and his skilful gardener, Mr. Edwin Beckett, have made the question of food production a matter of chief concern on the estate. Every effort has been made to produce food crops on the largest scale possible, and vegetables have been planted wherever they were likely to succeed. Some 50 acres of the park have been ploughed up and planted with Potatoes (see figs. 4 and 5). The management of the 50 acres was divided between the staff of the farm and the garden, and, as I saw the plot early in June, the prospect was most encouraging, the preparation of the soil and planting of the tubers having been done in a most thorough manner.

Much use has also been made of improvised cold frames, the lights being of a standard size of 7 feet. These temporary frames are sufficient to cover an area of 300 yards run. Considerable ingenuity has been displayed in the choice of material for the bases of the lights. In some cases shrub and tree prunings have been used by building them into walls 2 feet to 5 feet high, on which to rest the lights (see fig. 6). The frames are of great value in hastening the development of such crops as Potatoes, Turnips, Spinach, French Beans, Beet, Carrots, Cauliflowers, and Vegetable Marrows.

Onions have been planted extensively. The seed of the main batch was sown early in February in boxes in a cold frame, and directly the seedlings were large enough to handle they were transplanted direct from the boxes into rows 100 yards long and 15 inches wide, the plants being 3 inches apart in the rows. The varieties Mammoth, James's Long Keeping, Brown Globe, and Bedfordshire Champion are those most favoured. The present appearance of the plants on a quarter-acre plot promises well for a good crop of bulbs. Alongside is a corresponding plot planted with seedlings raised in the open from a March sowing. Large breadths of Tripoli Onion are also grown. For early spring use the Queen variety sown in July is found superior to any other, inasmuch as even when sown so early few of the plants "bolt," and they are ready for use early. There is also a splendid bed of Mr. Beckett's new lettuce-keeping variety, Autumn Triumph

and down the back wall of the house. A succession is provided by plants in frames started over a mild hotbed, from which the lights are removed later for other crops. Marrows are also grown on ridges of soil in the open among forest trees to continue a succession, the slight shade afforded by the trees reducing the need for watering so frequently as in the open. The best varieties are Table Dainty, Penny Bvd.



FIG. 5. THE POTATO CROP IN ALDENHAM PARK IN JUNE.

Photograph by R. A. Malby.

The Sutton, Moore's Cream, Long White, and Long Green.

Peas are regarded as an important crop in these gardens. Even for early supplies small-podded varieties are not favoured, but such sorts as Edwin Beckett, Duke of Albany, and Quint

named Wycombe Star, is of great promise as an early forcing sort.

Horseradish is planted in a different manner than that usually practised. The roots are placed horizontally on raised beds 1 foot high and a yard wide and covered with soil.

Celery for the earliest supplies is grown in frames, and successive batches are planted on the flat, thus saving the labour of preparing trenches. Blanching is done by banding the stems with brown paper, which allows of the roots being fed easily with liquid manure. For

greater advantages in production than in Runner Beans. The double rows at Aldenham are 10 inches apart, and the plants the same distance asunder. The plants produce large quantities of pods, and grow to a height of 14 feet. I noticed the following novelties in



FIG. 6. MAKING A TEMPORARY FRAME OF STAKES AND BOGIES AT ALDENHAM FOR GROWING VEGETABLES. (See p. 12.)

the latest supplies the ordinary trench system is adopted. The alleys in the Asparagus beds are filled with Celery this season in place of Lettuce and Cauliflowers, which are usually grown. Aldenham Pink and Aldenham White are the varieties mainly grown. A supply of Turnips is provided for nine months in the year. The earliest roots of the red and white M. n. type are grown in frames on a mild hotbed, and later batches in cold frames. Such sorts as Snowball and Orange Jolly are sown at short intervals in the open.

Spinach for winter is sown thinly in frames in September. The crop is ready for use quickly, and a supply of leaves is available for a long time, but the plants are given extra protection during very adverse weather.

Rhubarb is regarded as a valuable crop. The Sutton is the main variety grown, and a row of this sort 20 yards long has been planted from last season's forced roots at the feet of a wooden fence with a southern aspect. The slight shade afforded by forest trees growing near has aided growth considerably, and with a slight covering of straw, early Rhubarb will be obtained from the plants next year.

Many thousands of Brassicae, including Broccoli, Cauliflowers, Savoys, Landrard Kale, Thousand-headed Kale, Green Curled Kale, Brussels Sprouts, Coleworts, and Cabbage in variety, are set amongst young plantations of forest trees.

Chilian and Seakale Beet find a place in these extensive culinary crops.

Of the ordinary Beet, Sutton's Black and Globe are favoured; the early supplies of Beet are from frames.

Large quantities of Tomatoes are produced all the year round. Golden Perfection is the best of the golden-coloured sorts, and is becoming very popular with other growers. Sunrise is the best of the red-skinned sorts, but the most finely flavoured of all is Peach-Blow.

Leeks are grown extensively, Pritzetaker and Lyon being the chief varieties.

In no vegetable crop does thin planting give

ORCHID NOTES AND CLEANINGS.

ABNORMAL FLOWERS OF CATTLEYA MENDELII.

MR. KENOT, The Gardens, Bloomhill, Spreaton, Northants, sends three abnormal flowers of *Cattleya Mendellii* with the following remarks: "I have seven plants out of an importation all of which, each time they have flowered, show the same peculiarity. If there are two petals then there is no lip, and when there is a lip it comes as in the flowers sent. I have flowered the plants three years, and the result is always the same."

The fact of the abnormal characters being constitutional and not altered by high cultivation is worthy of recording, for doubts have been raised on this point.

One flower sent has the sepals and petals nearly normal, but there is no trace of a labellum. The other two flowers have one of the petals placed in the position usually occupied by the upper sepal. The other petal is merged in the lip, one side of which is petaloid and bluish-white, the other half having the red-purple colouring of the normal labellum. The lateral sepals, which also show traces of the second petal, are placed where the petals usually appear, and the columns of all three are thinner than in the normal flower, much less curved, and with the anthers more or less terminal. In 1895 an importation of *Cattleya Mendellii* flowering in the collection of the late Joseph Broome at Llandudno all showed the same abnormal characters, and the abnormality was tolerably common in other gardens. The production of occasional abnormal flowers is not rare in most Orchids, but in the case of this *Cattleya* there is distinct evidence that it is a fixed character in the plants in some locality. With regard to the earliest importation of this inverted type it was stated that the plants were collected growing on cultivated orange trees, but that could have no bearing on the case.

HYBRID ORCHIDS.

(Continued from April 21, p. 162.)

Hybrid.	Parentage.	Exhibitor.
Bracon-Cattleya-Cattleya	B. Digbyana x C. Walkeriana	W. H. St. Quintin, Esq.
Bracon-Laelia-Jessica	B. L. Josephii x B. L. Jena	Paula Kall, Esq.
Bracon-Laelia-Atteya-Almond-Smiles	B. C. Digbyana-Mossiae x L. C. St. Gothardii	Sanders
Cattleya Chario	B. C. Digbyana-Mossiae x L. C. Ingramii	Mrs. E. Schuchfeldt
Cattleya Edouard	D. Wanda x Carmen	Stuart Fox and Co.
Cattleya Monte-Al	scholone x Wm. Murray var. Gattlen Queen	Sir Edwin South Colman
Cyrtopodium Col. Carey-Batten	Lathropium	Col. Carey Batten
Cyrtopodium Eucalypti-Batten	villosum Prince-Nour x Col. Carey Batten	Col. Carey Batten
Cyrtopodium General-Petain	Herz-Burwals x Psyche	W. H. St. Quintin, Esq.
Cyrtopodium Helice	bellidulum	Armstrong and Brown.
Cyrtopodium Quercivans	gigas x Gaston Edouard	E. Smith, Esq.
Cyrtopodium Rom	lappaceum x triumphans	Sanders.
Laelio-Cattleya Airas	L. C. Aphrodite x C. Mossiae	E. J. Nicholson, Esq.
Laelio-Cattleya Azuel	C. Marmorata x C. pomaria-stans	Flory and Black.
Laelio-Cattleya Nidia	L. C. Aphrodite x C. Mendellii	Mansell and Hatcher.
Laelio-Cattleya Carmen	Dominiana x Welliana	Sanders.
Laelio-Cattleya General-Pershing	Patentia macrochloa	Baron Schödoer.
Laelio-Cattleya Monte-Rosa	L. purpurata x C. Guirardii x C. Suzanne Hyde-Crom	Mansell and Hatcher.
Laelio-Cattleya Nidia	Lo-His x Anzures	Rothschild.
Laelio-Cattleya Psyche	el-gigas x Nysa superba	Sanders.
Laelio-Cattleya Rheims	Aphrodite x Candianum	Flory and Black.
Laelio-Cattleya S. D. Stevenson	L. purpurata x C. Guirardii x C. Schiedel-rae-alba	Sanders.
Laelio-Cattleya Watsonii	L. C. Candianum-oracle	Armstrong and Brown.
Mitonia Fairy-Queen	Princess-Mary x W. Williamsii var. G. D. Owen	Armstrong and Brown.
Mitonia Princess-Mary	Hyacinth-Belkiana	Armstrong and Brown.
Odontoglossum var. Beauty	Odia-Charlsworthii x Odia-luteo-purpureum-Vuy-lstocki	P. Smith, Esq.
Odontoglossum Elaine	Odia-Charlsworthii x Odia-Lambachiana	Dr. Craven Moore.
Odontoglossum General-Harg	Odia-Aglaium x Odia-Van-Steekouwe	Armstrong and Brown.
Odontoglossum Hryvathia	Charlsworthii x Corandion	Charlsworth and Co.
Odontoglossum Victoria-Lionel-Crawley	Odia-lutea x Odia-Charlsworthii	De R. Gray-Shay, Esq.
Odontoglossum The-Prince	Odia-Charlsworthii x Odia-Adriano-triumphans	G. W. Birk, Esq.
Odontoglossum Tigris	Odia-Charlsworthii x Odia-hatsvortiana	P. Smith, Esq.
Odontoglossum Aclianum	Odia-Lambachiana	Armstrong and Brown.
Odontoglossum Bandolet	Wickham x Hallii	H. T. Pitt, Esq.
Odontoglossum Ballester	Wickham x Mars	Armstrong and Brown.
Odontoglossum Felicity	Oxyria-ardentissimum	Charlsworth and Co.
Odontoglossum Giffordia	Jaeger x President-Poincaré	Charlsworth and Co.
Odontoglossum Hampsonae	ardentissimum x pieteloni	Paula Kall, Esq.
Odontoglossum Modus	Dora x Bellae	Dr. Craven Moore.
Odontoglossum Narvae	Lambachiana x Thompsonianum	Mrs. Eschhoffshelm.
Odontoglossum Rex	crispum hybrid	Armstrong and Brown.
Odontoglossum Trentino	Harry-mo-rispum x Alexanderi	Charlsworth and Co.
Odontoglossum Zoe	Vuy-lstocki x Crashevianum	P. Smith, Esq.
Odontoglossum Aphrodite	M. Wargowezian x Odia-Magal-Sander	Sanders.
Sepholo-Laelia Stella	L. superbum x S. grandiflora	Rothschild.

* L.C. Sir David Beatty, B. Worsley, Esq., *Gard. Chron.*, March 3, p. 95.

NOTICES OF BOOKS.

TWO NEW BOOKS ON VEGETABLES.*

Vegetable Culture for All, by "Eva," is written in plain, everyday English. As a rule, the authoress knows what she is talking about, and, though one could scarcely recommend the volume to those experienced in kitchen gardening, nor even as an infallible guide to the inexperienced, still its teaching cannot but be of value to amateurs and allotment-holders generally. Like all good teachers, the authoress engages the sympathy of her readers from the outset, and, will you, will you, it is carried irresistibly onwards from chapter to chapter. Her quaint comicities and illustrations do not fail to point the moral they are intended to enforce; and, like all books that count, this one draws its reader to a second perusal. The authoress does not attempt to do more than just notice the very commonest kinds of vegetables, though one chapter is devoted to "rare" vegetables, which are not at all rare in well-appointed gardens. She is frequently irrelevant, too, breaking off the thread of her instruction to introduce something quite apart from the subject of her chapter. Sometimes we are given a page of digression, as in Chapter XV., where a novel method of destroying weeds is described. To each chapter a vegetable recipe is appended, and the last chapter relates to "cooking vegetables," said to be even more difficult to master than producing them. She concludes with this exordium: "Yes, be proud! There are some legitimate prides that never fall—those sanctified by honest toil, and blessed by its reward. You will have to record some failures, but turn minor disappointments into the brave hopefulness that begins again."

In *Vegeticulture* we pass "from lively to severe," from vivid to rather dull and long-drawn sentences. On the whole, the matter is good, but the author is mistaken in his endeavour to popularise dozens of edible vegetables of the nature of which few people know anything, except, perhaps, the names. For at no time has it been more important than at present that cultivators of all classes should limit the kinds of vegetables to the valuable few—useful for food, and not difficult to produce in quantity. Many of the details regarding the production of seedlings and transplanting—speaking from the same point of view—are superfluous, but much thought has been devoted to the production of the volume, the introductory chapters being useful résumés of the various essentials to all good gardening.

SOUTH AFRICA.

THE CONSUMPTION OF MAIZE MEAL.

OWING to the growing scarcity of wheaten flour, I should like to call the attention of your readers to the value of Maize meal as an article of human food. It forms an item in the daily dietary of nearly every white family in the Transvaal, and is wholesome, nutritious, and tasty.

Maize meal (or milie meal, as it is called by South Africans) is used in place of Oat meal on the breakfast table. Johannesburg bakers add finely ground Maize meal to Wheaten meal in the preparation of bakers' bread. In my own home our bread is made with fifty per cent. Maize meal and fifty per cent. Wheaten flour.

A pamphlet published by the Transvaal Department of Agriculture in 1909 gave 154 selected recipes in which Maize in some form is the main ingredient. *J. Butt Davy.*

ON INCREASED FOOD PRODUCTION.

LEAF MINERS

AN easy and safe remedy to prevent flies from depositing their eggs on the foliage of Celery and Parsnips is to dust the plants occasionally, and always after rain, with spent carbide.

We obtain the spent carbide in small bags from the garage, and after being kept in a dry shed for a short time a bag is tied on the end of a stick, and dusting proceeds as fast as the operator can walk. The material may also be used to ward off the Carrot and Onion flies, but it will not kill the maggots of these pests, which must be either crushed between the thumb and finger or the infested parts removed and burned.

Many weeds harbour leaf miners, and this fact is an additional reason why all weeds should be promptly removed and burned. *G. H. H. W.*

SHORTAGE OF SEEDS.

SUPPLIES of many kinds of vegetable seeds are likely to be short next season, and it is important that all growers should take great care to put the seed which they purchase to the best use.

The sowing of seeds is generally left wisely to the seed grower, but as a w.r.t.m. measure growers of vegetables may add to the available supplies by saving some of their seed. In the case of vegetables of the Cabbage tribe and of Beets, the saving of seed is not to be recommended, owing to the fact that different kinds of these plants cross so readily with one another that it is not possible to obtain good "true" unless careful and somewhat elaborate precautions are taken.

Peas and Beans are rarely cross fertilised, and it is, therefore, desirable in all the drier parts of the country that growers should leave all the pods on a few plants for purposes of seed saving. In the case of Peas, when the seed-bearing plants are beginning to dry off, the whole plant should be pulled up and hung in a dry, airy place in order that the seed may ripen. Finishing seeds must be protected from birds, for otherwise much of the seed may be taken by them, especially by jays and hawfinches. Broad Beans may be picked when almost ripe and laid out thinly to dry. Dwarf and Runner Beans to be used for seed-saving purposes should be pulled by about the second or third week in September and hung in a dry, airy shed. When the pods are dry, the seeds should be removed, spread out until they are thoroughly dry, and then stored in a cool dry place away from mice.

Seed should not be saved from biennial plants (such as Carrot, Beet, Parsnip, and Onion) that have "bolted." In order to save seed from such biennials, good roots should be chosen and grown on to seed in their second year.

RUNNER BEANS FOR SOUPS.

SEEDS of Runner Beans have been used in my house for soups and for "Beans and bacon." Lately, also, they have been very successfully substituted for Lentils in that excellent dish, Lentil cutlets. In my opinion, there is nothing in which they are not quite as useful as Lentils. Like Lentils, they have to be soaked a long time previous to use. After soaking, they must be skinned, which is an easy matter then, but not after cooking. This is an important point. When skinned, they have the pleasant white appearance of Lentils or Butter Beans. The Runner Beans, being larger, are better fitted for these purposes than the dwarf kinds. If any of your correspondents should wish for the recipe for Runner Bean cutlets, I shall be pleased to give it. *S. Jackson, Arley, Port Hill, Shrewsbury.*



THE KITCHEN GARDEN.

By J. DRUX, Foreman, Royal Gardens, Windsor

TURNIPS.—A large sowing of Turnips should be made about the middle of the present month to obtain roots for use during autumn and early winter. Ground which has been occupied by Early Peas or Potatoes is suitable, and will only require to be lightly ricked up and levelled. When the surface soil has been made fine draw the drills 16 inches apart and sow the seeds thinly. As soon as the plants are large enough they should be thinned to 9 inches apart and the ground lightly hoed to destroy small weeds. Turnips are benefited by frequent dustings of sifted wood ashes. Another sowing should be made 10 days later, and the plants of this batch may be allowed to stand in the ground throughout the winter. Protection from frost may be necessary, but this is easily applied. Green Top Stone and Orange Jelly are reliable varieties for planting in winter.

WINTER GREENS.—The planting of all winter greens should be accomplished as quickly as possible. Savoy, Hardy Cabbage, Scotch Kale and Sprouting Broccoli should be planted freely. There is still time to transplant Autumn Self-Protecting Broccoli and Halloween Giant Cauliflower in rich soil; the heads should be ready for use in October and November. The varieties Early Market Broccoli, Snowdrop, and Early Feltham will, if planted now, and the weather is favourable, furnish a succession of heads through January. Other varieties for late supplies should be planted as soon as possible.

ENDIVE.—A sowing of Batavian Endive should be made at once for early winter supplies; transplant the seedlings in a sheltered position as soon as they are large enough for transplanting, allowing a space of at least 15 inches between the plants each way. Another sowing should be made ten days later and the seedlings transplanted into cold pits for use during winter and spring. It is much better practice to transplant these seedlings into pits while young than to grow them in an open border for lifting and placing them in pits in the late autumn. Early Endive may be tied up for blanching as soon as of sufficient size.

SPINACH.—This crop will require much care and attention during the next few weeks to obtain a full and continuous supply of leaves. Make weekly sowings in a cool situation and give the plants a plentiful supply of water. At Frogmore we sow broadcast, so that the plants cover the surface very quickly, and they are watered freely, the ground never becoming dry.

LETTUCE.—Make sowings of Lettuce weekly on a north border or other position protected from hot sunshine. Sow thinly and regulate the plants as soon as they are sufficiently advanced for thinning. If weekly sowings are made transplanting will not be necessary during the next few weeks; in dry weather the plants will succeed better in the seed rows than if they are transplanted.

FRENCH BEANS.—A sowing of French Beans should be made in rich soil with a view to producing pods about the end of August. Allow plenty of space between the rows; plants 8 inches apart in the row will give a good result. Plants in bearing should be given a good watering at the roots, for if growth is stunted through drought the crop will be unsatisfactory.

CABBAGE.—In late districts sow Cabbage seed for early spring supplies thinly in shallow drills made 15 inches apart. Keep the ground free from weeds. Another sowing should be made ten days later. Protect the plants from birds by netting and dust the seedlings freely with soot or lime as soon as they appear through the surface.

* *Vegetable Culture for All*. By "Eva." (London: Herbert Jenkins, Ltd.) Price 2s. 6d.
Vegeticulture. By Harry A. Day. (London: Methuen & Co., Ltd.) Price 1s. 6d. net.

FRUITS UNDER GLASS.

By JAS. HUDSON, Head Gardener at Gunnersbury House, Acton, W.

EARLY PEACH AND NECTARINE HOUSE.

As soon as the house is cleared of the crop, let the roots be given a thorough soaking of clear water. Then apply a light dressing of artificial manure, not to the extent of exciting growth, but rather to build up and solidify the wood. Use a fertiliser containing phosphates and potash. Keep the trees well syringed, to prevent attacks of red spider, and if this be done only once a day, select the evening. The houses should be thrown open completely, removing the top lights entirely if they can be taken off. When the lights are removed, the trees can be well syringed from the upper side.

LATE PEACHES AND NECTARINES.—If the trees in cold-houses are bearing heavy crops, the fruits should be thinned finally, leaving a little margin for eventualities. See that the trees are not dry at the roots, and apply a manurial stimulant if it is considered necessary. Attend to the regulation of the growths, and stop all very luxuriant shoots at an early stage of their development. Syringe the trees twice daily in sunny weather, and do not hasten growth unduly by closing the houses early in the afternoons.

STRAWBERRIES FOR FORCING.—Runners of the latest varieties of strawberries intended for forcing should now be layered. Fillbasket, which makes its runners later than many others with us, is one of the very best late sorts, being a reliable and good cropper. Runners of other varieties should be slanted into 6-inch pots, as soon as they are fairly well rooted; do not, on any account, allow them to become pot-bound. If the plants are stood pot to pot for the time being it will be an easy matter to keep them lightly damped overhead. Meanwhile, when opportunity offers, prepare a site for standing the entire stock of plants. Choose a situation exposed to full sunshine. The ground should be well surfaced with ashes and sprinkled with lime to keep worms in check.

AUTUMN-FRUITING STRAWBERRIES IN POTS

Autumn fruiting strawberries give good results in pots, and form a good succession to the outside plants and the early forced plants that are held over to a second crop. My plan is to do in the runners as early as possible and to pot them direct into 4½ inch pots, which are sufficiently large for the purpose. The runners will quickly become established. In some instances I have noted that the first flower spike develops even before the runner is severed from the parent plant, and it is hardly advisable to retain these precocious plants unless for very early fruiting in the autumn. A crop may be had from these young plants in from ten to twelve weeks from the laying. The best varieties for forcing are Merveille de France and St. Antoine de Padoue; St. Fléaire is also highly spoken of.

THE FLOWER GARDEN.

By W. J. GIBSE, Gardener to Mrs. DEMESTER, Keele Hall, Staffordshire.

GNAPHALUM LEONTOPODIUM. It may not be generally known that the "Lidoways" is easily raised from seed. Sow in pans in a mixture of loam, mortar rubble, and sand. A clear shaded frame is the most suitable place until the seed has germinated. The young plants should have the sunnet position in the rock garden, using a similar compost as advised for use in the seed pan.

VIOLETS. Cut off all runners from Violets within two eyes of the base; on no account should they be pulled off. Give the plants a light dusting of soot occasionally to keep red spider in check. Keep the soil always loose on the surface by the use of the flat hoe, and syringe the plants overhead in the evening during dry weather.

FLOWER BEDS.—The summer bedding plants are well established. The soil in the beds should be stirred on frequent occasions, and especially after rain, when it is liable to become caked on the surface. Edging plants require attention at least once a week, pinching them into shape as they require it. Ivy-leaved Pelargoniums, Verbenas, Petunias, Iresines, and

other plants that are used as a groundwork should be pegged to the soil and the shoots pinched to cause side growths to develop and fill the space.

EAST LOTHIAN AND BROMPTON STOCKS.

Sow seeds of East Lothian and Brompton Stocks to obtain sturdy plants for flowering next spring and early summer. Raise the plants in cold frames, but do not coddle them; for the present the lights may be removed entirely. Old potting soil of a rich nature mixed with a little fine mortar rubble or lime will form a suitable compost. Make the soil firm. Spray the seed bed daily and provide light shades during sunny weather until the seed has germinated. Plants in bloom should be given stimulants to prolong the flowering season.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcote, Eastwell Park, Kent.

BEONIA GLOIRE DE SCLAUX.—This variety is one of the best Begonias for flowering in winter and early spring, the bronzy metallic lustre of the foliage (which is quite ornamental in itself) contrasting well with the panicles of bright rosy-pink flowers. If grown in ordinary conditions, the variety is at its best in the spring; but if it is given on early in the summer, and placed in a brisk heat in the late autumn, it will bloom at Christmas and the New Year. The plants are suitable for the decoration of rooms, the moderately warm and dry conditions exactly suiting the flowers, which last well. The variety may be propagated and grown under similar treatment to that recommended for the Lorraine type. Cuttings strike freely, and the plant presents no great difficulties in its after cultivation. It should not be allowed to become pot-bound till it has been placed in its flowering pots. Specimens of all sizes flower satisfactorily; 4½ inch and 6 inch are useful sizes for general purposes, but if large specimens are wanted, 7½ to 8 inch pots will not be too large. Whatever the size, when the pots are filled with roots, feed the latter regularly with stimulants. Stand the plants well apart in a light house to ensure specimens of good shape and undamaged foliage.

BROGMANIA DATURA.—The somewhat old-fashioned plant is worthy of a place in a general collection of cool-house plants. It can be planted out in the conservatory bed, or small border, or grown in large pots or tubs. In the spring it should be pruned hard back within a foot or two of the old wood. Growth starts freely as the weather gets warmer, and the plant will commence to flower in June, and continue to do so till late autumn. The habit of growth of this plant makes it very suitable for training as a standard. The plant should be kept to a single stem till the desired height is attained, pruning back the head each spring as for a standard Rose. B. Knightii, B. albana, and B. sanguinea later are the principal species, and all are well worth growing.

HARDWOODED GREENHOUSE PLANTS. Many other hard-wooded indoor plants will also succeed better if placed in the open during the next three months. The foliage will be more healthy and vigorous, and standing the plants outside presents a good opportunity to thoroughly cleanse them. All the members of the Heath family—*Coronilla glauca*, *Coprosma*, *Baneri*, *Diosma* *aroides*, *Azalea*, growing in pots or tubs, *Eupatorium*, greenhouse *Eleocharitoides*, *Chlorizema*, *Cytisus*, *Myrtles*, *Ononises*, and *Limonis*, may be treated in this way. Plunge the pots in a bed of ashes, to keep the roots in a fairly uniform condition of moisture and syringe the top growth daily in bright weather. Use clear, well-diluted soot water once a week for syringing, and water the plants with liquid manure about twice weekly.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVES, Abbot's Wood, Godalming, Surrey.

EARLY APPLES.—The recent rains have benefited the trees of early Apples, which do not mature their fruits satisfactorily when the soil is very dry. The first to ripen are Mr. Gladstone, Early Margaret, Early Harvest and Irish

Peach, and they are usually ready for gathering in July. Irish Peach is of excellent quality when well grown, and to secure the fruit at its best it should be gathered just before it is eaten. This variety can be grown either as a bush, cordon, pyramid, or horizontally trained tree. Look over the trees and remove by hand picking dead and decaying leaves, or give the trees a vigorous syringing to dislodge them; thorough syringing will also cleanse the trees of insect pests.

PEACHES AND NECTARINES.—Trees of early Peaches and Nectarines with ripening fruits should be given a good dressing of concentrated fertiliser. If the roots have been watered with liquid manure from the farmyard the fruits will be swelling rapidly. During the present month fruits of Ansdan June, Waterloo, and Early Alexander will ripen. All early Peaches should be thinned evenly. The fruits should be gathered with care and placed in a box or basket containing fine, soft wood-wool, which is the best material on which to convey them to the fruit room. The shelves in the fruit room should also be covered with this material. Nectarines do not ripen quite so early as Peaches. Early Rivers and Cardinal are amongst the earliest varieties, and these are closely followed by Lord Napier. Early Peaches are best used quickly, as the flavour deteriorates when they are kept.

STRAWBERRIES.—The earliest layers are ready to be severed from the parent plants, and when this is done they should be kept partially shaded for a brief period. When they have recovered from the check caused by their removal they may either be potted or planted out. If the latter method is adopted choose ground that has been heavily manured, or they may be planted on ground that has been cropped with early Peas. Old Strawberry plants that have finished cropping should be pulled up and the ground cleared and made ready for other crops. The beds which are to remain should be cleared of rubbish and the plants watered.

FRUIT ROOM.—Keep the fruit room well ventilated and as cool as possible. If it does not contain much fruit take the opportunity to cleanse it thoroughly. Scrub the wooden uprights, shelves, and trays with soap and hot water. The fruit room should be kept spotlessly clean and free from all trace of mustiness.

THE ORCHID HOUSES.

By J. COULDER, Gardener to Sir JEREMIAH COLEMAN, Bart., Gattin Park, Reigate.

MANAGEMENT OF THE HOUSES.—Most of the potting having been done, the principal work in the Orchid houses at this season should be directed to keeping the plants in an active condition of growth and free from insect pests. It is important that the plants receive sufficient water at the roots, and that the atmospheric conditions be regulated in accordance with the weather. It will now be possible to treat the plants in the warmer divisions more liberally, and with the increased amount of sunlight and warmth, more ventilation and more moisture may be given in all departments. In the East India House, fire heat should not be dispensed with altogether. The water pipes should be kept sufficiently warm to maintain a temperature of 75° up to midnight, regulating the fires so that the thermometer records 60° in the early morning. The ventilators should be closed early in the afternoon, and the blinds drawn up directly it is safe to do so without exposing the plants to injury from scorching. The temperature of the house may be allowed to rise to 85° or 90° with sun heat. Drain the floors, stages, and other bare spaces frequently, and especially the ground beneath the hot water pipes. Spray the plants lightly overhead and on the under-sides of the leaves in order to keep down attacks of red spider and other insect pests. As a stagnant atmosphere is many plants to become spotted, on warm, damp nights open the top ventilators late in the evening; this will cause the air to circulate and dry up any excessive moisture that may have accumulated after sunset.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.
Editors and Publisher.—Our correspondents would oblige delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 17.
 Royal Hort. Soc.'s Coms. meet and National Carnation and Florist Society's meeting at Drill Hall.

AVERAGE MAXIMUM TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 65.3

AVERAGE TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday, July 12,* 10.3 a.m., Bar, 30.1, Temp. 67°. Weather, Sunshine.

SALES FOR THE ENSUING WEEK.

TUESDAY.—Cattle and indoor stock and implements, of the Ayrshire Nurseries, Liverpool, by Protheroe and Morris, at 11 p.m.

THURSDAY.—Greenhouses, frames, and general stock of the Stratton Approach Floral Nurseries, at four of Stoke Newington Station (G.E. Ry.), by Fisher, Stanhope and Co., at 1 o'clock.

Crops on Virgin Soil.

Among the less experienced cultivators of the many thousands of acres of waste land which are now being brought into use for the production of food, the idea is prevalent that virgin soil—i.e., soil which has hitherto lain more or less waste—is particularly fertile, and needs only to be lightly dug in order to produce heavy crops.

The belief is in the nature of a faith, in that it rests on no basis of fact or experience. It is true that in special circumstances a few plots of this nature may yield good results without much trouble, but unless they are properly cultivated and manured the far greater number yield very meagre crops. Indeed, it may even happen that the more labour expended the less satisfactory the yield, since it has been observed that in a number of cases the more deeply the soil has been dug, the more thoroughly has the sub-soil been exposed, and the worse has been the resultant growth of the plants.

Such failures have been attributed to many causes. The seedsman has in many cases been unjustly blamed; or, with more justification, the exceptional season, consisting of an almost unprecedentedly cold, late spring, followed by an early summer drought accompanied by blazing sunshine.

It is hardly necessary to point out that the fact of the sterility of virgin soil is well known to experienced cultivators, farmers and horticulturists alike. The farmer may induce fertility by the simple

method of spreading over his freshly ploughed land a layer of earth from one of his older fields. The gardener, working in a more intensive area, corrects the weak, spindly growth which is the result of growing plants in new soil, by the judicious application of manures and fertilisers rich in nitrogen. For it is nitrogen-starvation which gives to plants growing in virgin soil the stunted appearance which characterises them. The soil may be rich in nitrogen; but not in a form by which it can be assimilated by the plants, because—and here we come to the crux of the whole matter—the micro-organisms (bacteria) by whose agency the nitrogenous compounds in the soil are converted into nitrates, are absent or deficient in numbers.

Even in normal conditions, on cultivated soil, there is always a shortage of available nitrogen in the spring. During the winter, the rain washes away a large amount of the soluble nitrogenous compounds from the soil; and the temperature of the ground is too low to encourage the nitrate-forming bacteria either to multiply or to perform their work of nitrification. As the weather becomes warmer, and conditions more genial, the bacteria become active, and the soil becomes more and more rich in nitrifying bacteria, and in the nitrates which they form. Many gardeners, though unaware of the action of the bacteria, are yet familiar with the ill-effects of this early spring shortage of nitrates, and apply nitrate of soda by way of a "whip" to their growing crops.

As we have already observed, in many instances which have come under our notice, where the ground has been dug most deeply the results have been the worst. In one set of plots under observation, a wise old cultivator warned his younger and more enthusiastic neighbours that they were doing very foolishly in "burying all the good soil at the bottom of the trench." Certainly, up to the present, his contention has been justified; for his own Potatoes are the best of any, notwithstanding the fact that the plot is full of sprouting grass. Those who brought up the subsoil to the top had probably buried the few nitrifying bacteria which may have been present in the upper layer. There is no doubt, however, that equally good results could be obtained by burying the topsoil, if generous applications were made of such material as well-rotted manure, which would encourage the rapid spread of the beneficial micro-organisms. That the failure of crops on virgin soil is due to nitrogen-starvation can be demonstrated by applying a little nitrate, when it will be seen that the plants recover in a remarkable degree. In one case under observation a patch of very weak, spindly Potatoes was watered with a nitrogenous manure. The response was almost immediate, the plants assuming a deep green colour, and the stems thickening in a surprisingly short time.

Our observations have been chiefly directed to plots on heavy soil over a thick clay sub-soil, through which percolation and aeration were undoubtedly deficient. In an adjacent district, where the subsoil

was gravelly, the crops were noticeably less unsatisfactory, probably because the better aeration and percolation favoured the spread and activity of what few nitrifying bacteria were present in the ground.

The conclusion would thus seem to be that during the first year of the cultivation of virgin soil, better results can be obtained by shallow cultivation than by deep digging, unless the cultivator is prepared to expend a considerable sum on manures which will supply all the nitrates his plants require; but that in the second year, when the surface turf has rotted, the raised subsoil been exposed to all the beneficial influences of a season's rain, sunshine and air, and the nitrifying bacteria have increased to the requisite number, the deeply dug ground will yield in every respect the more satisfactory results.

HORTICULTURAL CLUB ROOM COMMANDEERED BY THE GOVERNMENT.—Members of the Horticultural Club are asked to note that the Hotel Wimbor, Westminster (including the room occupied by the Horticultural Club), has been commandeered for Government purposes from Monday, the 16th inst. R. HOOPER PEARSON, hon. sec.

NATIONAL DIPLOMA IN HORTICULTURE.—The 1917 Examinations for the National Diploma in Horticulture were held at Wisley in June, with the following results:—Section II.—General Horticulture: THURPE, HILDA; MARGARET BURTON, The Nurseries, West Clendon, Surrey; HERON, MAY, 5, Wellington Road, Handsworth Wood, Birmingham. Section V.—Landscape Gardening: WOOLLEY, ROBERT; VERNON GIFFARD, Fair Croft, Lapworth, Warwickshire. Section VII.—Horticultural Inspection: MELVIER, DAVID GEORGE, 8, Silver Street, Enfield. The following candidates satisfied the Examiners' requirements in the Preliminary Examination:—OLDFAM, CHARLES HENRY, 25, Mill Street, Stafford; JOSHUA, LEVY HENRIETTA, 58, Forest Road, Kew; HERRING, LOTTIE KATE, Horticultural College, Swanley; THORNTON, ELEAZOR BOM, Botanic Gardens, Cambridge.

BEQUESTS TO GARDENERS.—Among the bequests made by the late Mr. LEOPOLD DE ROUSSELD are three to his head gardeners, Mr. JOHN JENNINGS receives £500, and Messrs. HUDSON and REYNOLDS £500 each. The admirable gardening work done by Messrs. JENNINGS, HUDSON, and REYNOLDS has recently been described in these pages, and this mark of recognition of their services will be appreciated, not only by the recipients themselves, but also by their wide circle of friends.

AN ECONOMIC GARDEN.—The gardens of Dr. J. E. HURRY, Westfield, Reading, have been adapted to the cultivation of plants of economic use, and the scheme, which has been pursued for several years past, has much to recommend it. The main object is that of education, and for this purpose the grounds are thrown open frequently to the public and to school-children, who are privileged to see, not only the growing plants, but also the results when the plants are gathered and prepared. A printed catalogue of the plants grown is supplied to each visitor, and demonstrations of the more interesting exhibits are given by Dr. HURRY and his assistants.

IDENTIFICATION OF GRASSES BY THEIR VEGETATIVE CHARACTER.—When the present crisis of war is removed, we hope that a counterpart of this very useful bulletin will be issued in this country. It is hard work for a beginner to get to know his grasses by means of the ordinary keys, which depend largely for

diagnostic directions on floral characters. In the bulletin each of 43 grasses is figured, and briefly described, and an analytical key to grass seedlings help the student to "run down" the specimens.

THE CULTIVATION OF SUGAR BEET.—The statement by the Parliamentary Secretary to the Board of Agriculture that a loan of £125,000 has been made from the Development Fund for the purpose of the purchase of an estate near Newark on which to establish the Sugar Beet industry, "when circumstances permit," has revived the discussion in the Press of the general question as to the possibility of growing Sugar Beet profitably in England. The associations which have devoted themselves to the promotion of English Sugar Beet growing have done most useful service. It has been proved that there is a great deal of land in this country on which Sugar Beet can be grown as successfully as in most parts of the Continent, both as to the yield per acre and the sugar content. In due course, no doubt, Sugar Beet will be largely and successfully cultivated in England, but the matter is not one to be treated hurriedly as a war emergency question. It is not such a simple matter as some people suppose to persuade farmers to grow the large quantities of Beet required. The chief difficulty of the Cantley factory, which has been often referred to in these debates, lay in securing a regular supply of Beet sufficient to keep the machinery running economically within about 2s. per ton rail way or water distance of the factory. The most economical unit seems to be a factory of 80,000 to 100,000 tons annual capacity. This means an area under Beet of 8,000 to 10,000 acres per annum. On a four-course rotation 32,000 to 40,000 acres of arable land worked in turn would, therefore, be required to maintain a regular supply to a single factory, and these figures assume that the whole root crop of the farm consists of Beet, which in practice would not be the case.

WOMEN'S FARM AND GARDEN UNION.—During the past year 106 new members have joined the Women's Farm and Garden Union. The Union was reconstructed in the spring of 1915, and this led to recognition and financial help by the Government. To meet the great demand for women gardeners and hailiffs, short courses of training have been instituted. This no doubt is one of the necessities of the times, but if women expect to be successful either as gardeners or hailiffs after the war, when competition will be keener, they must be prepared to undergo fuller preliminary training.

BLUEBERRY CULTURE. Blueberry culture is developing into an industry of some importance in the United States, and Mr. CORRIE, Government Botanist, has published several papers on the subject. The present one is an illustrated epitome of what has been accomplished so far. The name Blueberry is applied in the United States to more than one species of *Vaccinium*, though more especially to *V. corymbosum*, which is nearly allied to our native *V. Myrtillus*, the Bilberry or Whortleberry. Success in Blueberry culture, CORRIE maintains, rests largely upon the recognition that an acid soil is essential and the presence of a root fungus, which appears to have the beneficial function of supplying nitrogen to the plant. Full details of cultivation are given; also of propagation and treatment. An example is given of the yield and profits of a plantation 2½ acres in extent. This plantation was started in 1883, but exact records of yield and receipts are only available for the years 1910 to 1915. The average yearly yield in quarts for the six years was 1,741 per acre, the lowest being 419 quarts and the highest 2,574. The average price obtained was 14s. 6c., and

average profits \$116 (about £25) per acre, after making all necessary deductions. But the author explains that the plantation was composed of wild bushes taken indiscriminately, and he fairly contends that selection would give better results, and much might be expected from new varieties artificially raised. In support of this he gives illustrations of cross-bred new varieties which fully bear out his predictions, though they have not been tried on a sufficiently large scale to give convincing results. Promising results have been obtained by crossing Low Bush Blueberry (*Vaccinium angustifolium*) with High Bush Blueberry (*V. corymbosum*). The Blueberry will flourish in a soil in which few other plants will grow.

SAVING TREES IN THE BATTLE AREA.—The destruction of French fruit trees by the retreating Germans who cut down thousands of valuable trees before retreating back according to plan will probably not be quite so serious as at first expected. Mr. HENRY WOOD, the Special Correspondent of the United Press of America with the French Armies, gives an exceedingly interesting account of how the French set to work to rescue as many as possible of these ruined trees. As soon as the

side. This last operation, performed with the pain-staking care which characterises French gardening, is much more certain of success than the treatment of the "ring trees," and several years, at least, have been saved in restoring a portion of the mutilated orchards of France, for at present the labour needed for replanting such extensive areas would be prohibitive. But a few orchards have been planted, and Mr. WOOD describes "the carefully cultivated and planted fields, each bearing its little painted sign, 'Terre cultivée par l'Armée.'" Army wagon and ammunition cart-horses, not otherwise wanted for the moment, are pressed into the service of ploughing, cultivating, and harrowing alongside the camps, and as one body of troops proceeds to the front, the work is continued by the successors.

WAR HORTICULTURAL RELIEF FUND.—Lady SPENCERINA has given £100 to the Royal Horticultural Society's Allies' War Relief Fund, which has been started for restoring the ruined gardens and gardening industries of our Allies.

DUTCH SEED FIRM'S JUBILEE. The fiftieth anniversary of the foundation of the firm STALS AND GROOT, seed merchants, Enkhuizen, Hol-



Photograph by R. A. Malby.
FIG. 7. OPENING VEGETABLES IN FRAMES ON AN ENCLOSED HOED BED AT ALDINGHAM HOUSE GARDENS.—(See p. 1.)

recaptured areas were consolidated, the orchards were inspected by experts, and it was found that more recently time did not apparently permit the Germans to follow their earlier practice of felling the trees, and that they had contented themselves with removing rings of bark, expecting that this would be sufficient to destroy the trees. Assisted by many Army surgeons and other Red Cross workers, the tree experts had first covered with a special grafting cement, and the entire wound then carefully bandaged up—often with bandages that had been prepared for human limbs. So great was the number of trees that had to be dressed in this way that the entire available supply of grafting preparation was quickly exhausted. Tar was then used as a substitute, and finally even a loamy clay. Substitutes for surgical bandages also had to be found, and in the end it was discovered that moss twisted and tied about the dressed wound was as effective as anything else. The trees thus treated were chiefly half a century-old Peaches, Plums, Apricots, Apples, and Cherries. Even the trees which had been felled have also received attention. The jagged stumps, usually two to four feet long, have been cut cleanly and then grafted, in many cases, with their own shoots taken from the branches lying by their

side. The occasion was celebrated on the 3rd inst. The founders of the business, Mr. N. STALS and Mr. N. GROOT, who are respectively 83 and 75 years of age, were presented with their portraits in oil colours to mark the occasion.

PUBLICATIONS RECEIVED.—Board of Agriculture leaflets: No. 75, *The Manufacture of Cheese in Co-operative Dairies*; No. 77, *Hay-making Machinery*. (Board of Agriculture and Fisheries, Publications Branch.)—*Fossil Plants*. (Cambridge Biological Series.) By V. C. SEWARD. Vol. II. (Cambridge: At the University Press.) Price 18s. net.—*Vegetable Bottling and Fruit Preserving without Sugar*. By Vincent and Georgiana Banks. (London: W. Wesley & Son.) Price 1s.—*How to Know the Ferns*. By S. Leonard BASTIN. (London: Methuen & Co.) Price 1s. 6d. net.—*A Blossom Wilt and Canker of Apple Trees*. By H. WORMALL, M.Sc., (Cambridge: At the University Press.) (Reprint from *Annals of Applied Biology*, April, 1917.)—*A Good Living from Poultry for Disabled Soldiers and Others*. By P. G. PAYNTER. (London: George Swaine, Ltd.) Price 4s. net.—*Plants and Seeds Ltd. Royal Botanic Gardens, Peradeniya*. By T. H. PARSONS. (Ceylon Dept. of Agriculture.)

* *Directions for Blueberry Culture*. With seventeen plates by F. V. CORRIE, Botanist, U.S. Department of Agriculture Bulletin No. 234. Contributions from the Bureau of Plant Industry, 1916. Washington, D.C., U.S.A.

CANTUA BUXIFOLIA.

CANTUA BUXIFOLIA is one of the most beautiful of greenhouse climbers, and has been cultivated in this country for many years, although it has

never become common. It is extremely suitable for furnishing a greenhouse pillar or corridor wall. Especial attention may be called to it, now that indifference to indoor plants is certainly increasing. So much are they now neglected that

it is difficult to know where some of the choicest can be obtained. *Cantua buxifolia* was introduced by Messrs. R. Veitch and Son, Exeter, many years ago, and was said there to have withstood two winters in the open. The plant is not



FIG. 3.—CANTUA BUXIFOLIA (DEPENDENS). FLOWERS BRIGHT ROSE-PINK.

difficult of cultivation, but it should be grown in peaty soil, and needs a fairly cool, moist atmosphere. Red spider is its greatest enemy, but, with ordinary care, this pest can be overcome by any of the usual remedies. Cuttings root without difficulty. The plant is a native of Peru, and the Peruvian Indians are said to adorn their chambers on feast-days with the gay blossoms. The species is figured in the *Botanical Magazine*, tab. 4,582, and is there described as a very ornamental flowering shrub. It belongs to the natural order Polemoniaceae, and has dependent, tubular flowers (see fig. 8). The limb of the corolla is deep pink, and the tube pale pink or nearly white. *R. Irwin Lynch.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

TRANSIT OF FRUIT AND VEGETABLES.—The attention of the President and Council of the Royal Horticultural Society having been called to the difficulty fruit growers and market gardeners were experiencing in the matter of railway transport, and the prospect of that difficulty increasing through varying causes, including the shortage of baskets, a letter on this subject was recently sent by the Society to the Railway Executive Committee, to which the following favourable reply has been received:—"In reply to your letter of the 16th inst. calling attention to the shortage of receptacles, in which fruit and vegetables are sent, which must occur unless priority treatment is given to the return of such empties, this subject is one to which the railway companies have given careful consideration, and instructions have been given to their staffs concerned with a view to ensuring the prompt return of fruit and vegetable packages." *W. H. D. Society, Royal Horticultural Society.*

SEED-GROWING. Should not other foods than Corn be produced, both for man and beast? And if so, is the production of selected seeds from which foods are to be grown as important as, or even more important than, the production of these foods for immediate consumption? The sowing of vegetable and root seeds this spring will have taken nearly all the seeds in the hands of seedsmen, both retail and wholesale. We in this country, do not, even in normal times, produce as many seeds as are required, but growers abroad can now only in rare instances arrange for any seed crops, owing to mobilisation, and also because those seeds which they are able to grow will be required largely for home sowing. In England it is almost as bad. My firm has heard almost daily this spring from seed growers that they cannot possibly undertake contracts as usual, owing to their men having been all or nearly all taken. And now, in the nation's slow, blind groping, before the real truth has been found, new and unforeseen difficulties arise. For example, since the people in authority have not answered the questions which I venture to put in my first paragraph in the only way in which they ought to be answered, War Agricultural Committees have been employing themselves, in some seed-growing areas, in restricting the growing of seeds other than Corn. It is not genuine to the subject matter of my letter, but may I say that equally with the "authorities" the lay public requires expert advice? For instance, no one should imagine that such suggestions as "Grow Haricot Beans" and "Cultivate Sugar Beet to sweeten jam" point to the *summa bonum* of national effort in the garden or on the farm in this land, when land and labour are valuable. Hobbies in this country may be made to give a sound crop of seed in southern counties one year in five; but Sugar Beet, whatever its other qualities, will not crystallise out as preserving sugar in the twinkling of a human eye. *James Kolway.*

INSECTS AND BIRDS. (See pp. 255, 264). Birds are a great limiting factor as regards insect pests, but I do not think that the anti-sparrow campaign can be held responsible, to my marked degree, for the plagues of caterpillars that have appeared in various districts this year.

C. X.'s theory, showing how a severe winter favourable to insect life, seems to me an excellent one; but another reason why insect pests are more numerous this year is that the lack of labour owing to the war has prevented orchardists from receiving the careful attention that they would have had in normal times. In my opinion, so much attention cannot be paid to the ground beneath the trees. I have found it extremely beneficial to fork the soil frequently to a depth of four or five inches. In this way the pupae of numerous harmful insects are laid bare to the attacks of birds, particularly robins. Much good is also derived from encouraging tits to breed in orchards by providing suitable nest-boxes. I may add that my trees are much cleaner than they were last year, although sparrows are by no means abundant here; that they are in most localities. With regard to the old belief that severe winters kill off injurious insects, the explanation may lie in the fact that usually plants grow much better after a severe winter, because during such a season the plant foods, chiefly nitrates, formed by the action of soil bacteria during the spring, summer, and autumn are not washed out of the soil. In addition, hard and continuous frost destroys many organisms which are enemies of the useful

plexicaulis, *Delphinium Brunnatum*, the dwarf form of *Potamogeton obtusum* called *luteus* cause a very dark form of *Campanula anabasis*, and a well fruited shoot of the so-far unnamed *Lomera F. 269*, collected by Mr. Farrer in Kansas.

Obituary.

PHILIPPE DE VILMORIN.—It is with the deepest regret that we announce the death, on the 30th ult., after a short illness, of Monsieur Philippe de Vilmorin, head of the French nursery firm, Vilmorin, Andreux et Cie. Monsieur Vilmorin was only forty-five years of age, but had already attracted to himself a wide circle of friends and admirers. His funeral, which took place at Verrières-le-Buisson, the home of the Vilmorin family, on the 3rd inst., was attended by representatives of the President of the French Republic, of the Ministries of Marine and Agriculture, of the Treasury, and of the many scientific societies of which Monsieur de Vilmorin was an honoured and valued member. His early death removes one of the most promising and distinguished figures from the ranks of horticulturists. His keen intellect, general love of horticulture, and energetic enterprise in applying science to that art, had already gained for him a leading position among the horticulturists of the world. To few men is it given to evoke in equal degree both admiration and affection, sentiments which were universally felt for Monsieur de Vilmorin, not only in his own country, but in this. Although he retained the marked and admirable qualities of his race, he had the gift of making everyone feel at home with him. Tall and handsome, speaking English with remarkable facility, he will be deeply mourned by his English colleagues, who recognise that his death is a loss not only to his relatives and friends, but also to the two allied nations, France and England. He leaves a widow and six children, to whom we tender our deepest sympathies.



THE LATE MONSIEUR PHILIPPE DE VILMORIN.

bacteria. This is being increased amount of food to eat in the soil, so early spring gives plants that is really start, which enables them to get the better of their insect foes. This state is, at home, produced where applications of soda, nitrate of soda, etc., are used as detergents to such pests as the Omnivore and Turnip Fly. *W. Loun, Philadelphia.*

CROPS AND STOCK ON THE HOME FARM.

NEW WHEAT

There is room for improved varieties of Wheat that will produce heavier yields of corn, and require less seed for sowing. Canadian and French sorts have been tried, but these, in many cases, have been found wanting in their adaptability to English soil and requirements. Canadian Wheat produces exceptionally "strong" corn, but is lacking in quantity owing to the smallness of the grain, and the average English standard of production—40 bushels per acre is not attained. Varieties that lack "strength" are not favoured by the miller; the large size of the "berries" adds to the measure, but their weakness reduces the quality of the flour, which has thus less market value. Strength in the berries is much influenced by the nature of the soil. No matter how good the cultivation on chalk, peat or sandy soils, the strength is distinctly below what it is even with ordinary cultivation in stiff soils.

I am testing a new variety from Mosses, Webb & Sons this season, which has a distinctly promising appearance. It is vigorous in growth, and does not require much seed per acre to produce a "plant," which is one of the most important qualities to aim for.

A friend in Essex has obtained by careful hybridisation, a promising new variety Carter's White Standup is one of the parents. When I inspected this variety on a five-acre plot early in June, the tillering properties of the variety were very pronounced. One plant taken at random contained no fewer than twenty-three heads, which is a strong point in its favour. One and a half bushel of seed was used per acre, which is a great saving, as the ordinary varieties require 2½ bushels per acre, and, later in the season, 3 to 4 bushels. This plot was not sown until March 5, and a late sowing in an unfavourable seeding time on stiff land is a disadvantage, and the good prospect of this improved variety is all the more remarkable.

SOCIETIES.

ROYAL HORTICULTURAL. Societies. Committee.

July 5. *Present:* Mr. E. A. Bowles, M.A. on the chair; Messrs. W. J. Bean, J. Fraser, W. C. Worsley, W. Hales, and F. J. Clatten den absent.

Pelonia Delphinica. Mr. W. C. Worsley showed spikes of *Delphinium* var. from Dr. Chapman, of Reigate, of which the terminal flower was regularly pelonia and spurred, and the peduncle twisted.

Festuca subarva. Mr. Fraser showed specimens of the hybrid grass *Festuca x holcus*, derived from *Festuca elatior* and *Lolium perenne*. It is a somewhat variable plant, approaching at times the one, at others the other parent, and is not at all infrequent, apparently especially in water-meadows.

Carrot plant. Mr. Bowles showed, on behalf of Mr. Elwes, the late-flowering Niphium Tris. L. Taitii, at its best after all others of this group are past; the Asiatic *Streptopus*

The size of the cars and how they will fill and open are points to be settled later, if they justify expectations, the name of the new variety England's Safeguard is very appropriate.

The late hot, dry weather has altered the appearance of the Wheat crop generally. Where the plant was pale in colour owing to excess of cold and continued rain, it has assumed the dense green colour which betokens success. In some cases the plant is thin owing to adverse wintry weather, and the depredation of rooks. In early sown plots the ears are stout, of good length, and have bloomed freely. With a resumption of hot weather the Corn should develop fully, and there is an entire absence of rust on the flag. *E. Molyneux, Swanmore Farm, Bishop's Waltham.*

SALE OF HARES

Many owners and occupiers are taking steps to reduce the number of hares on their lands in order to protect crops and pasturages. Under the existing law (the Hares' Preservation Act, 1892), no hares or leverets may be sold or exposed for sale until August 1. In order to prevent the hares now being killed from being wasted, and to secure their use as food, the Board of Agriculture has made an Order under the Defence of the Realm Regulations allowing hares or leverets to be sold or exposed for sale by any person entitled by law to do so, notwithstanding the statutory prohibition as to sale in the months of June and July.

SOLDIERS ON AGRICULTURAL WORK.

The military authorities have issued instructions that no soldiers who are now engaged on agricultural work are to be withdrawn from the land until further notice. This instruction applies to all the classes of soldiers who have been made available for agricultural work.

ANSWERS TO CORRESPONDENTS.

AMOUNT OF HAY IN A STACK: *E. C.* Your particular of the stack are not sufficient for us to estimate the amount of hay it contains. You say nothing of its density, the kind of grass, or whether it is the crop of 1916 or 1917. Whether the sides of the hay are tucked or not would make some difference in determining the weight. From your data we would give 16 tons as the approximate weight of hay. Sometimes hay shrinks from the sides of the stack considerably, and this, of course, would make a large difference in the weight of the stack. If it is a question of sale, why not sell by the ton when the stack is cut?

BEETLE ON A LABURNUM: *C. J. P. O.* The beetle sent is the cockchafer, or May-bug, *Melolontha vulgaris*. (See fig. 51, April 7, 1917.) In the early spring, the soil should be turned up, and the grubs exposed and destroyed.

CHERRY TREES GEMMING: *W. T. A. S.* There is an abundant growth of the spawn of a fungus in the cortex of the branch sent, but it is not possible to identify the fungus at this stage. It is probably a species of *Cytospora*. Cut out and burn all dead wood.

DRY BORDEAUX MIXTURE: *G. H. H. W.* Having had satisfactory experience of the effect of dry copper-sulphate mixture for Potatoes, you are quite right in continuing its use, but at the same time we think that the Board of Agriculture took the only course open to it in recommending a wet spray, for experience in the use of dry Bordeaux fungicide for Potatoes is not yet sufficient to justify the Board in recommending their general employment.

ENGAGING GARDENERS: *M. Z.* Write to the Director of National Service, St. Ermin's Hotel, Westminster, S.W. 1.

FURRY TREES. *Noëlle.* You should cut away the old, barren shoots from your Currants, and train in a sufficient number of young shoots to take their place. If the trees are Black Currants, cut away most of the old wood, as the Black Currant fruits on young wood, but in the case of Red and White Currants only cut away those old shoots which have ceased to bear. It is quite true that birds

eat the fruit-buds, and thus render barren trees which would otherwise fruit; you can prevent this by painting the buds with butter, or netting the bushes. To get rid of the caterpillars, syringe the trees, when all the fruit has been gathered, with an insecticide—not before, as it would render the fruit poisonous, especially if you used arsenate of lead, which is the best specific. You can use it again in the spring, before the fruit buds expand.

GAS LIME: *E. C.* One ton of gas lime per acre should be applied in the autumn. The lime should be allowed to lie on the surface for not less than a month before it is ploughed in. Half the quantity named would suffice if it is dug or ploughed in at the time of application.

GRAPES SPOTTED: *C. H.* The berries are affected by Grape rot (*Glossosporium ampelophagum*). Gather and burn any fruits, shoots, or leaves showing symptoms of disease, and dust flowers of sulphur on to the remaining foliage at intervals of ten days. Mix a small quantity of lime with the sulphur on the second application, increasing the quantity on every successive occasion, but not allowing the quantity of lime to exceed that of sulphur. In the winter thoroughly wash the branches with a solution of sulphate of iron. Do not employ rich stable manure in any quantity in the border.

HOT WATER PIPES: *F. A. P.* Take a caulking iron, or a sharp-pointed chisel, and carefully knock away as much as you can of the caulking between the two pipes. Be careful to avoid breaking either of the pipes, which are very brittle. Then warm the pipes at the junction, and work them about a little, when it should be possible to pull them apart.

HUTCH LILY: *W. X.* *Lilium Martagon* is the Hutch Lily, which is said to abound in Palestine in woods north of Tabor.

LIQUID MANURE: *C. H.* *Linwood* Liquid manure may be made by tying horse droppings and soot in a piece of sacking, and dropping it into a barrel of water, using the water from the barrel as required, and leaving the bag of droppings in the barrel until the water is exhausted. With regard to compound manures, although the ingredients of some of these are secret, others can be made at home. For instance, Tonk's Manure, used for all sorts of garden plants, but chiefly for Roses, is made as follows:

Superphosphate	12 parts
Nitrate of Potash	10 parts
Sulphate of Magnesia	2 parts
Sulphate of Iron	1 part
Sulphate of Lime (Gypsum)	3 parts

It is used in the spring at the rate of $\frac{1}{2}$ lb. to the square yard.

MORAEA (IRIS) PAVONIA: *F. A. G.* You should grow your plants of *Moraea Pavonia* (known in gardens, but erroneously, as "Iris" *Pavonia*) in the border in a cool greenhouse. Leave them there without any disturbance, and when they become thoroughly established they should flower. Keep them rather dry in the winter, and do not make the soil too rich.

NAME OF FRUIT: *L. S.* Apple Winter Greening (see French Code).

NAME OF PLANT: *W. J. Greenwood.* *Ameilanchier canadensis* (Juneberry). The fruits are largely used in North America in pies and puddings, and for preserving. Though perfectly edible, they possess no economic value in this country, being practically tasteless, cooked or raw.

PEAR AND NUTLEAF LEAVES USUALLY: *L. G.* The trees are attacked by the shot-hole fungus (*Cytospora fumissis*). Pick off and burn all the affected leaves, and next year, when the leaves are just expanding, spray the trees with ammoniacal solution of copper carbonate, repeating afterwards at intervals of a week or a fortnight. Do not use Bordeaux mixture for spraying Peaches, as the leaves are too delicate for this fungicide.

PEAR LEAVES ATTACKED: *H. M.* The leaves have been attacked by (1) the vaporar moth, (2) the Pear slug worm. Both the vaporar caterpillars and the larvae of the saw fly can

be killed by spraying with arsenate of lead. Do not spray the fruit, as the arsenate of lead is very poisonous.

PLUM TREE AFFECTED: *S. H.* The tree is affected with silver leaf disease. There is no remedy but cutting back every affected branch behind the discoloured portion, taking care to burn the cuttings, as the disease is very contagious. If the whole tree is affected, it will eventually have to be destroyed. The variety Victoria is very susceptible to the complaint. Be careful to watch for signs of the disease on any other trees of Plum or Apple, and cut back at once beyond the discoloration. The disease can, to a certain extent, be prevented by good cultivation; if the soil is cold and stiff, it should be well dug, and enriched with leaf mould or well rotted manure.

POTATOS: *J. F. F.* As your experience will have shown you, 2 feet 6 inches is not enough space to leave between strongly growing Potato plants if you want to intercrop. However, do not cut the leaves of the plants; your best plan will be to drive a stake into the ground by each plant which is overshadowing the greens, and lightly tie the Potato haulm to the stake.—*H. W.* The stems of the Potatoes have been injured, and the injury is now covered with a species of *Fusarium*. There is also present on the leaves late blight (*Phytophthora infestans*). Spray the plants at once with Bordeaux mixture or Burgundy mixture.—*P. G. S.* There is no fungus on the Potato, but the haulm is affected with "leaf curl." Spraying will not cure this, but the plants should be sprayed to prevent attacks of *Phytophthora infestans*.

ROSE LEAVES CUPLED: *R. H. and A. B.* The shoots have been attacked by the Rose sawfly (*Blennocampa pusilla*). Next spring watch carefully for the first symptoms of the pest, and pull off and burn all affected leaves. Remove the surface soil during the winter to a depth of 2 inches and either sterilise it or replace it with fresh soil in which Roses have not been grown.

STRAWBERRY LEAVES ATTACKED: *J. G., Monnyhan.* The leaves are attacked by the leaf beetle (*Gale-medella tenella*). The best remedy is to spray the plants with arsenate of lead, but not when they are in fruit, as it is very poisonous. We shall be glad if you will kindly send your full name and address, and further specimens of the affected leaves.

STRAWBERRY INFESTED WITH INSECTS: *M. P.* The insects are snake millepedes (*Blanulus pulchellus*). You should trap them by laying round the Strawberry beds pieces of Mangold or Turnip, preferably in a state of decay. Collect the pieces every morning, and if they are, as they probably will be, covered with insects, drop them into a basin of strong insecticide or carbolic acid solution. Soot spread over the ground acts as a deterrent.

TOMATOES: *P. W. J.* If you wish to keep Tomatoes for some time, they should be gathered when almost green. Spread them out on a board or a piece of soft paper, and keep them in a dark, cool place; they will keep for a week or a fortnight, according to the weather.

TOMATOES UNDER A WALL: *M. Z.* You can grow Tomatoes with every prospect of success in the situation you mention, and plant Cauldflowers and Cos Lettuces in the border. It is too late in the season for Potatoes or Peas. Next spring you can obtain early crops of Potatoes, French Beans, and Carrots in the warm border. If the soil is deficient in lime, apply old mortar rubble or slaked lime.

WINTER SPRAYING: *S.* Spray the trees in winter with a caustic alkali wash, and again in the spring, when the buds are just breaking, with arsenate of lead. Grease-bandaging is still practised in well-tended orchards, and is very successful.

Communications Received—*W. J. W. M. H.—R. W. W. H. C.—A. G. M. O. R. D. W.—W. L.—R. J. F.—W. H. D. E. A. B.—C. E. B.—J. A. P.—E. L. T. C.—A. W.—F. V. T.—R. H. P.*

MARKETS.

COVENT GARDEN, July 13.

Table with columns: Plants in Pots, &c.; Average Wholesale Prices; s.d.s.d. Lists various plants like Aralia Sieboldii, Asparagus plumosus, etc.

Table with columns: Cut Flowers, &c.; Average Wholesale Prices; s.d.s.d. Lists various flowers like Achillea per doz., Alstromeria per doz., etc.

Table with columns: s.d.s.d. Lists various plants like Aspidistra, Cacti, Ferns, Heliotrope, etc.

Table with columns: s.d.s.d. Lists various plants like Aspidistra, Cacti, Ferns, Heliotrope, etc.

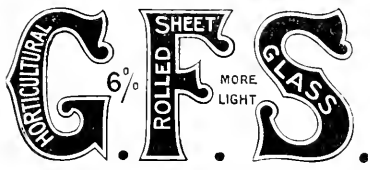
in demand. Those in the vicinity of Liberty, but only a few in the market. Alstromeria, Crocus, Calliope, Anemone, and Grand Daisies are selling freely. Stationery has been checked by the recent rains, and there is only a limited supply. White and mauve Sweet Sultan are selling freely. A few plants of White Lycopodium and Lobelia telekium (China) are on offer.

Table with columns: Vegetables; Average Wholesale Prices; s.d.s.d. Lists various vegetables like Artichokes, Beans, Broccoli, Carrots, etc.

Table with columns: Fruit; Average Wholesale Prices; s.d.s.d. Lists various fruits like Apples, Apricots, Blackberries, etc.

ORCHIDS.

Clean, well-grown and cheap; also Many Rare and Choice Varieties. STOVE AND GREENHOUSE PLANTS OF ALL KINDS. Kindly send for Catalogue. JAMES CYPHER & SONS, Exotic Nurseries, CHELTENHAM.



A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/8 in. (or equal to stout 21 oz.) in thickness. Can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of GENUINE WHITE LEAD PAINT. "BLACKFRIARS BRAND." Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cans. AND BEST LINSEED OIL PUTTY. Complete Price List of Paints, Colours, Varnishes, &c., on application.



GEORGE FARMILOE & SONS, Ltd., 34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C. And Blackfriars Wharf, Upper Ground Street, E.C. QUOTE GARDENERS' CHRONICLE.



Sample CRET Pot FREE with Booklet. Will convince you that the Drainage, Porosity, Healthiness of a CRETS would help your plants. Write PETER BAILEY & SONS, Ltd., 2 HEATON MERSEY POTTERY, near MANCHESTER.

THE WEATHER.

THE WEATHER IN SCOTLAND. The weather during June was mild, bright and dry. The total rainfall during the month was 1.56 inches, the highest being on the 23rd. The sun made its appearance on 18 days, but rain and gales a grand total of 21 1/2 hours of sun being in average of 2 1/2 hours per day, and an average of 4 1/2 bright days was the result. The total rain fell on 12 days, of which 4 1/2 inches fell during the first 10 days of the month, and the rest on the 17th, and was the heaviest since fall for the year. The maximum of 61.4 inches, or 1.592 inches, fell on the 21st, the rain on the 20th to 24.50 inches, and on the 22nd to 1.26 inches. Temperature of 71.1 degrees, while the 10th to 15th was 65.0, and on the 16th the maximum was 55.0, and on the 19th, and the minimum 55.0, on the 16th, while the mean maximum and minimum were 63.0 and 45.0 respectively. Thus the mean temperature of 55.0 is a mean range of 18.0, and of 18.0, the 10th to 15th. With a mean of 41.0, the minimum of the grass 41.0 to 30.0 on the 19th, this being the lowest night of ground thus during the month. At 1.00 o'clock the ground temperatures rose from 55.0 to 58.0, and at 2.00 to 56.0, and at 3.00 to 56.0. The previous day's rain fell from the southeast and the wind from James' Mill, St. Andrew's Provincial Committee at the Training College Gardens, Kirkton of Mary, near Dundee.

GARDENING APPOINTMENTS

Mr F J Hyland, 45 Gardner to St. John's, Hemby, Wain, Leach, Ablesdon, Surrey. Mr George W. Grass, 45 Gardner to S. P. Austin, Esq., Hallin Hall, Ripon, Yorkshire. Mr C E Bridgett, for the past eight years Gardener to H. P. S. Esq., St. Helens, Hampton Wick, is Gardener to H. Ainslie, Esq., Red House, Putlington (Thanks for donation for R.G.O.F. box, Eds.). Mr Geo W. King, 45 Gardner to Mr Chas. Freres, 104 of House, W. 5th St., Wiltshire.

MANY YEARS REPUTATION. EUREKA WEED KILLER. LASTING RESULTS - NO NEW EXPERIMENT. LABOUR SAVERS. "EUREKA" LAWN SAND. SULFURIC NICOTINE INSECTICIDES FUMIGERS. SPRAYS AND OTHER CHEMICALS & SUNDRIES. SEE LIST. PLEASE ASK YOUR AGENT FOR THE EUREKA ARTICLES. THEY ARE ALWAYS SATISFACTORY IF ANY DIFFICULTY IN OBTAINING WE SEND DIRECT CHARGE FREE. Only Address: GIMLINSON & HAYWARD LTD. LONDON.

SALE OF SURPLUS STOCK. We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Ladders, which we shall be pleased to clear at special prices, subject to being unsold. Particulars on application. BOULTON & PAUL, Ltd., ROSE LANE WORKS, NORWICH.

TURF LOAM. Very Fibrous Yellow Turf Loam. For VINE BORDERS, CARBONATES, ROSES, MELONS, CHRYSANTHEMUMS, FERNS UNDER GLASS, etc., etc. Quotations Carriage Paid or Delivered. A. B. JOHNSTON, New Park, Cranleigh, SURREY.

THE HORTICULTURAL DIRECTORY AND YEAR BOOK.

INDISPENSABLE to EVERY GARDENER and NURSERYMAN.

In this, its Fifty-Eighth Year of Publication, this indispensable work has undergone a thorough revision. Every page has been purged of out-of-date, obsolete names, fresh ones added, and the whole work brought up to date. Numerous Fresh Features have been introduced, including a

CALENDAR OF GARDEN OPERATIONS

AND A LIST OF

NEW PLANTS FOR THE YEAR.

Another interesting feature is a set of Short BIOGRAPHICAL NOTICES of **PROMINENT HORTICULTURISTS and NURSERYMEN**

who have passed away during the year. Thus, by obtaining this DIRECTORY at the beginning of each season, one is enabled to keep pace with passing events in the horticultural world. There are still for sale a few copies of the current edition.

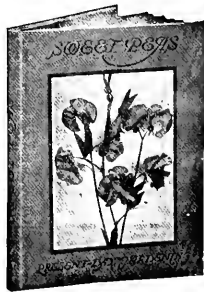
SEND FOR ONE AT ONCE TO

The LIBRARIAN, 41, Wellington Street, Strand, W.C. 2.

PRICE 1s. 4d. Post Free.

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CH. RLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden," (Double volume 2/6.)

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from

THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 3995

No. 1595. Vol. LXII. (THIRD SERIES)

SATURDAY, JULY 21, 1917.

{Registered as a Newspaper.} PRICE 3d. {POST-FREE, 3d.

SUBSCRIPTION—Inland, 15-; Foreign, 17s 22 r. 10s. [54 26c] per annum. Entered at New York Post Office as second-class matter. Postal Address 41, Wellington Street, Covent Garden W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 21

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note that the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

To replace Dutch Bulbs for next Spring flowering sow new British flowers.

SUTTON'S WALLFLOWERS.
Sweet-scented flowers of brilliant colour.
Sutton's Fire King, vivid orange, per packet, 1s. 6d.
Sutton's Giant Veilcan, brilliant crimson, per packet, 1s. 6d.
Sutton's Orange Bolder, a very striking colour, per packet, 1s.
Sutton's Cloth of Gold, bright yellow, per packet, 6d. & 1s.
Sutton's Superb, mixed, per packet, 1s. and 1s. 6d.
Post free.

SUTTON & SONS, The King's Seedsmen, READING.

MACKENZIE and MONCUR, Limited.
Hot-water, Builders, and Heating Engineers, London, Edinburgh and Glasgow. By special Appointment to H.M. the King. London Office, 8, Camden Road, N.W.

BUNYARD'S STRAWBERRIES.
Our new 4-ounce lot is now ready, and is sent on receipt of order.
ALPINE STRAWBERRIES. 1-ounce lot.
GEO. BUNYARD & CO., Ltd., Royal Nurseries, M. Station.

GREENHOUSE PAINTING & GLAZING.
"Vitrolite" superior to White Lead Paint. "Prestone" superdries putty. Full particulars from W. CARSON & SONS, Glass Works, Battersea. Agents throughout the country.

GISHFORD COMPOUND. Insecticide and Fungicide. Over 50 years' reputation; highly Commended R.H.S. & agriculturally controlled. Trials at Wexley, 1914-15. Sold by dealers in Garden Sundries. Wholesale: PRICES PATENT CANDLE CO., LTD., Battersea, London, S.W. 11.

SANDERS, Orchid Growers, St. Albans.

POTATO SPRAYING. On spot ready for immediate delivery. Sulphate of Copper 30 per cent., pure Washing 8-14 98 per cent. Water for process and quantity required per acre. — G. H. RICHARDS, 23, Borough High Street, London, S.E. 1.

SPRAY YOUR POTATOS.
INCREASE your crops and protect them from blight and disease by using KEELING'S SPRAYING MIXTURE ("Kiln") brand. Guaranteed free from lead and keeps indefinitely. A 4 lb. bag, with 25 gallons of water, is enough to spray twenty rods (two, and rods only 4s. 6d.; 3 lbs., 8s.; 1 lb., 13s. 6d.). 32 lbs., carriage free in the U.K. Sample 1 lb., 1s. 6d., post free. Send P.O. order, direct to the manufacturers, KEELING & WALKER, LTD., 20, Milton House, Surrey Street, London, W.C. 2.

SPRING CABBAGES — The best varieties to sow during the first part of August. Order at once.

SUTTON'S HARBINGER CABBAGE.
The earliest Cabbage for Spring Cutting.
Per packet, 1s., per ounce, 1s. 6d.
Trial of Autumn Cabbages. A trial of no less than 114 stocks, representing 94 sorts, was made at Wexley last year. It will be noticed that Sutton's Harbinger is the only one at the trial which gives Autumn and Spring sowing. — The Field, June 17, 1916.
Cabbage Harbinger is a capital variety. I sowed some seed in July, and now (January 10, 1917) I am writing some lovely heads. — Mr. A. F. Coles, The Garden, Wallasefield, Croydon.

SUTTON'S APRIL CABBAGE.
The most popular early Cabbage for garden use.
Per packet, 1s., per ounce, 1s. 6d.
"The April Cabbage you supplied me with last year have done wonderfully well, hardly a plant has been destroyed by the severe winter, and they are now coming in very useful." — The Rev. E. J. Rogers, May 4, 1917.
"The April Cabbage, raised from seed supplied by you last year, was wonderful. They were a lovely batch of plants, and not one bolted." — Mr. H. Brent, Framfield.

SUTTON'S FLOWER OF SPRING CABBAGE.
The most suitable for the general Spring crop.
Per packet, 1s., per ounce, 1s. 6d.
My best of Flower of Spring Cabbage was well worth photographing, and was far earlier than any others in this neighbourhood. — W. Webb, Esq., Dursley.
I sowed your April and Flower of Spring the best Cabbage in cultivation. Last September I planted 2,000 of them, and in the whole plantation there were but four plants not true to character. The bulk of these are being sent to the U.S. through the Vegetable Producers' Committee. — Mr. P. H. Scholly, Rothamsted Gardens.

SUTTON & SONS, The King's Seedsmen, READING.

J. GRAY, LTD. Builders of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wire, 201, Western, London. Telephone: 201, Western.

BARR'S VEGETABLE SEEDS for July to September Sowing. Special List post free. BARR & SONS, King Street, Covent Garden, London.

FOR SALE, 500 400 Strong Wooden Boxes.
2 iron hinges, hump, and fastener; assorted sizes, 14 by 5, 22 by 14 by 24, 18 by 15 by 7, 18 by 12 by 12, by 4, 18 by 13, 21 by 15 by 5. Best offers. With seed samples. HUNTER'S DAIRIES, LTD., Chard, Somerset.

IT IS OF NO USE waiting until the war is over to advertise your wares. Even if you find it difficult to supply your customers, on account of shortage of staff and difficulties of transport, you should not cease to advertise. When peace is declared, there will be, at any rate for a time, increased activity in every branch of industry. When that time comes, with whom will your customers deal with the man who has not advertised for three years, and whose very name they have forgotten, or with the man who, by persistent and persevering advertising, has kept his name before the public? Memory is short, and people whose names are out of sight are also out of mind. After the war all your competitors will be struggling to obtain the business with which everyone will then be in a better position to cope. Are you going to miss your chance?

BRITAIN'S GREAT CABBAGE. WEBB'S EMPEROR CABBAGE.

(For July and August sowing.)
Earliest, best, and most popular Cabbage in cultivation. Remarkably free from any tendency to "bolt." 6d. and 1s. per packet, 1s. 6d. per ounce, post free.
Mr. G. Edmund, Head Gardener to W. H. Myers, Esq., Swammer Park, writes: "I should like to testify to the excellence of your Emperor Cabbage, it is really a gem. fit for private gardeners or market growers alike, and of splendid quality."
WEBB'S FAVORITE CABBAGE.
Early medium-sized heads, of splendid quality, 6d. and 1s. per packet, 1s. 6d. per ounce, post free.

WEBB & SONS, LTD., The King's Seedsmen, Stourbridge.

WATERER'S ALPINE HERBACEOUS PLANTS and WATER LILIES. Large stocks of the best and most popular varieties. Descriptive Catalogue free. JOHN WATERER, SONS & CHRIST, LTD., The Nurseries, Tonbridge, Kent.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also Duncan's Improved Mushroom Spawn. Frost-killers for use on application to DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.

OUR list of Vegetable Seeds, suitable for summer sowing, is now ready, and will be sent post free on application. DOBBIE & CO., Seedsmen to the King, Edinburgh.

WM DUNCAN TUCKER & SONS, LTD. Lancing Road, South Tottenham, Conservatory, Window, Garden, Kitchen, Peach-houses, Parthenon Buildings, &c. Catalogues gratis.

NARCISSUS Grand Primo, 150,000 single and double Bulbs for forcing 98s. per 1,000, 1s. 6d. per 100. VAN DER SLUIS, 10, Rinner, Groningen.

ARMY BOOTS (reconstructed), cost 10/-, now only 6/-, 6d. Selling most of a bargain price. Superior quality, without a blemish, as good as new, composed of top-graining, turning, imitation, and other cloth, single pairs cost 10s. 6d. one pair only 6s. 6d. (both feet). Same size. Many returned if dissatisfied. Special attention to quantities. THE THAMES TRADING COMPANY, LTD. (Army Boots Dept.), 8, Eldon Street, London, E.C.

ARMY BOOTS (reconstructed) A word of advice. The prices of boots and leather have gone up considerably, and will increase greatly by the coming winter, it is a good investment to buy our boots now. We desire to give you our famous "Heavy" Boots, and conditions as above. THE THAMES TRADING COMPANY, LTD. (Army Boots Dept.), 8, Eldon Street, London, E.C.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipcord Tweed; wears the leather; showproof; 7 yards for 17s. 6d. Patterns free. — BRADFORD WOOLLEN CO., 71, Bradford.

SEVERAL hundred boxes, various sizes, of hard and soft wood, suitable for Nurseries, the beds, &c. Wholesale: STONE, 19, Waddan Marsh Lane, London.

SALE BY AUCTION.**WALTHAMSTOW.****EXPIRATION OF LEASE.**

Six Spanish Cactaceae, 2,000 ft. of Larch Piping, five Bakers, several Farnes and Lightes, also the stock Potatoes, Tomatoes, Asparagus Ferns, Geraniums, few specimen Palms, Flower Pots, and Sundries.

MESSRS. PROTHEROE & MORRIS will sell the above by auction on the premises, The Nursery, Summit Road, Walthamstow, near Hoe Street Station, G. E. Roadway.

On Tuesday, July 31st, at 1 o'clock,

by order of Mr. J. Spink, may be viewed.

Catalogues on the premises, and of the Auctioneers, 65, Cheapside, London, E.C. 2.

BUSINESSES FOR SALE.

PROTHEROE & MORRIS, Horticultural, Market Garden, and Estate Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and at Lewtontone, E. Monthly Horticultural Register had on application.

NORTH WEST COAST.—Important and popular seaside town. For immediate sale. Owner called up. For sale, Florist's, Seed, and Fruiterer's Business.—Full particulars of PROTHEROE & MORRIS, 67 and 68, Cheapside, E.C. 2.

AUBREY & CO., Nurserymen's Agents, 10, Duke Street, Adelphi, London, offer old established Nursery and Jobbing Gardening Business near Liverpool; doing over £1,000 yearly, comprising 1,350 square yards land, several glasshouses, cut frames, &c. Price £200 for goodwill and stock at valuation.

FOR SALE, as a going concern, **NURSERY BUSINESS**: 600ft. Glass, 2 acres land; Southend Coast Road, R. F. Box 7, 41, Wellington Street, Covent Garden, W.C. 2.

NOTICE.

FAMOUS GARDENS IN WAR TIME.

How they are being maintained with reduced staffs. An exceedingly interesting series of interviews now appearing in the popular gardening weekly,

"GARDEN LIFE."

This week's interview is with Mr. Thomas Smith, of GORME COURT, KINGSTON HILL. Get a copy today; it will interest and help you. Price 2d., of all newsagents, or post free, 2d., of The Publisher, Hatton House, Great Queen Street, London, W.C. 2

TENDER.

TRAINING WITH THE ENEMY AMENDMENT ACT, 1916. By order of the Public Trustee as Custodian and James H. Stephens, Esq., as Controller.

FOR SALE BY TENDER, in one or more lots, the valuable Portman Lease No. 47, Baker Street, W. 204 years unexpired, Ground Rent £100. Also the business of the Floral Depot Ltd., Highfields Road, established therefor for over 50 years.

Particulars of sale and forms of tender may be obtained of the Public Trustee, Kingsway, W.C., of James H. Stephens, Esq., F.C.A. (Messrs. Losch, Stephens & Co.), 6, Clements Lane, E.C.; and of the selling agents, B. E. Foster & Co., 111, 6, Pauling, E.C.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock; cash or exchange. See other advertisements; catalogue free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, offers of well rooted layers of Sovereign and Givon's Little Strawberry to E. G. GERRISH, Pimley Gardens, Tring.

WANTED, choice Fruit, Flowers, and Vegetables; best market prices returned, buyers, &c., sent. Supplies stock from Gardens occupied. MORLE & CO., 150-155, Finchley Road, N.W. 3.

REQUIRED, a number of second hand Garden Seats. Full particulars, with lowest prices, to G. A. HARVEY & CO. (London), Ltd., Wood Lane Road, S.E.

PLANTS, &c., FOR SALE.

100,000 LARGE GARDEN FERNS (Crocus, 100; Palms, Begonias, Crotons, Anacardium, Roses, Eucalyptus, Lilies, Hydrangeas, &c.)—catalogues free.—J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

TUBEROSES, double African Pearl, just arrived, for tender bottoming, extra large bulbs, 2s. 4d.; 12s. 10d.; sent free any address, for cash.—MORLE & CO., 150-155, Finchley Road, N.W. 3.

FERNS! FERNS!—Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns; catalogues free.—J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

FOR SALE, a beautiful Kentia Fosteriana Palm, 24ft. high, in splendid condition, in tub, can be seen at Cumberland, London. No reasonable offer refused.—Letters, C. C., 22, Bonmouth Road, Peckham, S.E. 15.

FOR SALE, Atropa Belladonna Seedlings; delivery end of July and onwards; 11s. per 100, carriage paid, cash with order.—Apply, HEM BLAND, Blandford, Wilts. Lark.

FOR SALE, five large tubs of AGAPAN—THUS; nominal price or exchange.—Long Lodge, Church End, Finchley, N. 10.

MISCELLANEOUS.

FOR SALE, excellent Turf Loam for Gardening purposes; for Glendon and Rushton Station, M.R.—For further particulars, apply C. R. KNOLLIS, Estate Office, Boughton House, Kettering.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient. Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. No advertisement shall they enter into communication with unknown correspondence which require a fee beforehand. Advertisers are cautioned against having Letters addressed to Agents at Post offices, as all letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.**THE UNIVERSITY OF LEEDS.****DEPARTMENT OF AGRICULTURE.**

Applications are invited for the position of additional Instructor in Horticulture, commencing salary £150 per annum, a man or woman with sound horticultural training as required. Applications will be received up to 25th July, 1917, and should be addressed to The Secretary, The University, Leeds, from whom further particulars may be obtained.

HEAD GARDENER WANTED (in and out) man or woman or married couple, without children to superintend lady workers and assist in new home for Vegetable and Fruit production in Oxfordshire on about 50 acres land and orchards; must have had some years' practical experience and responsibility with good knowledge of soils, packing and marketing produce. Apply giving references, experience, age, and wages required, if board and lodging provided by employer, to F. A. T. on Director, 150, Leadenhall Street, London, E.C. 3.

WANTED, HEAD GARDENER: 10 miles from London; must have good knowledge of Flowers, Vegetables, Fruit; must also be able to do Conservatory work, glazing, painting, &c., and to milk cows, cut and make hay, and other manual or stable, but no children. Also an UNDER GARDENER would do. Apply by letter, stating age, full details of previous experience, and wages required; also references, to "HAMSTEAD," at Homesteads, 60, Cheapside, London, E.C. 2.

WANTED, a HEAD GARDENER: thorough experience and general knowledge; Garden (5 acres); 2 Glasshouses for Fruit Trees only; permanent situation; cottage offered; wages to be arranged; must be over age or unfit for military service.—Apply, COMMANDANT, Abbot's Linton Hospital, Huntingdon.

WANTED, HEAD WORKING GARDENER, where 7 or 8 are usually kept; must be good all round man; able to supply Vegetables for large establishment, Melons, Peaches, Nectarines, Grapes, &c.—Apply, stating wages required, with cottage and garden for own vegetables, age, whether single or married, and if the latter what family of any, to R. J., Box 27, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, HEAD WORKING GARDENER: thoroughly experienced at inside and outside work; personal reference from last employer required; good wages and cottage. State full particulars, age, &c.—MRS. L'EGAN, Bramblehill, East Grinstead, Sussex.

WANTED, HEAD WORKING GARDENER: thoroughly experienced inside and out; Vineyard and Glasshouses; several kept.—Write, HILL, Holfield, Cogenhoe, Essex.

WANTED, HEAD WORKING GARDENER. Send full particulars, age, experience, wages, ages of children, &c., "Lower Woodside," Hatfield, Herts.

WANTED, immediately, HEAD WORKING GARDENER (Parham), good wages to thoroughly capable man; furnished rooms.—Full particulars to HON. GERALD MONTAGU, 27, Kensington Court, W. 8.

GARDENER WANTED; good HEAD WORKING, assistance given; Fruit, Flower, Vegetable, and Greenhouse, good cottage.—Write, F. BURNES, Habing-rove, Dunham, Bucks.

CAN lady or gentleman recommend efficient SINGLE MAN? HEAD GARDENER for best good cottage.—H. G. V., Llandudni's Inn Fields, London, W.C. 2.

WANTED, an experienced GARDENER, to take charge, under the Head Gardener, Peppery, Grapes, Peaches, Vegetables, Orbits, &c.; wages £2 per week—Other particulars on application to E. ROBERTS, The Gardens, Bridge Hall, Bury, Lancashire.

WANTED, good all-round GARDENER, over military age; Vegetables, Flowers, and Fruit; 2 small Greenhouses; wife willing to help in house; good cottage and garden fount.—Write, stating full particulars, wages required, &c., to E. BARTRUM, Estate Office, Stockton, Wiltshire.

WANTED, GARDENER (ineligible) for Vegetable Garden and small Vinery; single-handed during the war; Flower Garden and Greenhouse after the war; must be experienced in both, good wages and cottage. Apply, HON. MISS LESTER, Ham Manor, Hingford, Berks.

WANTED, good GARDENER: Carnations, Vines, &c.; 2 men and boy kept. State age and full particulars.—MRS. CAPEL CURE, Shakenhurst Hall, Cleobury Mortimer.

WANTED, good GARDENER: help given; Fruit, Vegetables, Flowers, small Greenhouse; wages 30s.; good cottage. B. SPRING RICE, Steventon, Hertsmere.

WANTED, GARDENER (ineligible); experienced, inside and out; Vinery, Orchard House, several orchards; second man kept.—Apply, with full particulars, to E. T. BOWLE, Mill House, Salisbury.

WANTED, good KITCHEN GARDENER, also MAN for Inside and Out; wages 25s., home, coal, and vegetables, negligible or dish-washed.—For particulars, apply A. C. DEBANE, Park Hill Garden, Mansfield, Notts.

WANTED, GARDENER (ineligible for Army), well up in Fruit, Flowers, and Vegetables; little Glass; good wages, with free gate lodge.—Apply to A. E. SPENCE, The Park, Sutton Bridge, Lincs.

WANTED, competent MAN, to take charge of Glass; liberal wages to experienced man.—For particulars, apply HEAD GARDENER, Childwickbury Gardens, St. Albans.

WANTED, SECOND GARDENER; capable of taking charge of staff (3 men and a boy) if and when Head Gardener is absent; ordinary table Vegetables; food growing a specialty; no fancy Fruit, Grapes, &c.; Melons, but little Glass; isolated country place; 5 miles from Dorking; wages 32s. 6d., a week commencing modern built four-room cottage, garden, garden, pigsty, no extras; if married preferred, but single would be considered, ineligible for service; returned wounded soldier would be eligible if able to fulfil the duties as stated above. Address replies to MR. H. GARDNER, Cottage, Lechlade, Wotton, Dorking.

WANTED, a SECOND MAN, chiefly In Vinery, well up in Fruit and Plants; single or married; wages 30s., duty and overtime paid.—Full particulars and copies of references to J. BLACKWOOD, Setton Park, Slough.

WANTED, UNDER GARDENER having good experience and references; single and ineligible; liberal wages.—Apply, T. ELLIOTT, Norton Manor, Sutton Southey, Hants.

WANTED, UNDER GARDENER; cottage given; must have good reference.—Write, stating wages and particulars, LADY MCMAHON, Southdown House, Devizes.

WANTED, UNDER GARDENER at good salary; unmarried; ineligible.—LADY B. PAGET, Longhorn Hall, Rugeley, Staffs.

WANTED, UNDER GARDENER for Outside; duty alternate Sundays; pumping in House; wages 25s. per week, good cottage and garden. Apply, stating age, particulars, to ALFRED CHILD, Calcey House Gardens, Daventry, Northants.

WANTED, FOREMAN, for the Houses; ex-Serviceman or ineligible; one with experience of growing good Fruit, Flowers, and Vegetables under Glass; a good decorator; wages according to experience and ability. Both, &c.—Apply, giving full particulars, to GARDENER, Park Place, Henley-on-Thames.

"See Bull's"
THE FOOD FOR PLANTS

ONLY MEDAL
 INTERNATIONAL EXHIBITION EDINBURGH-1896
 ONLY GOLD MEDAL EDINBURGH-1891

THOMSON'S
 CELEBRATED
MANURES

PERFECT PLANT FOODS.
 Distinguished for all garden crops. Prices: Vines, Plant and Vegetable Manure, 1 cwt. 20/-; 50 lbs. 12/6; 25 lbs. 7/6, 14 lbs. 4/6, 7 lbs. 2/6. Fruit 2 1/2, 1 1/2, and 6d. Carriage paid anywhere on 30 lbs. and up. Special Chrysanthemum and Top Dressing Manure: 50 lbs. 20/-; 25 lbs. 11/-; 14 lbs. 6/-; 7 lbs. 3/6. This 1/- Carriage paid anywhere on 25 lbs. and up. Sold by all Seedsmen. Sole makers, Wm. Thomson & Sons, Ltd., Clonfert, N.E.

Save our Food - Thousands of tons wasted through the ravages of Rats and Mice in our Farms, Stores & Homes. Destroy this menace with **LIVERPOOL VIRUS** exterminates **RATS & MICE**. In tin ready prepared with bait for Rats 2/6 & 6/- for Mice 1/6. Sole Importers: **EVANS BROS. LEICHER & WEBB Ltd., Liverpool.**

SANITAS

✓ SLUGS SLUGS

"SANITAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as **Worms, Rats, Mice, Sparrows, Cats, &c.**

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (net wt., London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
 Limehouse, London, E.
 Awarded Medal at Royal Horticultural Exhibition, 1911.

ORCHIDS,
 Clean, well-grown and cheap; also Many Rare and Choice Varieties.

STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
 Kindly send for Catalogue.

JAMES CYPHER & SONS,
 Exotic Nurseries, CHELTENHAM.

Established 1860.
JOSEPH BECKETT, LTD.,
 Fruit Brokers and Commission Agents,
CENTRAL AVENUE, COVENT GARDEN.

Warehouses: 7, Garrick Street, W.C.

Consignments of Choice Hot House and Orchard Fruits Solicited.

Tomatoes and Cucumbers a Speciality.

Best Prices and Quick Returns Guaranteed.

References Supplied on Application.

EMPTIES AND LABELS SUPPLIED.

SANKEY'S FAMOUS GARDEN POTS
Are the BEST and Cheapest.
 Small quantity of each size required and have "Carriage paid" condition. Carriage frequently amounts to half value of quantity required. Write for Price List, free. SPECIAL POTS of all descriptions. Dutch Bowls and Fern Pots from 2d. each.

RICHARD SANKEY & SON, LTD.
 Dulwell Potteries, NOTTINGHAM.



Sample **CRET Pot FREE** with Booklet will convince you that the Drainage, Porosity, Healthfulness of CRETS would help your plants. Write **PETER BAILEY & SONS, Ltd.** 2 Heaton Mersey Pottery, near MANCHESTER.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being unsold.

Particulars on application.
BOULTON & PAUL, Ltd., ROSE LANE WORKS, NORWICH.



LAXTON'S STRAWBERRIES,
 including the grand new var.:-
 Laxtonian (fine Main Crop),
 Pots, 30 - 100; open, 20 - 100,
 King George,
 20/- pots; 6/- open.
 Royal Sovereign & Standard Sorts,
 20 - pots; 6 - open.

LAXTON BROS., BEDFORD.

IMPORTANT: Please write for a Catalogue, as the Paper Commission only allow us to send to those who apply.
LAXTON BROTHERS, BEDFORD.

MANY YEARS REPUTATION.

EUREKA WEED KILLER

LASTING RESULTS - NO NEW EXPERIMENT.

LABOUR SAVERS. "EUREKA" LAWN SAND, SOIL FUME, NICOTINE INSECTICIDES, FUMERS, SPRAYS, AND OTHER CHEMICALS & SUPPLIES. SEE LIST PLEASE FOR YOUR AGENT FOR THE EUREKA ARTICLES - THEY ARE ALWAYS SATISFACTORY IF ANY DIFFICULTY IN OBTAINING WE SEND DIRECT CARRIAGE FREE

Daily Address: **LOMLINSON & HAYWARD LTD. LINCOLN.**

ROSES (Vol. 10 of PRESENT DAY GARDENING), by **H. R. DARLINGTON**

Edited by **R. HOOPER PEARSON**, Managing Editor of "Gardeners' Chronicle."

A good practical book for all Rose lovers. Contains much valuable information. 5 full-page coloured plates. A double volume. Price 2/10, post free. Special presentation edition with beautiful cover design, in cloth gilt, gilt top, price 3/10, post free.

THE PUBLISHER.

"Gardeners' Chronicle" Offices, 41, Wellington Street, Covent Garden, London, W.C. 2

Ammanford and Pontyberem Collieries.
 SOLE AGENT:
T. T. PASCOE,
 York Chambers,
SWANSEA.

Tele (phone) 1048 Central, Pascoe, Swansea.
 (grams)

Best Anthracite Large Coal for Horticultural purposes and Cobbles for House Furnaces.

Quick Despatch. Best Quality.
Lowest Prices.

THE
Gardeners' Chronicle
No. 1597.—SATURDAY, JULY 21, 1917

CONTENTS

Adamsonia digitata in India ..	22	Obituary—	
Cherries, the pollination of ..	23	Bargery, G. T. ..	29
Eucalyptus verrucosa ..	27	Farguson, Gustave ..	29
Enonimus ..	27	Rozain-Bouchardat ..	29
Working in Ferns, crops and stock on the home ..	29	Voss, Walter A. ..	29
Food production, on increased ..	24	Orchid notes and gleanings—	
Forestry—		New hybrids ..	22
Work in Highland Forests ..	23	Potatoes, sale of ..	26
French nurserymen in America ..	26	Raspberries, Scottish ..	26
Fruit prospects ..	27	Rosary, the—	
Finer and fixation of nitrogen ..	23	Rosa himalayica alba ..	23
Galloway garden, notes from a ..	21	Seed trade, an appeal to the ..	27
Garden Sunday ..	26	Societies—	
Grapes with large shoulders ..	27	National Viola and Pansy ..	29
House sparrow, the ..	27	Royal Horticultural and United Hort. Benefit and Provident ..	28
Insect pests of fruit trees ..	26	Soil infection, on the ..	23
Notes from a Galloway garden ..	21	Tamar river, on the ..	23
		War item ..	26
		Week's work, the ..	23, 25
		Women and workers' fares ..	26

ILLUSTRATIONS.

Adamsonia digitata, 22, trunk and roots of ..	22
French nurserymen in America ..	26
Roses Mrs. George Munro, 27, Sun-tan ..	28
Spiraea bracteata ..	21

NOTES FROM A GALLOWAY GARDEN.—VIII.

Carnations, and streaked gill flowers—Which some call Nature's bastards—of that kind our rustic garden's barren; and I care not to get slips of them, for I have heard it said: There is an art which in their richness shares With great creating Nature, 'Tis not put The dibble in earth to set one slip of them.

Walter's Tale, iv, 3.

THE indifference which I cannot help feeling towards florists' flowers, and garden hybrids in general, approaches very near to the prejudice so frankly expressed above by Pindar. It is, therefore, with scant consistency that I venture to suggest what a brilliant race might be evolved by crossing the Mexican *Oenothera* raised with some of the golden-flowered species. The only defect in the carnine blossoms of the Mexican plant is their small size, which seems out of proportion to the abundant foliage.

Some hybrids, especially natural ones, are irresistible. *Primula Bulleyana* has turned out an irresistible flirt; most parts of the borders are peopled with his illegitimate, but charming, offspring. The other parent is not always to be identified. The stature of some of the brood indicates pulverulent blood, the soft rose tints in others point to *japonica* or *Bessiana*, while the fiery hue in others suggests *Cockburniana*. Now that *P. helodoxa* has joined the glad throng, further developments may be expected. The seed of these hybrids is fertile. I shall be happy to forward some to anyone who cares to send a stamped, directed envelope.

We spent an afternoon on a moorland meadow lately, selecting the best forms among myriad *Orchis maculata* for re-planting to the garden. It is strange that British terrestrial *Orchids* are not more commonly grown in borders, where some of them develop dimensions far beyond those they attain when competing with grass and other growths. Unlike most plants, our wild *Orchids* are most easily moved when in full flower, for the flowering stem proceeds from a tuber which is destined to disappear after the plant has seeded, a new tuber forming along side of the old one. If care be taken not to break the fleshy roots of the new tuber, the plant sustains no check in removal. The colour of *Orchis maculata* ranges from crimson to pure white, some of the intermediate forms being

beautifully pencilled and marbled with darker tints, the leaves of some being richly spotted, others plain green. In the marsh *Orchis* (*O. latifolia*) I have only found one variation from the full red purple (dangerously near magenta). The flowers of this variety are what milliners call "vieux rose." Among the crowds of *O. maculata* which enrich our moorlands in June, one comes from time to time upon specimens of commanding stature and large flower-spikes. These are natural hybrids between the spotted and the marsh *Orchis*, and make splendid garden plants, increasing into large clumps. One of these hybrids has long been supplied by nurserymen under the name of the Kilmorock *Orchis*.

Habenaria conopsea and the so-called Butterfly *Orchis*, *H. bifolia*, both deliciously scented, are worth cultivating, and so is the bright *Orchis pyramidalis*, for the welfare of which lime or chalk is essential.

In these days, when the influx of new plants from China and elsewhere far outstrips the capacity of anything less than a botanic garden and its staff, it becomes more necessary than ever to exercise discretion in excluding all except the most desirable species. In no genus is this more needful than in the shrubby *Spiraes*, most of which require ample room to develop their full beauty. Among the June-flowering

its impatience of summer drought. The difficulty of water-side planting for things of lowly growth is enhanced in this garden by the unhappy circumstance that there is no water therein, standing or running. There is, indeed, a long border irrigated by subterranean pipes for the benefit of Lilies, but *P. tosa* does not send its roots deep enough to profit by this provision. It cannot put up with dry surface soil. But to be without its glad-ome hue in March would be to miss one of the chief delights of early spring, so we set what wits we had at command to devise a satisfactory scheme, and hit upon one. A breadth of border facing north was made up with strong loam, peat, and sand, and planted with *P. rosea* from seed of the fine strain in Sir Frank Crisp's wonderful "paradise." In the middle was set a root of *Rodgersia tabularis*, which remains asleep until the *Primula* has set its seed, then rises and spreads its huge green umbrellas, each two feet across, over the bed. Throughout this blazing month of June the soil has remained cool and moist, not a leaf of the *Primula* has flagged, and the seedling stems are a foot high. In autumn a dressing of peat and sand will be laid over the plants.

This has proved an "annus mirabilis" for Lilies, just as 1916 was an "annus damnabilis." The prolonged cold of last spring

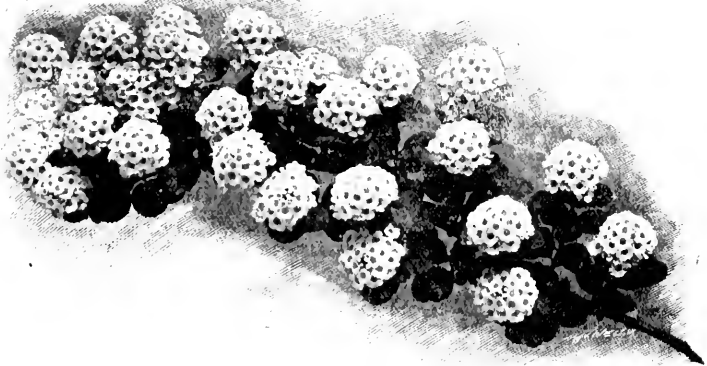


FIG. 9. SPIRÆA BRACTEATA. FLOWERS WHITE.

species, Mr. Bean gives the palm to the hybrid *S. van Houttei*, which he pronounces to be "probably the finest of all the white-flowering *Spiræas*, except, perhaps, *S. arguta*," which is another hybrid. It is with diffidence that I venture to differ from so high an authority; but certainly here *S. van Houttei* is eclipsed by the Japanese *S. bracteata* (see fig. 9). We have a specimen of each, well isolated, but growing within sight of each other, and we cannot dispense with either, for *S. van Houttei* precedes its rival by a fortnight. Both are profuse in bloom, but the sprays of the Japanese species are more richly clad with snowy clusters than the other, and last longer in bloom. In July the display is taken up by the loftier *S. cuneensis*, whereas the flowers are in rounded clusters, like those of the species afore-named, and set along whiplike branchlets, with charming effect. Following these in August are two splendid species, introduced from China by Mr. Wilson (S. *Honyi*), with its flowers in crowded rosettes, like those already referred to; and another, whereof I know not the specific name, in the way of *S. sorbifolia*, with huge terminal panicles of white blossom produced in succession well into September.

Many persons have found it hard to keep *Primula rosea* in satisfactory vigour, owing to

discouraged early growth; after the plants did make a start, all the conditions continued favourable, and there has been no check of vitality to let the dread *Botrytis* start an innings. One sometimes speculates what the choice should be if one were restricted to growing six species of Lily. It would be wise to keep to the easy sorts, leaving to experts such coy or fickle beauties as *L. rubellum*, *japonicum*, *leichthii*, and others. Even from a list so curtailed it would be hard to fix on the half dozen. The happy amateur for whom the peerless Madonna Lily yields her charms will hardly remain happy without her Naudin half sister, *L. testaceum*, and the presence of the white *Mar-tagon* positively postulates the swarthy *Dalmatian* as a foil to its purity. Only under duress could we be induced to exclude *L. Szovitzianum*; and as for *L. regale*, with the constitution of a dray horse and the grace of a thoroughbred, if Madonna be the queen, this is, without dispute, the Prince's Royal of the race. It has been hitherto beyond the reach of slender purses in war-time, but it is destined to become one of the commonest Lilies, being very easily raised from seed, which it produces generously. Among a batch of two-year-old seedlings here, some are actually flowering this summer; but they require four or five years to attain their full stature. One of the older bills

here has a stem over five feet high, bearing a crown of eleven great blooms.

And how we have come to the limit of half a dozen, without making provision for a single scarlet Lily, such as *L. pomponium* and *L. chalcidonicum*, or for any of the flaming Panther, and leaving the late summer and early autumn cheer-

ADAMSONIA DIGITATA IN INDIA.

At Allahabad, near the point where the rivers Ganges and Jumna meet, are to be found two very fine specimens of the above tree, and recently Mr. Head, Superintendent, Government Parks

we measured the trunk three feet or so from the ground level, also one of the roots. The circumference of the trunk was 56 feet 8 inches, and the root selected 91 feet in length. The other tree referred to is 42 feet 4 inches around the trunk just above the ground line. Both trees are situated almost opposite the fort of Allahabad, which was built by the Mogul Emperor Akbar some 500 years ago. T. W. Briston, Fort, Allahabad.

ORCHID NOTES AND CLEANINGS.

NEW HYBRIDS.

LAELIO CATLEYA AZAEL. We have received a flower of a very brightly coloured hybrid of medium size, taken from a plant blooming for the first time in the Orchid house of Elliot T. Nicholson, Esq., Stoneleigh, Setton Park, Liverpool. It was obtained by crossing *Cattleya Minucia* (Loddigesii's Warszewiczii) and *Laelia pumila pauciflora*, the latter showing very clearly in the tubular, close fitting base of the labellum. The sepals and petals are deep rosy-mauve, the base of the lip slightly darker, and the front ruby crimson, with a band of primrose-yellow in the middle area. The column is pure white.

ORCHIDOGLOSSUM HAMPSONI. A very handsome flower raised between *O. ardentissimum* and *O. splendens*. *O. crispum* has been used throughout in its ancestry. *O. Pescatorei* comes in twice, and *O. Wylekeatum*, one of the parents of *O. splendens*, sustains its reputation for imparting good qualities. The flower is of model form, white, with two-thirds of the inner parts of the segments light chestnut red, with line darker veining. The reverse side is tinged with light purple. It is sent by Panta Ralli, Esq., Ashtend Park (to Mr. W. H. Winter).

LAELIO CATLEYA S. O. SUNDENSON.—This plant is the result of crossing *Laelia purpurata* and *Cattleya Empress Frederick* (Mossiae's Dowiana aurea), and it is an acceptable addi-



FIG. 10. ADAMSONIA DIGITATA ON THE BANK OF THE RIVER GANGES.

tion without the splendor of *L. auratum* and the glowing clusters of the Tiger Lily.

Among all the Alpine species of *Dianthus*, there is none, methinks, so equal *D. calzonius* in beauty. This opinion may be held without doing any dishonour to the gaiety of the better forms of *D. neglectus* or the profusion of *D. alpinus*. The blossoms of *D. calzonius* are larger than either of these, and the delicately dotted crevet round the centre of the flower gives it the distinction which has justly earned its specific name. This *Pink* is reputed less easy to cultivate than the other species, but once it gets its roots well down among the stones and receives an occasional top dressing of loam and sand, no time, it is not likely to fail, and is not fastidious about aspect. One plant here has occupied a dry ledge in a retaining wall for ten years; but its tenure is threatened by the invasive runners of *Spirea decumbens*, which has spread outrageously over a space of more than six feet, swallowing up a fine clump of *Campanula*. G. F. Wilson on its other flank. The worst of a wall-garden is that one cannot move precious things out of the way of aggressive neighbours. *Herbert Maxwell*

FORESTRY.

WORK IN HIGHLAND FORESTS.

THE Board of Trade Forestry Commission, through the medium of the leading officials of the Aberdeen and North of Scotland College of Agriculture, has organised large parties of lads from the leading secondary and higher-grade colleges and schools for forestry work in the Highland districts during the vacation. The work consists of shedding and peeling trees for pit props. The lads are under military discipline, and in some forests there are as many as 200 cadets in one encampment, their ages ranging from fourteen to eight or nine years. Many will in all probability pass through the Universities, and the experience they are gaining should inculcate in them an interest in the steps which are now being taken for the establishment of a forestry centre in the North of Scotland.



FIG. 11. TRUNK AND EXPOSED ROOTS OF ADAMSONIA DIGITATA.

found in the Bombay and Madras Presidencies, so it is possible seeds may have been brought by traders from Africa.

In fig. 10 is presented a general view with the River Ganges to the right; and fig. 11 gives an idea of the size of the trunk. In company with Mr. Head, I paid a visit to these trees, and

tion to the *L. C.* Canhamiana class. The broad sepals and petals are bluish white, the lip light violet with yellow lines from the base; the centre is tinged with orange. The flower was raised and sent by Messrs. Flory and Black, Slough.

CATLEYA CHARM.—Raised by Messrs. Saunders and Sons between *C. Percivaliana alba* and *C.*

Dusseldorfer Undine (intermedia alba x. Mossiae Wagener). It is but a slight variation from *C. Persivaliana* alba, but it will probably prove a freer grower. The chief departure is in the construction of the middle of the lip, the front lobe of which is more elongated than that of *C. Persivaliana*. The flower is pure white with chrome yellow disc to the lip.

BRASSO LACTEO CATELYA NEXUS. A flower of a cross between *Brasso Cateleya Diglyam* x *Mossiae* and *Laetia Cateleya Inguami*. *L. Dayana* x *C. Doyana* are also present by Mr. H. Haddon, Orchard grower to Mrs. Bischoffheim, The Warren House, Stamford, where it is flowering for the first time. It is of medium size, the *L. Dayana* in its composition having tended to restrict the expansion of the lip. The whole flower is tinged with blue over a white ground, the petals and lip being veined with dark rose. The lip, which is folded over on the side lobes, is very much undulated and fringed at the margin.

OBONGLOSSUM NAISALIA O. THOMASIANUM x *O. PERCULUM*. Mr. H. Haddon also sends a flower of this attractive *Obonglossum*. Although the *O. Ferdinandi* x *O. Thomasiannum* is not very evident, the record appears to be correct. The flower is like an ordinary *O. crispum* in form, the greater part of the surface of the sepals and petals being traced and blotched with light color, which displays conspicuously on the backs and the fronts of the segments. The lip, which is rather narrow, is white, with brownish red base and yellow crest, with radiating red lines at the sides.

ON THE TAMAR RIVER.

ON a bend of the Tamar River, in the beautiful valley through which it flows, stands the ancient Ship Inn, surrounded by the box houses that comprise the hamlet of Morwellham. It was to reach this beautiful spot and make the acquaintance of Mr. A. J. Bliss and his seedling lilies that I left Tavistock one morning in early June and drove through that delightful part of Devon.

We had first to pass through the valley of the Tavy, and as we slowly climbed to the ridge beyond, behind us, and above the picturesque-looking town, we had just left, high on the skyline in dim and misty fading masses stood Dartmoor, the most cherished and picturesque part of Devon, and, as it always seems to me, a desert complete in itself and apart. Away to the left in the far distance was the range of hills above Launceston. Pausing for a moment before descending to the next valley, the mind was lost in the wide sweep of country unfolded to the eye. Here was no evidence or sound of war, and the spirit of man was caught up in the beautiful panorama now spread out. A great film from nature that no cinema could ever reproduce.

Once again we began to slip between the wooded hills, the vegetation in many places now covering up the disfiguring signs of the recent copper and other mines of which the whole countryside is full. In clearings on the hills, at a sharp angle, warm slopes are utilized for large plantings of early Potatoes and Strawberries, for which the district is famous.

The road still descended, until very abruptly we seemed to be shot out on to the old quay of Morwellham and before the ancient Ship Inn. Here now all is still, and it seems as if a deep sleep had fallen on the place that some fifty years ago teemed with life and shipping. Then the copper mines were in full swing, making this ancient hamlet famous with its activities of life connected and bound up with the deep exploration of the soil. These have all passed away, but I seem to think that the activities of Mr. A. J. Bliss, which are mental more

than physical, and which are expressed through the medium of the soil, will once again make this little corner of glorious Devon famous, at least among garden-lovers.

Mr. Bliss's interest in the *Daffodil* is well known, especially among the Kentish rascals. Just before my visit he had been very active in catching the *Daffodil* Fly, having netted it in goodly numbers, much to his surprise, believing he had previously exterminated it. Fortunately for him, all his best seedlings were rearing in a gigantic apparatus, resembling one of a very large meat safe. Many hundreds of seedlings in beds testified to his devotion to the *Daffodil*. Mr. Bliss, it may be remembered, was one of the founders of the Kentish *Daffodil* Society, and it was encouraging to learn that he is of opinion that the "daffodil" trouble may be dealt with successfully.

But the lilies were my chief concern. In a large envelope several hundred clumps of seedlings were in full flower, the result and selection of many years of patient and careful work. To the owner they were as children, he knew each by name or number, its parents, and many other points of particular and individual interest. The quiet enthusiasm and knowledge the rascal showed for his children reminded me in many ways of the late Sir Michael Foster. It is not often you meet with such intimate knowledge and subtle deal liking.

In this quiet spot in Devon for the last five years Mr. Bliss has raised a collection of Bearded Irises of great beauty and exceptional variety. It is impossible as yet to name or describe many of them. One of his aims is to raise a really red *Paluda*. He is well on the way, but still has a long road to travel before he reaches his goal. His "Donation" is a wonderful plant of enormous size and colour, a magnificent and glorified "Black Prince" is the best description I can give in a few words. Many new purple shades were to be seen, whilst his very pink, simpler forms were equally lovely. The improvement in the stems of *variegata* was evidenced by greater height, with lighter and deeper coloring. A much finer plant than *Caterina* was also noted.

The use of *Præpina* as a parent Egyptian *Phlox* of *Festiva* was clearly seen, and the old lines of grouping seemed to be more and more broken down. Well named flowers of color coloring on tall stems, more branching than formerly, are the common characteristics of these seedlings.

Mr. A. J. Bliss is very much a comely part of the world that I thought his many horticultural trials would be pleased once more to hear of him and his work, which is now confined entirely to *Daffodils*, *Iris*, and *Gladioli*. He grows nothing else, but devotes his whole time and energy to the improvement of these three families. Robert W. Wallace.

FRENCH NOTE.

THE BRITISH ARMY AND FRENCH AGRICULTURE.

THE genius for organization in the British Army is nowhere better illustrated than in the reconquered fields of France. Each British Army has an agricultural officer whose business it is to devote himself to the agricultural organization of the land in the occupation of that army. Associated with him is a French agriculturalist, who also acts as an interpreter. Together they visit the mayors and the farmers, receive their requests for, and supply, labour. In illustration of the results that have been achieved, M. Thomassin, at a recent meeting of the Academy of Agriculture (June 15, 1917), mentioned that from March 10 to May 5 one army alone had supplied 41,000 days' manual labour and 2,000 days' horse labour.

THE POLLINATION OF CHERRIES.

THE infertility of Cherries has been much discussed during recent years, and the opinion is now very generally held that it must be attributed to the sterility, partial or complete, of certain varieties, and the need for cross-pollination. The problem is being attacked by experiments under glass, laboratory experiments as they may be termed, and field observation. A good example of the latter method is seen in Mr. G. P. Bery's paper in the June number of the *Journal of the Board of Agriculture*. Taking five commercial varieties, he has studied their behaviour in many parts of Kent, and collected some information of great interest.

While such work requires to be confirmed by repeated and independent observation, there is no doubt that some of the evidence points very strongly to the fact that in certain cases cross-pollination is very necessary. But as in all horticultural experiments, it is extremely difficult to isolate conditions in such a manner as to ensure that the results observed are due to one cause alone. There is an old saying in Kent that Cherries are "stuck on with innure," and it is certain that the older generation had a strong belief in the need for heavy manuring for cherries in established orchards.

Until some manual experiments have been tried, I should be reluctant to attribute all cases of infertility to lack of pollination. It seems to be rather too readily assumed that "self-sterile" Cherry is so under all conditions, whereas the influence of phosphate manures on this factor should give pause to those who hold such opinions.

Mr. Bery's paper brings out very clearly the necessity of preliminary work on the nomenclature of Cherries; it is useless to recommend certain varieties until some agreement has been reached as to their identity. For instance, the Turk or Turkey Heart is given as a synonym of Black Tartarian, and the growth described as upright and the leaves very large. The Turkey Heart of East Kent, whatever its right name may be, is quite distinct from Black Tartarian; it is a small leaved, late variety of upright growth, whilst the true Black Tartarian is a straggling grower, with a much larger and better fruit. To add to the confusion, Dr. Hogg describes the Turkey Heart as a Bigarone. We trust that it will be possible after the way to establish an experimental station where such problems can be solved as a stable nomenclature is a first condition of any progress in science. R. I. Bungeard.

THE ROSARY.

ROSA HIMALAYANA ALBA MAGNA.

THE above is the name given to a new hybrid pillar Rose, raised by Messrs. Paul and Son, Chesham. The parentage was *R. Himalayana* x *multiflora*. The seed parent is the Himalayan form of *R. moschata*. The reverse cross had previously been effected, and this is known in gardens as *R. polyantha grandiflora*. The new variety has semi-double, bush flowers, some fading to pure white, and freely produced in bunches. The stems from the base of the plant grow 20 feet long in one year, and ultimately lengthen to 30 feet. The plant may be grown as a pillar Rose, and is well adapted for training on free trunks in the wild garden. As a pillar Rose the supports should be at least 10 feet high, but the finest effects would be obtained by allowing it to grow to its full length, even if the stems were to sprawl over some object of moderate height, and give the profusion of flowers of which they are capable. J. P.

ON INCREASED FOOD PRODUCTION.

RUNNER BEAN SEEDS AS FOOD

Quite recently our attention was drawn to an article in a gardening paper warning the public against eating cooked ripe seeds of the white-seeded or other Runner Beans, as they might possibly be poisonous. In view of the national importance of our making use of any nourishing food of this kind that may be available, we forwarded the article, with samples of two varieties of Runner Beans and two varieties of Dwarf Beans, to the Food Production Department for analysis. The following is the report of the analyst:—

"On the 5th inst. I received from you four samples of Beans, marked respectively 'Dutch Case Knife Runner Bean,' 'Dutch Case Knife Dwarf Bean,' 'Ordinary White Haricot sold by Grocers,' and 'Scarlet Runner No Plus Ultra.' I have very carefully tested these four samples for the presence of a cyano-genetic glucoside, but in all cases with negative results. I have not, of course, examined the samples for other poisons, but I have fed the two uncooked 'Dutch Case Knife' samples to white mice without any ill-result.

(Signed)

"A. CHASTON CHAPMAN, F.I.C."

BOY SCOUTS AS FOOD PRODUCERS

At Eirkenhead, under the supervision of Mr. Frank W. Preston, the Scoutmaster, the Boy Scouts have prepared a demonstration plot of about 2,000 square yards which is worked entirely by the members of the troop. The same Scoutmaster has organised a body of lads to spray Potato plots at an inclusive charge for the use of knapsack sprayer, for material and labour.

OLD SEED AND NEW.

The irregular germination of many kinds of vegetable seeds is reliable evidence of the mixing together of old and new seed which took place before leaving the hands of seedsmen last spring; such action was probably necessary to eke out the supply, but those who purchased them should have been notified to that effect, and advised to exercise patience. With me, Beet and Turnip seeds were very much mixed, the old seed only germinating just when hope of a good crop was being abandoned. Leek seed has played me more false than any other kind. New Leek seed came up very badly at both sowings, under glass and in the open—so much so that additional plants have had to be procured from elsewhere; whilst old seed grown both under glass and in the open failed on truly. C. Turner.

SPRING CABBAGE

There is divided opinion amongst growers as to the best date on which to sow Cabbage for use in spring. No hard and fast rule can be laid down. For the home and southern counties I strongly advise two sowings, the first from the middle to the end of July, and the second about August 9. The seed should be sown thinly in drills, and if the soil is dry, the drills should be watered before sowing. Transplant the seedlings as soon as they are large enough for transplanting, and each plant when pricked out should have ample space to develop an upright, sturdy growth which will be well able to withstand the winter. In colder parts of the country Cabbage requires to be sown earlier and planted in September in order that the plants may be well established before growth ceases in autumn. Small, sturdy plants are far superior to larger plants with tender growth, and may usually be relied upon to pass through ordinarily severe weather without serious injury. In selecting plants, therefore, it is best to place the most advanced in rows together. If very early Cabbages are required, these plants may be expected to furnish them if grown in moderately

rich soil and afforded a somewhat sheltered position.

The plants for the main crop should undoubtedly be put out fully in the open in firm, fertile, but not over-enriched, soil. In such conditions they will grow slowly, but hardily. Cabbages never grow well on poor land, but the plants sown out now will succeed admirably on ground that has been liberally manured for a previous crop. Having prepared the ground well, either by forking or digging, very light hand should be made firm by treading in dry weather. Treading will not only consolidate the particles of soil and reduce rapid evaporation of moisture, but it will assist the free formation of fibrous roots.

The rows should be made 2 feet apart, and the plants put 18 inches apart in the rows. Some growers, desirous of securing an early cutting of small-hearted Cabbages, place the plants 1 foot apart in the rows, with a view to cutting out every alternate plant before they become so large as to spoil one another.

The seedlings should be watered the day previous to planting them, and each plant should be carefully lifted with a good ball of soil. The small plants may be left in the beds or dibbled in 4 inches apart, to remain for the winter, and be planted out in spring. After a severe winter there are often many blanks in the rows, and the surplus plants are useful to make good the losses. As a deterrent to slugs, scatter newly-slaked lime or soot about the plants soon after they are planted. Small plants soon suffer seriously from three pests, which attack the soft stems and riddle the leaves.

When the young plants have become established, hoe the soil frequently in dry weather. Hoeing has great value; it is an aid to growth, a disturber of slugs, which hide in the soil under the lower leaves, it warms the ground by admitting air, and keeps down weeds. Rich, stimulating food applied to Cabbages during winter may prove harmful, but after severe frosts are over the crop cannot be too much encouraged by feeding. Dressings of soot, nitrate of soda, and applications of liquid manure, guano, and other stimulants, are all excellent, whilst frequent hoeings to render the surface soil loose will favour rapid growth. Should wet weather prevail, and hoeing not be feasible, the soil can be pulled over with a reversed fork or scratcher, and this, though it may not be of much use for the elimination of weeds, will stir the manure into the soil. The applications of manure may have to be repeated if growth is slow. The following varieties are to be strongly recommended: Harbinger, April, Flower of Spring, and Webb's Emperor. James A. Price.

POTATO SPRAYING BY MOONLIGHT

It is reported from various districts that gardeners and holders of allotments are taking advantage of moonlit nights to spray their Potatoes. In some places there appears to be a scarcity of wooden receptacles in which to mix the copper sulphate; but generally, it is sug, gested, empty oil tins or beer barrels, well cleaned, or lard boxes from the local grocer can be obtained, and will serve all practical purposes. During the past week the Potato crop growing in the Mall has been sprayed by representatives of the Food Production Department.

RHUBARB

This useful plant needs a little extra attention at this time of the year. The leaves are so arranged that most of the rainfall is conducted away from large specimens, and the plants are apt to get dry at the root before other vegetables suffer from lack of moisture. Liquid manure should be given freely, or, in wet weather, a concentrated fertiliser should be applied and lightly forked in the soil just underneath the leaves. Whatever stimulant is applied, it should be rich in nitrogen to favour strong growth, which will ensure a better supply of leaves in the spring. W. H. Dicks.



THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. Arthur J. DAVY, Alberts Wood, Godalming, Surrey.

STRAWBERRIES.—Strawberry plants can now be freely layered for making new plantations, the earliest runners having been already removed for potting. The best layers are those obtained from year-old plants, which have attained their full vigour. In any case, no plants should remain in the ground more than three years. A good plan is to make one new bed and not destroy the oldest each year. Plants of Royal Sovereign which were used for forcing, and have now been planted out, should produce a few dishes of fruit in the autumn; other varieties will also yield an autumn crop if the plants are clean and healthy. The ground to be used for a new plot should be well dressed with manure, the quantity varying with the nature of the soil. Ground formerly used for Onions, and well enriched for that purpose, makes a good Strawberry bed, and so does a cleared Pea plantation. The sooner the plants are put out, when once they are rooted, the better, so that it is a good thing to keep a little ground in reserve for this purpose.

LOGANBERRIES.—Loganberries and other fruits of a similar nature should be pruned and tied, and given a good soaking with manure water. A mulch, after watering, will also be beneficial.

GOOSEBERRIES.—The later varieties of Gooseberries should be carefully netted with wasp-proof material.

PEARS.—The fruits of Pears should by this time have received their final thinning, but in isolated cases, especially where the fruits are borne in clusters, some may yet be the better for the removal of others which are crowding them. The size of the fruits of the different varieties should be borne in mind, and more room allowed for the larger kinds than for the smaller. Cordons trained trees on Quince stock will require ample moisture at the roots, especially those growing in shallow soils, and a good drenching from a sewerage tank will do much to improve the colour and flavour.

GENERAL WORK.—Fruit picking should now be proceeding apace, and those fruits not required for immediate consumption should be preserved. Be careful that all trees are sufficiently hoisted to prevent injury to the swelling wood. Keep long shoots secured to the walls. If signs of aphids are perceived, spray the young shoots at once with an insecticide.

THE KITCHEN GARDEN.

By J. DENN, Foreman Royal Gardens, Windsor.

CARROTS.—There is still time to sow stump-rooted Carrots to come into use during March and April. They can be allowed to remain in the ground throughout the winter. Model and Monument keep their colour well, and are reliable varieties. Young Carrots sown a month ago are well through the surface, and must be carefully thinned. Dust frequently with soot during showery weather, and keep the ground free from weeds by the frequent use of the Dutch hoe between the rows.

PARSLEY.—A sowing of Parsley should be made in a sheltered position for use during winter and spring. As soon as the plants are a few inches high they should be cut close to the ground, so that fresh and stocky growth may be produced. If a cold pit is available, a sowing may be made now for use during rough weather in winter. This may be cut over several times during the autumn to induce new growth. The lights should be left off until winter. Parsley will benefit by light dustings of soot and a plentiful supply of water.

SEAKALE.—Plants intended for forcing in winter should be encouraged to make quick,

clean growth. Apply a good dusting of soot during showery weather, and a month later a dressing of some approved artificial manure. If dry weather sets in, a plentiful supply of water should be given. Clumps of Seakale which are intended for forcing in the open should also receive attention. Remove all small growths, so that nothing but strong crowns remain. Manure water may be freely supplied during the autumn, especially if dry weather prevails. Keep the ground free from weeds.

TOMATOS.—If seeds were sown a month ago, young Tomato plants should now be ready for potting into 3-inch pots. A compost of two-thirds loam and one-third sifted leaf soil, with a sprinkling of sifted lime rubble, will be suitable. Pot carefully, and place the plants in a close, cool pit until fresh growth commences, after which ventilation must be applied. Water carefully until the roots are well round the pots, and at this stage shift the plants into 6-inch pots and grow them quite close to the roof-glass with plenty of ventilation. Plants producing ripe fruit must be given a good supply of liquid manure. Do not allow the fruits to remain on the plants after they are ready to gather, but rather pick them before they are quite ripe. Most of the side-shoots should be removed as they appear.

SUCCESSIONAL TOMATO IN POTS. As soon as the pots become well filled with roots a top-dressing of loam and artificial manure should be applied and made firm on the surface of the soil, after which water should be applied through a rose, so that the surface dressing may not be removed. Pinch all side shoots from these plants and ventilate freely.

WINTER GREENS. Continue to plant Late Broccoli and other hardy vegetables as the ground becomes vacant. As time advances a little less sowing will be necessary for such plants as Christmas Cabbage, Coleworts, and Savoys, as these can hardly be expected to grow to their full size. Late plantations of Brocks and Turnips may prove useful in spring. See that all available space is cropped with some useful vegetable before the season is too far advanced.

LETTUCE.—Fortnightly sowings of Lettuce must now be made to secure a continual supply throughout the autumn. Sow thinly and keep the ground free from weeds.

FRUITS UNDER GLASS.

By JAS. HENDER, Head Gardener at Gundersbury House, Aveon, W.

NEWLY PLANTED VINES. Give every possible attention to vines that have been planted recently, and make the best use of the sunshine by closing theinery early. Keep the atmosphere humid. Slight warmth in the pipes is beneficial towards the evening and through the night when the weather is changeable. Encourage the leaders to make a good growth by pinching the laterals for another six weeks, if the canes are not too well advanced. Give strict attention to watering, for the roots must not suffer from drought. For syringing, use water containing soot, as already advised in a previous calendar. If the syringe is used freely insects will not be troublesome.

PERMANENT VINES.—If there are only a few bunches remaining on the vines, the Grapes should be cut and placed in bottles in the fruit store. This will permit of a thorough syringing of the house to cleanse the vines from insect pests, and especially red spider. For this next, mix a little sulphur in the water for syringing, which should be done vigorously. Inside borders may need watering, but if the border is outside moisture will scarcely be needed. Should there be any tendency to make fresh growths, it will be well to allow them to develop to a moderate extent. Ventilate theinery fully both by day and night. Do not permit other plants to remain in the house. Damp the floors and the border frequently. An application of concentrated vine fertiliser is advisable after a copious watering with clear water.

PINEAPPLES. The Queen Pineapple should now be at its best from the batch of plants started into fruit in the spring, and these should supply fruits of good quality until early

October. From thence onwards more reliance must be placed upon the varieties Cayenne and Charlotte de Rothschild, which, if induced to show fruit during July, will develop good specimens in the late autumn. As the fruits of the earliest Queens are cut, care must be taken to secure a sufficient number of suckers, potting the greater number towards the end of July. At the same time, while the Pine pits are being rearranged, it is a good plan to put up all that are required to fruit early next season into their fruiting pots, which need not be of more than 12 inches diameter. Firm potting is essential. Use the best turfy loam in a rough state. If the loam is not quite first-rate, add about one-third of rough fibrous peat. The only other ingredient needed is finely sifted mortar rubble. Thoroughly cleanse the walls and woodwork, and examine, and, if necessary, repair, the piping used for bottom heat. For plugging, spent bark from tanvards is the best medium. After all the plants are arranged, keep the house warm and close it early. Do not shade the plants.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLEMAN, Bart., Gatton Park, Rogate.

EPIDENDRUM VITELLINUM MAJUS.—The winter-flowering variety of this cool-house Orchid should be repotted or top-dressed when new growth commences. Use shallow pans, provided with ample drainage, and stand them on the stage, or suspend them near the roof-glass in a light, airy part of the Obolito-glasshouse. Afford water sparingly during the early stages of growth, but when root action is most vigorous give liberal supplies of moisture at the roots until the new pseudo-bulbs are completed. During the resting season afford only sufficient water to keep the pseudo-bulbs firm.

EPIDENDRUM PRISMATOCARPUM.—As plants of this species pass out of flower they should be given attention at the roots. Specimens that have become pot-bound, and have grown over the sides of the pot, should be taken out. Cut away the old pseudo-bulbs, leaving only two or three behind each leading growth, and place several together in moderate-sized pans. Make the soil firm around the rhizomes, arranging them so that two or three of the leading growths point to the centre, to make a well-balanced specimen. Plants that do not require repotting will be benefited by having some of the old material removed from the surface and being given a top-dressing. For a few weeks after repotting, keep the soil rather dry, but whenever moisture is applied give a thorough soaking, taking care that water does not lodge in the centre of the young growth. The plants grow well in the coolest and lightest part of the Cattleya house.

EPIDENDRUM BICORNUTUM DIACRUM BICORNUTUM. Plants of this species and its many hybrids will soon be making fresh growth, and as soon as new roots develop from the base the plants may be repotted or re-surfaced. Ordinary flower pots are suitable, filled to half their depth with drainage material, as during their growing season liberal supplies of water at the roots will be needed. At the same time it is essential that the soil is kept in a sweet, porous condition. After removing the plants from their pots, cut away any useless pseudo-bulbs, retaining only two or three behind the lead. Those cut off may be utilised for propagating purposes. *E. bicornutum* grows best if placed near the roof-glass in a high temperature and moist atmosphere. A suitable compost for all the above-mentioned plants consists of three parts Osunda or Al. Filix, and one part Sphagnum moss, with a moderate addition of crushed crocks to ensure the free passage of water.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHMOKE, Eastwell Park, Kent.

RHOODOBENDRUM INDICUM (SYN. AZALEA INDICA). Plants of the Indian Azalea have completed their growth, and should be placed out of doors for the remainder of the summer. Plunge the pots in a bed of ashes in order to keep the roots moist. Careful watering is necessary; the soil should never be allowed to become dust dry, whilst over-watering is equally harmful. Syringe

the foliage in the afternoons in bright weather, occasionally using clear soot water for the purpose, as this will serve to keep down attacks of thrips and other insect pests.

CAMELLIA.—Camellias growing in tubs or pots that have been flowered in the greenhouse and conservatory should be placed out of doors until the end of September. Similar conditions to those recommended for Azaleas will suit them, but if the plants have been standing in a shady house care must be taken not to expose them too suddenly to full sunshine and open air conditions, or the foliage will be damaged. They should be first placed under trees, and afterwards moved to a partially shaded situation until the foliage has hardened.

CHRYSANTHEMUMS.—Chrysanthemums will require more water from this date, and should receive strict attention in this respect. See that the stakes are secured firmly to a strained wire, to prevent the plants being blown over in stormy weather. Keep a sharp watch for aphids, and if any of the insects are detected dust the plants with tobacco powder or spray them with an insecticide. Attend regularly to the disbudding and stopping of the shoots. When the pots have become filled with roots, light top-dressings should be given and a moderate amount of stimulant to build up firm, healthy wood.

ABUTILON SAVITZII.—This Abutilon is a very satisfactory greenhouse plant for the amateur or small grower. The delicate green and white foliage blends well with the colours of the flowers. Abutilons are very easy to grow, and the species under notice gives good results in quite small pots, and is thus of much value for decorations. Cuttings strike readily in a warm propagating pit. When rooted, they should be potted on as required, and grown in a light position near the roof-glass. Pinch out the points of some of the shoots to obtain bushy specimens. Old plants that have become leggy or untidy should be cut fairly hard back and kept somewhat drier for a few weeks. They will then break into growth all over the stems, and if potted, will quickly form useful specimens. Do not use rich soil; a mixture of plain loam and leaf-mould with a little sand is all they need.

THE FLOWER GARDEN.

By W. J. GUYSE, Gardener to Mrs. PEMBERTON, Keele Hall, Staffordshire.

PANSIES AND VIOLAS.—Pansies and Violas raised from seed sown now on a partially shaded border will make sturdy plants by October, and such plants usually withstand the cold of winter better than those raised earlier. Use rich, friable soil, mixed with wood ash, or the ash may be scattered in the drills. Sow the seed thinly in rows made 12 inches apart and spray the seed bed each evening with tepid water. When the young plants are large enough to handle, transplant them in reserve beds at a distance of 6 inches apart in rows 12 inches asunder. Use tepid water for watering.

BOX HEDGES.—Provided the hedges are trimmed now, they soon make new growth and regain their fresh appearance. Very sharp shears are necessary to trim hedges of Box, Yew and similar close-growing plants. The work is best done in showery or dull weather.

LILIUM. Liliams must be staked before they are too far advanced. Insert the stakes a reasonable distance from the stem, or the bulbs will be penetrated. Keep the plants clean by occasional syringings of insecticide. Place top dressings of some rich compost round the base of the plants to encourage surface roots. Liberal supplies of water are necessary during dry weather, and a little fertiliser occasionally, manure, or soot placed in the water-can will be beneficial.

DARWIN AND MAY-FLOWERING TULIPS.—The bulbs placed in reserve beds to make room for the summer bedding plants should be lifted without delay. Bulbs of all descriptions will be scarce this coming season. The majority of the largest bulbs will flower next year, and may be used in the spring bedding scheme, but the smaller ones will be best planted in reserve quarters, and given liberal treatment. Spread them thinly in boxes after they have been dried and graded, and place them in a cool, airy shed until required.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

EUCALYPTUS VERNICOSA.—I see in *Gard. Chron.* of April 7, 1917, p. 145, a statement that *Eucalyptus vernicosa* has apparently never been introduced into this country. It has been growing here since 1909, and forms a shrub 8 feet to 10 feet high. It is one of the hardest of Eucalyptus trees, so far as I can judge. *K. G. Loder, Leamington, Warwick.*

THE HOUSE SPARROW (see Vol. LXI., p. 264, and Vol. LXII., p. 1) — I often condemn this bird while living at Belvoir Castle. No sooner were Peas above the ground than sparrows commenced eating them, and they did the same with Sweet Peas. But here in Surrey I find the house sparrow is of much better behaviour. The bird clears Winter Mistletoe caterpillars from Apple trees, and does not touch the buds of Peas. There is no doubt about its being the house sparrow in this case, and I am pleased to be able to say a good word for him in confirmation of Mr. Stanbury's note on p. 264. The most useful birds in the garden at Belvoir Castle were red linnets, thrushes, both common and muskell, robins, martins, and swallows. *J. H. Davis, Westdown, Hants, Salisbury.*

— I can assure *Southern Gardeners* I made no mistake when I stated that the house sparrow destroyed more fruit tree pests than all the other birds combined. There are fruit trees in front of the putting house office and cottage windows, and I am up and down the walks from early morning till late at night, so I have good opportunities of seeing what birds are in the trees and what they are doing. I have seen as many as ten or a dozen sparrows in a tree searching for young caterpillars among the young fruit and foliage. I have seen them opening curled leaves and picking out the young caterpillars, and later I have seen them hanging on to Plum branches picking aphides from the undersides of the leaves as fast as they could. Sparrows are often blamed for what they do not do. When they fly up from the ground where they have been picking the seeds from Chickweed the first thing they do is to wipe their bills on young shoots and twigs, and at a little distance they appear to be picking buds. The sparrow feeds its young entirely on insects and young caterpillars from the time they hatch out till they leave the nest. *J. H. Stanbury, Mount Felix Gardens, Walton-on-Thames.*

AN APPEAL TO THE SEED TRADE.—In reply to *Seedman*, p. 250, Vol. LXI., I ought to say, it is time we had someone to protect our interests. Men manage to get into the trade who have no qualification whatever. This all tends to lower the standard of wages of experts. We could do a great deal to help the boys to with draw when they come home. Would those interested, including *Seedman, Gloucester*, like to exchange views? *L. G., Portland Road, Nottingham.*

GRAPES WITH LARGE SHOULDERS. I have for many years raised the berries in the shoulders of small bunches of Grapes, particularly of Black Hamburg and Muscat of Alexandria in the way recommended by Mr. Hudson on p. 253, Vol. LXI. But it cannot be done with all varieties. Muscat Hamburg, for instance, must have the shoulders "laid up." And in the case of the larger bunches of other varieties, it is important not to do them also, if for no other reason than that of saving the strain by taking part of the weight of the stalk. Sometimes I introduce a string under two of the shoulders to lessen the whole weight. The effect is apparent in a slight increase in the dimensions of the berries. In a little pamphlet written many years ago by the late Mr. Dobbie (originator of Dobbie and Co.), the author remarked on the effect of tying Peas in a similar manner had in increasing the size of the fruits. The practice is, of course, followed with Melons, Apples, and other fruits. *B.*

FRUIT PROSPECTS. Black Currants, which were very backward before the last week of June, coloured suddenly, so that picking was begun on July 2. The crop, on the whole, is a fair one.

Early Rivers, Monarch, and President Plums show fair to full crops. Victoria and Black Diamond varieties light to full ones, and Czar and Pond's Seedling very small crops on the whole. Trees of Belle de Louvain, in their seventh season, have not blossomed yet. Apples show thinly on many trees, the blossom of which at first seemed to be entirely destroyed by caterpillars. On most of my oldest trees there is a good crop, particularly of Mr. Gladstone, Beauty of Bath, Duchess of Oldenburg, Early Julyan, Queen, Bramley's Seedling, Royal Jubilee, Charles Ross, and Lane's Prince Albert. The last-named is fruiting well on most young, as well as on comparatively old trees, and is the best all round cropper of the season in my orchards. Cox's Orange Pippin has a fair crop on comparatively old trees, but only a sprinkling of fruit on some planted twelve years ago, though some younger ones are well loaded. Lord Grosvenor is bearing well where there was not a

but normal green-eyed examples of *Euonymus japonicus* were throwing shoots with foliage of a clear yellow of the Evening Primrose hue, giving the bushes the appearance of bearing flowers. The plantations on the Broadstairs "front" consist very largely of the ordinary green *E. japonicus* with an intermixture of several other coloured shrubs. Many individuals of these variegated varieties have produced shoots and bear bearing leaves, representing reversion to the original green. But what is less common, so far as my experience goes, the normal green condition is prolific in colour sports in this year's growth. I do not mean by this that there is not evidence of such sports of greater age, but growths of this nature are conspicuous this season, and total yellow sports predominate. Others there are with central yellow variegations; some with marginal yellow bands; others again with white variegations. *Euonymus japonicus* is well known as one of the most plastic bud sporters



FIG. 17. THE EARLY BLOSSOMING OF A WINTER PEACH, GROWN WITH THE BUDS WITH PINK SPORES.

large crop of peaches. Dominant and partial Worcester Pearmain is one of the best. Worcester is a good tree and has a very possible success in fruiting here. Victoria Plum, except on a few old trees which did not fruit last year, has scarcely a sprinkling of fruit. Norfolk Beauty is a failure, and a large expanse of Beauty of Bath, not over twelve years from the planting, still produce scarcely any fruit. Worcester King is nearly a failure. More than half the promised crop of Lord Derby has been ruined by the brown rot fungus. James Grieve is fruiting well in proportion to ages of trees. Gardeners are thick on trees the foliage of which has been ruined by caterpillars. *Southern Gardeners.*

SPORTING AND REVERSION IN EUONYMUS JAPONICUS. In a communication on the effects of frost and wind on vegetation at Broadstairs (*Gard. Chron.*, May 5, 1917, p. 146) I mentioned

among other green northern shrubs, but it is not, perhaps, so generally known that *E. radicans* is what is termed a juvenile condition of the same species. *E. japonicus* (*radicans*) is another eastern Asiatic plant exhibiting the same hereditary phenomenon, which is also characteristic of many elements in the vegetation of New Zealand and other countries. Under this opportunity of correcting my report on the injuries effected by the winter weather at Broadstairs to the extent of recording the fact that very few specimens of plants were actually killed, the South American *E. radicans* that appeared to be absolutely dead at the beginning of May soon put bud vigorously, and now show little traces of injury. *Chrysothamnum (Pyrothrum) frutescens* is the only common plant utterly exterminated, though *Yucca*, *Amelanchier* and nearly shared the same fate. *W. Belling Hensley.*

SOCIETIES.

ROYAL HORTICULTURAL

JULY 17.—The Drill Hall was well filled with exhibits on Tuesday last on the occasion of the fortnightly meeting, and many visitors were present. Numerous seedling Roses were exhibited, and several awards were made to new varieties by the Floral Committee and the National Rose Society. The national Carnation and Picotee Society's annual exhibition was held in conjunction with the R.H.S. meeting.

A moderate number of other novelties was submitted to the Floral Committee for award, and three Awards of Merit were recommended.

lifton blooms in boxes and American Pillar in tall stands.

The deep crimson, fragrant variety, H. E. Richardson, was conspicuous in Messrs. FRANK CANT AND CO.'S group, flanked by British Queen and Mrs. Amy Hammond. Messrs. W. AND J. BROWN had a most effective display of Roses, including tall bouquets raised above the general collection. Mr. E. J. HICKS had also a fine exhibit of Roses, and made a special feature of Princess Mary, Mme. E. Herriot, Queen of the Belgians, and the new C. E. Shea.

In addition to Perpetual Carnations, Messrs. ALLWOOD BROTHERS contributed varieties of the hybrid Dianthus Alwoodii, their new race of Perpetual flowering Pinks. The ALDER RIVER NURSERY staged a beautiful group of Lilliums.

There were few exhibits before the Fruit and Vegetable Committee, but one of these, from Messrs. BARR AND SONS, filled half the length of one table, and consisted of an attractive and educational exhibit of sixty-two dishes of vegetables. Peas, Carrots, Potatos, Tomatos, Cauliflowers, French Beans, and Marrows were especially well shown. The NEW ZEALAND COMMISSIONERS staged Jonathan and Stayman Winesap Apples. Mrs. BARRS again showed bottled fruits and vegetables. Mr. H. CLOSE staged a new Red Currant, named Littlecroft Red. The bunches and individual berries were of large size.

At the 3 o'clock meeting of the Fellows, Mr. WALTER EASTLEA gave a lecture on "Mildew Resistant Roses."

Floral Committee.

Present, Messrs. E. A. BOWLES (in the chair), John Green, W. J. Bean, Sydney Morris, R. C. Notcutt, W. G. Baker, G. Reuthe, C. R. Fielder, H. O. Jones, J. W. Moorman, John Dickson, John Heal, Chas. E. Pearson, Wm. Howe, C. Dixon, J. T. Bennett Pore, A. G. Jackson, Clarence Elliott, H. Cowley, Jas. Hudson, W. H. Page, J. Jennings, E. H. Jenkins, J. F. McLeod, Thomas Stevenson, George Paul, W. P. Thomson, and E. F. Hazelton.

AWARDS OF MERIT.

Sambucus racemosa plumosus.—An elegant shrub or small tree with slender, graceful branches furnished with an abundance of finely divided foliage, the divisions or leaflets often quite linear and with a few deep serrations. The tiny, coral-red fruits are borne in clusters on dark stems, forming a large, pendulous raceme. Shown by Messrs. PAUL AND SONS, Chesnut.

Rose Sanstar (see fig. 15).—A Hybrid Tea Rose of moderate size and good form. The colouring is a beautiful combination of gold and rich carmine red, the latter colour being around the edges of the petals and showing most in the bud state. It is a distinct Rose, and may be briefly described as an improved Queen Mary. Shown by Messrs. ALEX. DICKSON AND SONS, Newtownards.

Rose Irish Attergoun.—A vigorous, single-flowered Hybrid Tea variety, with shining, bronze-green foliage. The flowers are 3 to 4 inches across, golden-orange in colour on opening, and fading to golden-fawn and pink with age. The plant is very free flowering, but the petals are not quite so broad or of such stout texture as in some other singles. Shown by Messrs. ALEX. DICKSON AND SONS.

GROUPS.

The following medals were awarded to collections: *Gold Medal* to Mr. W. H. HOLLOWAY, Port Hill Gardens, Shrewsbury, for Sweet Peas, *Silver gilt Banksian Medal* to Messrs. PIPERS for Sweet Peas and border flowers, *Silver Flor Medal* to Mr. E. J. HICKS for Roses; Messrs. H. B. MAY AND SONS, for Ferns; Mr. L. R. RE'S SELLS, for Tree Ivies and shrubs; Messrs. BLACKMORE AND LANGDON, for Delphiniums and Begonias; Messrs. B. R. CANT AND SONS, for Roses, and to Messrs. FRANK CANT AND CO., for Roses, *Silver Banksian Medal* to the ALDER RIVER NURSERY, for Lilliums; Messrs. ALLWOOD BROS., for Perpetual Carnations and Pinks; Messrs. W. AND J. BROWN, for Roses; Messrs. R. HARKNESS AND CO., for Roses; and Messrs. WM. PAUL AND SONS, for Roses. *Bronze Flora Medal* to Mr. G. REUTHE, for hardy plants; and to Messrs. WM. CUTBUSH AND SON, for Perpetual-flowering Carnations. *Bronze Banksian Medal* to Messrs. J. CHEAL AND SONS, for hardy flowers and Dahlias; and the Rev. J. H. PEMBERTON, for Roses.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Veitch, Messrs. Jas. O'Brien (hon. secretary), William Bolton, E. R. Ashton, J. Wilson Potter, R. A. Rolfe, Frederick J. Hanbury, Arthur Dye, Fred K. Sander, Pantia Ralli, S. W. Flory, R. Brooman White, Walter Cobb, T. Armstrong, J. Charlesworth, and Chas. H. Curtis.

AWARDS

PRELIMINARY COMMENDATION

Odontoglossum Lillian (*Dora's Empress of India*), from Messrs. CHARLESWORTH AND CO.



FIG. 15.—ROSE SANSTAR.—PETALS CARMINE RED, SHADED WITH GOLD COLOUR AT THE BASE.

This Committee awarded seventeen medals to groups, including a Gold Medal to Mr. W. N. HOLLOWAY, for a fine group of Sweet Peas, which contained grand bunches of Aericola, Golden Glory (of wonderful colour), Hope, Audrey Croft, and Jean Inland. Messrs. PIPERS, Bayswater, also contributed a fine exhibit of Sweet Peas, including the beautiful Lavender George Herbert and the newer Sincerity and Ivory King.

Roses were a great feature of the exhibition. It cannot, however, be said that the Roses were, as a whole, up to the usual exhibition standard, and those from Irish growers showed evidences of long and delayed transit. Messrs. B. R. CANT AND SONS showed Mme. Edouard Herriot in good colour, and fine blooms of Golden Ophelia and Sovereign. Messrs. WM. PAUL AND SONS showed Mrs. Littleton Dewhurst (the white Lady Gay), Messrs. R. HARKNESS AND CO. staged fine exhibi-

tion blooms in boxes and American Pillar in tall stands.

The deep crimson, fragrant variety, H. E. Richardson, was conspicuous in Messrs. FRANK CANT AND CO.'S group, flanked by British Queen and Mrs. Amy Hammond. Messrs. W. AND J. BROWN had a most effective display of Roses, including tall bouquets raised above the general collection. Mr. E. J. HICKS had also a fine exhibit of Roses, and made a special feature of Princess Mary, Mme. E. Herriot, Queen of the Belgians, and the new C. E. Shea.

In addition to Perpetual Carnations, Messrs. ALLWOOD BROTHERS contributed varieties of the hybrid Dianthus Alwoodii, their new race of Perpetual flowering Pinks. The ALDER RIVER NURSERY staged a beautiful group of Lilliums.

There were few exhibits before the Fruit and Vegetable Committee, but one of these, from Messrs. BARR AND SONS, filled half the length of one table, and consisted of an attractive and educational exhibit of sixty-two dishes of vegetables. Peas, Carrots, Potatos, Tomatos, Cauliflowers, French Beans, and Marrows were especially well shown. The NEW ZEALAND COMMISSIONERS staged Jonathan and Stayman Winesap Apples. Mrs. BARRS again showed bottled fruits and vegetables. Mr. H. CLOSE staged a new Red Currant, named Littlecroft Red. The bunches and individual berries were of large size.

Hayward's Heath. A hybrid producing its first flower, which is of fine shape and substance, clear white, with light violet markings on the segments. *O. crispum* predominates in the general features, but its perfect form is derived from the very broadly ornate labellum of *O. Pescatorei*, descended through *O. Dora* (Lambeaunium x *Pescatorei*) and *O. Rolfeae* (Harryanum x *Pescatorei*) in *O. Lambeaunium* (*crispum* x *Rolfeae*).

GROUPS.

MESSRS. CHARLESWORTH AND CO., HAYWARDS Heath, were awarded a Silver Flora Medal for an interesting group, in which were good white Cattleya-Hosta, C. Warscewiczii Mrs. E. Ashworth, with six flowers, as shown at the previous meeting; good *Odontoglossums*, and *Laelio-Cat-thyas*, including a large and richly-coloured form of *L. C. Momus* (C. Octave Doim x *L. C. Rubens* Lambeaunium).

MESSRS. ARMSTRONG AND BROWN, Orchidhurst, Tunbridge Wells, were awarded a Silver Flora Medal for a fine group of showy *Odontoglossums*, *Odontiodas* and *Miltonias*, the last named including the handsome variety Frank Reader, and unnamed hybrids. The best *Odontoglossums* were *O. Armstrongiae*, with white ground attractively spotted with violet blue, and *O. Amethyst* Glehlands variety, which obtained the R.H.S. First class Certificate on Feb. 18, 1915. Among the seedling *Odontiodas* the most remarkable was *Oda*, *Cereus* var. *Figaro* (*Oda*, Charlesworthii x *Odm. excellens*), a very extraordinary variation from the original form, which was wholly light scarlet. The variety *Figaro* has the yellow ground colour of *Odm. excellens* (*Pescatorei* x *triumphans*), the showy markings of chestnut red colour indicating *O. triumphans*. The lip has a large chestnut red blotch yellow crest, and light margin.

Fruit and Vegetable Committee.

Present Mr. A. H. Pearson in the chair. Rev. W. Wilks, Messrs. F. Perkins, Edwin Beckwith, A. W. Metcalfe, George P. Berry, H. Somers Rivers, E. A. Bunyard, J. C. Allgrove, A. Ballock, W. H. Divers, Owen Thomas, Wm. Poppart, and A. R. Allan.

GROUPS.

The following medals were awarded to collectors:
Silver gilt Knight Medal to Messrs. BARN AND SONS, for vegetables; *Silver Bowl* to Messrs. BARN AND SONS, for Apples grown in the Dominion.

NATIONAL ROSE SOCIETY'S AWARDS—GOLD MEDALS.

Mermaid. A delightful single variety, with blooms 5 inches across, of a light yellow shade, deepening at the center, where the golden stamens add to the intensity of the colour. It is a hybrid from *Rosa bracteata* and a Hybrid Tea variety, quite hardy, of climbing habit, and has handsome, shining foliage. Shown and raised by Messrs. WM. PAUL AND SONS, Waltham Cross.

Elizabeth. A decorative and bolding variety, with rather small and (as shown) somewhat thin flowers. The colour is bright crimson, the outer petals darker than the inner ones. The variety appears to be free in flowering, but the foliage is not especially attractive; indeed, it was a little difficult to understand the award of a Gold Medal to this variety unless it has exceptional merit as a hedger, a matter not possible to determine from cut flowers. Shown and raised by Messrs. ALEX. DICKSON AND SONS, Newtownards.

The Queen Margaret. An exhibition and garden Rose of the Hybrid Tea class. The colour is very distinct, and may be described as bright cherry red; in some lights the shade assumes a vermilion tint. The flowers are full, of fair size, and slightly fragrant. The stems are strong, the foliage handsome and ample. It is the third Rose of the same name, which is continuing. Shown and raised by Messrs. SAMUEL MCGREY AND SONS, Portadown.

Mrs. George Marriott (see fig. 12). A large full-petalled variety of fine form and substance, and a suitable exhibition variety. The petals are cream-white, with a delicate flush of pink

that is most evident in the centre and in the younger blooms. It is one of the largest and fullest of the newer Roses. Shown and raised by Messrs. SAMUEL MCGREY AND SONS, Portadown.

Sunstar (see awards by the Floral Committee).

CERTIFICATES OF MERIT.

Mrs. Stewart Clarke.—A vigorous Hybrid Tea variety, and apparently with some influence of the Perpetiana type. The stems are very spiny, and the foliage is shining, deep green, and hardy some. The shapely flowers are rich, clear yellow, very attractive, and less flaunting than Bayon d'Or. Shown and raised by Messrs. ALEX. DICKSON AND SONS, Newtownards.

Pure. A hybrid Musk Rose, slightly perfumed. The semi-double flowers, from 3 to 4 inches across, are cream-white, with a central boss of golden stamens. It is a bedding perpetual variety, 3 feet to 4 feet high, and has dark stems and foliage. Shown by the Rev. J. H. PEMBERTON.

E. Godfrey Brown.—This Hybrid Tea variety is a rich, bright cherry-crimson colour, large petalled and of good form. The bloom is sweetly fragrant, and the variety has great promise as an exhibition Rose. Shown and raised by Messrs. HUGH DICKSON, LTD., Belfast.

Nancy. A handsome climbing Rose, of vigorous growth and free blooming. The leaves are deep green and shining. The shapely, single flowers are borne in erect clusters. The colour is deep, reddish rose. Shown by Dr. WILLIAMS, Harrow.

Mrs. H. D. Green. A charming garden Rose, and apparently a very free-flowering Hybrid Tea variety. The colour is delicate pink, with a light orange flush at the base of the petals, the latter tint also showing on the outer petals of unopened buds. Shown by Mr. WALTER EASTY.

Miss May Marriott. This beautiful golden-opic variety was fully described in *Gard. Chron.*, July 7, p. 3. It had a more decided orange tint on this occasion. Shown by Mr. TOM ROBINSON, Nottingham.

Edith. A large, white Hybrid Tea variety, with broad petals that make up a shapely bloom. Shown and raised by Messrs. SAMUEL MCGREY AND SONS.

Eunice Wright. A somewhat thin but extremely gorgeous Rose, that has orange-coloured buds, while the expanded flowers are rich golden-rose, of a very glowing shade. The dark green, shining foliage forms a handsome complement to the brilliant blooms. Shown and raised by Messrs. SAMUEL MCGREY AND SONS.

T. F. Cooper. A free-branching Hybrid Tea variety, with shapely blooms carried on stout stems. The broad-petalled flowers are of fair size, and the colour is bright sulphur yellow. The variety promises to be a good garden Rose. Shown by Messrs. HUGH DICKSON, LTD., Belfast.

NATIONAL VIOLA AND PANSY.

JULY 7. The annual exhibition of this society was held at the Botanic Gardens, Edglaston, Birmingham, on the 7th inst. The entries were in excess of those of the previous year, and the general standard of quality was higher. There were only two competitors for the Challenge Cup, and the exhibitors were almost of equal merit, but the first prize was awarded to Mr. J. BAYLOCK, Moseley, whose collection included five varieties of his own raising. Mr. J. A. PEARSON, Sparkhill, was the other competitor. The most successful exhibitor in the amateurs' classes was Mr. H. J. TANNER, Sparkhill, who won several first prizes. There were a number of honorary exhibitors, and medals were awarded to several non-competitive groups.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

JULY 9. The monthly meeting of this society was held at the R.H.S. Hall on the 9th inst. Mr. C. H. CURTIS in the chair. Two members withdrew interest amounting to £6 12s., and one member was allowed to withdraw £5 from his

deposit account. The sum of £10 19s. 8d. was passed for payment to the nominee of a deceased member who was killed in battle. The sick pay for the month on the ordinary side amounted to £65 5s. 7d.; on the State side to £15 19s. 2d.

Obituary.

WALTER A. VOSS.—We learn with sincere regret of the death of Mr. Walter A. Voss, the founder of the firm of Walter Voss and Co., Ltd. Mr. Voss, who had long suffered from heart trouble, died on Wednesday, the 11th inst., after an attack of influenza, followed by peritonitis. Mr. Voss built up his firm on the sound foundations of scientific accuracy, and the careful methods which he introduced into his business of agricultural and horticultural chemist have been followed by his successors, Mr. J. H. MAY, F.C.S., and Mr. WOODCOCK, with whom for some considerable time the direction of the business has rested.

G. T. BARGERY.—We regret to learn of the death of Mr. G. T. Bargery, representative for 50 years in the West of England of Messrs. Hurst and Sons, seedsmen, at his home, 17, Verney Place, Exeter, aged 73 years.

ROZAIN BOUCHARLAT.—We regret to announce the death, on June 12, of M. Rozain Boucharat, of Lyons. A generation ago his was a familiar name to chrysanthemum growers. Ecole de Lyon was probably the largest Japanese Chrysanthemum ever raised up to the time of its introduction in 1838. It was in the same nursery that the famous Mme. Gustav Desgranges was raised. Deceased, who was a prominent man in the Lyons world of horticulture, and a frequent attendant at Continental shows, was 63 years old. Chrysanthemums, Dahlias, and Pelargoniums were his specialities.

GUSTAVE FARGOTON.—We regret to announce the death, reported by the *Revue Horticole*, of Monsieur Gustave Fargoton, nurseryman, of Angers, France, a successful grower of Hydrangeas and other plants. As an exhibitor he won a number of prizes at French and foreign exhibitions, including the "prix d'honneur" in Paris, Orleans, and at other important centres. Monsieur Fargoton was an officer of the Order of Merit.

CROPS AND STOCK ON THE HOME FARM.

VETCHES FOR FEED.

WINTER Vetches sown as food for sheep and cattle are none too satisfactory, which means that seed will be scarce and dear next autumn. Mr. who can should save a plot for seed if but a few acres. Seed may be worth £1 per bushel, which means that a 20-acre plot would cost £40 to seed. Where the plant is thin it promises well to carry a full crop of seed pods.

ELECTRIFIED SEED.

In the near future we may be materially assisted in the production of increased crops by the aid of electricity, by a process of treating cereals and seed grain before sowing in order to render them more productive. I am testing a variety of Swede which has been treated by this process, and certainly the seed has a plump appearance, and is particularly bright in colour. I hope to be in a position to report favourably on the trial. In the case of cereals so treated if an extra 20 per cent. beyond the ordinary good crop of 48 bushels of Wheat per acre or 80 bushels of Oats can be obtained, the new method will be welcomed by farmers.

SUGAR BEET.

The root crop is growing splendidly where the soil is free from weeds. The plants should be allowed a distance of 2 feet, as they make much leaf. There does not appear to be much opportunity to use the roots this season for sugar production, but they are valuable for feeding cattle.

SHALLOTS.

Grown in bulk as a farm crop. Shallots in the past have been much neglected. The culture is

simple, and does not entail much labour. Choose a trailable, leamy soil, free from stones, and let the ground be well ploughed, adding a fairly good dressing of manure in the autumn. Now is the time to lift this season's crop. Place the chaves in a sunny position until they are thoroughly dry, and then store them in a cool, dry room or shed. The land they occupied may be cropped with Cabbage for cows or be manured and prepared for Spinach to be sown in August.

MARROW KALE

This new French or Marrow stem Kale is a cross between Thousand-headed Kale and Kohl Rabi. It produces thick, edible stems of a Marrow-like nature, growing 4 feet high, clothed with an abundance of leaves, which in the autumn provide much food for cows or sheep. The stems can be stored safe from frost for food through the winter.

The culture required is similar to that for ordinary Kale or Rape. The seed should be sown in drills, and the seedlings thinned freely and kept free from weeds. Marrow Kale is a valuable food for early lambs.

MUSTARD FOR WHEAT.

Mustard is largely used as a preparation for Wheat in the southern counties, especially where sheep are not kept in large numbers, or where it is not convenient to feed them on certain fields. Mustard grows quickly, and is useful for supplying a second green crop, which is an excellent method of growing good Wheat. For instance, a crop of Swedes, Rape, or Kale fed off by sheep, ploughed, and sown with Mustard about the middle of August, at the rate of 20 lb per acre, will be ready to plough in late in September or early in October. *E. Melquar.*

TRADE NOTE.

BARR AND HUNTER.

The firm of Barr and Hunter, carrying on business as nurserymen, seedsmen, and florists at 10 and 41, Galloway Street, Maxwell Road, Finsbury, has been dissolved as on June 30, 1917, by mutual consent, and the residual business of David Barr, one of the partners. The business will continue to be carried on by David Hall Hunter, under the same name of Barr and Hunter.

ENQUIRY.

CAN any reader inform me of the origin of the "Cropper" Broad Bean, and the name of the raiser? *J. W. Y.*

ANSWERS TO CORRESPONDENTS.

BEET: *W. E. P.* The specimen resembles *Stigota* *Beet*; the drought which took place during the spring is doubtless responsible for the plant having bolted.

DAPHNID PESTS DISEASED: *M. H. Jersey.* The Daffodil bulbs are affected with both the large Narcissus fly (*Merodon equestris* (see fig. 14) and the small Narcissus fly (*Emenusa strigatus*) in the larval stages. Bulbs affected with the former pest are hollowed out, and infested bulbs can be detected by pressing the neck with the thumb and forefinger. If the neck is soft and will not resist the pressure, the bulbs should be regarded as unsound, although when the grubs are young it is difficult to be certain of their presence. All bulbs showing damaged basal plates should be discarded and destroyed. No complete remedy is known, but it is said that by soaking the bulbs in lukewarm water for 24 to 48 hours the grubs are forced out of the bulbs and "drowned." The fly is two-winged and hairy, so that it can be readily distinguished from honey and humble bees and drone flies, although in general appearance it resembles them. The *Merodon* flies appear in spring and early summer, and should be caught with a butterfly net. Bulbs infested with the grubs of the small Narcissus fly are rapidly reduced to a decaying mass, and generally contain from twelve to twenty yellowish brown larvae, possessing a red coloured

horny tubercle at the tail end. All bulbs which are rotten or soft should be destroyed. We do not think the moth to which you refer is the cause of any damage to the bulbs.

DRILL HALL, BUCKINGHAM GATE: *E. J. H.* The Drill Hall of the London Scottish Regiment, in which the R. U.S. fortnightly meetings are now being held, is situated in Buckingham Gate, a road leading from Victoria Street, Westminster, almost opposite the Army and Navy Stores. The lecture on mildewy Roses to which you refer may be the one given by Mr. Earler on Tuesday, the 17th inst., entitled "Mildew Resistant Roses."

FIGS DISEASED: *H. T. S.* The Fig is covered



FIG. 14. THE NARCISSUS FLY (*EMENUSA STRIGATUS*) IN ITS LARVAL STAGES.

(1) THE PEST IN THE BULB; (2) A LARVA EMERGING; (3) A PUPA EMERGING; (4) INFESTED BULB (NOT SHOWN).

with the fructification of the fungus *Botrytis-emerea*. This pest lives on dying or decaying vegetable matter, therefore do not allow any decaying vegetation in the vicinity of the Figs, and remove all infested Figs before the disease spreads. Keep the air of the house as dry as possible.

INSECTS: *Constant Reader.* The Red Currant leaf has present on it cocoons of a moth, probably the Gooseberry moth. You should be able to prevent attacks of red spider on your Peach trees by syringing with clear water; this pest spreads rapidly when much fire-heat is used, and the air is excessively dry. If the present infestation is very severe, either place some flowers of sulphur in the water used for syringing, or dust a little of the powder on to

the leaves. The large larva you send is that of one of the Hawk moths.

NAMES OF PLANTS: *D. V. 1.* *Lycium chinense* (Chinese Box Thorn); 2, *Bromus mollis* (Soft Bromus Grass); 3, *Bromus stertilis*; 4, missing; 5, *Lolium multiflorum*, sometimes named *Lolium perenne multiflorum* (Italian Rye grass); 4, *Bordum murinum* (Wall Barley); *C. H.* 1, *Genista tinctoria* (Dyer's Weed); cutting down the tops of the plants before they seed and dressing the turf with a nitrogenous manure, such as sulphate of ammonia, are the best methods of destroying the weed.

B. W. *Rubus nobilis*.—*Dr. Rawson*, A. Veronica Traversii; B, *Deutzia crenata* var. *flora plena*; C, *Linaria purpurea*; D, *Sidaea spicata*; E, *Erigeron speciosus*; F, Rose "Rubin."—*Florence Rice.* *Elaeagnus multiflora* (syn. *E. longipes*). The fruits are edible when made into a jelly, which is said to be equal to Guava jelly.

NITROGEN IN RAIN-WATER: *C. L. C.* The quantity of nitrogenous matter present in rain-water is very small; it is derived from the trace of ammonia present in the air, which is dissolved and carried down by the rain as it falls. You ask whether you can "add nitrogen" to the water used in watering plants. Liquid manure made from animal dung is itself highly nitrogenous, and guano, which is also rich in nitrogen, sod, nitrate of soda, and nitrate of potash (saltpetre) can all be dissolved in water, and applied in this way direct to the roots.

ONIONS: *G. W. B. G.* The plants are attacked by Onion mildew (*Peronospora Schleidenii*). Next season spray the seedlings with Bordeaux mixture before the mildew has attacked the leaves.

PAEONIES DISEASED: *H. L.* The fungus attacking the Paeonies is *Botrytis Paeoniae*, the cause of the drooping disease of Paeonies. Discontinue mulching the plants with manure, as damp conditions favour the spread of the disease.

PEAR LEAF ATTACKED: *J. G.* The tree is infested with the Pear Leaf Blister Mite (*Phytoptus pyri*). Gather and burn all the infested leaves, and spray the trees at once with paraffin emulsion. In winter, spray the trees with lime sulphur wash. The pieces of "scab" are too fragmentary to identify; next year, if they appear again, send some whole leaves.

POTATOS UNSOUND: *J. Ludg.* The Potato plant is attacked by *Hypochymus Solani*, the "collar rot" fungus. It is not a serious disease as a rule, but withered plants should be pulled up and destroyed in the garden fire.

POTATO: *W. P. L.* We do not recognise the variety of Potato.

TWIS CUCUMBER: *G. S.* Double Cucumbers are not uncommon, and specimens are sent from time to time by correspondents. Yours is a particularly fine example of the abnormality.

VINE DYING: *P. H. H.* We cannot state the cause of the vine dying; the portion of the rod sent affords no clue.

VIOLETS FAILING: *J. Ludg.* The Violet plants are not attacked by any fungous or insect pest. Their unsatisfactory condition is due to unsuitable conditions.

WEEDS IN POND: *H. C.* Ascertain the amount of water contained in the pond you desire to clean, by multiplying together the average length, breadth, and depth in feet, and multiplying the result by 62½, the approximate number of gallons in a cubic foot. One pound of copper sulphate should be used to every 100,000 gallons of water. Break the material small, and enclose it in a bag of loose texture. Tie the bag behind a boat, and draw it along in the water in parallel paths about 10 to 20 feet apart. The copper sulphate will not injure either the fish or the Water-Lilies, if care be taken not to let the bag remain stationary in one part of the pond.

MARKETS.

COVEYNT GARDEN, July 18.

We cannot accept any responsibility for the subsequent reports. They are furnished to us regularly every Wednesday by the kindness of several of the principal salesmen, who are responsible for the quota figures. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—E.S.

Table with 2 columns: Plants in Pots, &c.: Average Wholesale Prices. and s.d. s.d. Lists items like Aralia Sieboldii, Asparagus plumosus nanus, etc.

Table with 2 columns: Cut Flowers, &c.: Average Wholesale Prices. and s.d. s.d. Lists items like Achillea per doz., Aist-america, etc.

Table with 2 columns: Cut Flowers, &c.: Average Wholesale Prices. and s.d. s.d. Lists items like Ailanthum (Maidenhair Fern), Asparagus plumosus, etc.

Table with 2 columns: Cut Flowers, &c.: Average Wholesale Prices. and s.d. s.d. Lists items like Ailanthum (Maidenhair Fern), Asparagus plumosus, etc.

arriving in good condition, and is lower in price. A few bunches of Lily of the Valley are arriving daily. All Linnams are scarce and their prices are again higher. White, orange, and yellow Sweet Sultan and white, mauve, and yellow Sultan are arriving in excellent condition. Valley Marguerites are also good, and are selling freely. A few spikes of Gladst. America, Hilley, and Pink Beauty are being offered this week. Carnations and indoor Roses are more plentiful, but the latter are only of medium quality. The outdoor Roses have been checked by the recent rains. Foliage is not more plentiful, and sunlay, which has been absent from the market for a few weeks, is arriving in good condition. There is a plentiful supply of Asparagus plumosus. A Sprenger, Fern Maidenhair, and other hardy foliage. The first arrivals of Lavender reached the market this week. The supply is increasing daily, and the quality is good.

Table with 2 columns: Vegetables: Average Wholesale Prices. and s.d. s.d. Lists items like Artichokes, Beans, Broad, Carrots, etc.

Table with 2 columns: Fruit: Average Wholesale Prices. and s.d. s.d. Lists items like Almonds, Apples, Apricots, etc.

REMARKS.—There are only a few Venturian Apples on sale, but some growers are sending a few fruits, principally a variety called 'varieties. The market is well supplied with Apples, Peaches, and Nectarines, but Melons and Pigeons are not so plentiful as usual at this season. Strawberries are plentiful, but the best quality of these fruits having been spoiled by the rain. Black, Red, and White Currants, Raspberries, and Elderberries are all fairly numerous, and there are up to the berries of the varieties White Lion and Superb. The market is well supplied with Potatoes and Onions. A few outdoor Mushrooms are on offer, and there is a fair supply of cultivated Mushrooms. All ordinary kind of vegetables are plentiful. Cuscutas are on sale at F. H. R. Covent Garden Market, July 18, 1917.

DEBATING SOCIETIES.

TUNBRIDGE WELLS GARDENERS'. The friendly meeting of this society was held at the Friends' Society Hall during the first week in July, and the exhibitors were meritorious. The best prize among some as follows: Don Vases of Rosal N. Turner. Don Vases of Sweet Peas, S. G. Hawkes.

ROYAL GARDENERS' ORPHAN FUND

B. WYNNE, Sec., to, Bedford Chambers, Covent Garden, London, W.C.

Important to Gardeners and Fruit Growers—

"NIQUAS" (IMPROVED) (REGD)

The Most Successful Non-Poisonous Insecticide of the Day.

Its Advantages are— Certain Death to all Insect Pests. No possible injury to the most delicate Plant, Flower or Foliage. It is the 'cheapest Insecticide known, the pint makes 10 to 12 gallons for Thrip, Black and Green Fly, etc., whilst RED SPIDER, Mealy Bug and Scale can be thoroughly eradicated by using "NIQUAS" about double the strength required for Fly.

Table with 2 columns: PRICES. Lists Half-pint, 1/-; Pint, 1/6; Quart, 2/6; Half-gal., 4/-; Gallon, 7/6; Kegs, each, Five Gallons, 25/-; Ten Gallons, 45/-.

THE "NIQUAS" SYRINGE

These Syringes are especially adapted for the use of "Niquas," and as a general Vapour Syringe. The "Niquas" Syringe changes automatically from Direct to Underleaf Spraying by simply turning the Syringe.

to be had from the Trade generally. Manufacturers— CORRY & CO., LTD., STORES & WAREHOUSE, SHAD THAMES, LONDON, S.E.

THE Vegetable Garden.

This is an English translation, made by Mr. W. Robinson, of the celebrated work by the world-famous growers, MESSRS. VILMORIN, ANDRIEU & CO.,

of Paris. There are no market growers to equal the French, and in this work English readers will find placed at their disposal, in readable and interesting form, all the experience and knowledge of centuries of successful cultivation. All the principal vegetables, including many which are at present unfamiliar to English growers, are fully dealt with; and numerous clear and informative illustrations give point to the instructions contained in the text.

EVERY FOOD PRODUCER

should obtain a copy of this book, which will enable him to get the very best results out of the ground at his disposal.

PRICE 15s. NET. From THE LIBRARIAN, 41, WELLINGTON ST. STRAND, W.C. 2.



A TREASURY OF INFORMATION

is contained in the

HORTICULTURAL DIRECTORY AND YEAR BOOK.

Nowhere else can the gardener obtain, within the small compass of four hundred pages, so much information on the subjects which interest him most. The knowledge which this little work contains is just what is indispensable to the gardener in his daily life. The

CALENDAR OF GARDEN OPERATIONS

takes him through the whole year, reminding him of the manifold small cares which make all the difference between health and ill-health in his plants. It also reminds him of the exhibitions which are to be held and of the most important annual meetings.

Another interesting section, which expands each year, is the list of

SCHOOLS OF HORTICULTURE.

with a brief description attached to the name of each such institution. Those concerned with the education of young gardeners—both men and women—will turn to this section with especial interest, and those who are seeking such education will find it of the greatest assistance in deciding which school to select. There are still for sale a few copies of the current edition.

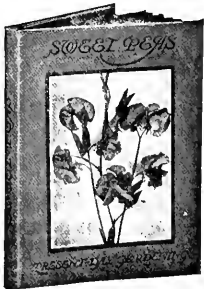
SEND FOR ONE AT ONCE TO

The LIBRARIAN, 41, Wellington Street, Strand, W.C. 2.

PRICE 1s. 1d., POST FREE.

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated
with Eight Plates Reproduced from Colour Photo-
graphs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

IRISES. By W. R. DYKES, M.A., with preface by Prof BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden," (Double volume 2/6.)

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from

THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 3996

No. 1596. VOL. LXII. {THIRD SERIES} SATURDAY, JULY 28, 1917. {Registered as a Newspaper.} {PRICE 3d. POST-FREE, 3jd.}

Subscription—Inland, 15-1 Foreign, 17 6 (22fr. 10c.) {54 26c} per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 31.

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note that the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week MUST reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

CONTINUOUS PRODUCTION FROM THE GARDEN

Sutton's Catalogue of Seeds and Garden Requisites for present use. Sutton's List of Vegetable Seeds for Summer and Autumn Sowing contains brief cultural notes. Sutton's List of Flower Seeds for present sowing and spring flowering. Sutton's Catalogue of Edible-growing Fruits, containing particulars of the most popular Duffield, Narbonne, Mal, flowering and Darwin, Table, etc. These Catalogues will be sent post-free on application.

SUTTON & SONS, THE KING'S SEEDSMEN, READING.

BARR'S VEGETABLE SEEDS for July to September Sowing. Special List post-free BARR & SONS, King Street, Covent Garden, London.

ARMY BOOTS (post-paid) at cost. Government issue, best selling boot at a bargain price. Specially selected, without a blemish, as good as new, unsurpassed for gardening, farming, hunting, and other work, single pairs post-free 1s. 6d. (this applies only the best). State size. Men's, returned all accepted. Special quotation for quantities. THE THAMES TRADING COMPANY, LTD. (Army Boots Dept.), 6, Eldon Street, London, E.C. 2.

ARMY BOOTS (post-paid) A word of advice. The prices of boots and leather have gone up considerably and will increase greatly by the coming winter. It is a good investment to buy our boots now. We desire to give our customers the benefit. Price and conditions as above. THE THAMES TRADING COMPANY, LTD. (Army Boots Dept.), 6, Eldon Street, London, E.C. 2.

GREENHOUSE PAINTING & GLAZING. "Vernis," superior to White Lead Paint. "Plastine" superlative putty. Full particulars from W. CARSON & SONS, Grove Works, Battersea. Agents throughout the country.

OUR list of Vegetable Seeds, suitable for summer sowing, is now ready, and will be sent post-free on application. DOBIE & CO., Seedsmen, to the King, Edinburgh.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilizers; also Dickson's Improved Mushroom Spawn. Prussel ventilators free on application. JOHN WATFERR, Royal Seed Warehouse and Nurseries, Chester.

WATERER'S ALPINE HERBACEOUS PLANTS and WATER LILIES. Large stocks of the best and most popular varieties. Despatch free on application to JOHN WATFERR, ROSS & CRISP, LTD., The Nurseries, Tice Clap, Bucks.

SPRING CABBAGES.—The best varieties to sow now.

SUTTON'S HARBINGER CABBAGE.
The variety of Cabbage for Spring Cutting. Per packet, 1s. per ounce, 1s. 6d.
Price of Autumn Cabbages. A trial of no less than 114 stocks, representing 94 sorts, was made at Wisley last year. It will be noticed that Sutton's Harbinger is the only sort that did well in both trials (Autumn-sown and Spring-sown). The result:—June 17, 1916.
Cabbage Harbinger is a capital variety. I sowed some seed in July, and now (January 10, 1917) I am getting some 1 1/2 bush heads. Mr. A. F. Cole, The Gardens, Wellesbourne, Oxon.

SUTTON'S APRIL CABBAGE.
The most popular early Cabbage for garden use. Per packet, 1s. per ounce, 1s. 6d.
The April Cabbage, now improved, is the earliest and most productive variety of its kind, and has been growing since 1880. The best 1 lb. Cabbage, May 1, 1917.
The April Cabbage, raised from seed, appeared as you see, being excellent. This year a very high price was obtained for it. Mr. H. B. and J. B. Froude.

SUTTON'S FLOWER OF SPRING CABBAGE.
The most popular for the general Spring market. Per packet, 1s. per ounce, 1s. 6d.
Method of Growing Spring Cabbages. See page 31 of photograph, and send a letter to the Editor for the full method. W. W. Webb, Esq., Dunley, 12, Grosvenor Gardens, London, W. 1.

Under your April and Flower of Spring Cabbages, in the "List," last September I paid you 1000 of them, and I have taken them from their seed for the purpose of your "showing." The seed for this year has been sown at Wisley, Long, Dunley, 12, Grosvenor Gardens, London, W. 1. R. S. S. and J. B. Froude, Bedford Gardens.

SUTTON & SONS, The King's Seedsmen, READING.

MARCISS'S Grand Primo 150,000. A large selected Bulbs for forcing, 3s. per 1,000, 1s. 6d. per 500. G. H. ROBERTS, 24, Broad High Street, London, S.E. 1.

POTATO SPRAYING.—On spot ready for business. Carbonyl Sulphide of Copper, 3s. per gallon. Washing 8d. per gallon. Write for prices and samples on request to G. H. ROBERTS, 24, Broad High Street, London, S.E. 1.

STRAWBERRIES and HOW TO GROW THEM.—Plant out in best season's planting. Complete with all cultural directions, post-free. Also up-to-date information arranged loose leaf, with special value for quantity. KING'S ACRE NURSERIES, LTD., Herts.

IT IS OF NO USE waiting until the war is over to advertise your wares. Even if you find it difficult to supply your customers, on account of shortage of staff and difficulties of transit, you should not cease to advertise. When peace is declared, there will be, at any rate for a time, increased activity in every branch of industry. When that time comes, with whom will your customers deal—with the man who has not advertised for three years, and whose war-time they have forgotten, or with the man who, by persistent and persevering advertising, has kept his name before the public? Memories are short, and people's imaginations are out of sight are also out of mind. At the very all your competitors will be struggling to obtain the business, and only he who will be in a position to offer best prospects. Are you not going to be in a position to

For Advertisement Charges see page v

BRITAIN'S GREAT CABBAGE.
WEBB'S EMPEROR CABBAGE.
(For July and August sowing.)
Earliest, best, and most popular Cabbage in cultivation. Remarkably free from any tendency to "bolt." 6d. and 1s. per packet, 1s. 6d. per ounce, post free.
Mr. G. Ellwood, Head Gardener to W. H. Myers, Esq., Swannore Park, writes: "I should like to testify to the excellence of your Emperor Cabbage; it is really a gem, fit for private gardeners or market growers alike, and of splendid quality."
WEBB'S FAVOURITE CABBAGE.
Early medium-sized heads, of splendid quality. 6d. and 1s. per packet, 1s. 6d. per ounce, post free.
WEBB & SONS, LTD., The King's Seedsmen, Stourbridge.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Hom, American Bright Green and Brown Fly, etc. Sold in boxes about 2lb., 3lb., and 12lb., by Dealers in Garden Supplies. Wholesale: PRICES PATENT CANDLE CO., LTD., Battersea, London, S.W. 11.

BUNYARD'S STRAWBERRIES.
Our new descriptive list is now ready, and will be sent on receipt of card.
ALFRED STRAWBERRIES, a specialty. GEO. BUNYARD & CO., Ltd., Royal Nurseries, Maddingley, Leicestershire.

INCREASE your crops and protect them from blight and disease by using KEELING'S SPRAYING MIXTURE ("Kilm") Brand. Guaranteed free from lead and keeps indefinitely. A 4 lb. bag, with 25 gallons of water, is enough to spray twenty rods (1 acre), and costs only 4s. 6d., 3 lbs. 8s., 10 lbs., 13s. 6d.; 30 lbs., 21s., carriage free in the U.K. Sample 1 lb. 1s. 6d. post free. Send P.O., with order, direct to the manufacturers, KEELING & WALKER, LTD., 26, Milton House, Surrey Street, London, W.C. 2.

SANDERS, Orchid Growers, 81, Abing.

Wm. DUNCAN TUCKER & SONS, LTD., 14, Cannon Road, South Tottenham, N. 15 (near Victoria Water Gardens, Veneries, Peach-houses, Fenchel Buildings, etc. Catalogues gratis.

J. GRAY LTD., Builder of Conservatories, Greenhouses, Kitchens, and Heating Engineers, Drury Street, Chelsea, London, S.W. 3. Wire, 201, Western, London. Telephone: 201, Western.

NOW IS THE TIME TO ORDER
KEWLEY & SON, The Royal Horticultural Society, Longport, Somerset, are now booking orders for their Choice Dutch Perennial Plants to be sent out in the Autumn. Plant a Calceolaria Border this Autumn, and you will be able to enjoy its beauty for many years without the additional expense of trouble. Send the measurements of your border, and they will recommend a selection of flowers suitable for your site, and quote their retail prices.
Plants in 2 1/2 inch pots, 1s. 6d. each, and other sizes of plants, in 4 inch pots, 2s. 6d. each, are now being sent out in large quantities. Write to us for our list of Plant Department for Retail and Wholesale.

BUSINESS FOR SALE.

FOR SALE, an old-established **FLORIST** and Jobbing Business, S.W. district.—R. F., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

BUSINESS TO LET.

TO LET at Michaelmas, Nursery and Market Gardens, situate in flourishing town in Lancashire, splendid position; 7 greenhouses, hot-water boilers, splendid sheds, excellent water supply, well drained, area over 4,200 square yards. Also House and Shop in centre of town, tot. 275. Apply, J. W. & A. NEWCOMBE, House Agents, Market Harborough.

PLANTS, &c., WANTED

WANTED, 1,000 Large ASPIDISTRAS, all plants suitable for 2s. 6d. each or exchange. See other advertisements, cat. digests free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, choice Fruit, Flowers, and Vegetables; best market prices returned; boxes, &c., sent. Supplies stock from 4 inches accepted.—MORLE & CO., 150-156, Finchley Road, N.W. 3.

WANTED, good cuttings of winter-flowering Begonias, cash or exchange, to WALSHAW & SON, Nurseries, Scarborough.

WANTED, GERANTHUMS—Cuttings of Paul Compaud and Javoy, Calceolarias (yellow and brown), offers invited.—MICHIE & CO., Nurseries, Abingdon.

PALMS—Wanted, one or two Kentias 8 to 10ft., good condition.—FRAS. CAPERS, Great Marlton Nursery, Waterloo Road, Blackpool.

WANTED, six Woodpecker Garden Archers, in good condition, cheap. Apply by letter, MRS. ROSE, 520, Green Lanes, Finsbury Park, N. 4.

PLANTS, &c., FOR SALE.

COLLECTION of choice ORCHIDS—small collection, comprising Dendrobium, Cattleya Bowringiana, Cattleya Trianae, Cattleya Mossiae, Cymbidiums, Epidendrum, &c., fine varieties of Anthuriums; in all 250 to be sold, great variety, in good condition. Accept 210.—ROBERT GREEN (1917), LTD., 27 and 29, Cranford Street, W.

PRIMULAS PRIMULAS PRIMULAS—4th Year of Distribution. Our well-known Magnificent Stream Cinerarias, Chionodoxa, Calceolarias, &c., 2/- per doz., 12s. 6d. per 100, carriage paid, JOHN STEVENS & SONS, Nurseries, Gventry.

FERN'S FERNS! Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogues free J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

FOR SALE, Atropa Belladonna Seedlings, delivery end of July and onwards; 11s. per 100, carriage paid, cash with order.—Apply, H. V. BLAND, Blandford, Dorset by Leix.

100,000 LARGE GARDEN FERNS, 10 to 100, including Begonias, Cinerarias, Freziera, Roses, Ericas, Gloxinias, Lilies, Hydrangeas, &c., cat. digests free. J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

MISCELLANEOUS.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whippet Tweed; wears like leather, showerproof, 7 yards for 7s. 6d., Patterns free.—BRADFORD WOOLLEN CO., 71, Beak Street.

FOR SALE, excellent Turf Loam for Gardening purposes; for Glendon and Rushton Station, M.R.—For further particulars, apply C. R. KNOLLAN, Estate Office, Boughton House, Kettering.

DEATH.

DIED—In the Colham Cottage Hospital, Mr. R. V. van der Mer W. H. Baily, of Burwood House, Colham, Surrey.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6s. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

HEAD WORKING GARDENER if A. W. EVANS beg to thank the applicants for the post advertised, they are now suited.

WANTED, good all-round **HEAD GARDENER**, intelligible, understanding Glasshouses, Pools, Melons, Vines, &c., with knowledge of outdoor work, cottage, state wages. Also wanted, a **SECOND GARDENER** to assist Head in Glasshouses and out-of-doors; intelligible, garden cottage provided. State wages. A. ALD, Esq., Dufford House, Cullompton, Devon.

WANTED, **HEAD** and **SECOND GARDENER**, male or female, understand stock preferable, cottage—Send full particulars, VIGERS, Hollydale, Keston, Kent.

WANTED, **HEAD WORKING GARDENER** and **BAILED** for small home farm, must have knowledge of stock and be thoroughly competent and trust-worthy. Write S. H., Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, **HEAD WORKING GARDENER**, male and female, cottage provided, must have excellent references. Apply, C. E. G. MOORE, Appleby Hall, Aberstone.

WANTED, **GOOD HEAD WORKING GARDENER**, good in Glass, Stone House. Apply, MISS BROTHERY HEATHCOTT, Cleveland, Stoke Forest, Slough.

COLONEL VAUGHAN of Courtfield, Ross-on-Wye, requires a **WORKING HEAD GARDENER** for the above address.

WANTED, a good hand with a **SINGLE HANDED GARDENER** (help given occasionally) for good Garden in East Cornwall, single or married, with small family, good references required. Apply, stating wages, and giving references, A. Y. Z., c/o Birmingham & Baltic, 4, Mount Street, London, W. 1.

WANTED, **SINGLE HANDED GARDENER**, with several years' experience, wages 75/- per week. Apply, MISS HORNBY, Blendish, Greenwich Road, London, W.

WANTED, at once, capable **SINGLE GARDENER** (male or female). Apply by letter to C. H. CAVE, Esq., Redway Hill House, Mungton-shed, near Bristol.

WANTED, **GARDENER**, good outside work and handy man, over thirty years' good wages, cottage, vegetables.—Apply, LINDSAY JONES, The Spinnells, near Kilsnoher-street.

WANTED, **Good WORKING GARDENER**, whose help is given, to live in cottage on the place, no children, STEVENS, Millstone Lodge, Surrey.

WANTED, **GARDENER**, with help; must be thoroughly experienced in Fruit and Plant growing, also Kitchen Garden and Pleasure Grounds; wages 50/- per week, home, &c. For particulars, apply A. C. LEVINE, Park Hall Gardens, Mansfield, Notts.

GARDENER wanted steadily, reliable, intelligible, one used to small close-up mixed plant and animal, single-handed, permanent. Private or Home, near Stevenage, Herts.

WANTED, **SECOND GARDENER**, with good experience and references, cottage or both provided. Full particulars to A. BRADBURY, Broom's Barn, Llandudno.

WANTED, **SECOND GARDENER**, male or female, well up in Fruit and Plants, good wages, stout and cottage provided. Apply with full particulars and references, to J. BLACKWOOD, Selton Park Gardens, Slough.

WANTED, **SECOND GARDENER** (married or single, cottage found, state wages, &c.), discharged soldier would suit.—H. MORRISON, Wiltoughby House Gardens, Rugby.

WANTED, **SECOND MAN**; intelligible, chiefly inside, able to take charge, of two **LADY GARDENERS**, one senior with experience, good wages in comfortable cottage or both. Particulars to H. E. TAYLOR, Enderidge Court Gardens, Oxford, Surrey.

WANTED, **GARDENER**, under Head Gardener, whose others kept, must be experienced, inside and out, intelligible, 27s. and room. Also strong YOUTH of 16, wages according to experience—Apply, giving full particulars, to the **HEAD GARDENER**, Non-shub Park, Chobem, Surrey.

WANTED, **competent MAN** to take charge of Glass department, under Head Gardener; good cottage. Particulars, wages, &c., S. J., Box 13, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, **UNDER GARDENER** for outside duty alternate Sundays, pumping in House, wages 25s. per week, good cottage and garden, milk. Apply, stating age, particulars, to ALFRED CHILD, Cately House Gardens, Daventry, Northants.

WANTED, **UNDER GARDENER**; cottage given, Fruit, stating wages and full particulars, LADY McMAHON, Southborough House, Devizes.

REV. W. D. BUSHILL, requires an **UNDER GARDENER**—Address, The Hermitage, Heron-on-the-Hill.

WANTED, **GENERAL FOREMAN**, ex-service man or intelligible, experienced in Fruit and Flower Culture, also Decorating, good wages, both milk, and vegetables.—Apply with full particulars, to **HEAD GARDENER**, Castle Gardens, Arundel.

WANTED, **FOREMAN (INSIDE)**; intelligible or discharged, well up in Fruit, Carnations, and Decorative Plants, good wages for suitable man. Apply, particulars, J. BAKER, The Gardens, Goldings, Great Witley, Essex.

WANTED, **FOREMAN**, with good experience, wages 45s. per week, with both for cottage if married, milk, vegetables, &c. Apply, with full particulars, to T. DENY, Bushmalkin Gardens, Chislehurst, Kent.

WANTED, **FOREMAN**, for the Houses; ex-service man or intelligible one with experience of growing good Fruit, Flowers, and Vegetables, under Glass, or a good decorator, wages according to experience and ability. Apply, giving full particulars, to **GARDENER**, Park Place, Holeyton-Thames.

WANTED, **JOURNEVMAN**, for Fruit Houses principally, wages 25/-, duty 3s.; must have good permanency of suitable, good both; wages, W. HEDLEY WARREN, Aston Clinton Gardens, Tring.

WANTED, **JOURNEVMAN**, for Houses; intelligible, wages 24s. per week, both and vegetables, duty every third Sunday.—C. EARL, Somerville Gardens, Tonbridge, Kent.

WANTED, a **MAN** for Glasshouses; must be experienced in Fruit and Plants; discharged soldier or intelligible. Apply with full particulars and wages required, with both or cottage.—H. KEMP, Priory Gardens, Reigate.

WANTED, a **good MAN**; Kitchen Garden and Grounds; intelligible, good wages, cottage and garden to suitable man.—Apply, J. R. BOOTH, The Gardens, Waltham, Hall, Sussex.

WANTED, **strong MAN**, to work under Head Gardener; intelligible, cottage or both; married preferred.—Apply, GIBBINS, Swalecliffe Park, Banbury.

WANTED, a **LADY GARDENER**, with some experience, to work with another lady.—Apply, MISS TALLIFF, The Cottage, Condon, near Coventry.

GARDENER (lady) required; 2 acres Kitchen and Flower; strong lad to assist; unfurnished cottage and 50s. week.—Apply, MISS GIBSON, Stunsted, Sutton, Surrey.

LADY GARDENERS—Good, experienced Head and Under Gardeners wanted, share cottage; good all-round experience. Apply to MR. ROBINSON, Redcomb House, near Salisbury.

WANTED, Two LADY GARDENERS for Lonsdale-street, under good Gardener, Outside and Inside work, wages 12/- weekly, good miscellaneous cottage provided.—C. J. PHILLIPS, 1, Lonsdale Square, London, S.W. 1.

WANTED, Two LADY GARDENERS for Inside; must be experienced; 24s. per week, Bothy, &c.; duty and overtime paid. 12 to 16 hrs. weekly.—Particulars to H. CHANDLER, Grooms Abbey Gardens, Coventry.

WANTED, Two WOMEN GARDENERS, for Inside and Out (sisters or friends preferred), some experience necessary. Bothy, &c.—Apply, stocking ages required and full particulars, W. WILCOCKS, Langley Park, Slough.

LADY GARDENERS wanted; all suited to Inside and Outside, Allround, Hants; 3s. a week, but amount of Glass, man and two boys, Caversham, Essex, 30s. and house, Vines, Peachtree, man and boy kept, 5 Glass-houses, Bromley, Kent; cottage or house; 2 a/c of Kitchin Garden, Orpington, Kent; Glass, Hithwood Rd. wanted; good allround Gardening experience, 8 rooms, house (Glas); 20s., and furnished cottage, a maid, Single-handed; Dunst. Rd, Surrey; some knowledge of Gardening, Gerrards Cross, Bucks; small Grounds, Kitchin Garden, Tockwith, Herts; 5s., no much Glass. MRS. HUNT, LTD., 55, High Street, Manchester, W. 1.

WANTED, at once 3 Female GARDENERS for Fruit and Plant Houses, wages 20/- per week; Bothy and vegetable patch; Sunday duty, 5s.; overtime paid.—Full particulars to J. PITTIS, Grafton, Claptonham, Wills.

WANTED, Three WOMEN GARDENERS (practical) doing chiefly the Plant Houses; one to take lead; suitable Bothy, with attached house. State wages expected, and send full particulars and experience, with copies of testimonials, to A. JOHNSTON-JOHNSTON, Grove Gardens, Acton, London, W. 3.

WANTED, IMPROVER, Inside and Out, wages 18/-, Bothy, &c., overtime paid, 1 week, Saturday. Apply, F. NOLWOOD, Western Woodlands, Wellingborough, Surrey.

WANTED, a Youth as IMPROVER (Inside and Out), wages 18/-, with Bothy, &c., all the year, overtime paid extra. F. BRISLOW, Deodar Gardens, Goswold, Cambridge, Wills.

WANTED, at once, strong YOUTH for Outside, must be experienced, wages 12/-, with Bothy, W. WARD, Kent W. of Garden, Hampstead, London, N.W. 7.

TRADE.

WANTED, thoroughly experienced GROWER, for Cucumber, Tomatoes, &c., General and Nursery work, connected with the most comfortable position for a grower in W. with a full staff of men and lads; wages required, &c.—A. B., Box 10, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, for South of Scotland GROWER (under a well known large soft-wood plants, also Herbaceous and Alpine plants). Storage and wages expected, with references, to H. B., Box 9, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, ROSE GROWER, good hand, permanent situation. Apply, ALBERT A. WALTERS & SON, Nurseries and Fruit Tree Centre, Bath.

PALM GROWER, thoroughly experienced, wanted for London, intelligible, good wages.—Write G. E., Grosvenor Gardens, N. Kensington, S.W. 7.

WANTED, Alpine and Herbaceous Plant PROPAGATOR, in good Nursery. Apply, with full particulars, S. B., Box 1, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, a CUCUMBER and TOMATO GROWER, State wages required, to F. M. LEATHER, Eastleigh, Micham.

WANTED, a MAN, used to growing Cucumber, Tomato, and Pot Plants. Please state wages required to M. J., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, FOREMAN, experienced in Cucumber and Tomato growing; cottage free; total abstainer—Apply, J. LYONS, London, Essex.

WANTED, FOREMAN, to manage Nursery, Tomatos and General Market Gardens.—ALDRINGTON NURSERIES, Rufford Gardens, Howe.

WANTED, WORKING FOREMAN (outside), with a good knowledge of Ornamental Shrubs, Trees, Climbers, &c. Good wages to competent man. V. N. GAUNTLET & CO., LTD., Chiddingfold, Reading, Surrey.

WANTED, immediately, active SHOP-MAN (indulgent), to take charge of Seed Business.—Apply, stating wages required and references, to H. CORRIER, High Street, Bidegate.

SEED TRADE.—SAMUEL FINNEY & CO., LTD., Newmarket-Tyne, have vacancies for experienced ASSISTANTS in their Garden Seed Department. Permanent situation and good wages to reliable man.—Write, stating age, experience, and wages expected, to above.

SEED ASSISTANTS wanted; intelligible, State age, experience, references, and wages required, to JACKSON & ROBINSON, The King's Seed-Shop, Manchester.

LADY Required on compact, established Nursery, London district; must be prepared to accept about £2000 good prospects.—Write, H. S., Box 7, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, for the Head Office at King's Arms, an experienced LADY TYPIST, with some knowledge of the Nursery Business. Particulars as to experience and wages required to KING'S ARMS NURSERY, LTD., Hereford.

WANTED, SHORTHAND TYPIST; must be experienced in the various branches of the Nursery Business. Full particulars to P. C., Box 12, 41, Wellington Street, Covent Garden, W.C. 2.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d. for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated at special rates, must be prepared to pay for each insertion. Notices will be taken at their communications. Notices and Advertisements are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of their notices only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Privats at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

HEAD GARDENER and BAILIFF (age 42), 22 years' experience, where a thorough superintendent and trustworthy man is required, 20 years' experience, 6 years' present. Highest recommendation as to character and ability.—J. S., Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

HEAD GARDENER and BAILIFF; age 26. Applicant seeks an appointment where a thoroughly competent and trustworthy man is required, 13 years' experience, 6 years' present. Highest recommendation as to character and ability.—J. H., Box 10, 41, Wellington Street, Covent Garden, W.C. 2.

FARM BAILIFF or BAILIFF and GARDENER. Applicant, over military age, and having had a life experience in all branches, could be pleased to communicate with any lady or gentleman requiring a thoroughly reliable man; good references.—R. FAWKES, Broom's Barn, Rayton, Chester.

HEAD GARDENER or GARDENER and BAILIFF. His experience in all branches; married (one daughter); highly recommended; age 45. OWLES, Pudding Cottage, Wilmington, Dartford, Kent.

HEAD GARDENER; all round, life experience, including Windsor, Grafton, and Berr; age 45; a small 12 children; at liberty after August 1.—HOWES, The Garden, Woodbastwick Hill, Norwich.

GARDENER (HEAD). A practical knowledge of all branches; the management and upkeep of a large well established; the production of Vegetables, Fruits, and Flowers in any quantity; Inside and Out; highly recommended; married (two children); age 51. Write, "HOBBS," Box 17, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD) — Advertiser seeks post where 5 or more are kept in normal times; life experience in large establishments; 11 years present place; personal reference obtainable; permanent discharge from Army.—CLEMENS, Sonnerhill Gardens, Tonbridge.

GARDENER seeks situation as Head; 12 years' experience; married (no children).—LOVE, DAY, 39, Ruxton Avenue, Brentwood, Essex.

SITUATION required as HEAD GARDENER; thoroughly experienced in all branches; 20 years' present situation, leaving through death of employer (Mrs. E. H. Denison).—A. G. GENTLE, Little Gaddesden, Berkhamsted, Herts.

W. ARKWRIGHT, Esq., Sutton Hall, strongly recommends J. STEPHENSON to anyone requiring a thoroughly experienced HEAD GARDENER; 12 years' present place; at liberty when suited; suitable for military service. STEPHENSON, Sutton Scarshale, Clonsterfield.

GARDENER (HEAD WORKING), where several are kept. An experienced man requires a situation as above; good Fruit and Vegetable grower; understands grass land and dairy stock; married; well above military age. Please state wages.—A. PARRY, Fonthill Cottage, Brooklands Avenue, Cambridge.

GARDENER (HEAD WORKING or good SINGLE-HANDED); married (no family); age 50; life experience all branches, Inside and Out; excellent reference, disengaged GARDENER, Octavia, Pegwell Bay, Ramsgate.

GARDENER (HEAD WORKING); age 51; 20 years' Head, Northbury Park, Dorking; seeks re-employment, through death of employer; thoroughly experienced all branches; used to growing large quantities Fruit and Vegetables; awarded medals, &c., at R.H.S. meetings; highest references. Apply, GEORGE KENT, Pixham Lane, Dorking.

GARDENER (HEAD WORKING); good practical knowledge and grower; life experience; age 50; discharged Army; married; one boy (age 15 years); good references. Apply to HEAD GARDENER, The Gardens, Bentley Priory, Stunmore, Middlesex.

GARDENER (HEAD WORKING); age 43; in good establishment; thoroughly experienced in all branches; active; excellent reference; used to producing Vegetables and Fruit in large quantities.—H. P. WARRIN, Sandhurst Lodge Gardens, Wellington College, Berks.

GARDENER (HEAD WORKING), where 25 more are kept, life experience in all branches; age 75; married (one child, age 6); intelligible; excellent testimonials. State wages. HOOK, 3, Burleigh Cottages, Sutton Common Road, Sutton, Surrey.

GARDENER (HEAD WORKING), where 2 or 3 are kept, 5 and 9 years' references as Head; good allround experience, disengaged August 4; married; age 40; State wages. W. SEARLES, Station Road, Pottery Bar, Middlesex.

GARDENER (HEAD WORKING), where others are kept, competent and reliable; good grower Fruit, Flowers, and Vegetables; life experience; age 49; married.—F. SPILLARD, Washington, Fulham, London.

GARDENERS (HEAD WORKING); thoroughly experienced at Inside and Outside work; excellent references, over military age. For particulars, H. HORTON, "Head Gardeners," Eveshild, Hay's Lane, Broomley, Kent.

GARDENER (HEAD WORKING); thoroughly experienced in all branches; age 46; married 4 children, youngest 10 years; 8 years in present place. A. PEGLOW, Brooklands Hall Gardens, Welshpool.

GARDENER (HEAD, or SINGLE-HANDED); 20 years' experience Flowers, Fruits, and Vegetables; good references; age 47; married. AYRES, Rectory Lodge, Helgoby, Farnham Royal, Bucks.

SITUATION required as GARDENER; understands electric light plant; Isle of Wight preferred. NEWTON, Sunnyside, Steyne Road, Bridgeheads, Isle of Wight.

FOREMAN (intelligible), age 28, requires situation, Inside or Out; good experience in Fruit, Plants, House and Table Decoration; not afraid of work; distance no object. State wages and full particulars; well recommended. P. A., Box 20, 41, Wellington Street, Covent Garden, W.C. 2.

JOURNEYMAN seeks situation; Inside and Out or Inside; age 22; 2 years' experience; married; good references.—MARTIN, c/o Mr. Walton, Ascol's Green, Warwick Road, Birmingham.

SITUATIONS WANTED continued on page 9.

"Savvy" Bull's
THE FOOD FOR PLANTS

MANY YEARS REPUTATION.
EUREKA WEED KILLER
LASTING RESULTS - NO NEW EXPERIMENT.
LABOUR SAVERS. "EUREKA" LAWN SAND, SULFUR NICOTINE INSECTICIDES, FUMERS, SPRAYS AND OTHER CHEMICALS & Sundries.
SEE LIST - PLEASE ASK YOUR AGENT FOR THE EUREKA ARTICLES - THEY ARE ALWAYS SATISFACTORY IF ANY DIFFICULTY IN OBTAINING WE SEND DIRECT CARRIAGE PAID.
Only Address: **TOMLINSON & HAYWARD, LTD. LINCOLN.**

HORTICULTURAL SHEET GLASS
G.F.S.
6% MORE LIGHT
ROLLED SHEET

A SUBSTITUTE for ordinary 21 oz. glass which is now so scarce. The new **British Rolled Sheet** is about 1/8 in. (or equal to stone 21 oz.) in thickness. (Can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. **British Sheet Glass**, under the same conditions.

Manufacturers of
GENUINE WHITE LEAD PAINT.
"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tins and 1 cwt. mild-lead cans.
BEST AND LINED OIL PUTTY.



Complete Price List of
Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
State quantity of each size required and have carriage paid (creation of Carriage) frequently amounts to half value of goods) or write for Price List, free.
Retail Prices of all descriptions. Full Details and Form sent from 2s. each.
RICHARD SANKEY & SON, LTD.,
Dulwell Potteries, NOTTINGHAM.

Sample CRET Pot FREE with Booklet
will convince you that the Drainage, Porosity, Healthfulness of CRET'S would help your plants. Write to:
PETER BAILEY & SONS, Ltd.,
2 Heaton Mersey Pottery, near MANCHESTER.




LAXTON'S STRAWBERRIES,
including the grand new var. :-
Laxtonian (fine Main Crop).
Pots, 30 - 100 ; open, 20 - 100.
King George.
20 ; pots : 6 - open.
Royal Sovereign & Standard Sorts.
20 ; pots : 6 - open.
LAXTON BROS., BEDFORD.

IMPORTANT : Please write for a Catalogue, as the Paper Commission only allow us to send to those who apply -
LAXTON BROTHERS, BEDFORD.

TURF LOAM.

Very Fibrous Yellow Turf Loam
For VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid or Delivered

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties.
TOWE AND GREENHOUSE PLANTS OF ALL KINDS
Kilnly sent for Catalogue.
AMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of
Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights,
which we shall be pleased to clear at special prices, subject to being unsold.

Particulars on application,
BOULTON & PAUL, Ltd., ROSE LANE WORKS NORWICH.

THE Vegetable Garden.

This is an English translation, made by Mr. W. Robinson, of the celebrated work by the world-famous growers,

MESSRS. VILMORIN, ANDRIEUX & CO.,

of Paris. There are no market growers to equal the French, and in this work English readers will find placed at their disposal, in readable and interesting form, all the experience and knowledge of centuries of successful cultivation. All the principal vegetables, including many which are at present unfamiliar to English growers, are fully dealt with; and numerous clear and informative illustrations give point to the instructions contained in the text.

EVERY FOOD PRODUCER

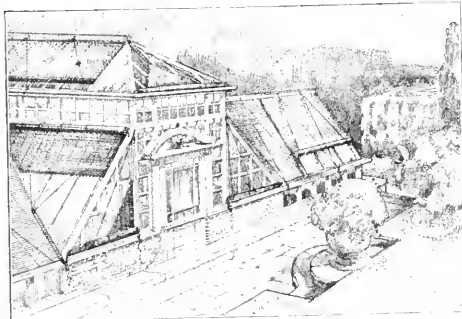
should obtain a copy of this book, which will enable him to get the very best results out of the ground at his disposal.

PRICE 15s. 7d. POST FREE.

From **THE LIBRARIAN,**
41, WELLINGTON ST. STRAND, W.G. 2.

BAMBOO BLINDS for GREENHOUSES.

SIZES
IN STOCK
FROM
10ft. x 8ft.
TO
15ft. x 15ft.



PRICE LIST
SENT
POST FREE
ON
APPLICATION

J. AVERY & CO., Horticultural Blind Makers
81, GREAT PORTLAND STREET, LONDON, W. 1

EVERY GARDENER KNOWS THAT

Clay's gets there
and makes the Garden gay all the year round

Sold everywhere in TINS at 6d. A 1s., and in BRANDED & SEALED BAGS: 7lbs. 2s. 6d., 14lbs., 4s. 6d., 28lbs. 7s. 6d., 56lbs. 12s. 6d., 112lbs. 20s., or direct from the Works. Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS)

CLAY & SON Manure Mills & Bone Crushers, STRATFORD, LONDON, E.



IT IS THE STANDARD FOOD FOR PLANTS.

THE

Gardeners' Chronicle

No. 1896—SATURDAY, JULY 28, 1917

CONTENTS.

Books, notices of— The Mexican and Central American species of Ficus 31
Bath-reading in Lincolnshire 38
Champagne bottles and Cabbage-ry 42
Currants, standard and Farm crops and stock on the home 42
Food production, on increased 42
Foreign correspondence— Seed-growing in Macedonia 49
Fruit crops, reports on—the 32-33
Gardeners and the Restricted Occupations Order 40
Lizard, some interesting wild plants at the 31

ILLUSTRATION.

Lonicera tragophylla 30

THE LIZARD ON A MORNING IN JUNE.

IN an interesting and useful little book, entitled 'A Week at the Lizard,' the Rev. C. A. Johns, author of that well-known and popular volume, 'Flowers of the Exe,' has given us a true picture of the Lizard district as he found it in 1848. Some changes have naturally taken place since Johns rambled along its rocky coasts and precipitous shores. The advent of the motor car and omnibus rendered the district more easy of access to visitors, and brought about a considerable change in the habits and fortunes of the inhabitants. Now, however, on account of Government restrictions in the consumption of petrol, in place of the buzzing engine, boating horn, and dusty roads, comparative peace reigns. But a definite object has attracted us on this bright June morning: the collection of two rare and interesting Trefloids which hide their tiny heads in a small arca near, and the beautiful Meseulanthemum, known locally as "Sally, my handson!" (the natives' nearest effort to pronounce the Latin name), which has succeeded in establishing itself in considerable profusion on the Cornish coast. For this dual purpose it will be sufficient to examine and describe (alas! the camera is excluded) a most beautiful valley a little to the west of the actual Lizard point, known as the Cornishian Valley. This is a natural rocky hill, deserving the careful attention of the land-cape gardener, for it contains examples of maritime rock-plant associations of remarkable beauty and charm. Johns says of this spot: "A sloping bank on the right hand side of the Cornishian Valley, about a hundred yards from the coast, produces, I should think, more botanical rarities than any other spot of equal dimensions in Great Britain. Here are crowded together, in so small a space that I actually covered with my hat growing specimens of, all together, Lotus hispidus, Trifolium Bocconi, T. Molinieri, and I. strictum." This little device of covering a floral area with the brim of his hat and investigating the contents thereof seems to have been a characteristic of the worthy and reverend gentleman; and it was, indeed, rather a noteworthy feat, for the hat, as we see from the picture of him climbing a precipitous cliff, was a tall one.

The chinks of the walls by the side of the road leading down from the Lizard village teem with multitudes of Cotyledon Umbellifer and neat vertical carpets of the beautiful pink-flowered

Sedum anglicum, an agreeable colour change from the common yellow species of the North Downs. Here and there are dotted small examples of Asplenium Adnigrum-nigrum. Towards the mill of water one meets charming associations of the scarlet Pimpernel, Bird's-foot-Trefoil, with yellow and bronze flowers on the same stalks, and everywhere there is a meadow carpet of pink-flowered Thrift. A little further up the valley there are occasional tufts of this plant with flowers of a much deeper colour. By the water-side revel cool green tufts of the Sea-Beet (Beta maritima) and dwarf forms of Silene inflata. On the rocks bordering the little rill of water, that charming little plant, Glaux maritima, with its pink petaloid calyx exactly simulating a corolla, forms a dense mass amongst the stones. On the lower slopes near by one finds the two Trefloids, Trifolium Bocconi and T. Molinieri, and curiously-dwarfed Jasione montana only a couple of inches high, whilst here and there occur simple examples of the Oxeye Daisy in miniature, exactly as signified by Johns seventy years ago. Flesh-coloured forms of the Pimpernel and almost pink Polygala vulgaris are characteristic of the valley. By the sides of the stream Sedum anglicum is always much paler than on the walls higher up. Spiraea filipendula, perhaps most beautiful when the flowers are just opening, grows in some quantity amongst the Gorse towards the top of the valley, where Arenaria verna, var. Gerardii, finds its home on the more barren spots of the heath. From the head of the valley may be seen the "old windmill," a conspicuous and well-known landmark in the neighbourhood, which was described by a certain waterer in 'I Drive to the Lord's End' as "the tower of a ruined church, venerable with age," in error rather curiously commented on by Johns.

The Meseulanthemum, now so thoroughly naturalized and so characteristic a feature of the sea-slopes of Cornwall, occurs on an old quarry face at the right hand side of the entrance to the Cornishian Valley. This particular patch consisted of M. aspidotale, a native of Australia, Chile, and California, with magenta flowers, and another species, M. edulis, from South Africa, with the young flowers either pale purplish-yellow or pink, the yellow ones soon changing to pink. The change of colour from yellow to pink is a fascinating young flowers, quite yellow when packed and despatched by post, were pink on arrival at Kew. I collected material from a single plant of a third species, with deep magenta flowers and rather different leaves, between Portovenia and Looe Pool, about half way up the slope near the boundary of Captain Rogers' estate. Mr. Belle has determined this to be M. macranthum, and it is apparently the first record for this species.

The two Trefloids which grow in the Cornishian Valley seed at Cudworth, a little further east, are very interesting from a phyto-geographical standpoint. Together with a few other species of plants, they constitute the Lusitanian and Mediterranean elements which are so remarkable a feature of the Cornish flora. These two Trefloids occur nowhere else in Britain, and they both have a fairly wide distribution in France and the Mediterranean littoral. It is not my role to discuss the question as to whether their occurrence in Cornwall is evidence of a former land connection with the Continent, or whether they were introduced since the glacial period, when the temperate flora of these islands is supposed to have been entirely destroyed. In his book on the origin of the British flora, the late Clement Reid strongly supported the latter theory. The species under consideration certainly grew naturally enough, as if they had been there as long as any other portion of the flora of this interesting district. In reference to this subject, we cannot conclude without quoting the very wise remarks of the Rev. C. A. Johns nearly seventy years ago: "The fact that the Trefloids peculiar to

the district should have been discovered growing together has been thought so singular that some botanists have entertained doubts whether they are really indigenous. I myself see no reason to doubt that their first introduction was coeval with that of the rest of the vegetation on the cliffs. It should be remembered that, as the Lizard is the most southerly point in England, and its climate uniformly mild, we have good grounds for expecting to find plants properly belonging to the warmer sea-coasts of Europe, and such is the case of these three Trefloids. . . . The cliffs in the vicinity of the Lizard are precipitous, and no ballast thrown overboard or washed from a wreck could be carried thither. The serpentine formation is a very uncommon one in England, and may be favourable to the growth of the plants in question; if this were not the case, we should, perhaps, find them in other situations. But, after all, the simplest solution of the question is to assume at once that there was a time when Great Britain was a portion of the European Continent. The whole was then clothed by continuous zones of vegetation, which the subsequent formation of the Channel interrupted, indeed, but did not destroy." J. Hutchinson.

NOTICES OF BOOKS.

THE FIGS OF MEXICO AND CENTRAL AMERICA.

WHEN, in 1883, I compiled the enumeration of the Figs for the Botany of the Biologia Centrali-Americana, between forty and fifty reputed species were on record for that region; but as the Kew Herbarium contained authenticated specimens of fewer than half of these reputed species, no attempt at a critical revision was undertaken. Since that date many districts of the countries in question have been much more thoroughly explored botanically, and a relatively large number of additional species discovered. Mr. Standley defines forty-one species of Ficus, more than half of which are new to science; so that more than half of the names in the Biologia are reduced to synonymy of others. From the numerous discoveries of the last half century, especially in Asia and Africa, it may be estimated that Ficus numbers at least 800 species, generally dispersed in tropical countries, but most numerous in Asia and Africa. A. Garcia is at home in the Mediterranean region; a few species extend beyond the tropics in Eastern Asia and Eastern Australia. None is recorded north of Mexico, or far outside of the southern tropics of America. Figs are common in Western Polynesia, and characteristic in some islands, and Ficus columnaris is one of the most remarkable and conspicuous trees in Lord Howe Islands, a speck in the ocean 500 miles east of Australia. It is similar in habit and dimensions to the Banyan, F. indica. Noteworthy among the Mexican and Central American species are F. interamarginalis, F. cotinifolia, F. pallifolia, and F. glabrata. The first has broad leaves 10 to 15 inches long. F. cotinifolia is very common, and ranges from the Northern States of Mexico to Costa Rica. F. pallifolia is equally common, from North Mexico to Panama, and is credited with twenty-one synonyms. F. glabrata is a tree often 80 to 120 feet high, common in Guatemala, and extending to Colombia. Mr. Standley employs the characters afforded by the inflorescence and flowers as primaries in his classification and definitions of the species and those of the leaves as secondaries. He makes no reference to the phenomena of fertilisation, and, what is more to be regretted, he gives no differential description of the genus Ficus. W. Botting Hemslery.

* "The Mexican and Central American Species of Ficus," by Paul C. Standley, Contributions from the United States National Herbarium, XX, Part I, pp. 1-35, with an index, 1917.

REPORT ON THE CONDITION OF THE OUT-DOOR FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP; AND "GOOD," "VERY GOOD," OR "BAD," DENOTE THE QUALITY.

FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLE ON PAGE 35.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND										
0, Scotland, N.										
CAITHNESS	Over; very good	Average; good	.....	Over; good	.....	.....	Over; very good	Over; good	.....	W. F. MacKenzie, Thurso Castle Gardens, Thurso.
ELGIN	Average; good Over; good	Under; good Under; bad	Under; bad Under; bad	Average; good Average; good	Under; bad	Under; bad	Average; good Over; very good	Average; good Over; very good	.....	John Macpherson, Mayne Gardens, Elgin George Edwards, Ballindalloch Castle Gardens, Ballindalloch, James Jamieson, Easter Elchies Gardens, Fraxocharie, W. Macdonald, Ben Dumph Gardens, Torndon.
ROSS-SHIRE	Average	Under	Under	.....	.....	.....	Average	Average	Average	.....
SUTHERLAND	Under	Under	Under	Under	.....	.....	Under	Average	.....	D. McVilvie, Dunsabin Castle Gardens, Golspie.
1, Scotland, E.										
ABERDEENSHIRE	Under; bad Average; good Average; good	Under; bad Average; good Average; good	Under; good Average Under; good	Average; good Average Under; good	..... ..... Over; good	Under; bad Over; good	Average; good Over; very good Over; good	Average; good Over; good Over; good	.....	James Grant, Rothienorman Gardens Simon Campbell, Fyvie Castle Gardens John McKinnon, Haddo House Gardens.
BERWICKSHIRE	Average; very good Over; good Under; good	Under; bad Average Under; good	Over; very good Average; good Under; good	Average; very good Under; bad Under; good	Average; very good Under; bad Under; bad	Average; very good Under; bad Under; bad	Over; very good Over; good Average; very good	Over; very good Average; very good Average; good	.....	Peter Smith, Duns Castle Gardens, Duns, W. A. Baldwin, Mellerstain Gardens, Gordon, Thomas Nelson, Althe Gradon Gardens, Coldstream.
CLACKMANNAN-SHIRE	Over; very good	Average	Under	Average	Average	Under	Over; very good	Average; good	Under	Alexander Kirk, Alloa.
EAST LOTHIAN	Under; good	Under; good	Under; good	Average; good	Average; good	Under; good	Average; good	Average; bad	.....	R. P. Brotherton, Tynninghame Gardens, Prestonkirk.
FIFESHIRE	Average Under Average	Under Average Under	Under Under Under	Under Under Under	Average Average; good Under	Average Under Under	Over; good Average; good very good	Average Average; good Over	.....	Chas. Simpson, Wemyss Castle Gardens, East Wemyss, D. McLean, Rath Gardens, Kikkeddy, William Henderson, Ballmarie Gardens, Markinch.
FORFARSHIRE	Over; good Over; good	Under Average; good	Under Average; good	Average; good Under; good	Under; good	Under	Average; good Average; good	Over; good Over; good	.....	Robert Bell, Kinaird Castle Gardens, Brechin, Andrew McAulie, Ruffven House Gardens, Meikle.
KINCARDINESHIRE	Under Average	Under Under	Under Under	Average Average; good	..... Over; very good	..... .....	Over Average	Over Average; good	.....	William Kibbit, Pasque Gardens, Laurencekirk, William Thomson, Fife House Gardens, Stonehaven.
GLINTHGOV-SHIRE	Average; good	Under; good	Average; good	Under; bad	Under; bad	Under; bad	Over; very good	Under; good	.....	John Hinchate, Hopetoun Gardens, South Queensferry.
MIDLOTHIAN	Average; good Average; good Average; very good Under	Under Under; good Under; bad Under	Under Under Average; good Under	Under Average Average; good Under	Average Under	Under Under Under; good	Over; very good Average; good Over; very good Over	Average; good Average; good Average; good Average	.....	William Oughton, Dalhousie Castle Gardens, Bonnyrigg, James Whitlock, Dalkeith Gardens, Dalkeith, A. C. Scott, Oxenford Castle Gardens, Ford, Wm. McDonald, Cardrona, Banjoethen.
PEEBLES	Under	Under	Under	Under	.....	.....	Over	Average	.....	.....
PERTSHIRE	Average Under; good	Under Under	Under Average; good	Under Average; good	..... .....	..... Under	Average Average; very good	Average Average; good	.....	John Robb, Minab Terrace, Cupel, Thomas Lint, Keir Gardens, Dunblane.
6, Scotland, W.										
ARGYLLSHIRE	Average; good Under Under; good	Under; good Under Average; good	Over; very good Under Average; good	Over; very good Under Over; very good	Average; very good ..... .....	..... ..... .....	Over; very good Under Average; good	Average; very good Under Average; very good	.....	D. S. Melville, Poltallock Gardens, Kilmartin, Henry Scott, Tarisk Gardens, Aros, Isle of Mull, George Haig, Barcaldine Gardens, Leuing.
AYRSHIRE	Under; bad Average; good Average	Under; bad Average; good Under	Under; good Under; good Under	Under Under; good Under	Average Average; good .....	..... Average; good	Average; good Average; good Over	Average Under; good Over	.....	William Priest, Edlinton Gardens, Kilmanning, D. Buchanan, Barzany Gardens, Dalry, John McInnes, Kirkmichael House Gardens, by Maybole, David Halliday, Asog House Gardens, Bute.
DUMBARTONSHIRE	Over	Average	Average	Under	.....	.....	Over	Under	.....	Donald Stewart, Knocklerry Castle Gardens, Cove.
DUMFRIESHIRE	Average; good Over; good	Under; bad	Average; good Under; good	Under; very good Average; good	..... .....	..... Under; good	Over; very good Average; good	Average; good Average;	.....	James McDonald, Dryfeholm Gardens, Lockerbie, John Urquhart, Hoddum Castle Gardens, Edergham, F. Loughton, Cairnshore House Gardens, Palmru.
KIRKCUDBRIGHT-SHIRE	Average; good	Average	Under	Average; good	.....	.....	Over; good	Under	.....	.....

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
6. Scotland, W.										
LANARKSHIRE	Average	Average	Under	Average	.....	.....	Over; good	Average	.....	John Shields, Carstairs Gardens, Carstairs Junction.
STIRLINGSHIRE	Over; good	Average; good	Average; good	Average; good	Over; good	Average	Over; good	Over; good	.....	John Middleton, Callendar House Gardens, Falkirk.
	Average	Under	Under	Average	.....	.....	Over	Average; good	Under	I. W. Cunningham, Dunreath Castle Gardens, Banchell.
WIGTOWNSHIRE	Average; good	Under; good	Under; good	Under; bad	.....	.....	Over; good	Average; good	.....	John Eyles, Dunraig Garden, Dunraig.
	Average	Over	Over	Average	.....	.....	Over; good	Under	.....	Samuel Gordon, Munreth House Gardens, Wharfedale.
ENGLAND :										
2. England, N.E.										
DURHAM	Under; good	Under	Average; good	Average	.....	Under; good	Average; very good	Under; very good	.....	W. Smith, Lambton Castle Gardens, Fenwick House.
	Over	Over	Over	Average; good	.....	.....	Average; good	Over; good	.....	John Smith, Hylton House Gardens, North Road.
	Over	Average	Under	Over	Over; very good	Average	Over; good	Average; good	.....	E. Tindale, Ravensworth Gardens, Gateshead.
NORTH MERLAND	Average; good	Under	Under; good	Average; good	Average; good	Under	Average; very good	Average; good	.....	John Thomas, Bywell Hall Gardens, Stocksfield-on-Tyne.
YORKSHIRE	Under; good	Under; good	Under; good	Under; bad	.....	Under; good	Over; very good	Under; good	Under	Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.
	Under	Average; good	Over; good	Average	Average	Under	Over; good	Under; bad	.....	A. E. Sutton, Castle Howard Gardens, Welburn.
	Under; good	Under; good	Under; good	Average; good	Average; good	Average; good	Average; good	Average; good	.....	Alfred Gair, 61, Belle Vue Road, Leeds.
	Average	Under	Under	Average	Under	Under	Average	Average	.....	F. C. Puddle, Scampston Hall Gardens, Kettlewell.
	Under	Average	Under	Under	Average	Under	Under	Average	.....	C. Bulford, North Riding Asylum, York.
	Average; good	Average; good	Under; good	Average	Over; very good	Average	Over; very good	Under; bad	Under	Sidney Legg, Dalton Holme Gardens, Beverley.
3. England, E.										
CAMBRIDGESHIRE	Average; good	Average; good	Over; very good	Average; good	Average; good	.....	Over; very good	Average; very good	.....	T. Spooner, Meldreth, Royston.
	Average; good	Over; good	Average; good	Under; good	Average; good	Average; good	Over; good	Under; good	.....	Arthur Sewell, The Palace Gardens, Ely.
	Average; good	Average; good	Average; good	Under; good	Average; good	Under; good	Very good; good	Under; good	Average; good	R. Alderman, Babraham Gardens, Cambridge.
	Over; very good	Over; very good	Under; good	Under; good	Average; good	Under	Over; very good	Under	Average; good	W. Woods, Chippenham Park Gardens, Ely.
	Average; very good	Average; good	Under; good	Over; good	Over; very good	.....	Over; good	Average; bad	Average; good	E. Goodacre, Milton Padlocks, Newmarket.
ESSEX	Average; good	Under; good	Under; good	Over; good	Average; good	.....	Average; very good	Average; good	Over; good	Edwin Gille, Shortgrove Gardens, Newport.
	Under; bad	Average; good	Under; good	Average; good	Under; good	Under	Over; good	Average; good	Under	Arthur Bullock, Copped Hall Gardens, Kippington.
	Average; very good	Average; good	Under; good	Over; good	Over; good	Under; good	Over; very good	Over; good	Average; good	William Johnson, Stanstead Hall Gardens, Stanstead.
	Average	Over	Under	Average; good	Over	Under	Over	Average	Average	H. Hester, Easton Lodge Gardens, Hinnow.
	Average; good	Average; good	Average; very good	Under; good	Over; very good	Over	Over	Average; very good	.....	Charles A. Heath, Great Hallingbury Place Gardens, Bishops Cleeve.
	Over; good	Average; good	Average; good	Average; good	Average; good	Average; good	Over; good	Average; good	Over; good	C. Walsley, County Gardens, Chelmsford.
HUNTINGDONSHIRE	Over; good	Over; good	Average; good	Average; good	Over; good	Under; good	Over; good	Under; bad	Average	A. V. Coombe, Ramsey Abbey Gardens, Ramsey.
	Over	Average	Over	Average	Average	.....	Over	Under	Average	James Hewitt, Kimbolton Castle Gardens, Kimbolton.
LINCOLNSHIRE	Under	Average	Under	Average	Over	Under	Over; good	Average	.....	F. J. Foster, Grimsby Castle Gardens, Bourne.
	Average; good	Under; good	Under; good	Under; bad	Over; good	Under	Over; good	Over; very good	.....	F. Vinden, Harlaxton Manor Gardens, Grantham.
	Under; good	Under; good	Under; good	Average; good	Over; good	Average; good	Over; very good	Over; very good	.....	Thomas Cox, Hanton Hall Gardens, Lincoln.
	Average; good	Average; good	Average; good	Average; good	Average; good	Under; good	Average; good	Average; good	.....	E. L. Norris, Elsham Hall Gardens, Elsham.
NORFOLK	Average; good	Average; good	Average; good	Average; good	Under	Under	Average; good	Average	Average	J. Wynn, Solgeford Hall Gardens, King's Lynn.
	Average; very good	Average; good	Under	Average; good	Under	Under	Over; very good	Over; good	.....	Isaiah Johnson, Catton House Gardens, Norwich.
RUTLANDSHIRE	Average; good	Over; very good	Average; good	Over; very good	.....	.....	Over; good	Over; very good	.....	Joseph Robinson, Somerby Hall Gardens, Oakham.
	Over	Over; good	Average	Average; good	Average; good	Average	Over; good	Average	.....	W. Dodge, Barley Thorp Gardens, Oakham.
SUFFOLK	Average	Over	Under	Over	.....	.....	.....	Under	.....	E. G. Creek, Shire Hall, Bury St. Edmunds.
	Average; good	Average; good	Under; good	Average; good	Average; good	Average; good	Average; good	Under	Average	W. Messenger, Woolverstone Park Gardens, Ipswich.
	Under; good	Average; good	Under; good	Average; good	Average; good	Under; good	Average; good	Under; good	Average	A. K. Turner, Orwell Park Gardens, Ipswich.
	Average; very good	Over; good	Under; good	Average; good	Average; good	Under; good	Over; very good	Over; good	Average; good	James Hilson, Flinton Hall Gardens, Bungay.
	Over; very good	Average	Average; good	Average; good	Over; very good	Under	Over; very good	Average	Average	William Low, Easton Gardens, Thetford.
	Over; good	Over; good	Under; good	Under; good	Average	Under; bad	Average; good	Average; good	.....	H. Coster, Eekworth Gardens, Bury St. Edmunds.
	Average	Average	Under	Under	Over; very good	Under	Average; good	Average; good	Average	Alfred Andrews, High House Gardens, Campsea Ashle, Wickham Market.
4. Midland Counties										
BEDFORDSHIRE	Over; very good	Over; good	Under; good	Average; good	.....	.....	Average; good	Average; good	Over; good	W. H. Neild, Woburn Experimental Fruit Farm, Ridgmont, Ampthill.
	Over; very good	Average; very good	Under; good	Over; very good	Over; very good	Average; good	Over; good	Over; very good	Over	F. W. Stanton, Hinwick Hall Gardens, Wellichborough.
	Average; good	Average; good	Under; good	Average; good	Over; good	Over; good	Average; good	Average; good	Over; very good	C. J. Ellett, Chicksands Priory Gardens, Shefford.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
4. Midland Counties. BEDFORDSHIRE (continued)	Average Average; good Under	Under Average; good Over	Under Under Under	Over; good Average; good Average	Under Over; good Over; good	Under; bad Under; good Over; good	Average; good Over; good Over	Average Average; good Under	Average	Wm. F. Palmer, Frosfield Gardens, Woburn. Thomas Vernon, Oakley Gardens, Oakley. Laxton Bros., Bedford.
BUCKINGHAMSHIRE.	Average; very good Average; good Over Average; good Average; good Over; good Average; good Over; good Average; good Over; good Average; good	Over; very good Average; good Average; good Average; good Average; good Average; good Average; good Average; good Average; good Average; good Average; good Average; good	Average; good Average; good Over Average; good Average; good Over; good Average; good Average; good Average; good Average; good Average; good	Over; good Average; good Average; good Average; good Average; good Over; good Average; good Average; good Average; good Average; good Average; good Average; good	..... Average; good Average; good Average; good Average; good Average; good Average; good Average; good Average; good Average; good Average; good	Under; bad Average Average Average Average Average Average Average Average Average Average Average	Over; very good Average; good Over; good Over; good Over; good Over; good Over; good Over; good Over; good Over; good Over; good Over; good	Average; very good Average; good Under Average; good Average; good Under; bad Under Under Under Under Under Under Under	..... Average Average Average Average Average Average Average Average Average Average Average Average	G. F. Johnson, Waddesdon Gardens, Aylesbury. William Turham, Greenlands Gardens, Henley-on-Thames. James MacGregor, Mentmore Gardens, Leighton Buzzard. James Wood, Bedford Park Gardens, Bourne End. W. Hedley Warren, Aston Clinton Gardens, Tring. Philip Mann, Education Sub-Office, Aylesbury. William Brooks, Missenden House Gardens, Amersham. W. Waters, Bulstrode Gardens, Gerrards Cross. Charles, Dropmore Gardens, Maidenhead.
CHESHIRE	Average; under Average Over; very good Average Average; good Average; good Average; good Average; good	Average; good Over; very good Over; very good Over; good Over; good Over; good Over; good Over; good	Average; good Over; very good Over; good Over; good Over; good Over; good Over; good Over; good	Average; good Average; good Over; very good Average; good Average; good Average; good Average; good Average; good	Average; good Average; good Over; very good Average; good Average; good Average; good Average; good Average; good	Under; good Under	Average; good Average; good Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good	Under Average; good Under Under Under Under Under Under Under Under Under Under	Average Under; bad	Charles W. Flack, Cholmondeley Gardens, Malpas. James Atkinson, Parkington Lodge Gardens, Hazel Grove, near Stockport. Philip Bell, Manor House Gardens, Middlewich. N. F. Barnes, Eaton Gardens, Chester. Alfred N. Jones, Marbury Gardens, Northwich.
DERBYSHIRE	Average; good Average; good Average; good Average; good Average; good Average; good Average; good Average; good	Over; good Over; good Over; good Over; good Over; good Over; good Over; good Over; good	Average; good Over; very good Over; good Over; good Over; good Over; good Over; good Over; good	Over; good Over; very good Over; good Over; good Over; good Over; good Over; good Over; good	..... ..... ..... ..... ..... ..... ..... .....	Average; good	Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good	Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good	Average	J. Mayfield, Darley Abbey Gardens, Derby. E. G. Mills, Laneside House Farm, Glossop. J. Tully, Osmaston Manor Gardens, Derby. E. Wilson, Hardwick Hall Gardens, Chesterfield. F. Jennings, Chatsworth Gardens, Chesterfield.
HERTFORDSHIRE	Average; good Average; good Average; good Average; good Average; good Average; good Average; good Average; good	Over; good Over; good Over; good Over; good Over; good Over; good Over; good Over; good	Average; good Over; good Over; good Over; good Over; good Over; good Over; good Over; good	Under Over; good Average; good Average; good Average; good Average; good Average; good Average; good	Average; good Over; good Over; very good Over; very good Over; very good Over; very good Over; very good Over; very good	Average	Over; good Over; good Over; good Over; good Over; good Over; good Over; good Over; good	Under; bad Over; very good Under Under Under Under Under Under Under Under Under Under	Average	Thomas Nutting, Childwick-bury Gardens, St. Albans. Edwin Bowtell, Aldenham House Gardens, Elstree. E. F. Hazleton, North Mymsms Gardens, Hatfield. William Fothergill, Hadrow House Gardens, Aldenham. Thos. Rivers & Son, Sawbridge-woth.
LEICESTERSHIRE	Under; good Average; good Under; good Average; good Average; good Average; good Average; good Average; good	Under; good Average; good Under; good Under; good Under; good Under; good Under; good Under; good	Under; good Under; good Under; good Under; good Under; good Under; good Under; good Under; good	Under; good Under; good Under; good Under; good Under; good Under; good Under; good Under; good	Over; good Under; very good Under; very good Under; very good Under; very good Under; very good Under; very good Under; very good	..... ..... ..... ..... ..... ..... ..... .....	Over; very good Average; good Over; good Over; good Over; good Over; good Over; good Over; good	Average; good Under; bad Over; good Over; good Over; good Over; good Over; good Over; good	..... ..... ..... ..... ..... ..... ..... .....	D. Roberts, Frostwood Gardens, Loughborough. W. Patterson, Southland Hall Gardens, Loughborough. F. Hobson, Rolleston Hall Gardens. A. Shackleton, Burrough Hill Gardens, Melton Mowbray.
NORTHAMPTONSHIRE	Under; bad Average; very good Average; good Under; good Under; good Under; good Under; good	Under; bad Average; very good Average; good Under; very good Under; bad Under; bad Under; bad	Under; good Under; very good Under; good Under; good Under; good Under; good Under; good	Average; good Average; good Average; good Average; good Average; good Average; good Average; good Average; good	Over; good Over; good Over; good Over; good Over; good Over; good Over; good Over; good	Average; good Under; good	Over; very good Average; good Over; good Over; good Over; good Over; good Over; good Over; good	Average; good Average; good Average; good Average; good Average; good Average; good Average; good Average; good	Average; good Average; very good Average; good Average; good Average; good Average; good Average; good Average; good	C. F. Crump, Althorp Park Gardens. J. Menor, Harrowden Hall Gardens, Wellingtonburgh. Robt. Johnston, Wakefield Lodge Gardens, Stony Stratford. Alfred Child, Catesby House Gardens, Daventry.
NOTTINGHAMSHIRE.	Average; good Over; good Average; good Average; good Under; good Average; good Average; good	Average; good Over; good Average; good Average; good Under; good Under; good Under; good	Under Under Under Under Under Under Under	Under Average ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... .....	Average; good Under; bad	Average; good Average; good Average; good Average; good Average; good Average; good Average; good	Under Average; good Average; good Average; good Average; good Average; good Average; good	Average	James Gibson, Wollack Abbey Gardens, Worsnop. S. Barker, Clumber Park Gardens, Worsnop. Thomas Simpson, Newstead Abbey Gardens, Newstead. Arthur C. Leane, Park Hall Gardens, Mansfield. J. R. Pearson and Sons, Lowdham. F. W. Parkes, Wollaton Hall Gardens, Nottingham.
OXFORDSHIRE	Over; very good Over; good Average; good Average; good Average; very good Over; good Average; good Average; good	Over; very good Average; good Average; good Average; good Average; very good Over; good Average; good Average; good	Average; good Over; good Under Under; very good Over Over Under Under	Over; very good Over	Over; very good ..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... ..... .....	Over; very good Over; good Average; good Average; good Over; good Over; good Over; good Over; good	..... Over; good Over; very good Average; good Over; good Over; good Over; good Over; good	Over; very good Average; good Average; good Average; good Average; good Average; good Average; good Average; good	John A. Hall, Shiplake Court Gardens, Henley-on-Thames. Arthur J. Long, Wyfold Court Gardens, nr Reading. William J. Short, Middleton Park Gardens, Bicester. T. W. Whiting, Shroveton Park Gardens, Wheatley. W. Miles, Cavesham Park Gardens, Reading. Ben Campbell, Cornbury Park Gardens, Charlbury. C. E. Munday, Suneham Park Gardens, nr Oxford.
SHROPSHIRE	Average Over; good	Average Over; good	Average Average	Average Average	Over; good Over; good	Under Average	Over; good Over	Average Under	..... Average	George Adams, Lilleshall Gardens, Newport. Alex. Haggart, Moor Park Gardens, Ludlow.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
4, Midland Counties.										
STAFFORDSHIRE	Average : good	Average : good	Over : good	Average : good	Average : good	.....	Over : very good	Average : good	Under	H. Collier, Killeston Hall Gardens, Burton-on-Trent.
	Average : good	Average : good	Over	Average	Average : good	Under	Average : good	Under	Average	W. Hadden, Shirehall Gardens, Wolverhampton.
	Over : very good	Average : good	Over : good	Average	Over : good	.....	Over : good	Average	.....	A. Cheney, Shenstone Court Gardens, Lichfield.
	Average : good	Average : good	Over : good	Over : good	.....	Under : bad	Over : very good	Under : bad	Under : good	E. Rankin, Birchfield Gardens, Rugeley.
WARWICKSHIRE	Average	Average	Under	Average	Over	Under	Average	Over	.....	Jno. Masterson, Weston House Gardens, Stratford-on-Avon.
	Average : good	Over	Average : good	Under : bad	Average : good	Average	Average : very good	Under : good	Over : good	Chas. Harling, Ragley Hall Gardens, Alcester.
	Over : very good	Over : very good	Average : good	Average : very good	Average : very good	.....	Over : very good	Under : bad	Average : good	J. Smith, Wellesbourne House Gardens, Wellesbourne.
	Average : good	Under : very good	Under : very good	Average : good	Over : good	Average	Under : good	Under : good	.....	H. Dunkin, Mount Pleasant Gardens, Emscote.
	Over : good	Under : good	Under : good	Average : very good	Average : good	Under : bad	Over : good	Over : very good	Average : bad	W. Harman, Newham Paddox Gardens, Lutterworth.
5, England S.										
BERKSHIRE	Average : very good	Average : good	Over : very good	Average : good	.....	Under	Over : very good	Under : good	Under	Edw. Harris, Lockinge Gardens, Watlington.
	Over : very good	Over	Average	Under	Average	Average	Average	Over : very good	Average	J. Minty, Oakley Court Gardens, Windsor.
	Over : very good	Average : very good	Average : very good	Average : good	Average : good	Under : bad	Over : very good	Average : good	Average	A. W. Blake, The Castle Gardens, Highclere.
	Average : very good	Average : good	Average : very good	Average : good	Average	Under	Over : very good	Average	Under	Thomas Wilson, Castle Gardens, Wallingford.
	Average : very good	Average : good	Average : very good	Average : good	Average : very good	Under	Average	Average	Average	A. B. Waddis, Englefield Gardens, Reading.
	Over : very good	Average : good	Over : good	Average : good	Over : very good	Average	Over : very good	Average	Average	A. MacKellar, Royal Gardens, Windsor.
	Average : good	Average : good	Over : very good	Average : good	Over : very good	Under : bad	Over : very good	Average : good	Over : good	Godfrey Cooper, Ramworth, Malvern Road, Maidenhead.
	Average : good	Average : very good	Average : good	Average : good	Over : very good	Under : good	Over : good	Under : very good	Average	William Tapping, Shinfield Manor Gardens, Reading.
	Over : good	Average	Over	Average	Over : good	Average : good	Over	Average	Over	J. Howard, Benham Valence Gardens, Newbury.
DORSETSHIRE	Average : good	Over : good	Over : very good	Average : very good	Over : good	.....	Average : very good	Under	Over : good	F. Burton, Castle Gardens, Sherborne.
	Over : very good	Over : very good	Over : very good	Over : very good	Over : good	Average	Over : very good	Under : bad	Over : good	Flora Denny, Down House Gardens, Blandford.
	Average : good	Over : good	Average : good	Average : good	Average : good	Under : good	Over : very good	Average : bad	.....	J. James, Bryanston House, Blandford.
	Over : very good	Under : bad	Over : very good	Under : bad	Average : good	.....	Average : very good	Average : very good	.....	H. Kempshall, Abbotshay Castle Gardens, Corbiscote.
HAMPSHIRE	Over : very good	Over : very good	Over : very good	Average : good	Over : very good	Average : very good	Over : very good	Under : good	Over : good	Lewis Smith, Colland Park Gardens, Fawley, Southampton.
	Average : good	Over : very good	Average	Average	.....	.....	Over : very good	Average : good	.....	C. Carley, Stratton Gardens, Micheldever.
	Over : very good	Over : very good	Average : good	Average : good	Over : very good	Over : very good	Over : very good	Average : good	Average : good	Henry Martin, Bartley Lodge Gardens, Chidnam, Southampton.
	Over : good	Over : very good	Average : good	Average : good	Over : very good	Average : good	Over : very good	Average : good	Over : good	Henry Tullett, Asho Park Gardens, Overton, nr. Basingstoke.
	Average : very good	Over : very good	Over : very good	Average : good	Over : very good	Over : very good	Average : very good	Under : good	Average	E. Kendall, Dogmersfield Park Gardens, Winchester.
	Over : very good	Over : good	Over : very good	Over : very good	Over : good	Over : good	Over : good	Average : under	Average	E. Molynoy, Swanmore Park, Bishop's Waltham.
KENT	Under	Under	Average	Average	Over	.....	Average	Average	Under	George Woodward, Barham Court Gardens, Maidstone.
	Average	Over	Over	Over	Over	.....	Average	Average	Over	E. V. Binyard, Royal Nurseries, Maidstone.
	Under	Under	Average	Over	Under	.....	Over	Average	.....	William Lewis, The Gardens, Hall Place, Boxley.
	Average	Over : good	Over : good	Over : good	.....	.....	Average : good	Under : bad	Average	Geo. Fennell, Bowden, Tonbridge.
	Under	Average : good	Average : good	Average : good	Average : good	.....	Average	Average : good	Average	Geo. Lockyer, Melworth Gardens, Maidstone.
	Average : good	Average : good	Average : good	Average : good	Average : good	Over : very good	Over	Average	.....	J. E. Shann, Belteshanger Park Gardens, Easty.
	Over : good	Average : good	Over : good	Over : good	Over : good	Over : good	Average : very good	Under : very good	Average	J. G. Weston, Eastwell Park Gardens, Ashford.
	Average	Over	Average	.....	.....	.....	Over	Average	.....	Charles E. Shea, The Elms, Fords Cray.
MIDDLESEX	Average	Average	Under	Average	Over : good	Under	Over : good	Average	Average	H. Merkan, Wrotham Park Gardens, Barnes.
	Average : good	Over : very good	Over : good	Average	Over	.....	Average : good	Average	.....	Wm. Comport, Marsh Farm, Uxbridge.
	Average : good	Average	Average	Average	Average	.....	Average	Under : bad	Average	W. Bates, Cross Deep Gardens, Twickenham.
	Average : good	Over : very good	Under : good	Under : good	Over : good	Under : bad	Over : very good	Average : very good	.....	James Hudson, Gomersbury House Gardens, Acton.
	Average : very good	Over : good	Over : good	Average : good	Over : good	Over : good	Average : good	.....	.....	John Weathers, Park View, Isleworth.
	Average	Over	Average	.....	.....	.....	Over	Average	.....	S. T. Wright, R.H.S. Gardens, Wsley, Ripley.
SURREY	Average : good	Average	Average : good	Over : very good	Average : good	Under : bad	Over : very good	Under	Average	W. Bayne, Sorbury Park Gardens, Burghley.
	Over	Over	Over	Average	.....	.....	Over	Average	Average	James Watt, Mynhurst Gardens, Reigate.
	Under : good	Average : good	Average : good	Average : good	Average : good	Average : good	Over : good	Under : good	Average	James Cook, Outlands Lodge Gardens, Weybridge.
	Average : very good	Under : very good	Under	Average : very good	Average : good	.....	Average : good	Under : good	.....	Hos. Smith, Combe Court Gardens, Kingston Hill.
	Under : bad	Average : good	Under : bad	Average : good	Over : good	Under : bad	Under : bad	Under : bad	Average : good	F. Jordan, Ford Manor Gardens, Lingfield.
SUSSEX	Under	Average : good	Average	Average	Over	Average	Over : good	Average : good	Under	Arthur Wilson, Bridge Castle Gardens, Tunbridge Wells.
	Under	Average	Average	.....	.....	.....	Average	.....	Over	William E. Bear, Magham Down, Hailsham.
	Over : very good	Over : good	Over : very good	Average : good	Over : good	Average	Average : good	Under : bad	Average	W. H. Smith, West Dean Park Gardens, Chichester.
	Average : good	Average : good	Over : good	Over : good	.....	.....	Average : good	Under : good	.....	W. Gearing, Agricultural Department, County Hall, Lewes.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
5. England, S.										
SUSSEX.....	Average: good	Over: very good	Over: very good	Over: very good	Average: good	.....	Over: very good	Under: bad	.....	Leon Squibbs, Stonehurst Gardens, Ardingley.
(continued)	Average: very good	Average: good	Under: good	Under: good	Over: good	.....	Over: very good	Under: good	Average: good	Wm. J. Langridge, Ote Hall Gardens, Burgess Hill.
	Average: good	Average: good	Under: good	Over: good	Over: good	Average: good	Over: very good	Under: good	Under: bad	J. W. Buckingham, Abland Place Gardens, Liphook.
WILTSHIRE.....	Average: good	Over: good	Average: good	Under	Over: good	Over: good	Over: good	Under: good	.....	J. Knight, Bowood Gardens, Calne.
	Over: good	Average: good	Over: very good	Under: good	Over: very good	Average: good	Over: very good	Average: good	Average: good	T. Challis, Herbert Cottage, Wilton, near Salisbury.
	Over: good	Average	Over: good	Average	Over: good	Average	Average: good	.....	.....	Thomas Sharp, Westbury.
7. England, N.W.										
CUMBERLAND.....	Average: good	Average: good	Average: very good	Under	Average: good	Under	Over: very good	Over: very good	Over	Andrew Watt, Saworth Castle Gardens, Brampton.
LANCASHIRE.....	Average: good	Average: good	Average: good	Average: good	.....	.....	Average: very good	Average: good	.....	Joseph Harris, Gathorpe Hall Gardens, Burnley.
	Average: good	Over: good	Under: good	Over: very good	.....	.....	Over: very good	Under	.....	C. H. Cook, Knowsley Hall Gardens, Prescot.
WESTMORELAND.....	Under: good	Under: good	Under: good	Average: good	.....	.....	Average: good	Average: good	.....	W. A. Miller, Underley Hall Gardens, Kirkby Lonsdale.
	Average: good	Average: good	Average: good	Under	Average: good	.....	Average: very good	Average: good	.....	W. Canton, Helme Lodge Gardens, Caton.
8. England, S.W.										
CORNWALL.....	Average: very good	Over: very good	Over: good	Average	Average: good	.....	Over: very good	Average	.....	W. Andrews, Tregothnan Gardens, Truro.
	Average: good	Over: very good	Average	Over: good	Over: good	.....	Over: very good	Average: very good	.....	Frank J. Clark, Tehidy Park Gardens, Camborne.
	Over: good	Over: good	Under	Under	Over: very good	.....	Over: very good	Over: good	.....	J. Spidney, Clowance Gardens, Praze.
DEVONSHIRE.....	Over: good	Average: good	Average: good	Over: good	Average: good	Average: good	Over: good	Average: good	Over: good	E. E. Bristol, Castle Hill Gardens, Filloz, South Molton.
	Average: good	Over: good	Over: good	.....	Over: very good	Average: good	Over: very good	Under: bad	.....	F. H. Bodey, Powderham Castle Gardens, near Exeter.
	Average: very good	Over: very good	Average: good	Average: good	Over: very good	Average: good	Over: very good	Under: very good	.....	W. Cook, Eastcliffe Gardens, Teignmouth.
GLoucestershire	Over: good	Over: good	Over: good	Average: good	Average: good	Under	Average: very good	Average: good	Average	P. Nurseries, Exeter.
	Over: very good	Average: very good	Under: good	Over: very good	Over: very good	Average: very good	Average: very good	Average: good	Average: good	Arthur Chapman, Westonbirt Gardens, Tetbury.
	Over: good	Over: good	Under: good	Average: good	Over: good	Under	Average: good	Average: good	Average: good	John Kenyon, Tortworth Gardens, Failand.
	Average: good	Average: very good	Over: very good	Over: very good	Over: very good	Average: very good	Average: very good	Average: good	Average: good	E. C. Walton, Stanley Park Gardens, Stroud.
	Average: good	Average: good	Average: good	Average: good	Average: good	Under	Over	Average: good	Average: good	Wm. J. Jeffries, Nurseries, Gloucester.
	Average: good	Average: good	Average: good	Under	Average	Under	Average: good	Under	Under	William Keen, Bowden Hall Gardens, near Gloucester.
	Average: good	Average: good	Average: good	Average: good	Average: good	Under	Over: good	Under: good	Over	W. H. Berry, Highnam Court Gardens.
HEREFORDSHIRE.....	Under: good	Average: good	Under: good	Under: bad	Average: good	Under	Over: good	Average: good	Over	G. H. Hollingworth, Shire Hall.
	Average: good	Average: good	Average: good	Average: good	Over: good	Average: good	Average: good	Average: good	Average: good	Floos Spencer, Goodrich Court Gardens, Ross.
	Average: good	Under	Average: good	Average: good	Over	Over	Under: good	Under: good	.....	G. Mullins, Eastnor Castle Gardens, Ledbury.
MONMOUTHSHIRE.....	Under	Average	Average	Over	Over	Over	Over	Over	Over	H. E. Burman, Dunelm, Eign Hill.
	Over: good	Over: very good	Average: good	Over: very good	Average: good	Under: bad	Over: good	Average: very good	Over: very good	Floos Coulmer, The Hendre Gardens, Monmouth.
SOMERSETSHIRE.....	Average	Average	Average	Average	Average: good	.....	Over	Under	.....	W. H. Leafe, Lawvern Park Gardens, Newport.
	Average: good	Average: very good	Average: very good	Average: good	Average: good	Average: very good	Average: good	Average: good	Over: good	J. T. Rushton, Barons Down Gardens, Dulverton.
WORCESTERSHIRE.....	Average: good	Over: very good	Over	.....	.....	.....	Average: good	Average: good	Average	George Stanley, Halwell Park Gardens, Bridgwater.
	Average: good	Over: very good	Over	Over: good	Average: good	Average: good	Over: good	Under: bad	Over: good	Ernest Avory, Finstall Park Gardens, Bromsgrove.
	Under: good	Average: good	Average: good	Average	Average	Under	Over	Under	Under	W. Gimp, Madresfield Court Gardens, Malvern.
	Average: good	Average: good	Average: good	Average: good	Average: good	Under	Over: very good	Under: bad	Average: good	James Odde, Omberley Road, Droitwich.
	Average: good	Average: good	Average: good	Average: very good	Average: very good	Under	Over: very good	Under: bad	.....	C. A. Eyford, Davenham Gardens, Malvern.
WALES:										
CARDIGANSHIRE.....	Over: very good	Average: good	Average: good	Average: very good	.....	.....	Over: very good	Average: very good	.....	Thomas Incehline, Crosswood Park Gardens, Aberystwyth.
CARNARVONSHIRE.....	Average: good	Average: good	Under	Over: very good	Average: good	.....	Over: very good	Average: good	.....	J. S. Hedges, Gullyhill Park Gardens, Llunwida.
DENBIGHSHIRE.....	Over	Over	Average	Under	Under	Average	Over	Under: bad	Over	I. Martin, Bryn Estyn Gardens, Wrexham.
	Average: good	Average	Over	Average	Average	Average	Average	Under: good	.....	J. A. Jones, Chirk Castle Gardens, near Rhyl.
FLINTSHIRE.....	Over	Average	Average: good	Average	.....	Under	Average: good	Average: good	.....	John Forsyth, Hawarden Castle Gardens.
	Over: good	Average	Average	Average	Over	Over	Average: good	Average	.....	James Barnard, Mostyn Hall Gardens, Mostyn.
GLAMORGANSHIRE.....	Over: very good	Over: very good	Average	Over: very good	Over: very good	.....	Over	Average	Under	C. T. Warmington, Penllengar Gardens, Swansea.
PENBROKESHIRE.....	Average: good	Over: very good	Average: good	Under: bad	.....	.....	Over: very good	Average: good	.....	Thomas B. Edey, St. Slobech Park Gardens, Haverfordwest.
RADNORSHIRE.....	Average	Over	Average	Average	Average	Under	Over: very good	Average	Average	J. Macdonagh, Maesllwch Gardens, Glasbury.
IRELAND:										
9. Ireland, N.										
CAVAN.....	Over: very good	Average	Average: good	Average	Under: bad	Under: bad	Over: very good	Average	Under: bad	J. McCallan, Arley, Mount Nugent Gardens.
DOWN.....	Average: good	Average: very good	Average: very good	Average: good	.....	.....	Over: very good	Over: good	Average	T. W. Bolus, Florence Stewart Gardens, Newtownards.
FERMANAGH.....	Average	Average	Over: good	Average: good	Over: good	.....	Average: good	Average: good	Average	J. Moncrieff, Moanac Court Gardens, Enniskillen.
LEITRIM.....	Average: good	Average: good	Over: very good	Average: very good	.....	.....	Over: very good	Average: very good	.....	Duncan McGregor, Derrycarne House Gardens, Droghda.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
6. Ireland, N.										
MAYO	Over; very good	Over; very good	Over; very good	Average; good	Over; very good	.....	Over; very good	Over; very good	.....	Richard Joyce, Domestic Gardens, Westport.
MEATH	Over; very good	Average; good	Average; good	Average; good	Average	Under	Over; very good	Average; good	Under	J. B. Dow, Dunsany Castle Gardens.
MONAGHAN	Over; good	Over; good	Average; good	Average; good	.....	.....	Average; good	Under; good	.....	Michael McKeown, Juliusstown, Dunsieda.
TYRONE	Average; good	Average; good	Under	Average; good	.....	.....	Average; good	Average; good	.....	James Hepburn, Dairtry Castle Gardens.
WESTMEATH	Over; very good	Average; very good	Average; good	Over; good	Average; very good	.....	Average; very good	Under; good	.....	Fred. W. Walker, Shen House Gardens, Six Mile Cross.
10. Ireland, S.										
CARLOW	Average	Over; very good	Over; very good	Over; very good	Over; very good	Under	Over	Over; very good	.....	William M. Foulds, Lisnavagh Gardens, Rathilly.
CORK	Average	Over	Average	Average	.....	.....	Over; good	Average; good	.....	Pat Sheehan, Glanville Manor Gardens, Fermoy.
KERRY	Average; good	Over; very good	Over; good	Average; good	.....	.....	Average; good	Average; good	.....	L. Donnelly, 17, St. Patrick's Terrace, Marazion Road, Cork.
KILDARE	Over; very good	Over	Over	.....	Average	.....	Over	Average	.....	M. Gilbert, Achern Gardens, Conna.
KILKENNY	Average; good	Over; good	Average; good	Average; good	Average; good	.....	Over; good	Average; good	.....	Charles W. Bennett, Mackross Abbey Gardens, Kiltarney.
KINGS CO.	Average; good	Average; good	Average; good	Over; good	Over; good	Under; bad	Average; good	Over; very good	.....	William O'Leary, Stratton House Gardens, Stratton.
LIMERICK	Under; good	Average; good	Average; good	Average; good	.....	.....	Over; good	Under; bad	Under	Alex. Black, Carton, Maynooth.
LONGFORD	Average; good	Under; bad	Average; good	Average; good	Over; good	.....	Over; good	Under; bad	.....	P. E. Tonnalin, Rosslonough Park Gardens, Piltown.
QUEENS COUNTY ..	Average; good	Average; good	Average; good	Average; good	Average; good	.....	Over	Over	.....	E. Clarke, Claremont, Garry Castle, Bunclody.
ROSSCOMMON	Average; good	Average; good	Average; very good	Over; good	Under; bad	.....	Average; good	Under; good	.....	Harry Nixon, Rockbarton Gardens, Kilmallock.
WATERFORD	Over; good	Average; good	Average; good	Under	Over; good	Under	Over; good	Over; good	Under	J. A. Hoyle, Castle Forbes Gardens, Newtown Forbes.
WICKLOW	Under; bad	Under; good	Under; bad	Average	Average; good	Average; good	Average; good	Average; very good	.....	G. McLaughlin, Abney Leix Gardens, Abney Leix.
CHANNEL ISLANDS:										
JERSEY	Average; good	Average; very good	Average; good	Average; bad	Average; good	Under; bad	Average; good	Under; bad	.....	Thomas Shannon, Imperial Nursery, St. Mark's Road, St. Heliers.
ISLE OF MAN:										
DOUGLAS	Over; good	Average; good	Average	Average	.....	.....	Over; good	Average	.....	James Inglis, Peel Road Nursery.

SUMMARIES OF THE HARDY FRUIT CROPS.

Records	SCOTLAND.							IRELAND.											
	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Straw-berr.	Nuts.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Straw-berr.	Nuts.	
Number of Records ...	(44)	(43)	(42)	(42)	(42)	(39)	(44)	(44)	(49)	(25)	(25)	(29)	(22)	(17)	(9)	(25)	(1)	(25)	(8)
Average ...	24	13	10	16	8	4	17	89	1	14	11	11	11	9	11	9	11	9	11
Over ...	9	1	3	3	1	1	25	44	1	8	4	6	6	7	1	16	8	8	3
Under ...	12	29	29	29	6	15	42	5	3	3	1	1	1	7	1	6	6	1	1
Number of Records ...	(179)	(179)	(179)	(171)	(146)	(125)	(175)	(175)	(115)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Average ...	106	92	73	103	59	49	10	89	65	1	1	1	1	1	1	1	1	1	1
Over ...	14	36	46	42	73	10	104	27	27	1	1	1	1	1	1	1	1	1	1
Under ...	29	39	69	28	64	4	65	30	1	1	1	1	1	1	1	1	1	1	1
Number of Records ...	(9)	(9)	(9)	(9)	(6)	(5)	(9)	(9)	(3)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Average ...	4	5	7	5	3	2	1	7	1	1	1	1	1	1	1	1	1	1	1
Over ...	3	4	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Under ...	3	5	6	7	5	4	1	6	1	1	1	1	1	1	1	1	1	1	1

GRAND SUMMARY, 1917.

SUMMARY OF 1916 FOR COMPARISON.

Number of Records ...	(290)	(251)	(257)	(216)	(181)	(184)	(285)	(253)	(135)	(304)	(301)	(300)	(280)	(299)	(179)	(204)	(322)	(115)
Average ...	147	126	102	114	78	36	100	133	76	144	138	137	118	127	102	127	171	10
Over ...	65	70	58	53	86	13	152	12	28	10	1	17	21	14	1	172	97	3
Under ...	11	62	94	19	17	89	6	80	31	209	245	112	167	128	162	5	31	102

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. Our correspondents would oblige by obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be sent, should be directed to the Editors. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors will not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editor any intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 62.2.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, July 26, 10 a.m.; Bar, 28.9; temp. 62.2; Weather—Dull.

The Fruit Crops.

Once again we publish the reports on the condition of the hardy fruit crops. The present occasion is not an ordinary one; on the contrary, it occurs during a period when the mind of the country is in large measure focussed on the task of maintaining the food supply in the face of diminished imports, and this is only possible by increasing the yields from our own lands and our own labour. If such circumstances the value of the fruit crops, taken collectively, must not be underestimated on the ground that their food contents do not compare favourably with certain vegetables, cereals, and meats. Whilst we have very wisely got into the habit recently of considering more carefully the caloric contents of foods, we know, at the same time, that there are qualities that make fruits almost as necessary for man as those foods generally regarded as indispensable for their protein, fats, or carbohydrates.

The figures before us are certainly most encouraging, for they promise above average crops for most kinds of fruit still un-gathered, and we hope they may be taken as an earnest or token that later on there will be heavy Potato yields and a bountiful cereal harvest. In England, out of 179 reports upon the Apple crop, there are 150 equal to or above the average, whilst only 29 returns record yields under average. In Scotland there are only 12 deficient crops out of 41 reported upon; in Wales the nine returns are all average or over the average; and in Ireland there are 22 crops that are satisfactory out of the 25 returns. In the light of these figures we may conclude that the Apple crop will be liberal and good, and, following, as it does, the unusually scanty yield of last season, it will be doubly welcome. Apples can be kept good longer than most fruits, and this fact greatly increases their value.

Pears, though not of equal economic value with Apples, are nevertheless more palatable to many, and the abundant crops of this fruit will be a joy to the fruit grower and consumer alike. The returns are almost as favourable as those already cited for Apples. The English returns record only 30 under crops out of a total of 179; Scotland has not so good a promise, there being 29 deficient crops in the total of 43 returns. Wales furnishes nine reports, but no under-average crop, whilst Ireland has three such crops included in its 25 returns. Plums appear to be not more than an average crop. In England the 179 returns include 73 average, 46 over average, and 60 under average. In Scotland the prospects are less propitious, there being 29 under-average crops included in the 42 returns. In Wales and Ireland Plums are more plentiful than usual.

Cherries are a very plentiful crop, especially in the districts where they are grown for the supply of the markets, but as these are now being gathered we need not go into details. For the same reason it will be sufficient to state that the Strawberry crop was not quite equal to the average, whilst "small fruits," including Gooseberries, Currants, Raspberries, and other berries, appear to be giving wonderful yields everywhere. The best return of all is concerned with Peaches and Nectarines. We scarcely remember such favourable reports upon these choice and, from the point of view of outdoor cultivation, somewhat delicate fruits. The 110 returns from England include 59 average, 73 "over," and only eight "under" average reports. In Scotland, Wales, and Ireland the crops are not less satisfactory. Apricots are not so plentiful as Peaches, and these richly flavoured fruits, all too scarce in the best of seasons, will be rather less plentiful than usual. With regard to Nuts, our tables do not specify the different sorts separately, but collectively the report shows them to be much above the average. In the summaries on page 37 are set out the figures for last year as well as this, and readers will thus be able easily to compare them.

There can be little doubt but that the liberal fruit promise is largely the result of the unusually late spring and the consequent lateness of the flowering period. In most cases it was at least a month later than usual (see *Gard Chron.*, Vol. LXI, p. 149), and by that time most of the danger from late frosts was past. In regard to Apples, however, the comparative failure last season may have predisposed the trees to fruitfulness this year. There have been many complaints of caterpillars this season, including those of the codlin moth, winter moth, lachey moth, and others—which, like the poor, are always with us—but these are epidemic in different localities every year. We remember seeing such devastation in Hampshire two years ago that cannot possibly be exceeded this season in Kent or anywhere else.

In looking over the summaries of the report it becomes clear that there have been or will be good crops of such soft fruits as

Plums, Strawberries, Cherries, Currants, Gooseberries and Raspberries, fruits that are used in great quantities for the making of tarts and jams. How far the deficient supply of sugar will affect the value of such fruits it is not possible to say, but it will affect it considerably. Waste is to be feared in country districts where there are good Plum crops, but no preserving sugar. Cottagers, and even many farmers, have not the habit of bottling without sugar, and much of the fruit is likely to be left on the trees. It is a great pity that steps were not taken to ensure a better distribution of such sugar as is available. Fruit cultivators were asked to apply for sugar for use with their own fruits, and in numerous instances the applications were not even acknowledged. However, we would urge on our readers the great importance of using all their influence to encourage those who have fruits to preserve them in the largest possible quantities.

From announcements in the local Press it would appear that the bulb-growing industry in the

Bulb Rearing in Lincolnshire. Holland division of Lincolnshire is threatened with a serious menace. The announcements made by the Agricultural Committee require a large restriction of the area under bulbs, and prohibit the planting of new bulbs on fresh ground. From inquiries which we have made, we understand that bulb-growers in this district have already, and of their own initiative, made considerable contributions to food production. A large proportion of the ground which they cultivate is already being devoted to the growth of food, and there is also "over-planting"—that is, sowing suitable crop crops in the ground occupied by certain of their bulbs.

The fact that they have done this, and are, as we understand, prepared to go further in these directions, absolves the bulb-growers of the Holland division from any charge of failing in their duty of food production. But to order them to refrain from planting bulbs in new ground is, we fear, to damage very seriously their industry. To require that luxury branches of horticulture should be reduced to the smallest limits is in present circumstances legitimate, and, indeed, necessary; but to destroy one of a number of industries concerned with unessential crops requires far greater justification than the present circumstances serious though they be offer. That that part of the order issued by the local authority prohibiting planting in new ground will have serious effects on the industry is, we fear, not to be disputed. Ground under bulbs is very generally infected with eelworm, which pest is responsible for widespread destruction. To insist on infected ground being used for planting is to encourage the disease and to prejudice the crop.

We feel sure that those responsible for issuing this order will recognise that the injustice which it does cannot be balanced by the small increased acreage brought under the cultivation of food-crops, for it is

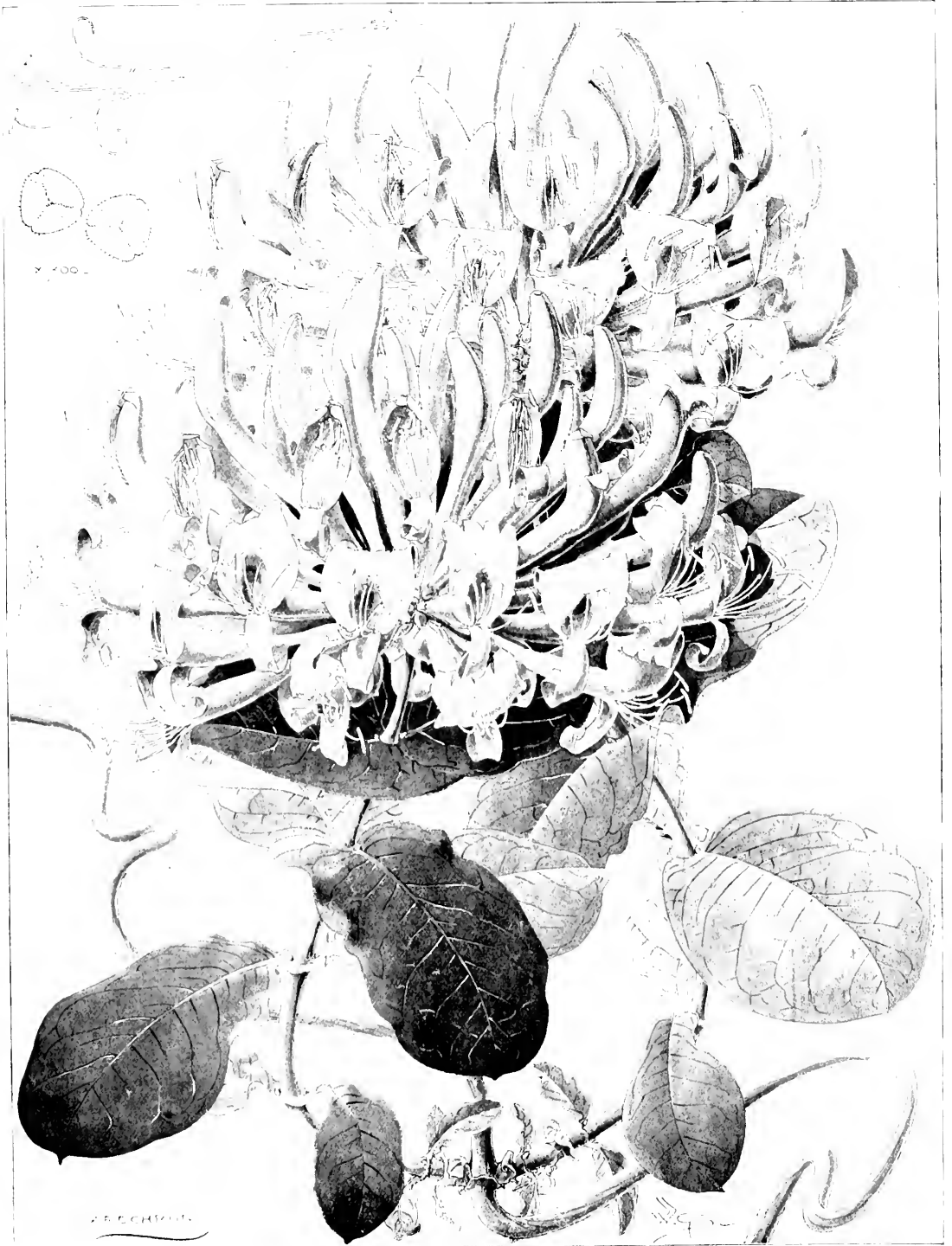


FIG. 15 — LONCHOCERA TRAGOPHYLLA: FLOWERS YELLOW.
(See p. 40.)

to be observed that the order is only of local application, and it makes it an offence to do in Spalding what anyone at Wisbech or other bulb-growing centres may do with perfect legal propriety.

Measures to increase food production have had, and will continue to have, our active support, but such a prohibition as that relating to the planting of bulbs on new ground cannot have the support of anyone with knowledge of the horticultural industry. It enforces a grievance, imperils an industry, and ignores the fact that the bulb-growers have shown, and are showing, themselves to be patriotic in devoting a large part of the acres which they hold to the production of food-crops.

FLOWERS IN SEASON. Early in the present month Mr. THOMAS COY, of Duffryn, Cardiff, sent us specimens of several interesting plants that have done remarkably well at Duffryn during the present season. Amongst them is *Lonicera tragophylla*, which is illustrated in fig. 15. Mr. Coy says that he has grown this plant for some four or five years, but never was the bloom so fine as this season. The specimens were cut from a plant growing in the nursery, where it has been since its introduction to the gardens. Another plant is growing on an east wall, and it was the mass of bloom at the time of writing, but the panicles were not nearly so large as those produced in the more open situation. The yellow flowers of this species of Honeysuckle, 2½ or more inches long, are exceedingly attractive. Another pleasant feature of the plant is the beautiful bronze shade of the young foliage. *Lonicera tragophylla* obtained an Award of Merit from the Royal Horticultural Society on the occasion of the Chelsea Exhibition in 1915. Regarding *Syringa japonica*, Mr. Coy states that he has grown the species for 20 years, and it has hitherto proved a poor doer, but this year it was one of the most ornamental and strong-growing shrubs in the garden, the panicles of white flowers being all that could be wished. Another plant that Mr. Coy draws our attention to is *Rosa Irbay*, which he thinks is one of the less-known ramblers. At Duffryn, where *Roses* do remarkably well, and there is a very fine collection of ramblers, the variety *Irbay* is considered one of the most ornamental, the rich colouring marking it out strongly amongst scores of other *Roses* with which it is growing.

MR. HENRY B. MAY, member of the Council of the Royal Horticultural Society, and chairman of the Floral Committee, who recently underwent an operation for an affection of the throat, has so far recovered that he was able to return home on Thursday last. His many friends will be delighted to hear that the operation is believed to have been entirely successful, and the recovery from its immediate effects unusually satisfactory.

RECORD RAINFALL. *Synon's Meteorology and Magnetism* states that 9.84 inches of rain were registered at Sexey's School, Binton, Somersetshire, on June 28 last, the amount constituting a record for the British Isles. The greatest fall on a rainfall day previously known was 8.20 inches, at Kyleshoepinch, Inverness shire, on October 11, 1916. Mr. W. A. KNIGHT, the headmaster of Sexey's School, stated that the rain-gauge measured 9.84 in. by between 10 a.m., June 28, and 10 a.m., June 29 (summer time). Other local records are: 1. ½ mile S.W. (9 a.m. to 9 a.m.), 7.90 inches; 2. ½ mile N.E. (9 a.m. to 9 a.m.), 8.11 inches; 3. 3 miles N. (9 a.m. to 9 a.m.), 8.03 inches. The damage done in the parish to roads, walls, hedgebanks, house property, furniture, and gardens is estimated at from £1,000 to £2,000. In some places 2 feet of debris was

deposited, and in others excavations of 2 feet to 5 feet deep were washed out down to the rock. The playground of the elementary school adjoining the River Brue and surrounded on three sides by masonry, although 10 feet above the normal river-level, was scooped out to a depth of 2 or 3 feet. Some cottages were flooded to a depth of more than 6 feet.

GARDENERS AND THE RESTRICTED OCCUPATIONS ORDER.—It has been decided that the provisions of the Restricted Occupations Order shall not apply to the engagement of gardeners, provided that their principal and usual occupation is the growing of foodstuffs or instruction in the growing of foodstuffs. The provisions of the Order, however, continue to apply to the engagement of gardeners for work which does not fulfil this condition. It has also been decided that the provisions of the Order shall not apply to the engagement of any sailor or soldier who has been discharged from the Naval or Military Services of the Crown in consequence of disablement or ill-health. The provisions of the Order apply to the engagement of rejected men between the ages of 18 and 61 for work in any of the trades or occupations mentioned in the Schedule to the Order. A man who has enrolled as a National Service Volunteer may be engaged to work in any of the trades or occupations mentioned in the Schedule to the Restricted Occupations Order until such time as he may be called upon to undertake work as a National Service Volunteer, or if he or his employer appeals, until such time as the appeal has been considered and refused. Notice of the proposal to transfer a National Service Volunteer to other work will be sent to the volunteer and to his employer, and it will then be open to either or both to appeal against the proposed transfer.

WAR ITEM.—The Right Hon. Lord ARTHUR HULL, 101, New Bond Street, London, appeals for Lavender to be sold in aid of the Auxiliary Maintenance Fund for the Y.M.C.A. Huts and Miss LENA ASHWELL'S Concerts at the Front.

PUBLICATIONS RECEIVED.—*Some Wild Flowers and How to Name Them.* (Books for the Bazaar—253.) By E. A. Lawrence. (London: Stead's Publishing House.) Price 2d. net.

PLANT HYBRIDISING.

ANYONE who studies a modern catalogue of hardy plants, or who walks through a good garden, must be struck with two facts, the vast quantity of first-class material apparently waiting for hybridisation, and the small number of existing hybrids. It is very puzzling. We have been a race of gardeners for hundreds of years. An endless succession of leisured garden lovers has stared at the same two facts, and yet they remain in seeming contradiction. Important genera the *Salvias* will do for an illustration—show no hybrid. Others show one or two crosses out of a very large number of potentials. What is the explanation? Why cannot we get the dark Gentian type of *Salvia patens* on to a hardy species, or the equally fine light blue of *S. Pichei* on to something which blooms before October? Is it that the crosses have never been tried, or is it that they cannot be done?

About twelve months ago I decided to attempt this problem, and crossed a number of plants which were then available. This spring the experiments have been continued on a larger scale, and with the utmost care. The results have been very interesting. Three facts stand out prominently. The first is variability of the seed parent. Some plants, so far as the production of plump seeds is a test, cross easily. Some refuse to cross, no matter how often they are wooed, and some will only cross as a rare grace. We tried one cross 32 times, and of these 31 were failures. But the 32nd was a gratifying success. The second fact is that apparently good

seed has been got from some highly interesting crosses in which both the parents have been first-class plants. And the third fact is that the forecast seed declines to germinate.

It is this fact which has set me writing, in the hope that readers may be able to give me some help. Have we here the solution of the mystery? Is the scarcity of hybrids in hardy plants due, not to the inability of the plants to produce seeds, but to the fact that the seeds lack viability?

There is another chance. The seeds may be viable, but they may require something different from ordinary treatment to bring out their life. I have been accustomed to deal with the difficulties of seeds sent from China, which have to stand the sweating of the Red Sea. Thorough drying beforehand is their prime need, and in the case of seeds sent from the Himalayas I have latterly tried, with good results, the plan of packing particularly good seeds in bottles filled with CO₂ and hermetically sealed. Mr. Cooper has been very successful at this operation, and seeds so packed have germinated which have failed under ordinary packing. I have also tried the plan of putting the seeds in cold store for three months, without much success. But at Edinburgh, where Dr. Balfour, with his accustomed enterprise, has built a special seed refrigerating house, I know that good results have been secured, especially with *Meconopsis*. This, too, is the plan on which M. Correvon relies for the germination of his Alpine seeds. But he has the natural covering of the snow, and that may be to seeds much more desirable than the artificial condition of a cold store.

So the upshot of it is that I write to ask readers of the *Gardeners' Chronicle* if they have had any experience in the germination of crossed seeds, and, if so, whether their experience has been the same as mine; and further, on the general question of seed raising, whether you or they can give me the names of any books, British or foreign, dealing with the subject, and the experiments which have been made? *A. K. Balfour.*

FOREIGN CORRESPONDENCE.

SEED-GROWING IN MACEDONIA.

NOTICING in the *Chronicle* of a few weeks ago that there is a probability of a great seed scarcity next season, it has struck me as very singular that not one of our seed firms has taken advantage of the glorious climate of Macedonia (The summer, starting in February and continuing well into November, certainly offers every facility for the thorough ripening of seed. In a French hospital garden near this place I have to-day (May 20) seen Stocks, *Potunias*, *Mari-golds*, *Pansies*, *Mignonette*, *Antirrhinums*, *Dianthus*, *Nasturtiums*, and other flowers, with seed almost ripe; also *Spinach*, *Radishes*, *Lettuces* and *Beet*.)

I am stationed at the 41st General Hospital, Salonica Forces, and have a fair-sized garden to keep me in training for the much looked-for return home.

I have finished the Peas sown on January 15. Have dug Potatoes planted on December 31, and am now cropping Cabbage and Turnips sown respectively on January 15 and March 22. Beet and Carrots grow with amazing speed, as do Lettuces, Radishes, and Endives. I have to thank Messrs. Chibran for a nice assortment of seeds, and it is pleasing to note the contrast between the strains from home and the exceptionally coarse Greek varieties.

Tomatoes planted in the open on April 10 are now in bloom, whilst Marrows and Melons sown out of doors on the same date are making headway. Private R. G. Armstrong, formerly with S. Gatrix, Esq., Whalley Range, Manchester, May 20, 1917.

The Week's Work.

THE KITCHEN GARDEN.

By J. DENN, Foreman, Royal Gardens, Windsor.

SPRING CABBAGE.—Make preparations for next season's supply of Early Cabbages. Select an open position where the ground is not too rich, and sow in shallow drills drawn at 1 foot apart, so that the hoe may be freely used between them. As soon as the young plants are sufficiently advanced transplant them to a plot of rich soil, where they will be left to mature. Harbiner and Early Offenham are good varieties for sowing now, and they seldom run to seed.

ASPARAGUS BEDS should be kept free from weeds, and a dressing of artificial manure applied during showery weather. Pea sticks which have been used for the early crops, and are now available, can be placed in position to support the plants and prevent them being injured by the wind during the autumn. Young beds of seedling Asparagus should not be allowed to become overworked.

WINTER ONIONS. Sow seeds of Onions to produce bulbs in spring and early summer, in shallow drills 16 inches apart, and keep them free from weeds throughout the autumn. White Lisbon may be sown for early use, but the variety is not good for any other purpose. Alsas Cruz, The Lord Keeper, and Lemon Rocca are good varieties.

EARLY POTATOS.—Lift the first plantations of Potatoes as soon as they are ready, in order to use the ground for a winter crop such as Spanish, Turnips, or salad. The tubers should be allowed to remain on the soil for a short time before they are placed in the store room, so that the skins may become hardened. Do not place a large quantity of tubers together, or they may become heated.

LATE PEAS.—As soon as the latest sown Peas are sufficiently advanced strong sticks for their support should be placed in position and made secure. The weather is favourable at present, but if a dry period sets in give frequent applications of soft water, and mulch the ground with farmyard manure.

TOMATO PLANTS in the open should be kept free from side growths and rough, decaying foliage. Keep the plants in an upright position either by tying or nailing, as it becomes necessary, and give the roots a topdressing of artificial manure.

VEGETABLE MARROWS. Keep these plants from becoming overworked by the removal of small, worthless growths. This should be done gradually, so that it may not become necessary to remove large quantities of growth at one time. Give a liberal supply of manure water at the roots, and cut the Marrows as soon as they are of sufficient size to use.

TURNIPS. A sowing of Turnip seed should be made at once to produce roots for use during the winter, and another sowing a week later, to remain in the ground during the cold weather. From this sowing useful heads may be available throughout the spring. Thin out young plants as soon as they are of sufficient size, and allow plenty of space between them. Dust them freely with sifted wood ashes, and hoe the surface frequently to promote healthy growth.

FRUITS UNDER GLASS.

By JAS. HEDDER, Head Gardener at Gannessbury House, Ayles, W.

LATE PLUMS IN POTS.—Plums of good quality that will ripen in cold houses during September and early October are exceedingly useful; it is only in favoured and protected localities that Plums attain to their best quality out-of-doors. Kirke's, one of the best of Plums, will often crack after a day or two of showery weather just as it is ripening. Transparent, Early Golden Transparent and Late Transparent Gages are all at their best, when grown

in pots. Our late Plums are now somewhat crowded, as we have not yet picked all the fruits from trees that were slightly forced. By the end of the month these early trees will be shifted outside, and the late ones taken indoors. After that, the trees that have fruited will be plunged in ashes over the rims of the pots, the earliest being so treated in a cold house, where the late Plums are now standing. The remainder will be left outside until October. Our crops of late Plums are excellent.

APPLES AND PEARS IN POTS.—In the early spring I advised growers not to keep Apple and Pear trees in pots under glass any longer. If, however, any growers have their stock still under glass, the trees should now be placed outside in order to finish the fruits. Care should be taken to safeguard the trees from birds, either by netting or by a wire curtain placed over them. Plunging should also be resorted to so as to secure the trees from winds and to conserve moisture at the roots. A few doses of artificial manure containing a 1/2 per centage of phosphates and potash will assist trees with heavy crops, and sown sprinkled over the ground will aid in imparting colour to the foliage.

MELONS IN PITS AND FRAMES.—Give every possible encouragement to Melons, which are now swelling their fruits. Do not allow the plants to suffer from drought at the roots, but do not make too free a use of liquid manure from the farmyard. Keep Melons in frames, on which the fruits are ripening, somewhat drier, but still maintain a fairly high temperature. Keep all superabundant growth well in check by pinching with the finger and thumb rather than by means of the knife. Cantaloupe Melons especially are gross growers, so a few more fruits can be left on the plants than on those of other varieties.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. Arthur J. Bouver, Abbots Wood, Godalming, Surrey.

HARDY VINES.—Trim as sufficient of the long shoots of hardy Vines to preserve an even balance of growth, also any stems that are necessary to furnish late crops. Pinch the laterals to allow the air and sunshine to reach the bunches, only one of which should be permitted on a single shoot. In very dry situations the pots may need misting even after rains, and when water is graded it should be given copiously. Watch carefully for signs of mealy, and directly any is detected dust the foliage with flowers of sulphur.

Figs. Remove the ends of the straggling shoots on Fig trees and take away all needless growth to expose the fruits as much as possible to the sun's rays. If the young shoots are thinned sufficiently, new very little further pruning will be needed this season. Old wood-out shoots bare of leaves at the base may be removed entirely. Afterwards secure the shoots to the wall by nailing or tying. Fig trees are usually planted in very limited borders, and the roots quickly exhaust the small amount of soil medium; for this reason it may be necessary to give the roots a thorough soaking when the fruits are swelling. If a little concentrated feed-Bor is first applied to the border the water will wash the manure down to the roots, or, if preferred, liquid manure from the farmyard may be used instead.

RASPBERRIES.—As soon as the crop is gathered remove the nets that have been used to protect the fruit from birds, and cut out the old canes. Afterwards clear the ground of weeds and secure by ties any of the stakes that need support. Let the plants have liberal treatment to make strong growth before the winter.

AUTUMN-FRUITING Raspberries. One of the most popular varieties of autumn-fruiting Raspberries is Belle de Fontaine, a variety that will furnish a good crop of fruits at the end of September and in October. Reduce the number of canes, leaving only the best and strongest. The plants will need watering in dry weather, and the ground should be mulched.

PLANTS UNDER GLASS.

By J. G. WILSON, Gardener to Lady Nourse, Earlswell Park, Kent.

SOUVENIR DE LA MALMAISON CARNATIONS.—Preparations for layering Souvenir de la Malmaison Carnations should be pushed forward without delay, as the latest varieties are now passing out of flower. The earlier the layers are potted the better chance have the young plants to become well established in the pots before winter. Strong, healthy plants should be chosen for layering. They should be layered in a frame, so that they can be protected from heavy rains, but a close atmosphere must be avoided. The best plan is to layer in shallow frames, keeping the lights on, and shading lightly during the hottest part of the day. Give sufficient air to ensure a perfect circulation, and extra air should be admitted in the evenings. A compost consisting of two parts chopped turfy loam, one of leaf soil, and one of burnt earth, and a fair quantity of sand will be suitable. See that the plants have been thoroughly watered before being layered. After completing the layering, water lightly in, and continue to damp the plants each evening. They will root quickly under this treatment. When the young layers begin to grow, the lights should be entirely removed. When well rooted, sever the layers from the parent plant, and leave them for a few days, first giving a good watering. They will then be ready to lift at any time. This treatment will build up strong, healthy plants, which should pass through the winter without contracting disease.

GERANIUMS. When required for autumn and winter flowering, some of the comers of them are usually kept dormant in a cooler house. These must now be shaken out and potted. Put them in light, porous soil, and place the pots in a warm house or stove to start. 4 or 5 inch pots are large enough for ordinary purposes, but if large specimens are required, these can be made up later by placing several plants of uniform size into a large pot, when they have started into growth. A very moderate amount of water will suffice for some time. The dampness brought about by a light spraying round them will usually be enough to induce growth.

THE FLOWER GARDEN.

By W. J. GIBBS, Gardener to Mrs. Demerut, Keele Hall, Staffordshire.

THE ROSE GARDEN.—In the Rose garden the watering should be in constant use, but care must be taken to avoid wetting with the inside of the Roses that are just opening, as the flowers will be ruined. Examine the trees very carefully for caterpillars and mealy. Aphids and most other insects can be kept in check if the trees are syringed with Quassia Extract at intervals of a week or ten days. Continue to feed the plants with diluted liquid manure, and occasional doses of soot water. Should an artificial manure be used, give about two teaspoonfuls in a gallon of water; "a little and often" is the best method. Tie in the strongest shoots at the base of climbers before they become twisted or broken by wind. All dead flowers and suckers should be removed and the beds made neat and clean.

DAHLIAS.—During dry weather Dahlias require copious supplies of water, and a liberal mulch placed round the base of the plants, directly after a thorough soaking of clear water. Straw or glass should be placed in position at once, and all weak growths cut out, the young shoots being tied in with strong, soft material. Keep the surface soil stirred with the flat hoe.

SWEET PEAS. Give Sweet Peas liberal supplies of water during dry weather, and apply light dustings of concentrated fertiliser at intervals previous to watering.

DAFFODILS.—If the bulbs have not been lifted already, they should be taken out of the ground at the earliest opportunity. The largest bulbs may be reserved for forcing. Let them be carefully dried, suspending them thinly in boxes, and placing the boxes in a cool shed. The small bulbs may be replanted in ground that has been well cultivated, or they may be utilised for naturalising in grass.

ON INCREASED FOOD PRODUCTION.

OLD SEED AND NEW.

MR. TURNER (p. 24) complains of the growth of garden seeds this spring, and lays the bad result to old seed being mixed with new. This complaint is often made, but from my experience unsatisfactory results are seldom due to this cause, but to others, as it is to the seedsmen's interest to supply good seed. It is unreasonable to suppose that all seed left over from a previous year is thrown away; after a bad seed harvest, and when certain seeds are scarce, the yearling seed stocks are absolutely necessary to meet the demand. I am of opinion that faulty growth this spring is owing to the period of dry, cold weather after seed-sowing time. My Cos Lettuce failed in the first sowing, and after I had, like others, condemned the seed, upon sowing a second time from the same packet the result was entirely satisfactory. One end of a row of Kale I sowed came up, and the other failed, whilst I had a similar result with Cabbage. With these three exceptions, the whole of my garden seeds germinated at the first sowing. Given the necessary conditions of temperature, moisture, and freedom from slugs and other pests, seeds very rarely fail to germinate satisfactorily. *M.C., Worthing*

BEANS.

If the Runner Beans are intended for use in soups it is much better to grow white varieties—there is then no need to add the labour of skinning them. At must be ten years now since I allowed a Scarlet Runner Bean in my garden. Treated as flageolets, very fine creamy Beans appear from several of the sorts. Broad Beans form a useful addition to the herbaceous border, where their glaucous foliage, and especially the black of the blossoms, is an unusual colour. I am trying drying some at a very young stage to add to the variety of winter pulses; it is said that they are quite good thus treated for storage.

BOTTLED FRUITS.

SMALL fruits bottled in water only are apt to be rather poor unless they are washed into a juice. The reason is that various constituents diffuse or osmose out from the interior of the fruit. To avoid this I am having the bottles filled off with the juice of the fruit. Raspberries or Currants may be treated with each other's juice. The readiest way of extracting the juice is with a press like the American "Entrepris" press, which has a continuous action, and which we have used for over ten years for making all jams with seedy fruit, such as Blackberries and Currants.

SOME "NOVELTIES"

MR. MOLYNEUX (p. 15) applies the word "novelty" to the Mangoutou Pea and to Good King Henry. Thompson, in 1859, mentioned three varieties of "Sugar" Peas; if the variety "French Sugar Pea" is the same as that I have bought under the name it is a pity to have selected it for a start, as in delicacy it is by no means as good as, for instance, Vilmorin's Grande Grosse, or even the little Breton. These Peas make excellent Green Pea soup. With regard to King Henry or Mercury, the leaves should not be picked and cooked "à l'instar des épinards" to have it at its best. In the spring, when little else green is to be had, the young flowering shoots still in bud are cut off close to the stool. After washing and tying in bundles with leaves and stalks, they are cast into a large quantity of boiling salted water and cooked till tender (about half an hour, or more as the season progresses). Very thorough draining and pressing are necessary, care being taken to keep the stalks straight. Serve with run butter. (Recipe from Lincolnshire.) Eaten alone there is a

distinct Asparagus-like taste about it, but, of course, most English people will miss this by eating it together with meat, and not as a separate course. With regard to cultivation, beyond hoeing for weeds my patch has had no attention or manure (except a little artificial) in the past six years, and it is still a success. The main points are to keep cutting the flower-shoots whilst young, and cut them low, or small secondaries sprout, and in July, when seeding may cause trouble. Clean up the plants by removing all blossom; the cuttings must be burnt soon, for, like Spinach Beet, the seeds will ripen off though buried in earth. Even with some care in this, self-sown seedlings are apt to appear; they have been useful this year, as people are beginning to attend to useful vegetables, and wanted seedlings. Half-a-dozen plants should be in every small garden—any out-of-the-way, shaded corner will do; twelve plants are quite enough for a small household, at any rate when they are three or four years old. As one of our few indigenous vegetables, which indeed may have been used as an entree, not when a costume of wood was "de rigueur," it hardly merits the term "novelty." *H. E. Durham.*

TRAINING THE TOMATO.

I CAN endorse the remarks of Dr H. E. Durham (see p. 260) on the advantage of training the Tomato on the double stem system. It is twenty years ago since, as a journeyman, I was first taught the method your correspondent described in a Herefordshire garden. The plants were grown in a long, span-roofed house, the long lights of which permitted good lengths of growth to be accommodated. The plants were pinched as described, and produced shoots more or less uniformly like a Chrysanthemum. We never found pegging necessary to equalise growth. Obviously a fewer number of plants is required—in fact, just half when grown on the two stem method—while the work of pinching out side shoots is reduced to a minimum through the vigour of the plant being diverted to the support of the extra stem. *C. T., Amphill Park Gardens*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

ROSE QUEEN ALEXANDRA. The fact of a Gold Medal being awarded to a Rose bearing the above name at the meeting of the National Rose Society on July 17 is likely to cause confusion. As matters stand now, Queen Alexandra No. 1 was given a Gold Medal in 1901. Queen Alexandra No. 2 received a Certificate of Merit last year, and now comes No. 3, another Gold Medal winner. Surely the judges responsible for this blunder were not so ignorant of the nomenclature of Roses as to be unaware that the name had been used before? It would be a good idea if at the next meeting of the National Rose Society a resolution was brought forward refusing to recognise any variety bearing a name that had been previously adopted. *H. T.*

CHAMPAGNE BOTTLES AND CABBAGE FLY.—On some allotments which I have seen the monotony of the Cabbage plots was broken by a number of champagne bottles stuck up on long sticks. On inquiry, I learned that the bottles are regarded as a means of scaring away the Cabbage moth, and that the allotment-holders learned the trick from Italian gardeners. Can any of your readers tell me whether the practice secures the desired result? At first sight it looks an unlikely sort of butterfly scarecrow, but I am assured by those who have tried it that it is effective. *N.*

POTATO SPRAYING.—Mr. Pickering asks for the authority to use the phrase "Burgundy mixture." If I may judge from my small library of recent French works, in all of which, where mentioned, the lime-copper washes are called "Bouillies bordelaises," and the soda-copper ones "Bouillies Bourguignonnes," I imagine that in

using the phrase "Burgundy mixture" we are simply following ordinary French practice. See for example, Verrier, *Arboriculture fruitière*, 1912 (where reference is given to Chancier, *Viticulture*, Encycl. des Connaissances agricoles), and Dubor, *Viticulture moderne*. It may be worth noting that Abegg's *Handbuch* gives the end-product of equivalent amounts of soda carbonate and copper sulphate as $3\text{CuCO}_3 \cdot 3\text{Cu(OH)}_2 \cdot \text{H}_2\text{O}$, while in the gel state the ratio CuO to CO_2 is also 2:1; some form of hydrated product or products is perhaps more likely than the anhydrous one that he gives. The last time I had much disease, a wet year, I was impressed by the enormous number of earwigs that sheltered amongst the diseased leaves, and could not help thinking that they must have helped to spread the spores. As a possible deterrent and antiseptic in later years I used lysol, and another cresol preparation; also acetate of copper in $\frac{1}{2}$ per cent. with pyridin. An equal volume of 2 per cent. lysol poured into 1 per cent. copper acetate makes an opalescent fluid, which does not settle out for a day or so; it is, perhaps, somewhat on the lines of "Truffant's" "Léssive Alcalino-Cuprique Crésyle" which is for winter use. I have not seen it scorch Potatoes. Surely there must be possibilities beyond the eternal Burgundy and Bordeaux washes? Calcium polysulphide ("lime-sulphur") does not seem to be well reported upon so far as I gather. *H. E. Durham.*

STANDARD RED CURRANTS.—I have a row of fan-trained Red Currants grafted as standards presumably on Ribes aurea. They flower and set wonderfully well, but drop many of the fruits of each bunch, so that only a few berries come to maturity. I suspect that deficient water supply is the cause of the trouble. Can any of your readers inform me whether it is customary to slit the bark of the stock in order to enable it to make more wood, and hence to conduct water better from the root to the scion? *Amateur.*

HOME-MADE NICOTINE WASH (see p. 11).—The remarks of *Southern Grower* will, I trust, revise the agitation in favour of home-grown Tobacco for nicotine wash. "Cannot the Food Production Department help in this matter?" The experiments at Wye and elsewhere have shown that Kentish-grown Tobacco is extremely rich in nicotine, and if this were used there would be no need of any denaturing process. Those who, like the writer, have smoked a pipe of the home-grown product would not repeat the experiment. *E. A. Barnard.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JULY 17.—President: Mr. E. A. Bowles, M.A. in the chair, Mrs. Bateson and Voelcker, Sir Everard in the Chair, Messrs. W. C. Worsdell, W. G. Baker, E. J. Allard, J. W. Odell, H. J. Elwes, and E. J. Chittenden (hon. secretary).

Fasciated Asparagus.—Col Sandeman, of Haying Island, sent a very large specimen of the common Asparagus showing fasciation, having a stem over 2 inches in breadth.

Infertility in Barley Field.—Dr. Voelcker showed specimens of Barley from fields on Salisbury Plain very stunted and poor, and another of about normal growth from places in the fields where stools had stood last season for a month. Doubtless the greater fertility of the place where the stools had stood was due to the washing out of salts, etc., from the old Barley, and possibly also to the protecting from washing of the soil beneath them, but the infertility of the remainder of the field, considering the nature of the marital treatment, must necessarily have been due to some other cause contributory, and possibly to the gnat fly, the chrysalids of which were present in some of the specimens.

Enations of Ediage of Pterisma aianthoides.—Mr. Worsdell showed foliage of this interesting Himalayan tree belonging to the Simarubaceae, and hardy at Kew, whence the specimens came, having on the upper side of the rachis both at the nodes and along the internodes numerous enations of various forms, some being shaped like a cup or goblet.

Hybrid Calceolarias. Mr. Allard showed hybrids between *Calceolaria alba* and other forms, including *cana*, *integrifolia*, and a garden hybrid of *cana*, *alba* being the pollen parent. In every case, foliage, habit and flower colour were of the pollen-parent type, and in every case they were sterile. This is a remarkable case of almost complete paternal inheritance, *v.g.*, comparable with the known cases of maternal inheritance, *v.g.*, in *Primulas*. *C. alba* itself is sterile so far as the ovules go.

Various Plants. Mr. Elwes showed a number of plants from his garden, including *Astrantia heliophylla*; a very floriferous *Lonicera* of bushy, late-flowering habit, perhaps *L. crata*; *Pelargonium Endlicherianum*, and others; *Theropogon pallidus*, somewhat resembling a large-flowered pink Lily-of-the-Valley, but lacking scent, native of the Himalaya; *Hymenocallis*, *Aristolochia arnithocephala*, strongly scented in the daytime, but scentless at night.

Ants and Lilium regale. Mr. Bowles showed a bud of *Lilium regale* and read the following note:—"A group of this growing in a garden at Norwich has been attacked by ants. The owner of the garden has watched the ants at work on the unopened buds, and has seen them carry away particles of green matter that they have apparently extracted from the flower. They confine their attention in the first place to those portions of the flower that are coloured with the chocolate-brown that comes on *regale* in its early stages. The first effect that is apparent is that the chocolate disappears in patches. As the flowers develop the portions attacked begin to decay, and, naturally, spoil the flower. So far as can be ascertained, no other variety of Lily growing in the neighbourhood has been touched, which would make it appear as though *L. regale* possesses some particular attraction for the pests. It is necessary to find some remedy, as the attacks of the ants are so persistent that a fine group of this beautiful Lily has been ruined within the course of a fortnight." It is probable that a disc of cardboard covered with Tangle-foot fixed round the stem some little distance from the ground would prevent the ants from reaching the flowers.

Change of Colour in a White Currant. Dr. Walter Dick sent a note calling attention to the complete reversion of a White Currant planted against a wall at Great Massingham, King's Lynn, to a red form. For two years prior to the present the plant bore white Currants, but this season all on the bush are red, and rise ten days earlier than those on other bushes in the garden.

Spencer-flowered Cupid Sweet Pea. Mr. G. T. Dickson, Newtownards, sent a Cupid Sweet Pea with waved flowers of the Spencer type, which he had raised along Mendelian lines by crossing (in 1915) a tall Spencer with the ordinary grandiflora type of Cupid Sweet Pea. The new form appeared in the second generation and has bred true since.

TRIALS OF BROAD BEANS AND ANNUAL POPPIES.

The following awards have been made to Broad Beans and Annual Poppies by the Council of the Royal Horticultural Society after trial at Wisley. *Clipper* variety of Mid-season Pea, which received an Award of Merit last year, has been awarded a First-class Certificate after further trial.

BROAD BEANS.

AWARDS OF MERIT.—*Broad Windsor*, from Messrs. Dobbie and Co.; *Exhibition Longpod*, from Messrs. Dobbie and Co.; *Green Giant*, sent by Messrs. Sutton and Sons.

HIGHLY COMMENDED.—*Erdington Gem*, sent by Messrs. Holder and Tilt; *Grant Windsor*, sent by Messrs. Sutton and Sons; *Green Leviathan*, sent by Messrs. J. Carter and Co.; *Green Windsor*, sent by Messrs. Sutton and Sons; *Mammoth Windsor*, sent by Messrs. J. Carter and Co.; *Priestcraft Exhibition Longpod*, sent by Messrs. Bunyard, Ltd.; *Profile Longpod*, sent by Messrs. Sutton and Sons.

COMMENDED.—*Invicta*, sent by Messrs. Nutting; *Market Garden Windsor*, sent by Messrs. J. Carter and Co.

PEA.

FIRST CLASS CERTIFICATE.—*Clipper*, sent by Messrs. Nydenham, Ltd.

ANNUAL POPPIES.

AWARDS OF MERIT.—*Dwarf Scarlet Fringed*, sent by Messrs. R. Veitch and Son; *Scarlet King*, sent by Messrs. Barr and Sons.

HIGHLY COMMENDED.—*Cardinal Blush*, sent by Messrs. Dobbie and Co.; *Cardinal Scarlet*, sent by Messrs. Dobbie and Co.; *Dainty Lady*, sent by Messrs. Barr and Sons; *Danubius*, sent by Messrs. Barr and Sons; *Peacock Poppy* (*P. pavoninum*), sent by Messrs. Barr and Sons; *strain of Dwarf Double Peony-flowered mixed*, sent by Messrs. Barr and Sons; *strain of New Double Queen*, sent by Messrs. Barr and Sons and Messrs. R. Veitch and Son; *unobscured*, sent by Messrs. Dobbie and Co. and Messrs. Barr and Sons; *The Admiral*, sent by Messrs. Barr and Sons; *White Colossal*, sent by Messrs. Barr and Sons; *White Swan* (syn. *Snowdrift*), sent by Messrs. Barr and Sons.

COMMENDED.—*Picotee*, sent by Messrs. Barr and Sons.

ROYAL SCOTTISH ARBORICULTURAL.

JULY 11.—The summer general meeting of members of this society was held at Glasgow on the 11th inst. The summer meetings of the R.S.A. Society have hitherto been held in the showyard of the Highland and Agricultural Society wherever the show might be, but as these shows are in abeyance in the meantime, it was decided, in response to an invitation from the West, to hold certain of the Arboricultural Society's meetings in Glasgow, to take advantage of the opportunity to hold the summer meeting in Glasgow on this occasion. Sir Andrew Agnew, Bart., the president, presided, and there was a general discussion on forestry matters. The discussion was opened by Sir John Stirling Maxwell, Bart., with a paper on "National Forestry," and this was followed by communications on "Barley and Mine Requirements," by Sir Charles Bine Renshaw, Bart., and Mr. C. G. G. Carlow, on "Deer Forests and Sheep Farms," by Colonel Archibald Stirling, M.P., and Mr. D. K. McBeath, B.Sc. More, the two last mentioned papers being read by the secretary, Professor Wm. Somerville, Oxford, who was unable to be present, sent a short note on "Forestry Education," which was also read by the secretary. A discussion followed, and on the motion of Mr. George Fraser, seconded by Sir John Stirling Maxwell, it was agreed that a deputation be sent to the Secretary for Scotland in the general question of the position of forestry. The attendance at the meeting was about 50.

SCOTTISH HORTICULTURAL.

JULY 13. The monthly meeting of members was held in the Guild Hall, 5, St. Andrew Square, Edinburgh, on this date, Mr. Phillips, the president, in the chair. There was an attendance of 55 members.

It was intended to hold a competitive show of Roses and Sweet Peas on this occasion, but owing to lack of entries this had to be abandoned, and in place of it the Council decided to have a special exhibition of Roses (in connection with the paper to be read at the meeting), and vegetables of interest to allotment holders. Messrs. DORRICK AND CO., Edinburgh, staged a fine collection of Roses, and an excellent exhibit of vegetables, and Mr. McHAYLE set up a particularly interesting collection of 13 different varieties of vegetables grown in the city, to illustrate what could be done by allotment holders and others on small areas. The dates of sowing and planting were given, so that visitors could see for themselves what could be produced in a given time. There was also staged from the Public Parks Department a fine collection of Roses. Miss BRUNTON, New Saughton Hall Gardens, Dilton, showed good tubers of *Edenrose* and *Mirabilian Early* Potatoes from sets planted on April 23, and of *Magnam Bonum* Chauliflower. Mr. CRECHTON, Dalhousie Castle Gardens, showed Scotch Peas and Roses, and Mr. J. W. SCARFITT, Sweethope, Inverclyde, exhibited ordinary Pea British Lion. Messrs. DORRICK AND CO. and Mr. McHAYLE were each awarded a Gold Medal, and Miss BRUNTON and Mr. CRECHTON received Cultural Certificates. The exhibits were handed over to the Red Cross Fund.

The paper read at the meeting was by Mr. George Taylor, of Messrs. Dobbie and Co., Edinburgh, and was entitled "The Romance of the Rose." Mr. Taylor traced the development of the Rose, and showed how Rose growing was encouraged by the Romans, by whom it was introduced into Gaul. France, he said, was the birthplace of modern Roses, which were the result of the labours of the old French growers. Ultimately Rose-growing shifted to England, and later to Ireland, which now took the lead so far as new Roses were concerned. In the long history of the Rose, dating back some 2,000 years, the old *Calbidge* Rose was shown to be the variety which linked those of former times with those of the present day.

NATIONAL CARNATION AND PICOTEE.

JULY 17.—This society held its annual exhibition on the above date in conjunction with the R.H.S. fortnightly meeting at the London Scottish Drill Hall, Westminster, and although the display was not a great one either in extent or quality, it was a wonderful demonstration of the patience and perseverance of florists and fanciers during war-time. A large number of interest records that on this occasion all the flowers were shown in vases. Mr. JAS. DODDARIS won the Carnwright Challenge Cup offered for the winner of the highest number of points in the open classes, whilst the Morton Smith Cup was won by Mr. R. PINXOCK as the most successful winner in the third division (amateurs).

In the principal division Messrs. ARTHUR A. BROWN, LTD., King's Norton, led for six bezars and flakes and also for six white-ground Picotees; the flowers were rather small. Mr. H. LAKEMAN, Thornton Heath, won the 1st prize in the class for six selfs with Elizabeth Shiffner; General French, Edinford, Mrs. G. Marshall, Bockham White, and Hilda Black, and succeeded in beating Mr. JAMES DODDARIS. The latter led, however, in the class for six fanics, other than white grounds, with glorions blooms of Lieutenant Slaekleton, Lord Sneyne, Pasquin, Cyclone, Edenside and Mrs. Penton; 2nd, Mr. LAKEMAN; 3rd, Messrs. A. R. BROWN. Mr. H. LAKEMAN excelled in the class for six white-ground fanics, George Robey and Daisy Walker being very attractive; 2nd, Messrs. A. R. BROWN. Mr. JAS. DODDARIS was successful in the class for six yellow ground Picotees with Mrs. Keen, Eclipse, Santa Claus, Exquisite, J. Hasham and Togo; 2nd, Mr. LAKEMAN.

In the second division of the schedule three varieties only were required in each class and three blooms of each. Mr. J. J. KEEN, Southampton, led in this class for bezars and flakes, followed by Mr. FARBLE, Aston. For white-ground Picotees Mr. J. J. KEEN, Mr. W. FROSTER, Narbury, and Mr. JAS. FARBLE were placed in the order named. Selfs were a good class. Mr. H. W. FROSTER won the 1st prize with Mrs. G. Marshall, General French and Daffodil; 2nd, Mr. FARBLE; 3rd, Mr. J. J. KEEN. For three fanics, other than white grounds, Mr. FROSTER beat Miss SHIFFNER, Lawes, and Mr. FARBLE; all showed well. Mr. FROSTER was also placed 1st for three white-ground fanics with Montrose, George Robey and Daisy Walker; 2nd, Mr. B. MOURTON, Woodside Park. Mr. J. J. KEEN had the best yellow ground Picotee in a class for these varieties, followed closely by Mr. FROSTER and Miss SHIFFNER.

In the amateur's division the principal prize-winners were Mr. R. PINXOCK, Ilford, and Mr. S. C. WIM, Thornton Heath.

In the open classes Mr. JAS. DODDARIS led for six new white selfs, with Albion (granted a F.C.C. by the N.C. and P.S.). Mr. FROSTER was placed 1st for six blooms of a dark red or maroon self with Mrs. G. Marshall. Mr. JAS. DODDARIS led in the class for yellow selfs with Sulphur, a beautiful flower; and he was placed 1st for (a) scarlet selfs with the glowing Fujiyama; (b) for buff or terra cotta selfs with Elizabeth Shiffner; and (c) for selfs of any other colour, with The Grey Douglas (deep heliotrope). Mr. FROSTER led for yellow ground Picotees with Eclipse; Mr. R. MOURTON for yellow ground fanics, with Skirmisher; and Messrs. A. R.

BROWN, LID., for fancies of any other ground than yellow or buff, with Betty.

PREFERER BLOOMS.

S.H. Mrs. Percy Smith, shown by Mr. JAS. DOUGLAS, *Fairy Lord Steyer*, shown by Mr. H. LAKEMAN, *Yellow-ground Peacock Togo*, shown by Mr. JAMES DOUGLAS, *Bicolor*—Master Fred, shown by Mr. J. J. KEEN, *White-ground Peacock*—John Smith, shown by Mr. J. J. KEEN, *Yellow-ground Peacock (light edge)*—Eclipse, shown by Mr. J. J. KEEN, *White-ground Fairy*—Daisy Walker, shown by Mr. JAS. DOUGLAS.

Obituary.

JOHN YOUNG.—*Horticulture*, U.S.A., records the death of Mr. John Young, a native of Scotland, gardener to Col. Samuel P. Colt, at Bristol, Rhode Island.

CROPS AND STOCK ON THE HOME FARM.

SWEDES AND MILDEW.

ON the whole, the seed of Swede Turnips has germinated well and the plants are healthy. No time should be lost in thinning them to the proper distance apart, as overcrowding by either too many plants in the rows or by weeds would cause a serious check to growth that would favour the development of mildew later. This malady is one of the worst pests of Swedes. Not only does mildew injure the leaves, checking the growth, but it impairs the keeping properties of the roots during the winter, for even if frost does them no harm, the flesh becomes tough and hard. Directly the plants can be seen in the drills, the horse hoe should be freely used to stir the soil about them. Should the seedlings make quicker progress than the labour can cope with in setting them out, or even horse-hoeing them, harrows should be drawn across the drills. This will move the soil and pull out a few plants, which will serve until they can be set out to a proper distance of 18 inches.

Owing to peculiarities of soil in various parts of even one field, the plants do not always progress evenly, whilst wireworms and other insect pests may be troublesome. Over such faulty places sprinkle sulphate of ammonia at the rate of $\frac{1}{2}$ cwt. per acre, or a good quantity of soot.

MANGOLDS.

Mangolds never looked more promising than they do at present. The plants are growing apace, and although they may be several inches in diameter, the stirring of the soil between the rows will further accelerate growth. In late-sown plots, or where the plants are backward in growth owing to various causes—shortage of manure in the soil, weeds in the early stages of growth, or late sowing—a dressing of sulphate of ammonia at the rate of 1 cwt. per acre, or half that quantity of nitrate of soda sown when the leaves are dry, will give a fillip to growth.

SHEEP FOR STOCK.

Never has the beneficial result of keeping a flock of sheep been more apparent in the corn crops than this season. Oats especially displayed signs of weakness owing to late sowing, and a spell of dry weather during April and May, that the straw did not promise more than 1 foot of growth. Where the previous crop was late-sown Turnips, for example, and sheep fed on the ground Oats since the rain in June have made remarkable progress. The present dense green of the flag, with the lengthening ears, all display the benefit of the manure from the sheep. I notice that where there were no sheep the Oat growth is much promising but few stacks of corn per acre.

As the mating season for lambs born early in January commences early in August, no time should be lost in selecting the rams—one to fifty ewes is sufficient. The best kind of sheep to breed is purely a matter of circumstance. No breed can equal Hampshire Downs where close folding for cereal crops to follow is the main

aim in keeping sheep. No other breed produces lambs of the size and quality in so short a time. For example, lambs born in January this year were sold in May for 5 guineas each. The South Down breed no doubt gives higher quality flesh, but the animals are not so suitable for close folding, especially on wet land. Where grass land only is available Scotch sheep are to be preferred.

THE PLOUGHING UP OF GRASS LAND FOR CEREAL CROPS.

To obtain the 3,000,000 additional acres of land for the 1918 cereal crop which the Government is asking farmers to crop is agitating the farming community. As chairman of an advisory committee, to which is delegated the function of obtaining the necessary acreage in each county, I know much of the difficulties that arise in obtaining this large increase in one season. Landowners and farmers are willingly helping in the scheme, although such a change in method means personal inconvenience and outlay.

I constantly see successful results from the ploughing up of grass land last autumn and spring that I do not hesitate to say there need be no need to question the success of the scheme. For instance, a grass field that never grew sufficient grass for a hay crop and not much for stock is now promising 60 bushels of Oats per acre. Naturally, I am not in favour of ploughing up good grass land to the detriment of the milk supply or the rearing of young stock, but grass that never gives more than one ton of hay per acre and subsequent feed for the cattle would be more profitable under the plough. *E. Midgour*

REPLY.

CROPPER BROAD BEAN.

In reply to J. W. J. (see p. 40), the Cropper Broad Bean was raised by Messrs Bell and Bielestedt (now David Bell), Leith, some years ago. It is a cross between Aquadule and Bunyard's Exhibition. I saw a large break of this particular Bean at Mr. Bell's trial grounds a week or so ago, and it is full of promise. *J. J. S.*

ANSWERS TO CORRESPONDENTS.

CABBAGEFLIES: *B. N. J.* No. 1 is the Cabbage-moth (*Alamastira brassicae*). You should pick the caterpillars by hand, and also gather and destroy any curled or injured leaves. As a preventive of further attacks, dust the ground with soot and lime. The chrysalids remain in the ground all the winter, and may be seen and destroyed when digging the soil preparatory for the seedlings. No. 2 is the Pear-Leaf Tent Sawfly (*Pamphilius flaviventris*). Hand-pick the trees, and spray with Bordeaux mixture in the spring, just when the fruit-buds are opening. No. 3 is the larva of another sawfly, probably a species of *Empythus*, for which the treatment will be the same as for the *Pamphilius*. The Peas have been attacked by thrips (*Katathrips robusta*). Spray the plants with a mixture of nicotine and soft soap, in the proportion of 2/3rds of an ounce of nicotine and 6 oz. of soap to 10 gallons of water.

GOOSEBERRY BUSHES DYING: *E. Y.* The Gooseberry bush is affected by "Die-back" disease, caused by the fungus *Sclerotinia*. Cut out and burn all the dead shoots. If the plant is badly affected it should be grubbed up and burned. The disease is not a difficult one to keep in check if these measures are adopted.

LARKSPURS: *X. Y. Z.* The trouble is not caused by organic disease. The unsatisfactory state of the plants is due to unsuitable conditions.

MONARCH PLUMS NOT FRUITING WELL: *T. H.* Monarch is usually a shy fruiter, mainly because birds are particularly fond of the buds of this variety. This season, however, very little bud-eating took place, probably because fullinches and sparrows were killed to a great extent by the prolonged severity of last winter, and in some districts, at any rate,

the crop is the best for many years. After every New Year's Day the trees should be inspected twice in every week, in order to detect the beginning of an attack of bud-eating, so that spraying profusely with lime-sulphur may be promptly done. Where there are long lengths of branches made permanently bald by bud-eating, benefit might result from cutting them back to live buds, but this would not be of any avail without protecting the new growths by spraying when needed. Lime-sulphur sticks on the trees well, but if washed off by heavy rains a second spraying may be necessary.

NAME OF FRUIT: *H. W.* Apple Mr. Gladstone.

NAMES OF PLANTS: *Horstead*, 1, *Lythrum salicaria* (Purple Loosestrife); 2, *Asclepias curassavica*—*J. U.* *Sempervivum tortuosum variegatum*. The species is a native of the Canary Islands, and not quite hardy in this country.—*U. C.* *Calycanthus floridus* (Carolina Allspice)—*M. D. G.* *Coronilla Scopioides*, of Koch, it is the *Ornithopus Scopioides* of Linnaeus, and has various other names. The species is a native of France and the Mediterranean region, not of Britain, where it occasionally appears as a casual. The seed had been brought to your garden, most likely, in the soil on the roots of the Roses.

OPICUM POPPY: *Laxious*. Opium is obtained from the seed capsules of *Papaver somniferum*. The seed heads are scarified when fully grown but still in a green state, and the juice, which soon hardens, is scraped off and formed into balls. This is the crude opium, the active property of which is morphia. The Poppy-heads are also dried and employed in fomentations.

POTATOS: *Rev. B. W.* The trouble is not due to organic disease; there is certainly no trace of late blight, *Phytophthora infestans*. We have seen similar cases of failure with Potatoes this season, which may be attributed either to an unsuitable condition of the seed tubers at the time of planting or to unsatisfactory weather.

ROSES AT BAGATELLE: *C. W.* Varieties of Roses grown under trial at Bagatelle, near Paris, are sent by raisers, not only in France but in other countries, and therefore they would probably include some that had already been sent into commerce. You ask whether they are any improvement on the large number of varieties sent out during the past four or five years; it is obvious that those sent to Bagatelle include many of the finest new sorts. Gold medals were awarded to Constance, Mrs. Wemyss Quin, Admiral Ward, and Gloire des Belges in 1916. You would probably be able to obtain a list of the awards made during the years you mention, on application to The Curator, Roseraie de Bagatelle au Bois de Boulogne, en gare de Neuilly-Porte-Maillot-Paris.

ROSES UNHEALTHY: *H. J. W.* No fungus or insect pest was present on the shoots. The appearance of the plants points to trouble at the roots. Try watering with some liquid fertiliser rich in nitrogen, such as that obtained from the farmyard. This treatment will probably restore the green colour to the foliage.

VINES WITH YELLOW FOLIAGE: *E. J. C., Cork.* Your vine leaves, which you say are from the centre of the house, appear to be suffering from an insufficiency of light, and if you find that any exposed shoots on the same vine are not suffering so much, it will confirm our suspicion. If this is so you should very gradually remove some of the ends of the shoots to admit light to the primary leaves. Vines in this condition will not need so much water as those which are healthy. Try the effect of a little sulphate of iron dissolved in water, at the rate of a quarter of an ounce to the gallon, and the same quantity of sulphate of ammonia, nitrate of soda, or nitrate of potash (saltpetre). One gallon of this will be sufficient for a square yard of border, and if the roots are healthy will probably improve the colour of the leaves.

Communications Received.—*Ignorance*—E. B.—A. J. G.—J. M. F.—E. G.—J. C. B.—S. P. C.—H. B. M.—J. F. McL.—A. R. W.—R. Kidd—M. D. G.—G. B.

MARKETS.

COVENT GARDEN, July 27.

We cannot accept any responsibility for the subjected reports. They are furnished to us regularly every Wednesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eos.

Table with 3 columns: Plants in Pots, Average Wholesale Prices, and various plant names like Aralia Sieboldii, Asparagus plumosus nanus, etc.

Table with 3 columns: Cut Flowers, Average Wholesale Prices, and various flower names like Asters, white, per doz. bun., Carnations, per doz. blooms, etc.

Table with 3 columns: Cut Foliage, Average Wholesale Prices, and various foliage names like Adiantum (Maidenhair Fern), Asparagus plumosus long trails, etc.

REMARKS: Asters are in increasing numbers. There is a good supply of double white stock, which is arriving in excellent condition. Carnations are exceedingly

planting and plants of second quality are difficult to obtain. Euphorbia angustiflora is reaching unusually high prices. At the time of our issue, Lavender is arriving in large quantities, also topophilia paniculata and the double white variety. It is preferred to the common sort because of its fragrance. S. sinensis and S. longifolia is now of its best, and both are so scarce the supply being very irregular. There is no new supply to record this week, and very little variation in prices generally. With the exception of Lilies, other flowers are likely to be cheaper during the next few days.

Vegetables: Average Wholesale Prices

Table with 3 columns: Vegetables, Average Wholesale Prices, and items like Artichokes Globe, Beans Broad, per bus., etc.

Fruit: Average Wholesale Prices.

Table with 3 columns: Fruit, Average Wholesale Prices, and items like Almonds, per cwt., Apples, per case, etc.

(Continued from page iii)

LADY GARDENER, fully trained, seeks (or is sought) as STENOGRAPHER, or with others. Inside or outside, would like to remain in work if near London. Comfortable accommodation, essential. Write, C. G., Box 12, 41, Wellington Street, Covent Garden, W.C. 2.

EXPERIENCED LADY GARDENERS require work by the day or by hour. First class work, London, excellent remuneration. T. F., Box 16, 41, Wellington Street, Covent Garden, W.C. 2.

TWO LADY GARDENERS, with experience, Inside and Out, in great post as Joint Working Head for Head and Forewoman, end of September, good cottage and home countries, essential. T. B., Box 8, 41, Wellington Street, Covent Garden, W.C. 2.

TWO LADY GARDENERS, with practical experience and good references, require post to 25th Middle Road, E. for Gardeners in South of England preferred.—K. M., 4, Convent Cottage, Cook, Rugby.

LADY GARDENER, free early September. 10 sents post near Brixton, 1 year's training, R.H.S., Greenhill, Epsom, in small garden; live in preferred.—CANNON, 47, West Park, Chiswick.

LADY GARDENERS (4 or 5) 2 years' practical and scientific training, with diploma, seek post in September, preferably together, in private or Market Garden. MISS MICHAEL, University College, Basing.

LAD seeks situation, Inside or Outside and (or) age 15, no experience. Both preferred; strong and willing to learn. P. CREASEY, 1 Brixton Cottages, Brompton, Kent.

MR. E. NORWOOD can with confidence recommend W. ALTON, his Employer (Inside), for a situation in a large establishment, 3 years' experience. Mr. W. ALTON, Winklers Wood Gardens, Woodhatch, Surrey.

GREENHOUSE PAINTING. Capable and reliable man is open to engagement; contract or otherwise. Full particulars to GRANT, 197, Drummond Street, Hampstead Road, London, N.W.

TRADE.

NURSERY FOREMAN or MANAGER: 12 years' active, all-round experience growing for London and provincial markets, over 100 varieties, married; aged 22. State terms. C. WILSON, Granville Nursery, Ditch Lane, Brixton.

RETIREE MANAGER FOREMAN (Widow) has 20 years' period, high marks in engagements, 10 years' experience, extensive knowledge, special 4000 plants, 2000 varieties, extensive residential, 8, Post 41, Wellington Street, Covent Garden, W.C. 2.

OWING to the residents leaving the City, a situation is vacant in a good NURSERYMAN, and seeks situation, well up in all branches in particular, in a good place, preferably in a good cottage and home countries, essential. T. B., Box 8, 41, Wellington Street, Covent Garden, W.C. 2.

The Gardeners' Chronicle SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisement not intended for insertion in the next issue MUST reach THE PUBLISHERS not later than WEDNESDAY, 5 p.m.

Table with 2 columns: Advertisement details and charges in £ s. d. for ordinary positions, facing front and back pages, etc.

GARDENING APPOINTMENT.

Mr. Daniel Pagnell, 11, St. Dunstons Church Lane, London, E.C. 4. Telephone, 1114. Mr. G. H. M. COMPTON, North Park, Clons, Co. Dub.

CLIMBING PLANTS

(Present-Day Gardening Series) By WILLIAM WATSON. (Introduction by William Robinson.) A Practical Handbook on the Treatment of Climbing Plants, both hardy and tender species. Illustrated with 24 full page plates, 8 of which are reproduced in colour. Price 2/10 post free from: THE PUBLISHING DEPT., "GARDENERS' CHRONICLE" OFFICES, 41, Wellington Street, Covent Garden, W.C. 2

Front page (no display allowed) 1/4 per line space. (Headline counted as two lines). For discounts apply to address below. SITUATIONS WANTED. 26 words 1s. 6d., and 6d. for every additional 8 words or fewer. These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT. SUBSCRIPTIONS. THE UNITED KINGDOM ... 15/- per annum. ABROAD ... 17/6. Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD., 41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2. Telegrams: 1543 "GARDENERS," KANS, LONDON. Telephone: 1643-GERARD.

A TREASURY OF INFORMATION

is contained in the

HORTICULTURAL DIRECTORY AND YEAR BOOK.

Nowhere else can the gardener obtain, within the small compass of four hundred pages, so much information on the subjects which interest him most. The knowledge which this little work contains is just what is indispensable to the gardener in his daily life. The

CALENDAR OF GARDEN OPERATIONS

takes him through the whole year, reminding him of the manifold small cares which make all the difference between health and ill-health in his plants. It also reminds him of the exhibitions which are to be held and of the most important annual meetings.

Another interesting section, which expands each year, is the list of

SCHOOLS OF HORTICULTURE.

with a brief description attached to the name of each such institution. Those concerned with the education of young gardeners—both men and women—will turn to this section with especial interest, and those who are seeking such education will find it of the greatest assistance in deciding which school to select. There are still for sale a few copies of the current edition.

SEND FOR ONE AT ONCE TO

The **LIBRARIAN**, 41, Wellington Street, Strand, W.C. 2.

PRICE 1s. 1d., POST FREE.

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.
DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.
CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD
TULIPS. By the Rev. JOSEPH JACOB.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES double volume 2/6. By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WAL ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from

THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 3997

No. 1597. VOL. LXII. {THIRD SERIES} SATURDAY, AUGUST 4, 1917. {Registered as a Newspaper.} PRICE 3d. POST-FREE, 3½d.

SUBSCRIPTION—Inland, 15-; Foreign, 17 6 (22r. 10c.) {54 26c} per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 45.

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note that the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

CONTINUOUS PRODUCTION FROM THE GARDEN.

Sutton's Catalogues of Seeds and Garden Requisites for present use. Sutton's List of Vegetable Seeds for Summer and Autumn Sowing contains brief cultural notes. Sutton's List of Flower Seeds for present sowing and spring flowering. Sutton's Catalogue of English-grown Bulbs, containing particulars of the most popular Double Narcissi, May flowering and Darwin Tulips, &c. These Catalogues will be sent post free on application.

SUTTON & SONS, The King's Seedsmen, READING.

GISHURST COMPOUND—Insecticide and Fungicide. Over 50 years' reputation, highly Commended R.H.S. Scientifically-controlled Trials at Wisley, 1914-15. Sold by dealers in Garden Sundries. Wholesale: **PICCES PATENT CANDLE CO., LTD., BATTERSEA, LONDON, S.W. II.**

STRAWBERRIES AND HOW TO GROW THEM.—Plant early for next season's fruiting. Complete list, with cultural directions, post free. A new up-to-date alphabetically arranged Rose List, with special value in collections. **KING'S ACRE NURSERIES, LTD., Hereford.**

BUNYARD'S STRAWBERRIES.—Our new descriptive list is now ready, and will be sent on receipt of card. **ALPINE STRAWBERRIES**, a specialty. **GEO. BUNYARD & CO., Ltd., Royal Nurseries, Midsalton.**

POTATO SPRAYING.—On spot ready for immediate delivery. Sulphate of Copper 3% per cent., potash Washing Soda 9% per cent. Write for press and quantity required per acre. — **G. H. RICHARDS, 234, Borough High Street, London, S.E. 1.**

SANDERS, Orchid Growers, St. Albans.

NARCISSUS—Grand Primo, 150,000. Large selected bulbs for forcing, 30s. per 1,000; Flowering Bulbs, 1s. per 1,000. **VAN DER SLUIS, La Ramée, Guernsey.**

W.M. DUNCAN TUCKER & SONS, LTD., Luxurios Road, South Tottenham, N. 15. Conservatories, Winter Gardens, Vineries, Peach-houses, Portable Buildings, &c. Catalogues gratis.

J. GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wire, 201, Western, London. Telephone—201, Western.

SPRING CABBAGES—The best varieties for sowing now.

SUTTON'S HARBINGER CABBAGE

The grandest Cabbage for Spring Cutting. Per plant 1s. 6d. per 100, 1s. 6d. per 100 of Autumn Cabbages. A trial or two less than 1s. 6d. per 100, 2s. 6d. per 100, 3s. 6d. per 100. Last year the *Harbinger* proved that Sutton's Harbinger is the best. Sowing that did well in both trials (Ammersdown and Springfield). The Field, June 17, 1916. Cabbage Harbinger is a rapid variety. It sowed on 25th Jan. in 1917, and was ready for market on 10th Feb. It can be sown in any soil. Mr. A. P. Cole, the gardener, Walsley, Cheshire.

SUTTON'S APRIL CABBAGE

The most popular early Cabbage for garden use. Per packet 1s. 6d. per 100, 1s. 6d. per 100. The April Cabbage can supply all needs. It last year was a splendid variety. A plant has been produced by the same variety, and they are now coming to the market. The Rev. J. J. Briggs, May 3, 1917. The April Cabbage is a rapid variety. It sowed on 25th Jan. in 1917, and was ready for market on 10th Feb. It can be sown in any soil. Mr. H. Bayart, Froulde, Kent.

SUTTON'S FLOWER OF SPRING CABBAGE

The most reliable for the general Spring crop. Per packet 1s. 6d. per 100, 1s. 6d. per 100. Mr. J. J. Briggs, May 3, 1917. The Flower of Spring Cabbage is a rapid variety. It sowed on 25th Jan. in 1917, and was ready for market on 10th Feb. It can be sown in any soil. Mr. H. Bayart, Froulde, Kent.

SUTTON & SONS, The King's Seedsmen, READING.

IT IS OF NO USE waiting until the war is over to advertise your wares. Even if you find it difficult to supply your customers, on account of shortage of staff and difficulties of transit, you should not cease to advertise. When peace is declared, there will be at any rate for a time, increased activity in every branch of industry. When that time comes, with whom will your customers deal, with the man who has not advertised for three years, and whose very name they have forgotten, or with the man who, by persistent and persistent advertising, has kept his name before the public? Merchants are short, and people whose names are out of sight are also out of mind. After the war all your competitors will be struggling to obtain the business with which everyone will then be in a better position to cope. Are you going to miss your chance?

GREENHOUSE PAINTING & GLAZING

"Agrotic" superior to White Lead Paint. "Plastino" superdurable putty. Full particulars from **W. CARLSON & SONS, Grove Works, BATTERSEA.** Agents throughout the country.

FERNS' FERNS

Tree Ferns, Climbing Ferns, Becket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogues free. **J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

FOR SALE, Aropa Belladonna Seed. Bulbs, delivery end of July and onwards; 11s. per 100, carriage paid, cash with order. Apply, **H.M. BLAND, Blindfold, Abbey Leys.**

For Advertisement Charges see page iii.

NOW IS THE TIME TO ORDER.

KELWAY & SON, the Royal Horticulturalists, Langport, Somerset, are now looking orders for their Choice Hardy Perennial Plants to be delivered in the Autumn. Plant a Colour Border this Autumn, and you will be able to enjoy its beauty for many years without any additional expense or trouble. Send the measurements of your borders, and they will recommend a selection of flowers suitable for your district, and quote their reduced prices. *Peonies, Delphiniums, Phloxes, Galliarthos, and other beautiful flowers* included in their colour schemes, which provide blossoms from early spring to late autumn. Write now to the Retail Plant Department for Reduced Price Lists.

WATERER'S ALPINES AND HERBACEOUS PLANTS. New Catalogue now ready.

WATERER'S BRITISH GROWN BULBS. New Catalogue now ready.

WATERER'S WARGRAVE ROSES. Catalogue and Supplementary List of new and best varieties now ready.

WATERER'S RHODODENDRONS AND CHOICE SHRUBS. Catalogue free.

WATERER'S VEGETABLE SEEDS FOR PRESENT SOWING. List post free.

All or any of the above Catalogues forwarded post free on receipt of name and address.

JOHN WATERER, SONS & CRISP, LIMITED, The Nurseries, Bagshot, Surrey, and Teyford, Berks.

OUR list of Vegetable Seeds, suitable for summer sowing, is now ready, and will be sent post free on application.—**DOBIE & CO., Seedsmen to the King, Edinburgh.**

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also Dickson's Improved Mushroom Spawn. Free circulars free on application to **DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.**

BARR'S Autumn and Winter-flowering Bulbs, including Crocus, species, Colchicums, Anemones, Hardy Cyclamen, Fritsias, Lachenaltes, Hyacinths, &c., for early planting. List on application. **BARR & SONS, King St., Covent Garden, London, W.C. 2.**

PRIMULAS' PRIMULAS' PRIMULAS'

4th Year of Distribution. Our well-known Magnificent Strain Cinerarias, Anemones, Gladioluses, &c., 2s. per doz.; 12s. per 100; carriage paid. **JOHN STEVENS & SONS, Nurseries, Coventry.**

100,000 LARGE GARDEN FERNS.

20s. 100; Palms, Begonias, Orotans, Dracenas, Mosses, Ferns, Gloriosa, Lilies, Hydrangeas, &c., catalogues free. **J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.**

WALL-FLOWERS Strong, transplanted. Anemone, Ruby King, Covent Garden, Golden King, Clarendon Beauty, &c., 6s. per 100, free, any address.—**MORLE & CO., 150 Dno, Finchley Road, N.W.**

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORETTES, AND SEED-BUSINESSES to be Let or Sold. Published by MESSRS. PROTHEROE & MORRIS every month. Copies may be obtained post free on application. Estate Offices, 67 and 68, Cheapside, London, E.C.

MIDDLESEX.—Within easy reach of a market, 1,200 feet of Glass, Frames, and Lights, to be Let or Sold, with or without stock. The healthiest of disposal. Particulars of PROTHEROE & MORRIS, 67 and 68, Cheapside, London.

BUCKS.—MODERN NURSERY, 4 acres, mostly 1 acre Glass, for Sale. Unimproved possession; splendid opening; suit. amateur.—Particulars of PROTHEROE & MORRIS, 67 and 68, Cheapside, London, E.C. 2.

WELL-KNOWN firm Carnation Growers desire to dispose of Freehold Nursery (about 4 acres), under 25 miles London, as going concern. Fully equipped, 10 glasshouses (4,200 ft. run), average width 25 ft., 2 good cottages, large stock plants, owners on military service; bargain for practical man, large market or private connection. Inclusive price £3,500. Particulars, genuine inquiries only. CHURCH & CO., 159, Victoria Street, S.W. 1.

FOR SALE, FREEHOLD MARKET NURSERY, Essex. 15 acres land, 50-roomed hanger, 2 houses (110 x 150, 2 houses 50 x 120), all heated, parking shed, &c.; all in good condition. Price £275. bargain, 100-110th year for selling, S. J., Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

BUSINESS TO LET.

TO LET at Michaelmas, Nursery and Market Gardens, situate in flourishing town in Kent;—splendid position; 7 greenhouses, hot-water boilers, necessary sheds, excellent water supply, well drained; area over 4,200 square yards. Also House and Shop in centre of town, rent 47s. Apply, J. W. & A. NEWCOMBE, House Agents, Market Harborough.

EXHIBITION.

COX GREEN SHOW. THE LEADING SHOW OF THE DISTRICT. (One Mile from Maidenhead Station.) THURSDAY, AUGUST 16. SPECIAL VEGETABLE CLASS. PRIZES: £4, £2 10s., £1 10s. Other classes for Cut Flowers, Fruit and Vegetables, including STAFFORD'S Special. Entries until Tuesday, Aug. 14 (10.30 a.m. post). Schedules of the Hon. Sec., T. BEDFORD, COX GREEN, MAIDENHEAD.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, all plants suitable for stock; cash or exchange. See other advertisements, catalogues free. SMITH, London Fern Nursery, Longborough Junction, London, S.W.

WANTED, GERANIUMS.—Cuttings of Paul Crampel and Jacoba, Calceolarias (yellow and brown). Offers invited.—MICHE & CO., Nurseries, Ash Wick.

WANTED, choice Fruit, Flowers, and Vegetables; best market prices accepted; boxes, &c., sent. Supplies stock from Gardens required. MORRIS & CO., 150-156, Finchley Road, N.W. 5.

WANTED, APPLES and PEARS.—Please mention varieties and price on rail.—C. W. O'GARRE, Rhubina Nurseries, Whitechurch, Cardiff.

MISCELLANEOUS.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipcord Twines; wears like leather, showproof; 7 yards for 17s. 6d. Patterns free. BRADFORD WOOLLEN CO., 71, Bradford.

WASP NETTING.

B. EDDY & SONS, Torleven Works, Porthleven, Cornwall. Special No. 4 WASP NETTING. Extra strong and durable.

24 inches wide	16 per yard run.
72 "	" "
100 "	23 "
120 "	" "

10 to 20 yard lengths. Any length supplied. Also, HEXAGON WASP NETTING.

24 inches wide	8d. per yard run.
36 "	1 "
72 "	2 "

Supplied by return, by post or passenger train, carriage paid.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

PRIVATE.

WANTED, good all-round HEAD GARDENER, intelligible, understanding Glasshouses, Pines, Melons, Vines, &c., with knowledge of outdoor work, cottage, state wages. Also wanted, a **SECOND GARDENER,** to assist Head in Glasshouses and out-of-doors, intelligible. Garden cottage provided. State wages.—A. ALD, Esq., Bulford House, Outoumpton, Devon.

HEAD GARDENER wanted for Assort. wages, 40s. weekly, with home and milk. State age, family, capabilities, and if any knowledge of stock. Write, T. R. F., c/o Streets, 30, Cornhill, E.C. 3.

WANTED, married WORKING HEAD GARDENER for Sussex, with experience of all the plants, wife to undertake in winter, cottage, coal, good wages; must have long references. **MEEKS,** 34, Kensington Square.

REQUIRED, GARDENER (HEAD WORKING), one who takes a keen interest, is competent in all branches, and reliable, intelligible; others kept, good cottage. Address: **MRS. F. COLEBORNE,** Nonsuch Park, Chess, Surrey.

WANTED, HEAD WORKING GARDENER, thoroughly experienced at inside and outside work, good wages and cottage. State full particulars, age, &c. H. S., Box 26, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, HEAD WORKING GARDENER, 5 men left, must have good knowledge, inside and out, Vines, &c.; single preferred. **MRS. TYNDALE,** Mowdown, Cuckfield.

WANTED, good SINGLE HANDED GARDENER, (with help man left), thoroughly experienced and good references; suit age, married. Write full particulars, **WHEATON,** The Grange, Dunm, Middlesex.

WANTED, at once, capable SINGLE HANDED GARDENER (boy left). Apply by letter to C. H. CAYE, Esq., Redway Hill House, Moulton, near Bristol.

WANTED, GARDENER (SINGLE HANDED) some Glass, &c., & 30/- small cottage and garden free. Apply, T. H. RESS, Waltham, near Coventry.

WANTED, GARDENER (SINGLE HANDED), Vegetables, Book-keeping, Borders, Lawns, no Glass. "Woollands," Sandhurst at Red, Sandhurst.

WANTED, GARDENER (good SINGLE HANDED), good rooms on premises for man and wife, with garden. Apply, Mrs. G., wages, &c. C. GANBLE, Woodside Park, Surrey.

WANTED, SINGLE HANDED GARDENER and BANDY MAN, no cottage, wages 5/- and cottage. Apply, starting age, experience, with recent testimonials. **BIRKENSHAM,** Roswell, Dorset.

WANTED, WORKING GARDENER, Greenhouse and small Kitchen Garden, good cottage, 10/- and wages, 24s. 24s., must have good personal references. Apply by letter, A. WORDSWORTH, 19, Abington Road, Stroudham Park.

GARDENERS wanted for the country; all started two years (Highfield), 50/- good cottage, 2/- and 1/- under kept, understand electric plant. **Herts (Boxmoor), 27s** week and cottage, help given. (King's Langley) good cottage; (Roxton) 7s. week and unmarried cottage, Kent (Beckenham) 2s. and a cottage and vegetables. (Petersham) 2s. week and excellent cottage, present one 3s. years (from us); boy kept, about 4 acres. **Midkess (Dunm), 50/-** and cottage, understand poultry. Surrey (Westbury) 30/-, cottage and light, 2 men under, Wilts (Salisbury), cottage, coal, and vegetable provided.—**MRS. HUNT, LTD.,** 26, High Street, Mayleigh, W. 1.

GARDENER (WORKING) wanted, Men (intelligible) or Woman, at Maidenhead, wages 25/- and lodging, coals and light, some knowledge of Hot-house work and general routine essential.—Apply by letter, **GARDENER, 31, Mansel Street, London, E. 1.**

GARDENER required to take charge of house and Garden at East Sheen, comfortable accommodation for married man. Apply, stating experience and wages required, to **OSBORN & MERCER, 25th, Albemarle Street, Piccadilly, London, W.**

WANTED, an experienced GARDENER, to take charge under the Head Gardener (temporarily absent). Peaches, Vegetables, Orchids, &c., wages £5 per week. Other particulars on application to E. KENTON, The Gardens, Bridge Hall, Bury, Lancashire.

WANTED, GARDENER (intelligible), to work under Head Gardener, where others kept, good wages and cottage; permanent place if satisfactory. Write, stating wages, with full particulars and references, to **HEAD GARDENER, Bunce Court, Faverham, Kent.**

WANTED, a thorough good MAN for Kitchen Garden, with some knowledge of general Plants, over military age; good wages paid to a suitable man.—Write, F. W. T., Stanley's Library, 56, Stamford Hill, London, N. 16.

WANTED, experienced MAN for Pleasure Grounds; willing to help in Kitchen Garden, wages 30s per week and cottage. Apply, with full particulars, to **W. CROOM, The Gardens, Upper Garton Park, Mertham, Surrey.**

WANTED, MAN for Inside work. State how long in previous places and wages required. **T. P. CARR, Redemond Gardens, Englefield Green, Surrey.**

WANTED, SECOND GARDENER; capable of taking charge of staff (3 men and a boy) and when Head Gardener is absent; ordinary table Vegetables, best growing a specialty; no fancy Flowers, Grapes, or Melons, but little Glass; isolated country place, 5 miles from Dorking; wages 52s. 6d. a week commencing in March (with bottom cottage, garden, ground, pigsty, no extra, if married, preferred, but single would be considered; intelligible for service; returned wounded soldier would be eligible if able to fulfil the duties as stated above.—Address replies to **MR. H., Gardeners' Cottage, Leylands, Wotton, Dorking.**

WANTED, on or after August 10, an experienced **SECOND GARDENER** for Glass, &c.; reported of over military age, wages 52s. a week and comfortable Betty Apple, starting age, and all particulars to **MR. BELLEGGIE, c/o Hon. Mrs. R. A. Smith, 40, Kings, Hertford, Herts.**

WANTED, SECOND GARDENER; married, 40s. wages, soldier or intelligible; must be a professional, 30s. and cottage. Write to **M. A., Box 24, 41, Wellington Street, Covent Garden, London, W.C. 2.**

WANTED, UNDER GARDENER; cottage given.—Write, stating wages and full particulars, **LADY McMAHON, Southham House, Devizes.**

WANTED, UNDER GARDENER, used to Greenhouse and Stone Plants; single and intelligible. Apply, **MRS. WAKEMAN NEWPORT, Sandbourne, Deal.**

WANTED, UNDER GARDENER for (outdoor), duty alternate Sundays, pumping in House, wages 25s per week, good cottage and garden, milk. Apply, starting age, particulars, to **ALFRED CHILDE, Crossley House Gardens, Daventry, Northants.**

WANTED, FOREMAN, for the Houses; ex-Serviceman or intelligible; one with experience of growing good Fruit, Flowers, and Vegetables under Glass, a good florist; wages according to experience and ability. Bothy, &c. Apply, giving full particulars, to **GARDENER, Park Place, Holey-on-Thames.**

WANTED, INSIDE FOREMAN; intelligible, 39s per week, Betty, vegetables, attendance, &c. State experience, full particulars, to **T. B. BURBIDGE, Goldings, Hertford, Herts.**

WANTED, two FEMALE GARDENERS (Greenhouse, Rock Garden, and Borders) and a man, with attendance, milk, and vegetables.—Wages and experience to **W. J. FOWELL, The Gardens, Putteridge Park, Luton.**

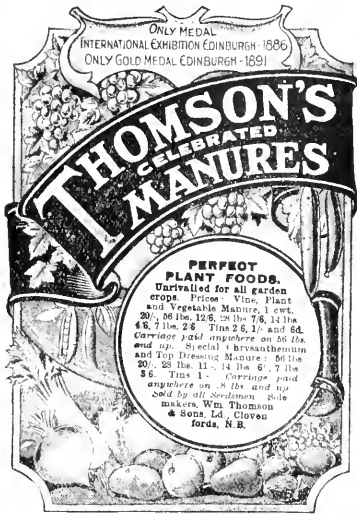
WANTED, Two YOUNG WOMEN for the Pleasure Grounds and Garden; 7 kept; sisters or friends preferred; furnished house, coal, milk, and vegetables.—Write, stating wages required, to **H. GRANHAM, The Gardens, Harwood Hall, Uppingham, Essex.**

CAPABLE LADY GARDENER required; Garden of about 2 acres; little assistance given.—**MRS. KING, Park View, Sundridge Avenue, Bromley, Kent.**

WANTED, smart YOUNG LADY for House Decoration and Conservatory work; experience necessary.—Apply, **GARDENER, Kidbrooke Park, Forest Row, Sussex.**

WANTED, strong YOUTH for the Houses; wages to commence 17s, 6d., &c.; Sunday duty paid; 1 o'clock Saturdays.—**J. HOWARD, Benham Valence Gardens, Newbury, Berks.**

WANTED, strong YOUTH for the Houses, wages 18s per week, Betty and vegetables, duty and overtime paid.—Particulars to **W. PHILLIPS, Bodorgan Gardens, Angelsey.**



"SANITAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.
 6d & 1/- Tins & 15/- per Cwt. (L.O.R., London) of all Chemists, Stores and Nurserymen.
THE "SANITAS" CO., Ltd.
 Limehouse, London, E.
 Awarded Medal at Royal Horticultural Exhibition, 1911.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE and GREENHOUSE PLANTS of ALL KINDS.
 Kindly send for Catalogue.
JAMES CYPHER & SONS,
 Exotic Nurseries, CHELTENHAM.

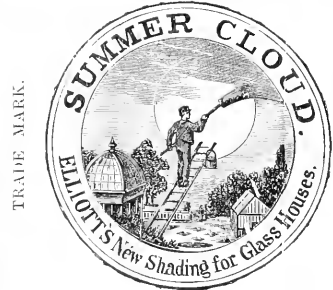


LAXTON'S STRAWBERRIES,
 including the grand new var. :-
 Laxtonian (fine Main Crop),
 Pots, 30 - 100; open, 20 - 100,
 King George.
 20/- pots; 6/- open.
 Royal Sovereign & Standard Sorts,
 20/- pots; 6/- open.
LAXTON BROS., BEDFORD.

IMPORTANT: Please write for a Catalogue, as the Paper Commission only allow us to send to those who apply.
LAXTON BROTHERS, BEDFORD.

Established 1860.
JOSEPH BECKETT, LTD.,
 Fruit Brokers and
 Commission Agents,
CENTRAL AVENUE, COVENT GARDEN.

Warehouses: 7, Garrick Street, W.C.
 Consignments of Choice Hot House and Orchard Fruits Solicited.
Tomatoes and Cucumbers a Speciality.
 Best Prices and Quick Returns Guaranteed.
References Supplied on Application.
EMPTIES and LABELS SUPPLIED.



TRADE MARK.

Registered No. 14629.

**AND FOR ALL
 GLASS STRUCTURES
 THAT REQUIRE
 OUTSIDE SHADING.**

The only Genuine, Original, and Improved Article. It has been in general use for **OVER 35 YEARS.**

**BE SURE TO ASK FOR
 SUMMER CLOUD
 AND SEE THAT YOU GET IT!**

Sold by all Dealers in Horticultural Sundries throughout the Kingdom. In packets containing 8 ozs., for 100 feet of glass, **1s.;** 24 ozs., **2s. 6d.;** and in bags of 7 lbs., **10s. 6d.;** 14 lbs., **20s.**

CORRY & CO., Ltd.,
 Bedford Chambers, Covent Garden, LONDON, W.C.



Sample CRET Pot FREE with Booklet will convince you that the Drainage, Porosity, Healthfulness of CRETS would help your plants. Write: **PETER BAILEY & SONS, Ltd.** 2 Heaton Mersey Pottery, near MANCHESTER.

Ammanford and Pontyberem Collieries.
 SOLE AGENT:
T. T. PASCOE,
 York Chambers,
SWANSEA.
 Telephone 1048 Central
 Telegrams Pascoe, Swansea.
Best Anthracite Large Coal for Horticultural purposes and Cobbles for House Furnaces.
Quick Despatch. Best Quality.
Lowest Prices.

THE Gardeners' Chronicle

No. 1597.—SATURDAY, AUGUST 4, 1917.

CONTENTS.

Table listing various garden-related items and their page numbers, including bottles for preserving fruit, orchid notes, and remarks on garden conditions.

ILLUSTRATIONS.

Table listing illustrations such as grapes, raspberries, and plum varieties with their respective page numbers.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See also Tables in Gardeners' Chronicle for July 26.)

1. SCOTLAND, N.

ROSS SHIRE.—Owing to the coldness of the year, Pears and Plums have failed with us this year. Small fruits are fairly good. The soil here is cold and damp.

2. SCOTLAND, E.

SETHLERSHIRE.—Apples, Pears, Plums and Cherries are almost total failures. Raspberries, Black Currants, and Gooseberries are only much below average.

3. SCOTLAND, E.

ABERDEENSHIRE.—Strawberries and small fruits have been satisfactory, but later than usual. Fruit trees in general are poor, last autumn being so wet the fruit buds failed to mature properly.

4. SCOTLAND, E.

BERWICKSHIRE.—The fruit in this district is very good on the whole, although Plums are scarce in some places.

5. SCOTLAND, E.

Apples in this district are good. Pears and Plums average. Cherries, Peaches, and Apricots are bad. Strawberries, Red and Black Currants were plentiful and of good quality.

6. SCOTLAND, E.

EAST LOTHIAN.—Fruit crops, with the exception of Currants, Gooseberries, Raspberries and Peaches, are very disappointing. Strawberries looked well, but the long drought rendered them almost worthless on light soil.

7. SCOTLAND, E.

FIFE.—Pears, Plums, and Cherries never looked better when in bloom, but were destroyed by cold, frosty nights. Apples on some trees are in abundance; on others there is none.

KINCARDINESHIRE.—The fruit crops, except Plums, are looking very promising. The soil here retains moisture for a long period, being rather firm, but does not crack.

LINLITHGOWSHIRE.—The fruit crop in this district is fairly good. Trees and bushes are in a healthy condition.

MIDLOTHIAN.—The wet and sunless autumn and cold winter continued into April, when the most severe frost was experienced, causing fruit blossom to be unusually late in opening.

8. SCOTLAND, W.

ARGYLSHIRE.—Apples and Pears bore a profusion of blossom, but inclement weather prevented good sets. Black Currant Boscop Giant had a splendid show of blossom.

The fruit crops in this district are less than usual this season, but of good quality. When the Apples were in full bloom we experienced a spell of cold, frosty nights; this occurrence greatly depleted the blossom.

ARGYLSHIRE.—The fruit crops, with the exception of Raspberries and Strawberries, are very satisfactory but two-thirds of the Raspberry canes were killed by severe frosts in January and February.

Apples and Pears blossomed well but caterpillars destroyed most of the bloom. Small fruits were late.

STIRLINGSHIRE.—Owing to the lateness of the spring, fruit trees did not come into bloom quite so early as usual, and thus they escaped injury from frost.

WILTSHIRE.—Strawberries promised well early in the year, but drought checked the swelling of the fruit, which was small.

9. ENGLAND, S.E.

DURHAM.—All fruits are under the average excepting some of the later varieties of Apples, namely, King of the Pippins, Alfriston, Cellina, and Bismarck; these are bearing heavy crops.

NORTHUMBERLAND.—The fruit crops this year are fairly satisfactory. Some varieties of Apples are laden with fruit, while others have none.

Pears and Plums are yielding light crops. Cherries and Peaches are plentiful. Gooseberries, Black Currants, Red Currants, and Raspberries are very good.

YORKSHIRE.—The fruit crops, especially Strawberries, suffered from drought on this light soil. Trees and bushes show remarkably clean growth.

All bush fruits are good, especially Gooseberries, Red Currants, and Raspberries. Strawberries yielded light crops owing to the exceptionally dry weather.

Owing to the cold spring fruit trees flowered much later than usual, but a severe frost on April 2 damaged many of the unopened flower buds of Pears, Apricots, Plums, and Peaches.

With the exception of Raspberries, Black Currants, and Gooseberries, the fruit crops are very light. There was an abundance of Apple blossom, but the very hot, dry weather at the time of setting caused it to fall.

10. ENGLAND, E.

CAMBRIDGE.—Fruit crops are good, with the exception of Strawberries. These suffered from the dry weather which set in just as the fruits began to swell.

The fruit prospects were excellent until the long spell of hot, dry weather cured many Apples, Pears, and Plums to drop. Since the rains the remainder have swelled rapidly.

11. ENGLAND, S.E.

ESSEX.—Apples in this district are a surprise. There was every prospect of a very heavy crop, but owing to the hot, dry weather, in some places they have not come up to expectations.

Our Apple crop is quite a failure; with the exception of two or three trees carrying very moderate crops, not an Apple can be seen. I am at a loss to account for this.

was very much under average, and there was every reason to anticipate a record crop this year. Caterpillars have been a plague, and may have had something to do with the failure. Plums, Peaches, and Nectarines are also very scarce. Strawberries of the later varieties have done much better than at one time I thought they would, but Royal Sovereign ripened before the fruits were properly developed, and lacked flavour. Currants of all kinds, and Gooseberries, have yielded heavy crops. The soil is a stiff, yellow clay. *Arthur Bullock, Copped Hall Gardens, Epping.*

— The fruit blossom here was abundant, but much fruit has dropped. The trees have been remarkably free from aphids, but caterpillars have

but did not set, the damage to the essential parts of the flowers being very apparent. *E. C. Norris, Elsham Hall Gardens, Elsham.*

— The fruit is not equal to the average. The dry weather of May and June caused the Apples to drop, and orchard trees are carrying very little fruit. Peaches and Nectarines set well, and are carrying full crops. The same is true of bush fruits, but Plums are scarce; while one tree may be loaded the next dozen bear hardly any fruit. *F. J. Foster, Grimsthorpe Castle Gardens, Bourne.*

— We have very light crops of Apples, Pears, and Plums. Some varieties have not a single fruit. Dessert Cherries are good. Apricots are bearing a good crop. We have a quantity of

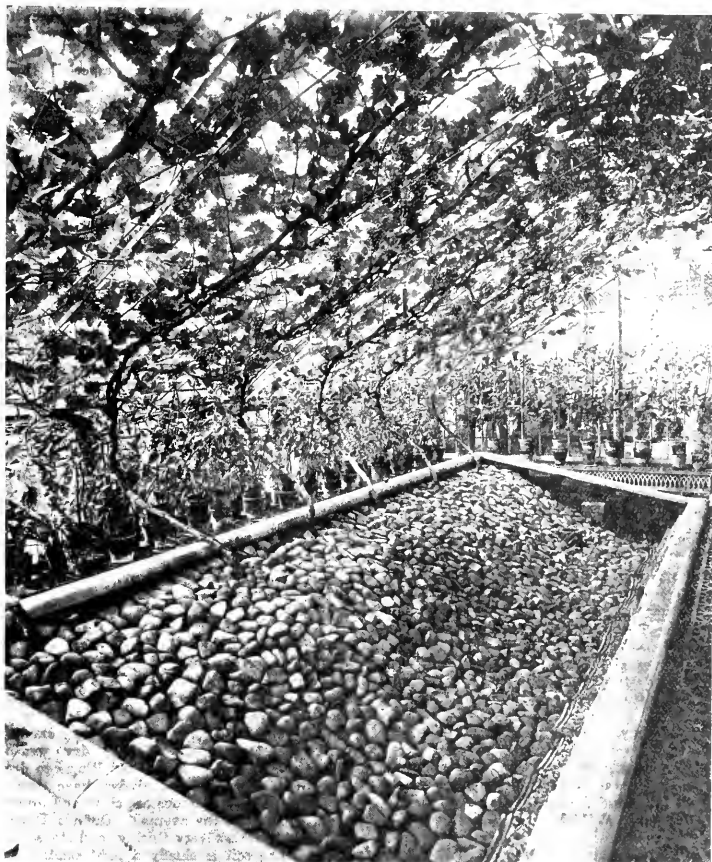


FIG. 16 - A RENOVATED VINE BORDER

been rather abundant. The soil generally is heavy. *C. Wakely, County Gardens, Chelmsford.*

HUNTINGDONSHIRE. — Apples and Pears are carrying heavy crops of clean, even fruits. Plums and Cherries are a fair average, and the trees are free from aphids. Raspberries and Currants are heavily cropped, but Strawberries have been a comparative failure owing to the hot, dry spell in April and May, which also caused a bad attack of red spider on Gooseberries. The Fen soil is peaty, over clay, the high land a stiff loam generally, with a clay subsoil. *I. F. Coombe, Ramsey Abbey Gardens, Ramsey.*

LINCOLNSHIRE. — The fruit crops generally are a good average. The show of fruit blossom was the best for some years, but the 25th of frost registered on April 15 damaged a portion of the blossom prior to opening. The flowers opened,

Gooseberries and Currants, there are some Red Currant trees here over 60 years old looking the picture of health, and carrying a heavy crop of fruit. *Thomas Cox, Brandon Hall Gardens, Lincoln.*

NORFOLK. — Plums and Apricots flowered well but set very few fruits. Black Currants, Raspberries, and Gooseberries are all carrying excellent crops. Insects have not been so troublesome as in past years. Ours is a light, sandy soil, with a gravelly subsoil. *Isaiah Johnson, Cutton House Gardens, Norwich.*

SUFFOLK. The present is a good fruit year all round. No crop is a complete failure. *E. G. Clark, Holt Inst., West Suffolk C.C., Shire Hall, Bury St. Edmunds.*

(To be continued.)

ORCHID NOTES AND CLEANINGS.

NEW HYBRIDS.

ODONTOGLOSSUM CORINNA. — A fine inflorescence of a stately hybrid raised between *Odm. Rolfeae* (*Harryannum* × *Pascuatori*) and *Odm. tigrinum* (*Harryannum* × *Pascuatori*) is sent by Mr. F. C. Puddle, gardener to W. H. St. Quintin, Esq., Scampston Hall, Rillington, York. The flowers, which naturally have *Odm. Harryannum* as the chief feature, are three inches across, all the segments being broad and of fine substance. The sepals and petals are pale yellow, the inner three-fourths having broad, irregular bands of chestnut-red, with a violet shade at the bases of the petals. The lip, which is one inch broad, has a very complicated yellow and purple crest. The basal half is rose-purple, the front yellowish-cream colour.

CATLEYA EGERIDES. — This is an attractive flower of medium size in its class. It is from a cross between *Cattleya Walkeriana* and *C. Downiana aurea*, and is sent by Mr. Puddle. In colour it is nearest to *C. Walkeriana*, showing little influence of the other parent except in the form and undulation of the petals and lip. The sepals and petals are of a light rosy-lilac colour, the front of the lip being rose purple, with thin, white veining at the base.

METHOD OF RENOVATING A VINE BORDER.

The illustration in fig. 16 shows the method of renovating a vine border adopted in the gardens at Heaton Grove, Bury, Lancashire, the residence of James Byrom, Esq. Previous to the alteration, the roots of the vines are said to have been in a very unsatisfactory condition, with the result that many of the bunches were affected with shanking in the berries. The vines are twenty years old, and were originally planted in a border 5 feet 6 inches deep and 3 feet wide. In order to restore them to a satisfactory condition of health, the old soil was removed in a sloping direction—as shown in the illustration—the roots lifted, laid on the slope of the border with old soil beneath them, and covered with a layer one and a half inch deep of fresh loam mixed with bone meal. The fresh soil was finally covered with stones. The stones, obtained from a gravel pit, were rather larger in size than cricket balls, and they serve to keep the roots moist without resorting to frequent waterings.

When the fruits were set this season, the vines were fed with liquid manure from the farmyard and a small amount of artificial manure, which was scattered on the stones once a week. It is claimed that the advantages derived by this novel method of renovating the border are: (1) Saving of labour in watering, (2) the small quantity of fresh soil needed to cover the roots until the vines have made another year's growth (3) the encouragement of surface rooting, (4) the use of only a small amount of stimulant which is directly absorbed by the new roots. Each season an addition of one and a half inch of fresh soil will be added, and the stones replaced in position. It is calculated that it will, with this small addition of soil annually, take at least sixteen years before the border is restored to its former level. Mr. Richard Kidd, the gardener at Heaton Grove, states that the strength of the new growth is double that of last year, whilst the leaves and fruit are as satisfactory as could be desired, there being not one shanked berry.

SWEET LAVENDER. — Lord Arthur Hill is collecting Lavender from country gardens to be sold in various towns in aid of the Y.M.C.A. Auxiliary Maintenance Fund for Huts and Miss Lena Ashwell's "Concerts at the Frank." The receiving office is at 101, New Bond Street, London, W., and any quantity is most gratefully received and acknowledged.

PRUNUS PSEUDO-CERASUS, LINDL.

In his valuable book, *The Trees and Shrubs Hardy in the British Isles*, Mr. Bean remarks, referring to *Prunus Pseudo-cerasus*, that "The typical form of this Cherry, first described in 1826 by Lindley, in Vol. VI. of the Transactions of the Horticultural Society, is probably not now in cultivation." It may, therefore, be of interest to point out that there is a fine tree in the Cambridge Botanic Garden, first confirmed as correct by the late Mr. G. Nicholson, Curator at Kew, some years ago. It measures 14½ ft. high and 14½ ft. through. In a manner not easily understood by the very slight degree of similarity between them, various double forms of *P. serrulata* have been referred to this very distinct *P. Pseudo-cerasus*, and as the error is not infrequent I think it important to point out some special characteristics of the latter, Lindley's original specimen, which I have carefully observed, is in the Cambridge Herbarium. The accompanying illustration of living flowers (fig. 17) is from a photograph taken on February 15, 1916, and the tree had already been in flower at least a week, while *P. serrulata*, in its various forms, flowers in April and May. Under this last mentioned species Mr. Bean remarks that *P. Pseudo-cerasus* is always to be recognised in any of its forms by the hairy leaves and flower stalks. Such, indeed, is the case, and I have picked up dead leaves of both species from beneath the trees which, until dry, could easily be distinguished by touch in the dark, and I think also it might be added by noting the different outline, *P. serrulata* being the narrower of the two and having a long acumen. Flowering, as it often does early in February, *P. Pseudo-cerasus* is unfortunate, as the flowers here are more often than not disfigured by frost. This year, temperatures down to 10.5° Fahr. in February killed practically all the flower-buds, so that there were only a few not quite normal flowers, but the shoot-buds were quite uninjured, and indeed temperatures down to zero in years past could have done much harm to the tree. It may be regarded as perfectly hardy, and the young leaves which come out later than the flowers have never shown evidence of injury. The trees are sometimes beautiful for a time when the weather is mild. It has the peculiarity of being in green leaf mood later in the year than *P. serrulata*, so that the trees are very conspicuously different in autumn. On November 8 the leaves were green, with no sign of turning yellow, while those of *P. serrulata* were yellow and falling. At this date they were glabrous below except for the midrib and veins, but with a distinctly velvety upper surface, due to very short hairs, not easily seen without a glass, but easily felt. In outline the leaf-blades are broadly ovate or obovate, rather abruptly acuminate, and doubly and rather irregularly serrate (see fig. 15). The leaf-stalk is distinctly hairy and about half an inch in length. In contrast with this the leaf-stalk of *P. serrulata*, as I have found it in several of the doubles, is an inch or even 1½ inch long. The leaf-blades of *P. serrulata* on the date above-mentioned were perfectly glabrous on both surfaces. In outline they are ovate, with a long graduated point regularly and not doubly serrate, the serrations fine pointed.

The inflorescences, which usually occur in clusters of eight to twelve, as shown by the illustration (fig. 17), consist of a short raceme or corymb of from five to eight flowers. The bracts are small and jagged, those of the upper flowers minute and still jagged, in neither case clearly glandular. The stalks and calvies are dark reddish red, the stalks are hairy, and the calyx tube appears to be glandular. The corolla is ¾ inch across, the petals are ¾ inch or a little less in length, and a ¼ inch

or a little more in breadth, notched in a way that suggests a W at the top, or it may be said that it is notched with a tooth in the middle. There may be more than one tooth, but there is always at least one. The stigma for want of a better word, may perhaps be termed calyciform; it is not solid and capitate, but forms a little irregular cup, with thin, spreading sides.

Lindley's type specimens of both *P. Pseudo-cerasus* (nos. 19 and *P. serrulata* no. 21) are in the Cambridge Herbarium; but, unfortunately, that of the latter is without flowers. The photographs from which these

are glandular, while in the former it is hardly certain in any case of a gland can be found; in *Pseudo-cerasus* the feather veins are ⅜ inch apart, while in *P. serrulata* they are not more than 3-16 inch apart; in *Pseudo-cerasus* the leaves are not glaucous below, while in *P. serrulata* they may be so described; in *Pseudo-cerasus* the serration is clearly double and slightly coarse, while in *P. serrulata* the serration is much finer and not double. Less conspicuously, but quite clearly, it is evident that the petioles of *P. Pseudo-cerasus* are finely hairy, while those of *P. serrulata* are glabrous. The hairiness of the leaf of *P. Pseudo-cerasus* is not so



FIG. 17. PRUNUS PSEUDO-CERASUS, LINDL.

flowers have been prepared I have been kindly allowed to take for the *Gardener's Chronicle* by Professor A. C. Seward, Master of Downing College. These specimens are on separate sheets, and Lindley, no doubt, regarded them as quite distinct. According to Nicholson, it is Professor Maximowicz who must have the credit of uniting them; but, as Nicholson remarks, Maximowicz had not seen the specimens. These type specimens differ conspicuously in the following particulars. In *P. Pseudo-cerasus* the petioles are about ¼ inch long or sixteenth less or a sixteenth more, while in *P. serrulata* they are from ¾ inch to an inch long, and in this they

coincide; evidently, I think, because the hairs collapse when dry. In the fresh leaf the degree of hairiness appears to vary.

In the autumn I picked up leaves from the ground very evidently hairy, both to sight and touch, which, on becoming dry indoors, seemed to lose almost all evidence of being hairy. Referring again to the type specimens, it may be of interest to remark that while the leaves of *P. Pseudo-cerasus* tend to breadth above the middle, the specimen of this species alone could show an ovate leaf, i.e., with greatest breadth below the middle. Variation of outline may, of course, be expected in both species. R. Irwin Lynch, Botanic Gardens, Cambridge.

TREES AND SHRUBS.

THE SANDALWOOD TREE OF JUAN FERNANDEZ.

In his interesting sketch in the *Gardeners' Chronicle* (Vol. LXI., pp. 199, 209, 220, 250, 251) of the history of this remarkable island, or, rather, group of islands, Mr. Hutchinson refers to the approaching total extinction of the endemic Sandalwood tree. When preparing the Flora of Juan Fernandez for the Botany of the *Challenger* Expedition in 1885, I had to deal with the obscure Sandalwood, of which there are many records by mariners from early in the seventeenth century onwards, and by botanists from Molina (1782) and Gay (1830). No botanical collector had seen a living example of the Sandalwood, though half petrified trunks of what was held to be Sandalwood existed in abundance in certain localities. But absolute certainty that these remains were those of a genuine Santalum was not attained before 1888, when F. Philippi received a bunch of twigs bearing leaves and very young flower-buds from a correspondent in Juan Fernandez. The material was sufficient to determine the genus, and Philippi described and figured the plant as Santalum Fernandezianum. Gay had referred it to the East Indian *S. album*, a very different species. Philippi generously sent some of his fragments to Kew, so that I was able to make comparisons with other Pacific Islands species, and it is nearly related to *S. Freycinetianum*, which inhabits the Society, Marquesas, and Hawaiian Islands. Mr. F. Johow, author of the excellent *Estudios sobre la Flora de las Islas de Juan Fernandez* (1896), spent much time in the islands, and specially searched for living evidence of the Sandalwood, and eventually saw one living tree, discovered by a resident. This tree was in a decaying condition then, and Skottsberg found only one little bunch of green on it in 1908. The existence of a genuine Santalum in Juan Fernandez is a highly interesting fact in plant geography, because no species is known to inhabit the American continent, and the nearest Pacific Island station for the genus is the Marquesas group, about 3,500 miles distant. Santalum ranges from Australia through Malaya to India, and the allied *Fusanus* is apparently restricted to Australasia. *W. Botting Hemsley.*

FOOD PRODUCTION IN FRANCE.

MARKET-GARDENING IN THE PARIS SUBURBS.

AN interesting account of the intensive cultivation carried on by market gardeners in the neighbourhood of Paris has recently been given by M. Paul Vincey, Professor of Agriculture for the Department of the Seine. How intensive is the cultivation may be judged from the fact that so many as five—or even seven—crops, successional and inter-crops, are taken from the same ground in a year. The total annual crop amounts to 20 tons, of a value of £1,000, per 2½ acres. Hence the 2,000 acres under intensive cultivation in the Department of the Seine produce annually 160,000 tons of vegetables, of the value of 20 million francs (£800,000).

Each of these highly productive market-gardens consists of an enclosed garden of about 50 rods, well provided with water laid on in pipes and delivered under pressure from a raised reservoir. The rental value is from £50 to £80 a year. The work is done by five or six persons working from twelve to fifteen hours a day, according to the season. The establishment is generally provided with a horse for the transport of vegetables to Paris and to work the water-pumping machinery; but motors are being installed generally for this latter work.

Large quantities of horse-manure are used both for fertilising purposes and also for hot-beds. Cloches are employed on a vast scale



THE KITCHEN GARDEN

By J. DUNN, Foreman, Royal Gardens, Windsor

CELERY.—The latest batch of Celery should be planted by now, and that for the autumn supply ready for earthing-up. The season has been favourable, and very little watering has been necessary. But before earthing the plants carefully examine the soil, and if it is at all dry apply a good soaking of clear, soft water, and leave the bed for at least twenty-four hours before the work of applying the soil to the stems is commenced. Trim and tie the plants carefully, removing all side-growths and small, deformed leaves. When the soil has been thoroughly broken it should be carefully placed round the plants with the hand, but never in sufficient quantities to choke the centre growth.

CUCUMBERS. Plants from which supplies are being cut should be frequently top-dressed with small quantities of light, rich soil, in order to promote healthy root action, failing which the plants would soon become infested with red spider and other pests. Keep the growths thinned and tied regularly. Stop young shoots at the first or second joint beyond the fruit, according to the space available, and only allow sufficient fire heat to promote a buoyant atmosphere during the night. Sprinkle the foliage twice daily when the weather is favourable, and close the structure before the day is too far advanced.

TOMATOES. Plants which are producing ripe fruits must be given a top dressing of rich loam and bone dust, and when necessary be given water, let this be afforded in sufficient quantity to reach the extremities of the roots, but the soil must never be allowed to become sour and stagnant through applying water when it is not necessary. Keep the plants moderately free from side-shoots, but at this stage some growth should be allowed to remain, in order to promote root action, and as a means of keeping the fruits from splitting. Ventilate the house freely during favourable weather, and gather the fruits before they are over-ripe. Successional plants should be given plenty of air to keep them stocky. Any structure without fire heat will answer this purpose well. At this stage these plants should be confined to single stems and fully exposed to the light. A sowing should be made at once for raising plants to fruit in winter. Earlier raised seedlings should be potted into small pots as soon as they are large enough and kept quite close to the roof glass in a cool pit or house.

FRENCH BEANS.—A sowing of French Beans should be made at once on a warm south border where protection from early frosts can be easily afforded. If cold pits are available, a sowing should take place every ten days until the end of August. After that date pits with some fire-heat should be used for the purpose. When the plants are well through the surface they must be given plenty of moisture at the roots, and the lights may be allowed to remain off the pit until the nights become cold.

CARROTS.—Give special attention to the thinning of late-sown Carrots, and dust them frequently with soot. This crop will benefit by the free use of the Dutch hoe between the rows after the plants have been thinned. All Carrots which are not sufficiently advanced for thinning must be encouraged to make quick growth during the autumn.

CHICORY.—The latest batch of Chicory plants should now be ready for thinning, and this work should be accomplished before the seedlings become drawn. Allow 3 inches between the plants in the row and hoe the surface soil frequently during the autumn.

TURNIPS.—Another sowing of some hardy Turnip should be made at once to stand through the winter in the open ground. Thin them as soon as the seedlings are large enough, or these late plants will soon "draw," and dust them with wood ashes in damp weather.

W. THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbots Wood, Godalming, Surrey.

STRAWBERRY BEDS.—Plants that are already three years old may now be uprooted and destroyed, though we are still gathering a few fruits of "Givon's Late," a variety which seems to enjoy this light soil. It will be well to have a special plot for late fruiting varieties on one side or the other, so that these will not be in the way when the others are ready to be destroyed. I find the best method in dealing with old Strawberry ground is to cut the plants off a few inches under the ground with a sharp spade or mattock. It is certainly expeditious, and all the ground needs then is to have the weeds cleared away; and the Brassica section will be found to do well in such a quarter, as these like firm ground. In some heavy soils one cannot quickly prepare a plot like this. The plants have to be dug up with a fork. Clear other Strawberry beds, cut away all runners not required, and apply water when necessary. Perpetual fruiting varieties of the St. Joseph and Alpine classes should be freely supplied with liquid manure. The fruit will prove an agreeable addition to the dessert.

ESPALIER TRAINED APPLE TREES.—These should now be finally summer-pruned if it is not already done. Tie in the leading supports to the wire, and if the trees are growing on the edge of vegetable quarters they may need extra nourishment. The fruits on these trees on the upper side of the branches usually develop very high colour, being more exposed, but are easily protected from the birds in dry weather. Early varieties do well in this particular style, as does Cox's Orange Pippin. Early varieties will require netting almost at once.

BLACK CURRANTS.—When the fruit has been all gathered, any thinning of shoots that is necessary can be carried out, and any branches that have become damaged. The shoots may be thinned severely in order to keep the bushes in a good cropping condition. Young growths from the base produce the best fruits. Boskoop Giant is a rare grower, and produces fruit of the highest excellence. Lee's Prolific should be made a note of, as this is one of the best-flavoured varieties.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gattin Park, Reigate.

ONCIDIUM.—*Oncidium crispum*, *O. Forbesii*, *O. Gardneri*, and *O. Marshallianum* should be repotted when the young growths are from 2 to 5 inches long, and are just developing new roots. The flowers of these species are produced on pendulous racemes, and for that reason it is preferable to grow the plants in shallow Orchid pans without side-holes. The compost should consist of equal parts of Osunda or A.I. Fibre (cut into rather short portions), half-decayed Oak leaves, and chopped Sphagnum moss, with a suitable quantity of crushed crocks, the whole well mixed together. Place a few crocks in the bottom of the pan for drainage purposes, pot rather firmly, and leave space for a surface of Sphagnum-moss. Suspend the plants from the roof rafters of the intermediate house, or in the warmest position in the Odontoglossum house. Water should be applied sparingly until the roots have grown freely in the compost, when the amount may be slightly increased, but the soil should at no time become saturated with moisture. The warmer *Oncidium*s, such as *O. Lanceanum*, *O. luridum*, *O. Carthagenense*, may also be given fresh rooting material as they reach the proper condition. Use a compost of Osunda fibre and Sphagnum moss cut into short portions, with a liberal addition of crushed crocks. Ordinary, well-drained flower-pots are the most suitable receptacles. In repotting, arrange the compost in conical shape, well above the rim of the pot. Stand the plants near the roof-glass in the warmest house. When the roots are growing actively they should be supplied with plenty of water, and the plants sprayed frequently during bright days. During the resting

season water should be applied sparingly, but at no time should the compost be allowed to become quite dry, as the plants do not possess pseudo-bulbs. *Oncidium ampliatum* may be given fresh rooting material whenever new roots appear at the base of the young growth. This plant grows best in shallow teakwood baskets provided with plenty of drainage materials but only a thin layer of compost. The plants should be suspended from the roof rafters in a light position in the warmest house. *Oncidium macranthum* is developing its flower-spikes, and should be supplied liberally with water at the roots until the flowers are expanded. The inflorescences should be removed soon after the flowers are fully developed, as they exhaust the energies of the plant. After *Oncidium leucichilum* has passed its flowering stage it should be placed in the coolest part of the intermediate house, and be allowed very little water at the roots. Frequent overhead sprayings, however, are beneficial, as they cause the pseudo-bulbs to become plump again after the plant has blossomed. Repotting should be done soon after the new growths have started. Use a compost similar to that recommended for the other species. Place a few crocks in the bottom of the receptacle, and pot the plants in a similar manner to ordinary greenhouse plants.

FRUITS UNDER GLASS.

By JAS. HUDSON, Head Gardener at Gunnersbury House, Acton, W.

PERMANENT TREES IN UNHEATED ORCHARD HOUSES.—The season, thus far, has suited the trees in this structure perfectly. In all probability, some trees will still need to be thinned of some fruits in order to get proper size. Late Plums should be thinned without delay, using a pair of vine scissors, to remove the smaller fruits and any that are deformed, and leaving the crop as evenly distributed over the tree as possible. Some of these thinned Plums, if already fleshy, may be used for tarts or for stewing. Apprets will now be ripening, and where the fruits have a tendency to split see that no excess of water is allowed at the roots. Keep any growing tendency in young wood in check by pinching out the tips of the shoots. Peaches and Nectarines in the unheated orchard-house often give the best and finest fruits, if not overcropped. Look to these also, and remove any misplaced or mal-formed fruits. Water liberally all Plums, Peaches, and Nectarines, and use weak liquid manure with discretion in cases where the crop is heavy. If the wood growth be at all vigorous, it should be checked by pinching the points out of the shoots, unless such be required for extension. Do not let Figs in these houses make too much leaf growth, but keep the shoots pinched so that late fruits now showing may be able to develop. Keep the house well ventilated at all times, more particularly so in bright, sunny weather. Keep a constant eye on insect pests, of which red spider is generally the most troublesome. As a remedy nothing is better than the bag of soot placed in the water tank, as previously advised; it should never be disturbed when once immersed.

VINES IN POTS FOR NEXT SEASON'S FRUITING.—During August and September these trees should be ripening their growth. It is a slow process, and it is desirable to prevent the formation of sappy growth. Rather burn the roots to more air and a gradual lessening of water at the roots. If this cannot be done where they now are, remove them to a light airy house, and later on place them outside in full exposure. Do not be misled into thinking that the biggest and the brownest looking rods are always the best. The buds should be plump and the wood short jointed. Any lateral growth that may still be soft and sappy should be shortened gradually. Young stock struck this year may be grown on still for a few weeks to come if the growth is not all that one would desire.

YOUNG FIGS IN POTS.—Growers who have recently taken up the cultivation of the Fig in pots, and who have struck a fresh stock this past spring, have had a good season for securing

a satisfactory growth. The plants will, in many instances, be showing a few fruits that will prove useful during the autumn. Where such is the case, keep the tips pinched so as to assist the fruits. Also pinch once more others that are not fruiting so as to regulate the growth. Young trees, such as these, may be kept growing through August so as to obtain as good a plant as possible for next season. The system of striking a few plants every spring is to be recommended in many ways; it gives one the opportunity of casting aside an unwhitely plant if needs be, and it is a means of gradually increasing the stock of a most excellent fruit, and of affording an addition to the varieties grown in pots.

THE FLOWER GARDEN.

By W. J. GURSE, Gardener to Mrs. DEMMESTER, Keele Hall, Staffordshire

CARNATIONS.—Carnations should be layered during the next few weeks; in the meantime, prepare a light, sandy compost, or peat leaf-mould and sand in equal proportions through a fine sieve to form a rooting medium. Fork the soil lightly between the rows and place a liberal quantity of the compost around the base of each plant, and select the strongest growths for layering, and prepare them by cutting off a few of the lower leaves, and cutting through the stem in an upward direction between the third and fourth joint from the top of the layer. Press the layer into the compost with the "tongue" well open. Secure the layers in the soil with pegs made from Braeken Fern, cut a few hours before required and placed in water to prevent them shrivelling. In dry weather water the layers through a fine rose and keep the compost moist. The stems should root in six weeks from layering.

PINKS.—Young shoots of Pinks detached from the plants will root readily in shallow frames or under bell-glasses. The pipings may have the lower leaves removed, and the stem cut through below a joint, or they can be inserted with a heel. Diddle the pipings firmly in a sandy compost, 2 inches apart. Spray the cuttings through a fine rose to settle the soil, and allow the foliage to dry before closing the frame. Shade the frame during bright sunshine and give an gradually directly the plants are rooted. Propagation may also be done by division of the old clumps, retaining a few roots to each portion.

TRANSPLANTING WALLFLOWERS.—Seedling Wallflowers and other spring-flowering plants sown become drawn and weakly if allowed to remain too long in the seed beds. Plant them in an open situation, and make the soil firm. Allow a space of 2 inches between the plants and 12 inches between the rows. Pansies, Violas, and Polyanthuses need a partially shaded position. Spray the plants every evening for the first week or ten days after planting.

ANTIRRHINUM.—Seeds may be sown now to produce a few plants for early flowering next year. Sow thinly in drills 12 inches apart, and transplant the seedlings into an open border directly they are fit to handle. Plants from this sowing will not give the lengthened display of flowers as those sown early in the New Year.

HERBACEOUS PHLOX.—Give the plants sufficient clear water to wet the roots thoroughly, and apply a mulching of decayed manure. Stimulants should be given in some form with occasional doses of root water. Place a strong, neat stake to each plant, and tie in the growths with some soft material.

AUTUMN-FLOWERING GLADIOLI.—Manure water, root water, or an approved fertilizer, are all excellent stimulants for Gladioli, if not used in excess. Light top-dressings of some rich material applied at the present time will be beneficial. During dry weather clear water should be given frequently. Stir the surface soil occasionally with a small hoe or hand fork.

BUDDING ROSES.—For the budding of Roses, select plump buds from shoots that have flowered. Cut them out cleanly with about half an inch of wood to form the shield. The wood

from the back of the bud must be very carefully removed with a sharp knife. Where standards are to be dealt with, insert the bud within one or two inches of the main stock, and for dwarfs as near to the roots as possible. Make the incision in the bark 2 in. long in length, insert the bud, and bind it firmly with raffia. Several buds may be inserted on one stock, but the weaker ones should be removed at a later period. It may be necessary to slacken the raffia a little after about six weeks.

PRUNING HEDGES.—Hedges of Holly, Yew, Privet, Thorn, Hornbeam, Laurel, and Beech may receive the final trimming for the season. If the work is done at once they will make just sufficient growth to obliterate the stiff appearance of the trimming. Shears should be employed on Thorn, Hornbeam, Beech, and Privet hedges, but for Laurel, Rhododendron, and Camfers the knife or standard tree pruner is the best tool to use.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTCOTE, Eastwell Park, Kent.

ACHIMENSES.—These will now be coming into flower. Feed the plants regularly with a good plant food. Use a few small twigs or Bamboo tips to keep the plants from straggling. When in bloom, Achimenses should be removed to a cooler and drier atmosphere, and when injured to the new conditions, additional ventilation should be given. When fully grown, they must not be allowed to become dry, or the blooms will fall off. Achimenses are excellent basket plants for the conservatory. When potting them in the spring the combs are put in at regular distances through the mossed surface of the basket.

COLEUS THYRSOIDEUS.—Young plants of *Coleus thyrsoideus* in 3-inch and 5-inch pots should be transferred to their flowering pots without delay. The soil should consist of three parts turfy loam to one of leaf soil and sand. If a number of plants is grown in various sized pots, it must be remembered that those in small pots will require more water and earlier stimulants than those in large pots. When the plants are fully re-established, increase the amount of air and allow plenty of space between the plants.

ACALYPHA HISPIDA (SANDERIANA).—If young plants of *Acalypha hispida* were propagated in the spring, they will now be growing rapidly. They do well in 5 or 6 inch pots, but good specimens grown on into 7 or 8 inch pots are effective. When large plants are required, the blooms should be pinched off as soon as seen, and the plants stopped when about 3 feet high. They will then break into several growths, and the blooms depend from the head of the plant. If grown on without a check, the plants will soon reach a height of 4 or 5 feet. They should occupy a light position in the stove, and not be shaded too much. When established in their flowering pots, careful feeding must be the rule, and they must never be allowed to suffer from drought. When the blooms have developed, the plants should be kept in a somewhat drier atmosphere. Keep a sharp look out for red spider and thrips. Other *Acalyphas* which are well worth growing are *A. musaica*, *A. macrophylla*, and *A. Gussoneana*.

LILIUM.—As the plants come into bloom they should be placed in a cool, well-ventilated and shaded greenhouse or conservatory, in which the bloom will last a good time. Stake all late batches of plants, and give a final top-dressing. A number plunged in ashes under a north wall will prolong the season, and be useful in the autumn.

ZONAL PELARGONIUMS.—Where these are required for blooming in autumn and winter, they should now be stood outside in a sunny position, where they will build up firm and short-jointed growth. Keep the plants pinched out of the straggled plants to ensure a bushy habit. Pinch out all flower-spikes as soon as seen. Turn the plants occasionally, so that they do not get rooted through the bottom. Feed very moderately as soon as the pots are well filled with roots.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would advance delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the Editors. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intimation of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturalists.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 62.0.

ACTUAL TEMPERATURE.—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thurs. day*, August 2, 10 a.m., Bar, 29.1 (imp), 62.2, Weather—Dull, with rain.

The Garden Cultivation of Poor Grass Land.

The following observations bearing on the fertility of surface soil may be of interest to those who are engaged in bringing poor grass land and uncultivated land generally under garden cultivation. A field consisting mostly of Couch grass (*Trisetum repens*) was ploughed just before the great frost of last year. The turned-up sods froze into solid lumps, but when the thaw came the Couch grass was found to be undamaged. An acre strip of the field was marked out for sundry crops, including Parsnip, Beet, and Haricot Beans, and in order to prepare the land for these crops it was bastard trenched. This work was done by a group of gardeners, whose opinion differed as to the best method of procedure. Some members of the group insisted that it would be best to turn in the sods grass-side downwards; others thought that, although the labour would be greater, it would pay to first shake out the sods, and only turn in the grass after the soil about its roots had been shaken out. Accordingly, the strip, about an acre in extent, was treated, one half by the former method, the other by the latter method. The essential difference in these methods lay in this, that whereas, by shaking out, the surface soil was kept on the top, by turning in the sod it was buried.

The difference in growth of the crops on the two halves is now manifest, and very instructive. The better growth of all the crops on the shaken out half is so striking as to divide the plot into two evident halves. The superiority of the shaken out half is to be attributed to two causes. In the first place, the Couch has grown more and has given more trouble where it was simply turned in. That was to be expected; but it by no

means wholly accounts for the better growth of the shaken-out strip.

That this is so is evident from the fact that the difference was apparent from the moment that the vegetable seeds germinated and before the Couch had made any growth worth speaking of. It is apparently to be attributed to the fact that such fertility as the soil possessed was confined to the thin upper layer, and that this soil, left on the top, made a good seed-bed, whereas the soil from a few inches deeper, brought up by inverting the turves, was deficient in fertility. If this be so, it would seem that when poor grass land is to be brought under garden cultivation it is worth while first to plough (and plough early), and then to shake out the sods, to leave the grass in position, and to bastard-trench lightly and as late as possible, taking care to leave the surface soil on the top. It should be added that the crops on the shaken-out half of the strip promise to be quite good, and those on the turned-in side fairly good. Incidentally, it may be remarked that the promise of the Dutch Haricots does not appear to justify the assertion made by a correspondent in our pages that this crop only succeeds once in five years. We know that this crop was very successful last year at Wisley, and it promises distinct success this year. Why, if dwarf French Beans can be grown here the dwarf brown Haricot cannot, is by no means clear, and experience, so far as it goes, indicates that it can.

THE "GARDENERS' CHRONICLE": ALTERATION IN PRICE.—Owing to the increased cost of paper and printing, the subscription to the *Gardeners' Chronicle*, after the present issue, will be increased by one penny.

BOTTLES FOR PRESERVING FRUIT AND VEGETABLES.—The orders for glass jars for preserving fruit and vegetables already received by the Food Production Department are so numerous, and the output in the present difficult war conditions, is so much below the manufacturers' estimates, that the Food Production Department has announced that it is unable to accept further orders. Those who wish to obtain bottles should place their orders immediately with their local tradesmen, and the Department will do all in its power to obtain the necessary facilities for the manufacture of supplies to meet these orders. In accordance with an arrangement arrived at between the Food Production Department and representatives of the retail trade, the price to purchasers of 2 lb. jars obtained through ordinary trade channels should not exceed 6s. 6d. per dozen.

CROPS IN 1917.—A note sent out by the International Institute of Agriculture (June, 1917) records that the crop prospects in France, Great Britain and Italy show marked improvement upon their condition in the earlier part of the year; but that in Northern and Central Europe the drawbacks resulting from the severe winter are still seriously felt.

SWEET CHESTNUT CANKER.—A valuable paper* on the fungous parasite which causes canker in the Chestnut diagnoses it as *Endothia parasitica*. The discovery of this fungus in Japan and China affords evidence that the disease which it induces had its original home in those countries. The fungus is now widely distributed in the Eastern United

States from Maine to North Carolina, and is spreading rapidly south and west. This parasite has already destroyed most of the Chestnut trees within a radius of 100 miles of New York City. *Endothia parasitica* attacks not only species of *Castanea*, but also species of *Acer*, *Quercus* and *Rhus*, but so far any serious damage done by it has been confined to the Chestnut.

HOLDENBY GARDENS IN THE SEVENTEENTH CENTURY.—In a recent number of *Notes and Queries* an interesting account is given of a journey taken through some of the Northern and Midland Counties by Charles I. shortly before his death. The following description of the gardens of Holdenby (Holmby) House, Northamptonshire, is quoted in the article, but is, in fact, taken from a Parliamentary survey made three years after the Royal visit:—

"On the south side of the said Mansion House is a pleasant, spacious, and faire Garden, adorned with severall long Walkes, Mounts, Arbors, and seats, with curious delightful Knotts, and in which Garden are many fruite trees of divers kinds; on the south of the said Garden is a large Orchard, well planted, commonly called the Lower Orchard, set artificially in Walkes with severall Ascents, and in the said Orchard are Six fish-ponds, well stored; on the west of the aforesaid Garden, lyeth another Orchard, commonly called the Upper Orchard, planted with severall fruite trees, and in it a long shady Walke; on the north side of the said Orchard is a large Bowling Alley, and on the north and west of the said Bowling Alley are two Walkes artificially set with well grown trees, and in the north west corner of the said Walkes there is a pleasant Mount; on the west side of the aforesaid Garden and Upper Orchard, are two Spynneys, well set and grown with Ashes, and in them a variety of delightful Walkes; and on the east side of the said Spynneys, is a faire Water House, with a very large Cisterne, into which water is conveyed by severall leaden Pippis, from Sundry Heades, which serves the whole House and all the Offices therunto belonging."

VEGETATION OF KOWEIT—No. 6 of the sixth volume of the *Records of the Botanical Survey of India* is devoted to an account of *Some Plants of the Zor Hills, Koweit*, by HUMEFRY G. C. CARTER, economic botanist. The plants were collected some ten years ago by Sir PERCY COX, and identified later by Major A. T. GAGE. An annotated enumeration is now published. Koweit, or Koweit, is situated at the top of the north west coast of the Persian Gulf. We have heard something lately of the climate of Mesopotamia, where the shade temperature sometimes rises above 120° Fahr and falls as low as 14° Fahr, in winter. It is not claimed that Sir Percy's collection is fully representative of this hot region, but it is sufficient to show that the vegetation is xerophilous and scanty in character. Just 101 species of flowering plants are enumerated, and these include a Poplar, a Willow, five species of *Acacia*, and three of *Tamarind*, which, with a few low bushes, constitute the woody element of the vegetation, so far as it is illustrated by the collection. Most of the herbaceous and half-woody plants are grazed, and of *Helianthemum Lippii* it is stated that all kinds of animals feed on it. An undetermined grass, probably a species of *Avistida*, is collected in large quantities and sold as hay. A species of *Matricaria* is common everywhere, growing no more than six inches high. It is used for seasoning and eaten alone. Its principal use, however, is in the manufacture of the curious brick cheese of the Bedouins. This product is a provision for the hot weather, and is used both dry and moistened with water and pounded with dates. Several kinds of fungus are sold in the bazaars, but specimens of these were not forthcoming for identification. Sir Percy Cox, it may be added, is highly engulised for his services by Sir STANLEY MAYNE in his recently published report on the campaign in Mesopotamia.

* Bull. 389, U.S. Dept. of Agriculture. By C. I. Shee, N. E. Stevens, and E. J. Tiller.

ON INCREASED FOOD PRODUCTION.

FEEDING A NATION.

PROFESSOR D. NOEL PATON, Professor of Physiology, University of Glasgow, in a recent address on "Public Health Problems Under War and After-war Conditions," stated that the feeding of a nation should depend upon a knowledge of the dietary requirements of the population as determined by scientific observation and experiment, and that any attempt to regulate the food supply which is not directly based upon such knowledge is more likely to do harm than good. The fundamental fact is that food is the sole source of energy—the power of doing work. The food requirements of the nation is the sum of the food requirements of the constituent individuals, which varies with their ages, sex, and occupation. The energy expended by a man while at rest and while doing different amounts of work has been accurately measured, and these measurements have been checked by the examination of the diets of men under different conditions. The general result arrived at is that a man doing moderate work should take food yielding at least 5,400 energy units (calories) per day. The requirements of women and of children of different ages are estimated as definite fractions of these of a man doing moderate work. By applying the above data to the census returns for 1911, it is found that the whole population was equivalent to nearly 55 million "men," and it is thus evident that the nation required a minimum supply of 454 million million calories of energy in the food consumed in the year. This energy is yielded by the three great constituents of the food, the proteins, fats, and carbohydrates, and experience has shown that in European countries these are taken in something like the proportions: Proteins, 100 grammes; fats, 100 grammes; and carbohydrates, 500 grammes per man per day. A study of the food supply of the nation shows that in pre-war time a considerable excess was consumed. The figures are: Proteins, 117 grammes; fats, 150 grammes; carbohydrates, 571 grammes; calories, 1,000. An investigation of the diets of the labouring classes shows that the food supply was unequally distributed, and that these classes were getting on an average a little over 7,000 calories per "man" per day, indicating that waste among the more well-to-do classes must have been excessive. The foodstuffs from which these energy-yielding constituents were derived are cereals, which yielded nearly 55 per cent. of the energy; meat, about 17 per cent.; dairy produce. The prime importance of cereals, whether eaten directly by human beings as breadstuffs, or indirectly after being converted by livestock into meat and milk, is thus demonstrated. The unfortunate fact that 80 per cent. of Wheat, far and away the most important of these cereals, is imported has to be recognised. The requirements of the nation have been modified by the increase in the military and naval establishments, and by the increased call for work from the civil population. Evidence has been adduced that up to the end of 1916 the food supply remained not less than in pre-war time, and this being the case, it is found that, after making the necessary deductions for the fighting forces, an adequate allowance was still available for the civil population as a whole. But the increase in prices has somewhat accentuated the inequality of distribution. Dietary studies of the labouring classes show that, while generally the increase of income has kept pace with the increased cost of living, those whose incomes have not increased have suffered hardship. The part which the State should play in feeding a nation in war time is, first, to secure an adequate supply of food; second, to secure an equitable distribution of the supply. The prime importance of the supply of bread-

stuffs as human food dominates the situation. This supply may be maintained or increased (1) by increased importation, (2) by better milling, (3) by limiting their use as cattle food, (4) by limiting their use in brewing and distilling. Increased production at home is a policy of the future. To secure equitable distribution, various courses, separately or combined, are possible: (1) To raise wages proportionately to the rise in the price of food; (2) while doing this, in the case of the organised trades, at the same time to make provision for those whose wages are not increased by supplying bread to them at a lower price; (3) to limit the rise of prices by fixing maximum prices; (4) to limit price by decreasing con-

sumption. A consideration of these seems to point to the conclusion that the best course is to allow the natural rise of prices by which supply is stimulated and waste checked, but to make provision for the supply of breadstuffs, and possibly of other foods, at a price proportionate to their income to those whose wages have not risen proportionately to the rise in prices.

leaf, and by the poorness of its root fibre, I should think that the Carrot required plenty of water, and that perhaps I have failed in the past by neglecting to satisfy its requirements in this respect. Perhaps, however, it is flourishing because the fly has for once left it alone, J. N.

POTATO DISEASE OUTBREAKS: URGENT ADVICE.

The weather generally has been favourable to the Potato crops in most parts of England, but serious outbreaks of disease are reported from Barnstaple, in Devon, and Devizes, in Wilts. Isolated cases are also reported from Somerset, Dorset, and Cornwall. It is important that measures should be taken at once to ring fence



FIG. 11. BRUNUS PSEUDO-CERASUS, LINDL. (From the "Vegetation of Cambridge" Botany, G. S. Gardner, showing the venation and outline and serration of leaf. (See p. 45).)

such outbreak by promptly spraying crops in the surrounding districts. All crops that have not yet been sprayed should be sprayed; all crops that have been sprayed once should be sprayed again within about three weeks of the first spraying. This course is dictated alike by enlightened self interest and by patriotic feeling. The first outbreak reported this year in Pembroke-shire was checked by instant attention to the crops in adjoining districts. Cases in Somerset and Dorset are being dealt with on the same lines. Should a period of damp, warm weather set in, no doubt outbreaks will occur in other counties. There is a fairly liberal supply of hose drawn, knapsack, or hand-sprayers of one kind or another in most districts, and there is no shortage in the supply of chemicals.

A GOOD CARROT YEAR.

HAVING, hitherto consistently and conscientiously failed to grow Carrots in the light soil of my garden, and having this year met with remarkable success, I write to inquire whether this is a general experience, and if so, to what conditions it may be attributed. By the look of its

such outbreak by promptly spraying crops in the surrounding districts. All crops that have not yet been sprayed should be sprayed; all crops that have been sprayed once should be sprayed again within about three weeks of the first spraying. This course is dictated alike by enlightened self interest and by patriotic feeling. The first outbreak reported this year in Pembroke-shire was checked by instant attention to the crops in adjoining districts. Cases in Somerset and Dorset are being dealt with on the same lines. Should a period of damp, warm weather set in, no doubt outbreaks will occur in other counties. There is a fairly liberal supply of hose drawn, knapsack, or hand-sprayers of one kind or another in most districts, and there is no shortage in the supply of chemicals.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

HYBRID PRIMULA SEED.—In reply to numerous inquiries, I beg to say that the Primula seed will not be ripe for another month or so, but will be sent as soon as ready. *Herbert Morrell, Monmouth.*

THE HOUSE SPARROW.—As the house sparrow is becoming so useful in certain districts, would it be possible to send a few of the marauders to be educated? I am sure there are many farmers and gardeners that would rather see the sparrows educated in usefulness than allowed to go their way of destructiveness. Perhaps Mr. Divers and others would kindly take

insects. This season a bed of Onions was badly affected with fly. After taking out all infested plants, as I thought, something knew better, and pulled up others, even digging small holes in the soil. Every Onion pulled in this way was infested, but not a maggot could be found. I am giving the credit to the sparrows, though I did not actually see them at work. But the house-sparrow does eat the buds of Gooseberries and Currants, the growths of young Lettuces, Peas, and later he takes the Peas from the pods, all of which can be prevented with black cotton netting. *Southern Grower* complains of devastation by caterpillars, also that no sparrow eggs have been brought to him, although he offered to pay for them. If he thinks those two things out, he will probably grow a few more sparrows on his

pruning Loganberries and other fruits of a similar nature. I cannot understand why these plants should be pruned just as their fruits are developing, and should think there must be some mistake in the matter. What is the object of pruning at the end of July? *Enquirer.*

—It is usual to prune all side growths and badly placed shoots and all unnecessary wood when tying in at this season, which has the effect of exposing the fruits. There was no slip of the pen. Autumn pruning is of quite a different character. If the plants are well cared for now, it will be much easier to gather the fruits, and less pruning will be needed in winter. Moreover, more vigorous growth will be made by those shoots which are retained for fruiting next season. *W. J. Cook.*

SUMMER PRUNING.—I should like to acknowledge the assistance which I, an amateur, derive from the advice given by your experts in the "Week's Work" column, and I venture at the same time to ask for a little more. When I am directed to pinch or prune spur shoots to four or five leaves, should I count the two or three leaves which often arise very close together at the base of the current year's growth? I believe that the advice to prune to four or five leaves in July is based on the fact that if this is done only one or two axillary buds—and those towards the ends of the pruned shoots—are likely to break, and that in winter pruning these sub-laterals may be removed. If I count the two or three basal leaves the spur which is left will be so short as to make subsequent winter pruning difficult. *Enquirer.*

SUPPORTING THE SHOULDERS OF GRAPE.

Whilst paying all due reverence to Mr. Hindson (see p. 255, Vol. LXI), I may say I have used Grape props similar to that illustrated in fig. 20 for 35 years, and the improvement they encourage in bunch and berry is beyond dis-



FIG. 20.—SIMPLE PROP FOR GRAPE.

pute. If anyone could make these props of various sizes, and sell them cheaply, it would be a great boon to many gardeners. I use Ash wood, but red deal sometimes will do. *North Devon.*

SOCIETIES.**ROYAL HORTICULTURAL.**

JULY 31.—Owing, no doubt, to the near approach of the holiday season, and also as a consequence of the sudden change from tropical conditions to wet and cool weather, there was not a great display at the Drill Hall, Westminster, on the above date, nor was the attendance large on this occasion, although the Dry-bulb Show brought many traders to town.

The Floral Committee recommended one First-class Certificate, three Awards of Merit, and awarded ten Medals.

Gladioli from Messrs. KELWAY and SON nearly filled one length of tabling; there were about a hundred vases, and each vase contained three flower-spikes. At one end was grouped the *G. primulinus* hybrids, in various shades of yellow, tawny, and apricot; Wraith, Friendship, Ella Kelway, Mrs. Swainson, Golden Girl, and Mrs. Cran (tinged with pink), were a few of these charming long-stem varieties. Among larger-flowered sorts, Painted Lady, Rose of July (very rich rose and scarlet), Ormonde, and Kelway's Superb, attracted special attention. Messrs. H. J. JONES were represented by Phloxes set up in fourteen very large and bold stands, each containing one variety: Mrs. Alder, delicate pink, with a mauve-purple eye, was a new variety of outstanding merit and distinction; Widar, purplish-blue with white eye; Mrs. H. J. Jones, rose-pink, and Elizabeth Campbell, were all finely shown.

The elegant *Thalictrum ditiocarpum* was grouped very pleasingly with *Astilbes* and double *Gypsophila* by Mr. J. C. ALLGROVE, who also staged the exquisite little *Astilbe simplicifolia*, with its bronze tinted leaves and plumes of white



FIG. 19. PINUS PSEUDO-CERASUS, LINDL. TYPE-SPECIMEN IN THE CAMBRIDGE HERBARIUM. (Leaf specimen, 11/4 inches long.) (See p. 47.)

the matter in hand and form a sparrow aviary for education. *C. H. H. H.*

—As everyone seems to think Mr. Stannary is confusing the two sparrows, let me say that in speaking of the sparrow I mean the common house-sparrow, with its insouciance, and not the hedge-sparrow with its pretty and shy movements. From personal observation, I know that the sparrow will clear Roses of green fly, and I have seen them eating Plum aphid, hanging upside down like a tit. This past week, on a new plot of Potatoes, the tops could be seen moving, with an occasional glimpse of a sparrow. Clap your hands, and a dozen or more would fly out to the nearest fence, and some of them had beakfuls of the Potato Fly. I have seen them digging out the Rose maggot, also leaf-rolling caterpillars on fruit trees, and peering into trusses of bloom for other

caterpillars, and if the sparrows become too numerous, a charge of hot shot will provide him with a delicious pie, thus making "all ends meet." *C. E. Bridgell, 62, Munster Road, Tredington.*

BOTTLING ONIONS. In connection with the trial of Onions at Wisley, I understand that the plants sown in autumn showed early in the year a remarkable tendency to break into flower, but that this tendency was checked by the removal of the flower-heads as soon as they were visible. This simple method is new to me, and I refer to it because it may not be known so widely as it should be. *F. K. H. S.*

PRUNING LOGANBERRIES.—In the *Gardeners' Chronicle* for July 21, under the heading "The Hardy Fruit Garden," your contributor, Mr. Cook, refers to the present time as suitable for

flowers; and *Anemoneopsis macrophylla*. Messrs. JAS. VEITCH AND SONS' exhibit of stately double Hollyhocks proved very interesting; the spikes were finely developed, and the blooms large and round enough to please the most exacting of old florists. *Britannica*, crimson-scarlet; *Walden Yellow*; *Lady Bailey*, pink; *Exultum*, dark crimson; and *White Queen*, a new pure white, were commendable varieties. *Mary Allwood* was the most striking Carnation in a goodly group from Messrs. ALLWOOD BROS. *Azalea arborea*, shown by Messrs. J. CHEAL AND SONS, is a good late sort, with white, very fragrant, flowers; and *Robinia Kelseyi* bearing its pretty crimson haired pods, were noted in this firm's display. *Campanula Mariesii* was well shown by Messrs. J. PIPER AND SONS, and Mr. L. R. RUSSELL showed sprays of the finer Oaks and some golden Conifers.

Mr. H. J. ELWES, Colesbourne Park, brought up a number of interesting flowers, including *Campanula Vidalii*, *Hedychium coccineum*, a fine white *Crinum*, *Disa Luna* (grown out-of-doors since May), and species of *Bonarea*, *Stapelia*, *Poterium* and *Cypripedium*. A brilliant *Antirrhinum* named *Fusilier*, gorgeous in scarlet and gold, came from Messrs. DOBBIE AND Co.; it is of intermediate habit.

The Orchid Committee was not overburdened with work. It granted two Awards of Merit and two Medals.

The Fruit and Vegetable Committee had little to do beyond granting one Medal and a Cultural Commendation.

MESSRS. SPOONER AND SONS' ten dishes of Apples included good samples of *Beauty of Bath* and *Mr. Gladstone*, both early dessert varieties. Mr. ANDERSON, Wellington, New Zealand, received a Cultural Commendation for fine examples of *Sturmer Pippin* Apple.

Floral Committee.

Present: Mr. E. A. Bowles (in the chair), and Messrs. W. J. Bean, S. Morris, John Green, R. C. Notcutt, J. W. Barr, G. Reuthe, John Heal, W. P. Thomson, J. W. Moorman, C. Dixon, Jas. Hudson, Thomas Stevenson, H. J. Jones, J. W. Blakey, Arthur Turner, George Paul, Herbert Cowley, Chas. E. Pearson, C. H. Jenkins, J. F. McLeod, and C. R. Fielder.

FIRST CLASS CERTIFICATE.

Thalictrum dipterocarpum.—Although by no means a new plant, this *Thalictrum* is not a very old inhabitant of our gardens, but it has become familiar to all who have taken an interest in hardy plants during recent years. Its elegant leafage and tall, graceful, branching spikes of blue flowers are exceedingly attractive. The species was introduced to cultivation by Messrs. Jas. Veitch and Sons, through Mr. E. H. Wilson, who collected it in China; an Award of Merit was granted it in 1903. Shown by Mr. J. C. ALLGROVE.

AWARDS OF MERIT.

Gladiolus Sunspot. A charming variety, with large, slightly hooded flowers of a delicate pink shade, overlying cream, the latter colour showing as an irregular margin round the large blotch of rich chestnut-scarlet which occupies the greater part of each of the three lower segments. There were five or six expanded blooms on each spike, and a dozen or so of unopened buds; the strongest spikes had basal branches. Shown by Messrs. J. KELWAY AND SON, Langport.

Anemone vitifolia tomentos.—A fine species from China, sent home in 1909 by Mr. Purdon. It grows from 3 feet to 4 feet high, and its basal leaves are large and handsome. Half way up the stout stems there are usually three large trifoliate leaves, each lobed and serrated like a vine leaf. From this point the stem branches, and carries its flowers in large terminal clusters. The latter are very like those of *Anemone japonica*, pink, rose-coloured out side, and with a central cluster of yellow stamens. The leaves are dark green, tomentose on the under side. Shown by Mr. J. C. ALLGROVE.

Gentiana Purdonii.—This is a showy species, somewhat akin to *G. Przewalskyi*. The principal leaves are broadly linear, and from 4 to 6 inches long, and from just below the tufts of these spring the foot-long spikes. These are evidently intended to depend or lie

along the ground, where their bright blue, white-tubed flowers turn upwards. We counted fourteen flowers on one branching spike. The individual blooms are about an inch across the mouth and 2½ inches long. The mouth has five large lobes, with five alternating small lobes. Shown by Mr. J. C. ALLGROVE.

AWARDS FOR GROUPS.

Silver-gilt Banksian Medal.—To Messrs. JAS. KELWAY AND SON; for *Gladioli*.

Silver Flora Medal.—To Messrs. J. CHEAL AND SONS, for hardy shrubs and Dahlias; and to Messrs. H. J. JONES, for Phloxes.

Silver Banksian Medal.—To Messrs. ALLWOOD BROTHERS, for Carnations; to Messrs. H. B. MAY AND SONS, for Ferns; to Mr. G. REUTHE, for hardy flowers; to Mr. L. R. RUSSELL, for ornamental shrubs; and to Messrs. J. VEITCH AND SONS, for Hollyhocks.

some, large-flowered *Cattleya* of fine shape and colour. Sepals and petals salmon-pink tinged with yellow, the midribs being of a pale gold shade; lip broad, clear chrome yellow in the centre, the well-rounded front being deep magenta-crimson. The *C. Dowiana Rosita* with which, crossed with *C. Harlyana*, Messrs. Armstrong and Brown produced *C. Prince John*, is a fine character-giving feature in the new hybrid. The *C. Eldorado* in *C. indesous* imparts delicate fragrance.

Cattleya Princess Royal (*Fabou* × *Hardyana*), from Messrs. CHARLESWORTH AND Co., Baywards Heath. A richly-coloured flower equal in size to *C. Hardyana*. Sepals and petals deep rose-purple with the white ground colour showing through on the petals between the veining. The lip is rubred with gold lines from the base to the centre and with a thin lilac margin.



FIG. 21. BRUNIA SERRULATA, LINNÆ. TYPE SPECIMEN IN THE CAMBRIDGE HERBARIUM. (Original specimen from the Berlin Herbarium.)

Bronze Flora Medal.—To Mr. J. C. ALLGROVE, for hardy plants.

Bronze Banksian Medal.—To Messrs. J. PIPER AND SONS, for hardy flowers.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), and Sir Harry J. Veitch, Jas. O'Brien (hon. secretary), W. Bolton, S. W. Ploy, Fred K. Sander, Pantia Ball, Thomas Armstrong, Gurney Wilson, J. Wilson Potter, and C. J. Lucas.

AWARDS.

AWARD OF MERIT.

Cattleya Rosita *Orchidhurst variety* *Prince John* × *indesous*, from Messrs. ARMSTRONG AND BROWN, Tunbridge Wells. A very hard

GENERAL EXHIBITS.

MESSRS. ARMSTRONG AND BROWN, Orchid Lists, Tunbridge Wells, were awarded a SILVER FLORA Medal for a group, in which the best novelties were *Cattleya illustris* *Orchidhurst variety* *indesous* × *Aris*, a clear yellow flower with dark rose veining on the front of the lip; and *Odoniada Uta* (*Odin*, *Hallii* × *Oda*, *Charlesworthii*), with cream-white flowers prettily barred and blotched with plum colour. The crest is strongly indicative of *Odin*, *Hallii*, to which the whole flower inclines, to the exclusion of the dark red in *Oda*, *Charlesworthii*. *Albion*, *The Rev. W. Wilks*, with enormous Peach-blossom coloured flower, and a very dark form of *Laelo* *Cattleya* *Promax* (*elegans* × *Geo. Woodhams*), were also shown.

Messrs. CHARLESWORTH AND CO., Haywards Heath, were awarded a Silver Flora Medal for a group in which the Xanthodes forms of *O. crispum*, *O. eximium* and *O. arborescens* were effective, and the late-flowering *Miltona vexillaria rubella*, with many spikes, well shown. A fine novelty was *Laelio-Cattleya Marina* (L.-C. St. Godard x C. Hardyana), with deep rose-coloured flowers having a broad ruby purple lip with gold lines from the base. A good yellow form of L.-C. Appam, with ruby-crimson front to the lip, and L.-C. Agnes (C. Schilleriana x L.-C. callistoglossa), which in form and colour adheres closely to C. Schilleriana, were also noted.

J. ANSALDO, Esq., Rosebank, Mumbles, sent *Sophro-Laelio-Cattleya Corona* Ansaldi's variety (L. C. Rubens x S.-L. C. Dorila). With *Laelia panula* in both the parents its influence has been very strong in this neat hybrid, which in form and colour approaches that species closely, although a shade of orange underlying the surface colour in places shows traces of *Sophronitis*. The sepals and broadly ovate petals are deep rosey mauve, the lip having a ruby-purple front and yellow disc.

Mr. J. E. SHILL, The Dell Gardens, Englefield Green, showed a flower of *Cattleya illustris* var. *Savoyard* (fideusesis x *Avis*), pale canary yellow with light purple front to the lip.

Fruit and Vegetable Committee.

Present: Mr. Owen Thomas (in the chair), Rev. W. Wilks, and Messrs. W. J. Jefferies, John Harrison, E. A. Bunyard, John Basham, H. Markham, E. Harris, Jas. Gibson, J. C. Allgrove, Edwin Beckett, Jas. Vert, W. H. Myers, W. Bates, H. Somers Rivers, and A. W. Deteraf.

Groups.

Silver Banksian Medal.—To Messrs. SPOONER AND SONS, for Apples.

Cultural Commendation.—To Mr. ANDERSON, Wellington, New Zealand, for *Stimmer Pippin* Apples.

DRY BULB SHOW.

There was a good exhibition of dry, home-grown, hardy flower bulbs.

Two sets were staged in the amateurs' class for a collection of not fewer than ten varieties, five to be Daffodils. Here Mr. G. STOKES, Bentley Road, Doncaster, gained 1st prize for a capital collection which included bulbs of *Lilium candidum* and Madame de Graaff Daffodils; Miss V. WARREN, The Oaks, Westbere, Canterbury, was awarded 2nd place.

In the class for twenty varieties of Daffodils, twenty bulbs of each, Messrs. J. R. PEARSON AND SONS, Loddham, won the 1st prize with specimens of large size and weight, those of Empress, Emperor, Vega, Weardale Perfection, and Florence Pearson being especially fine. There were four entrants, and second place fell to Messrs. R. H. BATH, LTD., Wisbech, for a capital lot; Messrs. HUGG AND ROBERTSON, Dublin, were 3rd, and Mr. J. MALLENDER, Strood, Bawtry, 4th.

The premier award for ten market varieties of Daffodils, twenty "single" bulbs of each, was won by Messrs. R. H. BATH, LTD., with clean examples of King Alfred, Sir Watkin, Victoria, Madame de Graaff, Emperor, Empress, Brightness, Ornatus, Weardale Perfection, and Barrii conspicuus; Mr. J. MALLENDER was 2nd.

Competition was especially keen in the class for a collection of home-grown Tulip bulbs, in not more than twenty varieties, nor more than twenty bulbs of any one variety. There were five competitors, and the 1st prize was awarded to Messrs. J. R. PEARSON AND SONS for a set of very large and heavy bulbs which consisted of nineteen Darwins and one budding variety. Some of the bulbs were of immense broader size, notably those of Marconi, Feu Brilliant, Henner, and Moralis. Some discussion took place among the traders present as to the definition of the word "collection," and there seemed to be a pretty general opinion that both early and late varieties should be well represented in such a class, or that in future there should be one class for bulbs of early varieties and one for Darwins. The 2nd prize went to Messrs. GEORGE MONRO, JUNR., The Maltings, Spall-

ing, for a collection which attracted attention by reason of the good size, cleanness, and general smoothness of the set; early single, early double, May flowering and Darwin varieties were all represented, and notable bulbs were those of La Reine, Bartizon, Vuirbaak, Washington, Professor Bauwenhoff, and Murrilo. Messrs. HUGG AND ROBERTSON were 3rd, and Messrs. R. H. BATH, LTD., 4th.

For a collection of any dry, home-grown hardy bulbs (other than Daffodils and Tulips), and not more than thirty varieties, Messrs. BARR AND SONS were 1st prizewinners. In this class diversity of genera and species received favourable consideration from the judges. Messrs. BARR AND SONS set up Eremuri, Fritillarias, Winter Acemites, Hyacinths, Chionodoxas, Anemones, Oxalis, Sparaxis, Cuscutas, Colchicums, Alliums, Irises of sorts, Acillas, Leucojum, Polygonatum, Ornithogalum, Cyclamen and Crocuses. Messrs. HUGG AND ROBERTSON gained the 2nd award.

Obituary.

C. McAINSH.—We regret to record the death of Mr. D. McAINSH, for many years gardener at Leeds Castle, near Maidstone. Mr. McAINSH was a Scotchman, and, though long resident in the South, he retained to the last his native accent, which, coupled with a sense of humour, gave him a distinct personality. The gardens at Leeds Castle were a tribute to his skill, and the fact especially was always worth a visit to inspect. Among his many friends he will be greatly missed.

CROPS AND STOCK ON THE HOME FARM.

MUSTARD FOR WHEAT

No time should be lost in finally ploughing fallow ground intended for Wheat, from which, perhaps, a crop of Swedes was taken, an opportunity having been given since of cleaning the land from Couch grass. After ploughing, harrow over the surface, draw the roller over it to facilitate the sowing of 20 lbs. of Mustard seed per acre with the hand seed harrow. Harrow the ground once afterwards. In six weeks' time the Mustard should be 2 feet high, and ready for ploughing in at the end of September or early in October, sowing the Wheat directly afterwards. Especially is the early sowing of Wheat to be recommended on stiff land, as the plant obtains a firm root hold before wintry weather affects the growth.

RAPE AND TURNIPS FOR WHEAT

The recent showery weather has brought on these crops amazingly, so that the roots will shortly be in a satisfactory condition to be eaten off by sheep, to be followed by a Wheat crop. This is quite one of the best of preparations for Wheat. It is stiff soil the Wheat from such a preceding crop grows with much "strength," a quality appreciated by the miller.

THE HARVESTING OF WHEAT.

It is to be regretted that recent rains have beaten down the grain crops over large areas in many counties, just when they were ripe for cutting. To obtain Wheat of extra "strength," bright red in colour, and full of gluten, the cutting should not be delayed until the Corn is quite ripe. It should be cut when it is, say, three-quarters ripe; indeed, the straw may still have a green hue about it.

Wheat cut at this stage is not so liable to "but"—shake out by handling—as when allowed to become thoroughly ripe before cutting.

ELECTRIFIED SEED OATS.

I have recently inspected two samples of Oats cut from plants raised from electrified seed and from untreated seed of the same variety growing in the same field under the same conditions. Certainly there is a huge difference in the size of the ears, but time alone can prove the value of such treatment. *E. Molyneux.*



CARNATION DISEASE: F. P. Assuming that the disease you mention is the leaf-spot of Carnations caused by the fungus *Uredo dianthi*, a good preventive measure is to spray the plants with potassium sulphide; but whilst this is useful, the best growers prefer to stamp out disease altogether by pinching off every leaf that shows evidence of attack, and as soon as it can be detected. At first the result is to appear to make the plant appear disfigured by the loss of so many leaves, but if the remedy is proceeded in, and the leaves thus removed destroyed by burning, as well as all those plants which are so debilitated by the process as to be incapable of making good specimens, the cultivator will eventually have the mastery, and the disease cease to trouble his plant.

HEDGE AS SCREEN: F. You cannot do better than plant *Cupressus macrocarpa*, *C. Lawsoniana*, *Thuja plicata*, or *Labocedrus decurrens* to form the screen you desire. All of these plants are rapid growers when once established, of strictly columnar habit. They should be planted about 6 feet apart to form a dense screen. We advise you to first see each kind of plant and choose which you like best; the rate of growth, habit, and price are practically the same in each case.

NAMES OF PLANTS: J. C. B. The larger Honey-suckle is *Lonicera periclymenum* Dutch Red; the small leaved one is *Lonicera syriacantha*, from China; the Lily is *Lilium regale* (Wilson's Lily)—*Ernest R. Colburn*. 1. *Sidaea malyaciflora*, or *S. spicata*; most likely the former, but you should have sent a leaf from the base of the plant, and a deeply divided one from near the top; 2. *Chrysanthemum coccineum*, a pale golden variety, generally known as *Pyrethrum*.—*W. H. E.* 1. *Sodium hybridum*; 2. *S. spurium* var. *album*; 3. *S. spurium*; 4. *S. album* var. *brevifolium*; 5. *S. reflexum*; 6. *Linum var. variegatum*; 7. *S. rupestre*.—*W. G. Hails*. *Bignonia radicans* (Peas next week).

NEVERLY ENGAGEMENT: F. J. W. You do not say that your employer sent you away without notice, but merely that he told you to look out for a fresh place, giving certain reasons which, you believe, are incorrect, but the validity of the reasons does not matter in this case, as the employer is under no obligation to give a reason at all, provided there was proper notice to terminate the agreement between you. There are other circumstances which will have to be taken into consideration, and, assuming that you wish to know definitely whether there is a good case against the employer, your best plan would be to consult a local solicitor on the matter.

PEACHES: Enquirer. There is nothing in the Peach leaves themselves to help us to determine the cause of the trouble of which you complain. It is most likely that the failure of the leaves is due to unsuitable conditions at the root; and whether such conditions have been brought about by the use of the miscellaneous manure you obtained from a distance or to insufficient drainage of the border, it is not possible to say without means of examining the border. There is a further possibility that the insecticide you used may have been too strong for the tender foliage of the Peach. If a check was caused to the roots every time you applied a fresh watering, you will have to try and determine whether this was caused by injurious substances from the manure, or to water-logging of the roots through ineffective drainage.

Communications Received—*Notice*—Ireland—E. C. B. C. W. H. R. J. D. P. B. J. B. Ed.—I. A. S.—R. W. W. W. W. W. F. C. L. J. M. F. A. J. G. Mrs. F. R. C. A. H. Mrs. B. Forth—J. B. C. H. S. W. L. J. G. W. R. H. W. W. H. G.—W. H.—Sir A. B. H. (Thanks for 5s. for Gardeners' orphan Fund. Names of plants next week.)—E. M.—R. G. G.—Sir E. P.—T. E. W.

MARKETS.

COVEYNT GARDEN, August 2.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots and their average wholesale prices. Includes items like Aralia Sieboldii, Asparagus plumosus, Aspidistra, Cacti, and Ferns.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their average wholesale prices. Includes items like Artichokes, Beans, Beetroot, Cabbage, Carrots, and Cauliflowers.

are increasing in numbers, and up to this morning there has been abundant supplies of Gypsophila paniculata and the double-flowered variety, Statice sinuata, S. inflata, and S. monna, which are now arriving in good condition...

1. Fruit from Kent for fruit farms in London should be sent in full truck loads to Bricklayers' Arms Station, as this year will be open at any time for delivery to be effected.

2. Fruit from Kent for fruit farms in London should be sent in full truck loads to Bricklayers' Arms Station, as this year will be open at any time for delivery to be effected.

3. In case of the shortage of cartage all salesmen should open their stands by the time the first deliveries of fruit are made by the railway companies and discharge the vans immediately. This is extremely important in the interests of the whole fruit industry.

4. Salesmen should be specially notified that no orders for "first" deliveries into the markets can be accepted this year and that they should therefore make arrangements to accept the produce as and when rendered to them.

5. The requirement of the railway companies that "market" empties shall be sent in bundles of eight should be observed. Every bundle should be labelled with the consignee's name and station.

6. In order to avoid the necessity for restricting the deliveries from the markets on certain days, which is a most objectionable arrangement, all parties concerned should observe the following regulations.

7. During the war, salesmen should avoid sending empties to country stations on the chance of finding a driver who will consign fruit to them.

8. Salesmen should be prepared to accept empties when rendered by the railway companies, and not only at certain hours or on certain days, but in order to relax congestion in the London markets, empties from farm and market areas, and in the case of considerable consignments, from other areas, should, where practicable, be rendered direct to the ground instead of through the London markets.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers and their average wholesale prices. Includes items like Asters, Carnations, Coreopsis, Cornflowers, Daisies, and Gladioli.

Fruit: Average Wholesale Prices.

Table listing various fruits and their average wholesale prices. Includes items like Apples, Grapes, Lemons, Nectarines, and Oranges.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of Garden Stents, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being in stock.

Particulars on application, BOULTON & PAUL, Ltd., ROSE LANE WORKS NORTHWICH.

CARRIAGE OF FRUIT AND EMPTIES.

In view of the strain now falling on the railways, the Board of Agriculture will endeavour to impress upon the Board of Agriculture and also upon the necessity of arranging the railway companies to avoid undue delay in the transport of fruit and empties by rail during the continuance of the war by paying attention to the following points, which the companies regard as very important.

- 1. In order to ensure the despatch of fruit, growers should, where required, advise the stationmaster or goods agent on the night of the approximate quantities they wish to send the following day. This may be necessary, owing to shortage of labour, the railway companies frequently have to restrict the total quantity of fruit they accept for conveyance, and growers who do not give notice may find that it is impossible for their fruit to be accepted.
2. The sorting of small lots into delivery vans, and the delivery of small lots, involves delay. Growers should put together their consignments to salesmen in lots of 2 or 4 tons. Delivery will thus be expedited. In many cases a considerable reduction of the rate is obtained by pooling the consignments in this way. The practice of splitting up the day's load into consignments of more or more than 4 tons, which, for the time being, are not in accordance should be selected for the output. This

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage and their average wholesale prices. Includes items like Adiantum, Croton foliage, and Ferns.

Advertisement for EUREKA KILLER weed killer. Features text: 'MANY YEARS REPUTATION. EUREKA KILLER WEED KILLER. LASTING RESULTS - NO NEW EXPERIMENT. LABOUR SAVERS: EUREKA! LAWN SAND, SOLIFUME NICOTINE INSECTICIDES, FUMERS, SPRAYS AND OTHER CHEMICALS & SUNDRIES.'

Advertisement for LIVERPOOL VIBRIS RATS & MICE. Features text: 'Save our Food. A thousand of tons wasted through ravages of Rats and Mice in our Farms, Stores & Homes. LIVERPOOL VIBRIS RATS & MICE. In the ready preparation of this product 24 1/2 cwt. of Mice-1/8 of Rats' brains. LEBORER & WEBB Ltd., Liverpool.'

By Special Appointment to



His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

A TREASURY OF INFORMATION

is contained in the

HORTICULTURAL DIRECTORY AND YEAR BOOK.

Nowhere else can the gardener obtain, within the small compass of four hundred pages, so much information on the subjects which interest him most. The knowledge which this little work contains is just what is indispensable to the gardener in his daily life. The

CALENDAR OF GARDEN OPERATIONS

takes him through the whole year, reminding him of the manifold small cares which make all the difference between health and ill-health in his plants. It also reminds him of the exhibitions which are to be held and of the most important annual meetings.

Another interesting section, which expands each year, is the list of

SCHOOLS OF HORTICULTURE.

with a brief description attached to the name of each such institution. Those concerned with the education of young gardeners—both men and women—will turn to this section with especial interest, and those who are seeking such education will find it of the greatest assistance in deciding which school to select. There are still for sale a few copies of the current edition.

SEND FOR ONE AT ONCE TO

The LIBRARIAN, 41, Wellington Street, Strand, W.C. 2.

PRICE 1s. 4d., POST FREE.

BUSINESSES FOR SALE.

FOR SALE, FREEHOLD MARKET
STUBBERS, Essex. 12 acre land, 5-roomed cottage,
2 houses (130 x 100, 2 houses 150 x 12), all heated,
picking shed, &c., all in good condition. Price £755.
Ingenio, 11-14th Avenue for selling, S. J. Box 21, 41,
Wellington Street, Covent Garden, W.C. 2.

PROPERTY TO LET.

TO LET, September 29, Hanbury Hall
Gardens, 4 acres of walled kitchen Gardens, with
Vines, 104-houses, 100, &c. garden & cottage and
paths within 3/4 and 5 miles of two good market towns,
2 miles from railway station. Apply, SECRETARY,
Hanbury Hall, Droitwich.

PLANTS, &c., FOR SALE.

100,000 LARGE GARDEN FERNS,
208, 100; Fatias, Begonias, Orotins,
Dracaenas, Roses, Eranas, Gloxinias, Lilies, Hydrangeas,
&c.; catalogues free.—J. E. SMITH, London Fern Nur-
series, Loughborough Junction, London, S.W.

PRIMULAS! PRIMULAS! PRIMULAS!
44th Year of Distribution.
Our well-known Magnificent Strain Cinerarias,
Oleanders, Calceolarias, &c.; 2s. per doz.; 12s. 6d.
per 100; carriage paid.—JOHN STEVENS & SONS, Nur-
series, Coventry.

FOR SALE, Atropa Belladonna Seed-
lings; delivery end of July and onwards; 11s.
per 100, carriage paid, cash with order.—Apply, HIRM
BLAND, Blandford, Abbey Leix.

WALLFLOWERS.—Strong, transplanted,
Vulcan, Ruby King, Covent Garden, Golden King,
Chantrel Beauty, &c., 2s. 6d. 100, free, any address.—
MORLE & CO., 150-156, Finchley Road, N.W.

FEIKNS' FEIKNS'—Tree Ferns, Climbing
Ferns, Basket Ferns, Stove and Greenhouse Ferns,
Basket Garden Ferns; catalogues free.—J. E. SMITH,
London Fern Nursery, Loughborough Junction,
London, S.W.

MISCELLANEOUS.

SPORTSMEN, Farmers, Horsemen, try
our splendid Yorkshire Whipcord Tweed; wears
like leather; shaverproof; 7 yards for 17s. 6d. Patterns
free.—BRADFORD WOOLLEN CO., 71, Bradford.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two),
6d. for each succeeding line.

Gardeners desiring their Advertisements repeated
must give full particulars, otherwise no
notice will be taken of their communications.
Name and address above are insufficient.
Gardeners writing to Advertisers of Vacant
Situations are recommended to send them
copies of testimonials only, retaining the
originals. On no account should they enter
into communication with unknown corre-
spondents who require a fee beforehand.
Advertisers are cautioned against having Letters
addressed to Initials at Post-offices, as all
Letters so addressed are opened by the
Postal Authorities and returned to the
Sender.

PRIVATE.

WANTED, good all-round HEAD GAR-
DENER, meligible, understanding Glasshouses,
Peaches, Melons, Vines, &c., with knowledge of outdoor
work, cottage, slate wages. Also wanted, a SECOND
GARDENER, to assist Head in Glasshouses and out-of-
doors, meligible. Garden cottage provided. State wages.
A. ALD, Esq., Bulford House, Culpeper, Devon.

WANTED, HEAD WORKING GAR-
DENER, 3 men kept; must have good knowledge,
Inssals and Out, Vines, &c.; single preferred.—MRS.
TYNDALE, Madderwort, Chislehurst.

WANTED, HEAD WORKING GAR-
DENER, thoroughly experienced in Inside and
Outside with personal reference from last employer
required; good wages and cottage. State full particu-
lars, age, &c.—MRS. LITCH, Bramblehurst, East Grim-
stead, Sussex.

WANTED, HEAD WORKING GAR-
DENER immediately, man and boy kept, wages
5s., cottage, vegetables free. Apply, C. L. G. MOORE,
Apply, Hall, Alverstoke.

WANTED, WORKING HEAD GAR-
DENER (meligible); two others kept; good out-
rage, vegetables, fuel.—BARRY, Lampsfield, Surrey.

WANTED, Married (Working) HEAD
GARDENER (meligible), wages 20s., good cottage
and garden. Apply, Tidenham House, Chislewort.

WANTED, HEAD GARDENER (WORK-
ING); two Under Gardeners kept.—State wages re-
quired to C. PETHERSTONHAUGH, Kings Worth
House, near Winchester.

WANTED, an experienced WORKING
HEAD GARDENER. Apply, Sandhurst Lodge,
Wellington College, Berks.

WANTED, GARDENER (SINGLE
HANDED), for Stoke Poges neighbourhood; small
Garden, lodge suitable for married man (no family), ex-
perience of electric plant or possess. State full particu-
lars, experience, references. MAJOR DARLEY, Staf-
ford Hotel, St. James's Place, S.W. 1.

WANTED, at once, SINGLE HANDED
GARDENER (some help given), willing to look
after pony and do odd jobs. Apply, with full particu-
lars, experience, references, to RICHARD, Giltspur House,
Chesham, Bucks.

WANTED, WORKING GARDENER
Vegetables and Fruit, no Glass. Apply by letter
to R. W. T. The White House, Oshott, Surrey.

WANTED, GARDENER, for Fruit and
Vegetable growing, willing to be useful, a cap-
able, conscientious man, about 55, or younger man,
if disqualified for military service, would suit; wages 7
sh. 6d. per week, with good cottage and garden. Stat-
family and give references. Reply GARDENER, c/o Mi-
Street, Heathside Nursery, Camberley.

WANTED, Good GARDENER, imme-
diately, for students' hostel, man or woman,
married or single, but work for wife if desired, St
Michael's, Grove Park, Lew, S.E. 12.

WANTED, GARDENER (meligible), to
work under Head Gardener, where others kept
good wages and cottage, permanent place if satisfactory.
Write, stating wages, with full particulars and refer-
ences, to HEAD GARDENER, Bunce Court, Evesham
Kent.

THOROUGHLY Reliable, Energetic MAN
willing and able to take control outside staff,
cult. Lilies, South London, must have good knowledge
Glenk work. Write, giving testimonials and wages re-
quired, to J. D., 204, c/o Dawson's, Lodenhall Street,
E.C. 3.

WANTED, MAN for Inside Work; Stat-
ing wages in previous places, also wages with or
without Betty, discharged or partly disabled soldier
would suit T. CARB, Redemuel, Enghelton Green,
Surrey.

WANTED, UNDER GARDENER, for
outside, duty alternate Sundays; pumping in
house, wages 28s. per week, good cottage and garden,
milk. Apply, stating age, particulars, to ALFRED
CHILD, Chesby House Gardens, Daventry, Northants.

WANTED, UNDER GARDENER; cot-
tage given. Write, stating wages and full par-
ticulars, LADY MERRION, Southbrook House, Berks.

WANTED, UNDER GARDENER, used
to Greenhouse and Stove Plants; single and mel-
igible. Apply, MRS. WAKEMAN NEWPORT, Smit-
bourne, Bewley.

WANTED, UNDER GARDENER, chiefly
outside, at a strong YOUTH, some experience.
Apply, stating age, wages, and reference, to W. H.
CLARKE, West Bank, Twickenham, Middlesex.

WANTED, as UNDER GARDENER,
Young lad or young Man (meligible), good wage
and comfortable place. State particulars to G. GREEN,
Portsmouth House, Fordingham, Somerset.

WANTED, FOREMAN (GENERAL); Single
(meligible), also FURKER MAX, for Homes,
good wages to suitable men, Betty, milk, and veg-
etables; Sunday duty and overtime paid. F. C. LEIGGE,
Castle Gardens, Arundel.

WANTED, FOREMAN, or Good, Capable
MAN, to take charge of Glass, 50s. per week,
Betty, &c.; duty and overtime paid—Full particulars,
A. BENNETT, Shelston Hall Gardens, Ashbourne,
Derbyshire.

WANTED, JOURNEYMAN and IM-
PROVER for the Houses and outside, good
wages, according to experience, with excellent Betty,
also milk, vegetables, and attendance, duty and over-
time paid extra. 1 o'clock Saturdays.—References and
particulars to GARDENER, Barford, Dorking.

WANTED, HEAD WORKING WOMAN
GARDENER (2 under); furnished rooms, coal,
light, and good wages.—FRANK SCHUSTER, The Hut,
Rayton-Thames.

WANTED, LADY GARDENER, to take
charge of small Garden and Poultry, comfortable
place; cottage available, or could live in.—G. B. RAN-
DOLPH, Steeple Aston, Oxon.

WANTED, LADY GARDENER and
LADY GROOM GARDENER; friends preferred;
help given; cottage. State wages.—WILDING, Stoke
Pages.

WANTED, Two LADY GARDENERS
(ASSIST); previous experience essential; good
wages, Betty, &c. Particulars to H. E. TYNDALL,
Tandridge Court Gardens, Oxted, Surrey.

WANTED, at once, strong YOUTH, for
Outside; must be experienced; wages 21s., with
Betty and WARD, Ken Wood Gardens, Hamstead, Lon-
don, S.W. 5.

WANTED, Active YOUTH for the
Houses, one with some experience preferred, but
not essential. State age and wages required, with Betty,
milk, and vegetables.—W. J. GUSE, Keele Hall Gardens,
Newcastle, Staffs.

WANTED, at once, strong YOUTH;
must be experienced, wages 18s. per week and
room. Address, HEAD GARDENER, Nonchuck Park,
Cleam, Surrey.

WANTED, Strong LAD, for Inside and
Out, wages 19s., overtime paid; 1 o'clock Satur-
days, comfortable Betty, &c. F. NORWOOD, Washers
Wood Gardens, Wokingham.

WANTED, IMPROVER for the Houses;
wages £1 per week, Betty, &c., duty paid extra;
1 o'clock Saturdays.—E. BRISTOW, Leyswood Gardens,
Growthbridge, Tunbridge Wells.

TRADE

WANTED, a CHARGE HAND for the
Tomato Houses.—W. WILFELDRON, Green Lane
Nurseries, New Eltham, London, S.E. 9.

WANTED, thoroughly experienced
GROWER, for Chumblers, Tomatoes, &c., general
and Nursery work, connected with the retail trade;
comfortable position for a good man. Write, with all par-
ticulars and wages required, to A. B., Box 10, 41,
Wellington Street, Covent Garden, W.C. 2.

PALM GROWER; thoroughly experi-
enced, wanted for London, meligible; good wages.
Write, G. P., c/o Gonals, 54, New Oxford Street,
W.C. 1.

WANTED, for our Trial Grounds, a cap-
able and experienced GROWER; meligible. State
age, wages, and full particulars of previous duties to
DICKSON & ROBINSON, The King's Seedsmen, Man-
chester.

WANTED, a Good, Practical GARDENER
for a small Both Farm in West of England where
Vegetables are also grown; must be married, sober, and
industrious, comfortable living quarters.—Write to B.,
Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, WORKING FOREMAN for
Branch Nursery, Fruit and Forest Trees; house
and garden provided.—Applicants must state wages re-
quired, with testimonials to JOHN PERKINS & SON,
52, Market Square, Northampton.

WANTED, WORKING FOREMAN for
Nursery of 20 acres, no Glass, must be well up
in Fruit Trees and have a knowledge of Trees, Shrubs,
Roses, &c., permanently. State age, wages, full particu-
lars, with testimonials to JOHN PERKINS & SON,
52, Market Square, Northampton.

SEED TRADE.—TRAVELLER—
Recommended by leading firm of Seed Merchants to
represent them in North Durham and South Northumber-
land; applicant must have thorough knowledge of the
Agricultural and Horticultural trades, good salary and
permanent situation to reliable man.—Write, stating age,
experience, salary required, and full particulars, to
TRAVELLER, Box 8, 41, Wellington Street, Covent Gar-
den, W.C. 2.

THE
Gardeners' Chronicle
No. 1598—SATURDAY, AUGUST 11, 1917.

CONTENTS.

Acid phosphate for Roses and Carnations .. 60
British Gardeners' Association .. 60
Carbon bisulphide as an insecticide .. 62
Farm, crops and stock on the home .. 63
Flies and manure .. 61
Food production, on increased—
Carrot year, a good .. 54
Food conserving .. 56
Food production campaign, the .. 55
Pollens of allotments, the .. 56
Potato prospects .. 56
Potatoes, new at Christmas .. 55
Potatoes, the mulch method of raising .. 55
Seed germination .. 55
Sulphate of copper .. 56
Tomato Bids's Recruit .. 56
Vegetables on old pasture .. 55
Foreign correspondence—
Soldier gardener in Palestine, a .. 58
Fruit crops, remarks on the .. 61
Fruit trees on grass .. 62
Fruits in season .. 61
Gardening forethought .. 62
Intensive cultivation .. 62
Japan, letters from—
Oshima, the island of .. 57
Umsurise, effect of frost on plants at .. 57
London allotments .. 60
National Fruit Growers' Federation .. 60
Obituary .. 60
Drery, C. T. .. 63
Pattinson G. .. 63
Raches and Nestorins .. 61
Kaulber Kosis failing to bloom .. 62
Rock garden, the—
Orchid foliosa .. 59
Rose Mermad .. 60
Snow, the removal of .. 60
Societies—
Local .. 60
Midland Carnation and Florists .. 62
Subscription to the *Gardeners' Chronicle* .. 60
Vetch, Sir Harry and Lady .. 61
War item .. 64
Week's work, the—
Flower garden, the .. 59
Fruits under glass .. 58
Hardy fruit garden, the .. 58
Kitchen garden, the .. 58
Orchid houses, the .. 59
Plants under glass .. 59
Weevils, destruction of .. 60

ILLUSTRATIONS.

Rose Mermad .. 56
Vetch, Sir Harry and Lady .. 61

ON INCREASED FOOD PRODUCTION.

THE MULCH METHOD OF RAISING POTATOES.

THE difficulty of growing Potatoes without a change of seed is experienced no less in America than in this country. With the object of overcoming this difficulty experiments in growing Potatoes under a mulch were initiated some years ago by Mr. R. A. Emerson. The results of these experiments are now recorded. The stock of Potatoes used was of the Early Ohio variety.

The manner of making the test was to grow part of the stock under a mulch and part by the ordinary method of cultivation, and to test the seed thus obtained by growing it in subsequent years, partly under mulch and partly by ordinary methods.

Where mulching was practised the ground was covered, after planting the sets, with a depth of 4 inches of straw. The mulched ground was left without further cultivation throughout the summer, whereas the other part received frequent surface tillage.

As examples of the results obtained the following figures may be quoted. Stocks mulched continuously from 1904-1909 and mulched again in 1910, 622 lbs.; not mulched again in 1910, 537 lbs., indicating an immediate falling off in yield as a result of discontinuing the mulch. Stocks cultivated by the ordinary method fell off in yield year by year, but those cultivated under a mulch maintained their yield.

It is claimed that for every 100 lbs. of produce obtained from mulched plots there were obtained by the ordinary methods of cultivation an average of only 74 lbs., and it is further claimed that the quantity of home mulched produce is as large, and even slightly larger, than that from northern seed, the average results being mulched seed, 100; northern seed, 98.

The author states that any coarse material, provided it is put on to a depth sufficient to smother weeds, straw, old hay, or coarse stable litter, will serve for mulching. We confess that we are not yet convinced that this method will

enable English Potato growers to dispense with Scotch or Irish seed, and we believe that the mulching method has been already tried in England. At the same time, it is very desirable that experiments should be conducted with the object of ascertaining the effect of mulching in increasing yield. On newly broken up grass land the mulch might have a further advantage in keeping down rank growths of grasses and weeds, but an early mulch could hardly fail to affect soil conditions, particularly soil temperature, in an adverse manner. Perhaps gardeners who have the facilities will try a few rows of Potatoes under mulch and compare the results with those obtained by ordinary earthing up in the d.

VEGETABLES ON OLD PASTURE LAND.

ONE can now fairly estimate the results likely to be obtained on newly broken up old pasture. Many criticisms were put forth last winter on the subject of utilising vacant ground, and especially old pasture land, and many were, I am sure, deterred from making use of ground that would otherwise have been brought into cultivation. One of the principal objections was the likelihood of ravages by wireworm, but if good methods of cultivation are practised this trouble may be overcome; satisfactory results can be obtained, even the first year, and, generally speaking, such land once broken up will be similarly utilised for many years.

In this district I have had under observation many plots so treated, and I know of no single instance of serious failure. On the contrary, magnificent crops are now to be seen, which include nearly all kinds of vegetables. Much of the land has been deeply trenched, and where this has been the case the best results are obtained. *Ernie, Bolton, Aldham, Hart.*

SEED GERMINATION.

A CORRESPONDENT (see p. 42) states that, in the case of many temperate moisture, freedom from slugs and other pests, seeds rarely fail to germinate. Here is the problem: What are the necessary temperature and amount of moisture, and how are the conditions to be controlled in the germinator? As to old seed and new, I have this season noted that seedlings of Brassica have appeared in those lots from the same sowing. Is this mixed seed from different growers, or mixed seed of three seasons? The early failure we had was Purple Sprouting Broccoli. The germination of Runner and Dwarf Kidney Beans varied from 25 to 75 per cent., with one exception, Golden Butter, which showed at least 95 per cent. of first class plants. We grew six varieties of these Beans, from three good firms. Marrows, Gourds, Cucumbers and Tomatoes did not give us more than 50 per cent.; this may have been caused by too much moisture. Mercury, Good King Henry, or Lincolnshire Spanish sown in a box on March 3 showed one plant on the 25th, and kept coming for several months. I have had this experience before, when seeds have been sown immediately ripe, or they were allowed to drop. A somewhat interesting and, to me, inexplicable point in germination this season and last is Black Thyme; seed from the same packet has been sown at different times in various places from May last to June 7 of this year, without much success, until the last sowing, when, as if to make good for its previous behaviour, we got enough plants to stock the patch. I hope to try this seed next season. I have not been able to raise Tarragon from seed, although I have tried on many occasions. White, Scarlet, and Breder Runner Beans, also Dwarfs, have set fruit freely this season, the peck touching the soil in each case; this without my attention as to watering or mulching. The land was dressed with ground lime in late winter and early spring, or when early spring should have come, and no manure was used on June 16. I shall be grateful to any of your readers for a simple method of preserving the beans for winter use. *J. E.*

THE FOOD PRODUCTION CAMPAIGN.

IN previous reports it had been estimated that the total increased acreage in England and Wales (over the 1916 area) for the harvest of 1917 would be about 500,000 acres. This was a very conjectural figure, based upon reports made before the spring cultivations were completed, and, in view of the climatic conditions experienced, it would not have been surprising if the estimate had proved optimistic.

The preliminary figures of the annual agricultural returns have, however, now been received, and show that the increased area in England and Wales of Corn and Potatoes for the present harvest amounts to no less than 547,000 acres. These are set out in a summary as follows:

	Increase or decrease	
	Acres.	over 1916.
Wheat	1,911,000	1,000
Barley	1,450,000	+127,000
Oats	2,250,000	+145,000
Potatoes	504,000	+76,000
	Total	+349,000

Sir Arthur Lee, Director General of Food Production, discussing these figures, said: "This result exceeds all expectations, and affords some measure of the exceptional effort made by farmers this spring, in the face of unusually adverse conditions. It also indicates the immense value of the assistance given by the War Office by the loan of soldiers for work on the land." Without this help, and without the impetus given by the work of the Agricultural Executive Committee, composed mostly of farmers, landowners, and the like, it would have been impossible, not merely to effect an increase in this year's crops, but to avert a decrease which was at one time estimated at not less than 200,000 acres, as compared with 1916.

The net result of the Food Production campaign in England and Wales up to date may, therefore, be reckoned as an additional 550,000 to 600,000 acres of Corn and Potatoes for the harvest of 1917.

This, of course, is irrespective of the still greater relative increase achieved by the small grower. It is not possible to give accurate figures with regard to the small grower, but the estimate already made of a quadrupled area of small cultivation is probably well below the mark. It is estimated, for example, that the number of allotments in England and Wales has been increased by at least half a million; 12,000 acres of new allotment land is being cultivated under the Cultivation of Land Orders alone, and the displacement of flowers by vegetables has been general in gardens throughout the country.

SULPHATE OF COPPER.

THE arrangement for the sale of sulphate of copper for home consumption for agricultural purposes at the price of £50 per ton, in quantities of not less than 2 cwt. for at makers' works, ceased at the end of July. Representations have been made that the retail price of 94d. per lb., which was recommended in March last, is now too low for small quantities. The Food Production Department does not think that 8d. per lb. is an excessive price for sulphate of copper in England and Wales.

NEW POTATOES AT CHRISTMAS.

IN supplement of my previous notes on new Potatoes at Christmas, I would commend those interested in late Potato planting not to delay a moment, but at once to select some sheltered ground facing south, and protected as much as possible from the north-east wind. Turn it well over and loosen the earth with the garden fork, and lightly manure with fresh stable refuse (if obtainable); plant a whole seed Potato of last year at least 7 inches deep, covering it with loose soil. On the appearance of the plant above the surface, slightly press down carefully all sides within 2 to

* Home Mulched versus Northern Seed Potatoes for Eastern Nebraska. Bull. of the Agric. Exp. Station, Nebraska. By R. A. Emerson.

which is 1 to 2 inches, and is a hole to a depth of 2 to 3 inches with loose soil, so that the tuber may have all the earth protection it can get against prospective frost. On the appearance of frost, cover the whole plant with a layer of stable straw or other suitable material to protect the developing tubers below ground, when all will go well. Do not dig for Potatoes until two days before Christmas, and then only lift what are actually required for use, taking care to protect the plant next to the root lifted. *Joseph R. Holmes, Bourne.*

POTATO PROSPECTS.

The reports as to crops of Potato which are being grown by allotment holders who have

twelve between 250 and 500, thirty five received under 250 tons a piece. Five counties did not adopt the scheme. In some counties a proportion of the total distributed went through individuals and bodies other than the Executive Committees. The majority of these Potatoes were supplied to small men who were not in the habit of using Scotch or Irish seed Potatoes, and were ill-placed for obtaining seed at all through local agencies. Complaints have been singularly few. A considerable amount of loss occurred in transit. In the case of the Irish consignments, there was a certain amount of short weight. Some of the Scottish "seed" was very small, and there was a certain proportion of diseased tubers.

The Home Secretary has called the attention of Chief Constables throughout the country to the importance of preventing trespass on allotments, and has suggested that they should press for substantial penalties whenever convictions can be obtained. The Food Production Department points out that trespassing upon land is being dealt with under the Cultivation of Land Ordinance and recommends the public display of a statement that it is an offence under the Defence of the Realm regulations. Offenders are liable to a fine of £100 or six months' imprisonment, or both fine and imprisonment.

THE HOME CANNER FOR FOOD-CONSERVING.

A SERIES of food-conserving demonstrations have been given in the large central hall of the reorganised Economy Exhibition, in the new L.C.C. building, Westminster Bridge Road, London. From the opening day of the exhibition, the most attractive features have been the stalls at which elementary fruit bottling and canning were illustrated by representatives of the Horticultural Branch of the Food Production Department. So successful have the been that, on the invitation of the promoters of the exhibition, the Food Production Department took possession of the large central hall, formerly occupied by the French market. Lady Glover organised four kitchens with a view to showing visitors how various forms of food can be conserved in the simplest possible manner. At one of the kitchens demonstrations have been given in fruit and vegetable bottling, and the sulphur process of sterilisation; at another, kitchen fruit and vegetable drying was illustrated, women being taught how they can do this important work with oven or gas stove in their own homes. A third kitchen was devoted to jam-making with sugar substitutes. At a fourth the canning of fruit and vegetables in tins was demonstrated, the appliance shown being known as the "Royal Home Canner." This useful apparatus is capable of dealing with 56 2 lb tins at a time, and is compact and portable. It can be obtained from the Food Production Department, 72, Victoria Street, for £6 10s., carriage free.

A GOOD CARROT YEAR.

In corroborating the paragraph by J. N. (see p. 51), I may say I have had the opportunity of inspecting many hundreds of the Liverpool allotments, which cover an area of over eight miles north and south, and over four miles east and west, and in all cases the Carrots gave evidence of robust health, both in the old worked positions and in the newly broken-up ground. Carrots, with Parsley and Onions, are three most difficult subjects of cultivation in this neighbourhood, but this season all give evidence of more than average success. The soil is generally on the light side, and sowing was late owing to the delay in handing over the plots to the cultivators. May was a glorious month of refreshing rains, which, I think, accounts in a great measure for the more than average success of our gardens. *R. G. Waterman, Woolton.*

TOMATO BIDE'S RECRUIT.

This is a very prolific Tomato. The thickly-set trusses carry about twenty perfectly shaped, even sized fruits, and the fruits are entirely free from corrugation. *E. Molyneux.*

ROSE MERMAID.

This single-flowered Rose illustrated in fig. 22 was shown by Messrs. W. Paul and Son at the meeting of the Royal Horticultural Society held on the 3rd ult. It belongs to the climbing Wichmaniana section, and the large flowers are of light yellow colour, shading to golden yellow at the base of the petals. The anthers and stamens are also of a rich golden shade.

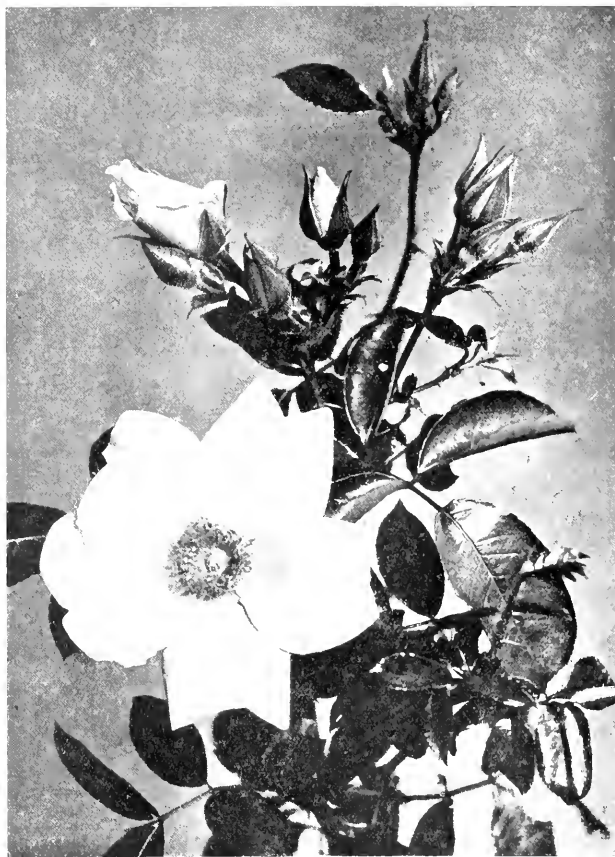


FIG. 22. ROSE MERMAID (MUCH REDUCED).
(Awarded R.H.S. Award of Merit on July 2, 1917.)

taken plots their total holdings exceeding 12,000 acres under the Cultivation of Lands Order of the Board of Agriculture and Fisheries are most encouraging. The seed Potatoes were forwarded direct by the suppliers to the distributing centres and consignees selected by the County Committees. Some 9,000 tons were obtained from Scotland, and about 200 tons from England, 400 tons of the latter being secured otherwise than through merchants; 8,600 tons were also purchased by the Department in Ireland through the Department of Agriculture and Technical Instruction for Ireland. The total quantity of Potatoes distributed was 15,558 tons (147,000 cwt.), and the number of consignments was about 2,700. One county took over 1,400 tons, three counties received between 750 and 1,000 tons each, six between 500 and 750 tons,

THE POLICING OF ALLOTMENTS.

As the crops on allotments are now maturing, the problem of policing the plots becomes more acute. There is no doubt that in many urban districts some method of policing is necessary. A certain amount of potholing is reported from some parts, and some wilful damage from others. It is stated that on the outskirts of one town a man had attempted to drive a horse and cart across the allotment field by way of a short-cut from one part of the town to another. Complaints are frequent of portions of allotment ground being used more or less regularly as footpaths. The special constables in most places have paid particular attention to the allotments, but obviously it is not within their power to keep watch during the whole twenty-four hours for possible marauders.

FOREIGN CORRESPONDENCE.

A SOLDIER GARDENER IN PALESTINE.

We have crossed the Sinai Desert, and passed from sandy desolation into the green, grassy plains and rolling downs of Southern Palestine. The Date Palm has apparently completely disappeared, and its place is taken by the Fig. There are groves of Figs, a few Pomegranates, Vines, and Almonds. The Almonds were near a native village. The plains are covered with the common grass—*Lolium perenne*—which grows everywhere in England, and a variety of couch grass is almost as universal, though none of the grass forms a carpet, as it does in England—the climate is too hot and dry. *Hordium jubatum* and the Sheep's Fescue Grass are also to be seen. What appears to be *Luzula campestris*, the English Field Rush, is also very common; wild Mustard grows abundantly, and the prominent stems of a species of *Polygonum* almost trip one up. *Trifolium* and *Lathyrus* enliven the herbage with their brilliant colours; *Asphodelus* forms large tufts, but has now passed out of flower; *Anthericum Lilium* and *Verhascum phoeniceum* both grow here, and a number of *Malvas* and an *Ipomoea* with pink flowers grow on the side of the wadis (dry river beds); *Salvia argentea* and *Cephalaria tatarica* grow in abundance, but the latter plant is not nearly so leafy or so tall as in England. There are *Thistles* of every kind, especially in the Wheat fields, where a species of green *Chamaecypripis* is common. *Linarias* in variety are common, and I have noticed *Omphalodes verna*, now passed out of flower. The weather just now (April 22) is fine and sunny, but with none of the blistering heat of the desert—just like an English summer's day. I should imagine that copious rains fall here in autumn and winter, but that the summer is hot and dry. The flowering period of all the wildlings has passed, the fruits are ripe and are bursting in the warm sun, and the seeds are being scattered by the breeze we always get during the day. I have mentioned only a few plants that I have noticed whilst grazing horses; but they are only a few of the great numbers to be seen. There is a large bulbous plant which grows here rather plentifully; the foliage has died down, and I have seen no signs of new or old flower spikes. I wonder if it is *Amaryllis Belladonna*; I have seen a pretty little Iris among the herbage, which I call (whether rightly or wrongly) I do not know) *I. reticulata*; it shines like a jewel in the dried pasture grass. In the Barley fields there is a little *Convolvulus* similar to that which flowers in our own cornfields, except that it has downy, trifoliate leaves. I have no doubt the flora is richer higher up; it is a wonder that any plants have the heart to flower in these sunburnt plains and downs within easy reach of a sandy desert. *F. Gooch* (formerly of Colbury House Gardens, Hill-Treet, Totton, Havts).

THE ROCK GARDEN.

ORCHIS FOLIOSA.

In the garden of Mr. John A. Holmes at Formakin, Renfrewshire, there are masses of the Madeira Orchis, *Orchis foliosa*, in the borders and rock garden. The plants are not only numerous (I question if there be anywhere in the United Kingdom so many plants in one garden), but they are exceptionally fine. Mr. Holmes assured me that he takes no special pains with *O. foliosa*, but divides it up when he wishes to increase his stock. The foliage is large and healthy, while the spikes of bloom, as I saw them, were of a grandeur unsuspected by those who only know the Madeira Orchis as seen in average gardens. The borders appeared fairly dry, but it is probable that the moisture underneath is abundant, although the upper surface is not heavy, and em- and drought-loving subjects were thriving admirably in moist cases in the same borders. *S. Traut.*



THE KITCHEN GARDEN

By J. DENN, Foreman, Royal Gardens, Windsor

SPINACH—Sow at once a good breadth of Spinach for winter supplies. Ground which has been occupied by early Potatoes requires no preparation beyond lightly forking and levelling. Sow in shallow drills drawn at 18 inches apart, and as soon as the plants are through the surface give frequent dustings of soot or lime to preserve them from slugs. Another sowing may be made a week later.

COLEWORTS—Any available space should be filled with the Coleworts Rosette and Hardy Green as soon as possible. Allow 16 inches between the rows and 15 inches from plant to plant in the row for early winter supplies. The Rosette may be planted in quantity, but the Hardy Green variety will stand the winter better, and there are very few green vegetables to compare with it in spring. Plantations may be made as ground becomes vacant until the end of August.

MUSHROOMS—The present is a good time to make preparations for October and November supplies of Mushrooms. The house which is used for this purpose should be thoroughly cleansed, and the walls washed with hot lime to destroy insects. The horse droppings should be placed in small quantities in a dry, open shed, and be well prepared by frequent turnings before being placed in the house. When a sufficient quantity has been got ready it should be removed to the bed and allowed to remain a day or two until the heat is about 85°. If turned and rained at this stage the spawn should be inserted in the bed when the temperature is slightly under 30°, and there is no danger of it rising. Make the bed quite firm by ranning, and after a few days place a covering of fresh loam over the surface and make it firm. Within six weeks the Mushrooms should be showing through the surface. In order to maintain an unbroken supply, a bed should be sown at intervals of a month throughout autumn and winter.

CUCUMBERS IN COOL, FLAT PITS—Mildew will be troublesome in these pits if the atmosphere be kept too moist, and red spider may appear if it is too dry. Let the foliage be thinned out, and all decaying leaves removed. When water is necessary it should be applied in the early part of the day, so that the leaves may become dry by night. Stop the growth as soon as it becomes necessary, and cut all fruits directly they are large enough for use.

FRENCH BEANS IN COLD PITS—All available pits should be planted with French Beans for cropping about the end of September. The soil should be thoroughly dry, and, if necessary, a quantity of decayed manure or old potting soil mixed with it. Allow plenty of space between the rows so that the plants may have sufficient light. The glass lights should be removed from the pit until later in the season, when it becomes necessary to replace them as a protection to the plants.

LETTCES AND ENDIVE—Seeds of Lettuce should be sown in a sheltered spot to produce a crop in October, and several small sowings will be necessary during August to ensure a full supply during autumn. Batavian Endive should also be sown now in a cold pit, and transplanted into spare frames and protected borders for use during the spring.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbots Wood, Godingham, Surrey.

PEACHES AND NECTARINES. Look over the trees daily and gather the fruits as they become ripe. Do not allow to remain on the tree too long they lose flavour. Those fruits which will leave the stalk easily are ready to gather, and should be taken and placed in a cool fruit room. Peaches to be despatched by rail should always

be taken before they are quite ripe. Later varieties will need good waterings at the root and daily washings with the engine or hose to keep down red spider and maintain the foliage in a healthy condition.

APRICOTS—These fruits should be promptly gathered as they become ready, both for dessert and for preserving. After the fruits are cleared give the trees a thorough syringing and watering, and if the soil close to the base is very dry and hard, make a few holes with a fork or bayonet and water to allow the ball to become moist, or the water may all run away and not have the desired effect.

PLUM TREES—The growths of Plums should be secured, and all unnecessary shoots pinched again. The trees should be kept clean by frequent washings with clear water, which will also help to keep the roots moist, more especially if a good mulch has been applied. Late Plums should be more severely thinned than early ones, and these can be used for preserving in various ways. Such first-class varieties as Jefferson's, Transparent Gage, Coe's Golden Drop, Kirk's, and Peach Plum need severe thinning, high feeding, and careful stopping and pruning. Large fruits of both dessert and kitchen varieties are very serviceable for bottling. Remove all suckers from the base of the trees.

EARLY PEARS—Doyenne d'Été and Citron des Carmes will soon be ripe. These are not of extra flavour, but are good when gathered and used at once; they will not keep when stored. Beurre Giffard is a better Pear, and must now be watched, as it may be ripening in some warm positions. The tree is a somewhat shy bearer when young. Jargonelle will be also nearing maturity. Later varieties should be supplied with moisture at the roots and as less growths taken away to allow the sun's rays to reach the fruits and growths. It is a good plan to use the hose to keep the trees fresh and healthy, and when this can be done in the evenings it cleanses the foliage and waters the roots at the same time. In this district there are enormous crops of the popular Williams's Bon Christian. See that all fruit trees are kept clean and free from aphid and American blight.

FRUITS UNDER GLASS.

By JAS. HUDSON, Head Gardener at Gunnersbury House, Acton, W.

MELONS IN HOUSES—Houses or pits that are sufficiently heated have a distinct advantage for Melon crops from this time onwards until the end of the season. Although we may still have some hot weather—as, for instance, in August, 1911—there may be periods of cooler weather with a superabundance of rainfall and a lack of sunshine, such as that through which we are now passing. During cooler weather keep a watch on the temperatures, both in the early morning and in the evening. If the thermometer ranges between 60° and 65° in the morning and between 65° and 70° at nightfall, it may be taken as a good standard. With more heat in the water pipes guard against too dry an atmosphere. Even with cloudy days make it a practice to ventilate for a few hours when the outside conditions are favourable, but close the house in time to raise the temperature somewhat during the afternoon. The latest crops should soon be safely set and swelling, after which stage keep the shoots pinched by means of the finger and thumb process. Before the weight of the fruits causes any strain on the growths, place them in Melon nets to take the weight. Should any plants be backward in setting, keep an eye on them and endeavour to secure a crop, even if a little late. I have known this to happen in the case of Hero of Locking in my own charge, and a most useful lot of fruit was secured quite late in the season. This variety keeps better than almost any other after it has been cut from the plant.

STRAWBERRIES IN POTS—Push forward the potting of the latest varieties for forcing. I like to see the potting finished by the middle of the month. In view of the heavy rainfalls the plants recently potted had better be laid on their sides if the water is seen to stand in the pots.

As soon as all the potting is done let the stock be stood out so as to cover the space at disposal. Do not be too persistent in pinching off any adventitious runners; rather let them run for a few weeks so as to encourage root action. Those of the autumn fruiting varieties that are now well rooted, and that have been treated as I advised in a previous calendar, will soon be ready for cutting off from the parent plant, and as these will soon show for flower keep the runners in this case pinched.

VINES THAT ARE BEARING CROPS.—With the heavy rainfall of the past few days, those growers who have experienced it will scarcely need to trouble about much more watering of the outside borders, even if they be well drained. Do not, however, let the inside borders suffer in the least for lack of water, but water them freely where the crops are still swelling. I would not hesitate to apply another dressing of an artificial vine manure, however, to both outside and inside borders. In doing this do not exceed the advice given with each bag of manure. Keep a close watch upon all vines in bearing for any symptoms of mildew; the weather of late has been congenial to this pest of the vine. Watch for and remove any scalded berries upon such varieties as Lady Downe's Seedling, and also give a look to all the bunches in the latest houses to see if a few small berries can be removed with advantage; continue to lift the top shoulders where needed.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Ganton Park, Reigate.

ODONTOGLOSSUM CITROSUM.—As plants of this Mexican species pass out of flower, attention should be given to any necessary repotting. These plants do not make many roots, and the receptacles should be only just large enough to accommodate them. Old dirty Orchid pans that may be suspended from the roof rafters are preferable to other pots or to covered baskets. Afford good drainage, cut away all moss, fresh pseudo-bulbs, and pot the plants freely. The atmosphere of the Mexican House is the most suitable for them, and for a few weeks after root disturbance the surface of the compost should be kept just moist, but towards the completion of its growth the plant should be thoroughly watered each time the soil becomes dry until the new pseudo-bulbs are fully developed, after which water should be gradually withheld. During their season of rest the plants should always be on the dry side until the lower scales are seen to be pushing from the young growths. All through their growing season the plants will be benefited by a warm, sunny position by day, with cooler and moister conditions at night.

OTHER ODNTOGLOSSUM. Such species as *O. Cervantesii*, *O. Humannianii*, *O. Galatrinum*, *O. Mathense*, *O. Rossi*, *O. maculatum*, and *O. aspersum*, that require repotting or re-surfacing, may be given attention at this period. They are best grown in shallow Orchid pans without side holes, and suspended from the roof of the cool house. Pot freely, and place the base of the plant just below the rim of the pan, and finish with a layer of Sphagnum-moss. Afford water carefully until the roots have grown freely into the new soil. While in full growth, the plants are benefited by light sprayings overhead several times daily.

LAELIA PUMILA. Plants of this species and its varieties are developing new growths, and as young roots are produced from their bases they should be repotted or resurfaced as may be necessary. These plants require liberal supplies of water at the roots during the season of growth, therefore it is important that the rooting materials should be sweet and porous. The ordinary shallow Orchid pans without side holes, and place a few cracks in the bottom, with the press of fern rhizomes over the top, gives the potting materials moderately firm, being of sufficient space for a layer of living heads of Sphagnum-moss over the surface. The plants should be exposed to a considerable amount of light and air at all times, and a plentiful supply of water at the roots is necessary when in full growth. Suspend them from the roof rafters in the cool house until the flowers begin to

show, when they should be removed by the intermediate-house. A suitable rooting medium for all the Orchids above mentioned is found in a mixture of equal parts of Osununda fibre and A 1 fibre cut in rather short portions, with an addition of crushed crocks and Sphagnum-moss.

THE FLOWER GARDEN.

By W. J. GRICE, Gardener to Mrs DEMESTER, Keele Hall, Staffordshire

PROPAGATING HARDY PLANTS.—Preparations should be made to propagate various hardy plants for the rock garden and herbaceous border. Partition a shallow frame into several compartments. Place 6 inches of sandy soil on a hard ash bottom and cover the compost with a thick layer of silver sand. The bed must be made quite level and moderately firm. Insert the cuttings with a blunt dibber, from 1 to 4 inches apart, according to the variety, syringing the compartment directly it is filled with cuttings, but do not close until the foliage is dry. Afterwards the frame should be kept closed until the cuttings are rooted. The frame must be syringed occasionally, and a light shading provided during bright weather. Admit air gradually when the cuttings are rooted, eventually removing the lights entirely. Plants that may be increased in this way are *Androsace*, *Campulanas*, *Phloxes*, *Dianthus*, *Androsace*, *Atenaria* and *Theris*.

CLIMBING PLANTS.—Plants growing in narrow borders are always at a disadvantage as regards moisture. Such borders need copious supplies of water, and a liberal mulch of some moisture retaining material, each time the roots have been thoroughly soaked. The thinning and training of young growths require constant attention, especially those of *Clematis*, *Vitis*, *Wistaria*, *Honeysuckle*, *Virginia Creeper*, *Jasmine*, and *Veronica*. Admit light and air to *Pyra-cantha*, *Chimonanthus*, *Cotoneaster*, *Garrya elliptica*, and *Ceanothus* by removing all weak, straggling shoots. Plants growing on pergolas, such as *Akebia quinata*, *Lycom europaeum*, *Begonia maculosa*, *Wistaria*, *Bridgesia spicata*, and *Clematis* need careful training to fill the spaces. The stock of climbing plants can be increased by layering, in the same way as for *Clematis*. Select suitable shoots as near to the base as possible and layer them in pots.

RAMBLER ROSES. Only a light pinning is essential at the present time. Remove weak or overgrown growths retaining sufficient to be flowering next year. In the climbing sections the old flowering branches should be removed as they pass out of flower. The new growths of plants trained on pergolas or walls must be carefully kept in shortening the straggles or removing the weak, as these may be lost. For a continuous display of bloom there are few climbing Roses to equal the variety *Graess* and *Ephzatz*. During dry weather copious supplies of leaf water, with occasional applications of liquid manure, will be beneficial.

PLANTS UNDER GLASS.

By J. G. WISSEY, Gardener to Lady NORTHOTE, Eastwell Park, Kent

MOSCHOEMA RIPARIUM. This is a useful indoor and conservatory flowering plant for the conservatory. Young plants should now be potted into 7½ and 2½'s, according to the strength of the plant. When re-established, the lights can be withdrawn altogether or the plants placed outside in ashes. *Moschoema* is a cross feeder, and should be potted in a fairly rich compost. Regular supplies of water are necessary during the growing season. Syringe the plants daily in the afternoon, and occasionally give a little clear diluted soil water. Pinch out the points of the shoots in the earlier stages of growth to ensure a bushy habit, but do not continue this too late in the season.

CAULOPHARIA CLIBRANNI.—When the plants of this *Caulopharia* have finished blooming, the older and tougher specimens should be discarded, and the remainder cut over and repotted in a cold frame. Do not give them much water at this stage, but provide light shading, and spray them overhead, keeping the frame merely damp to encourage the new growth. When this is sufficiently developed, the required number of cuttings should be taken off and propa-

gated. They will strike readily in boxes of sandy soil at kept close in a cool, damp frame. If large specimen plants are required for next spring, as soon as growth is fairly active put up some of the most promising of the year-old plants, and grow them steadily on in a cold frame. Use a fairly rich compost of turfy loam, well-rotted manure, and leaf soil in equal proportions, and give the plants a fairly liberal shift.

PRIMULA SINENSIS.—Give young plants in small pots a shift in good time. It is a good mistake to allow the plants to become pot bound, as they receive a check in growth, lose the good colour of their foliage, and become stunted. Use a light, open compost, and when potting see that the plants are firmly fixed in the soil at the collar. *Primulas* are sometimes sown so loosely potted that they fall over at the collar. This weakness generally arises in the first place, from being left too long in the seed pan, thus becoming drawn. Stand the plants in a cool frame, on an ash bottom, and shade lightly during hot sun. Water carefully, damp the plants overhead in the evening, and increase the amount of air. Seed may still be sown for a batch of plants for late-flowering.

STREPTOCARPUS HYBRIDUS.—Plants of *Streptocarpus* in full bloom require plenty of water this season. Keep all day-laying flowers picked out, for if the seed pods are allowed to develop the plants will soon cease blooming. If given constant attention in this respect, and weak liquid manure water, and an occasional dose of artificial manure, they will continue to bloom over a long period. Give abundance of air when the plants are in flower, and keep the house cool and well shaded. Seedlings required to flower in the autumn should be potted in a light, open compost similar to that recommended for *Primulas*. Do not overpot at this season; the seedlings will flower nicely in 60 and 54 sized pots. Set aside some of the finer forms, and allow them to carry a few seed-pods.

FREESIA.—As *Freesias* require a long season of growth before reaching the flowering stage, if they are required for blooming about Christmas time, the bulbs should be potted without delay. Bulbs that were left in the pots after being dried last spring should now be shaken out of the soil and graded. Do not pot large and small bulbs together or the growth will be irregular. A compost of loam and leaf soil, with some sharp sand added, will suit them very well, and 3 to 4 inch pots are suitable sizes. If the soil is in proper condition for potting, i.e., neither dust dry nor pasty, no water will be required; but if the soil is very dry one good watering should be given. Stand the pots closely together in a cold frame, and place a little sifted leaf mould on the top of the soil in the pots, to keep it from drying too quickly. The frame should be shaded until growth starts. Directly growth has begun shake off the leaf soil and give the frame ample ventilation. Afterwards expose the plants to sun and air, and give only very moderate supplies of water until the pots are filled with roots, when they will require a good quantity.

PRIMULA OBSCURA. If well grown this *Primula* will flower continuously for many months. Seed may be sown from May to August, to obtain a succession of good plants. Other good *Primulas* include *P. malacoides*, in various shades, and *P. Kewensis*, which makes a good contrast, the flowers being of a rich yellow. All these succeed under ordinary cool frame treatment, and will stand a cooler temperature than *P. sinensis*.

MARGUERITE MRS. F. SANDER. This double white *Marguerite* is a capital pot plant. Cuttings should be put in now to secure a batch of decorative plants in small pots. Cuttings inserted in boxes or pans of light, sandy soil will strike readily in a close frame or warm, shady house. As soon as they are potted transfer them to small pots, using light, rich soil. Grow them on in a light position in a house or frame. Pinch out the points of the shoots once or twice to ensure a bushy habit. Pot them again as soon as the roots show round the sides of the pot until the plants have been placed in their flowering pots. After they have filled these with roots, bed them with manure water.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications and queries for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, kindly observe our conventions or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their contributors.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the Editors, 41, Wellington Street, Covent Garden, London, W.C. Contributions should be written on ONE SIDE ONLY of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 62.4.

ACTUAL TEMPERATURE
Gardners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, August 9, 10 a.m., Bar, .3, temp 65.5, Weather Very dble.

Gardening Forethought.

There is no occupation which demands more forethought than does gardening, and therefore advice to gardeners on the importance of exercising forethought at the present time is not likely to fall on deaf ears. Assuredly, it cannot be urged too strongly that everyone can lend real assistance to national efficiency by "sitting down and taking thought" with respect to his next year's requirements. The best time to begin to consider the cropping of and distribution of crops in the garden is not when the ground is bare, but now. That done, a decision may be reached on the amount and kind of seed to be ordered, the quantity of manure—natural and artificial that will be required, the kinds and amounts of Potato seed, the supply of lime or chalk needed to maintain fertility or to exterminate such pests as club-foot, and the garden tools which require to be purchased or mended.

If everyone with a garden or allotment will take stock early of the needs of his land he will be making a very real contribution to the efficiency of the State; for he will be in a position to place his orders at an early date, and thereby both assist the traders working with depleted stocks and ensure for himself that the materials he requires will be received in time. Few who are not engaged in industry or administration realise the severe difficulties which have to be overcome in carrying on under present conditions the normal and necessary business of the State. By everyone taking thought these difficulties would be mitigated to some extent. It is therefore putting an illegitimate burden on the already overtaxed word patriotism to say that the exercise of forethought is an exercise in patriotism. General considerations

suffice to demonstrate that provision, always to be encouraged, is of very great national value at the present time; but there are other particular reasons for forethought which are not so apparent. Everyone knows that it is desirable to maintain exports at the highest possible level. Certain materials which are exported are also required for home use, and export in the case of these materials can only be undertaken after provision has been made for home requirements. Hence it is no extravagance to state that the home users of a commodity coming under this category can assist the welfare of the State by making the earliest possible estimate of their requirements and by placing forthwith their orders with the trade. For example, the only nitrogenous artificial manure available at present is sulphate of ammonia. This fertiliser is, as is well known, manufactured in this country. Enough of sulphate of ammonia must be set aside to meet home requirements. As soon as that has been done and not before the amount available for export can be determined. For these reasons farmers and gardeners are advised to form an estimate of their requirements as soon as possible and to place their orders. With the object of encouraging this course of action, the price of sulphate of ammonia has been adjusted in favour of the early purchaser.

There are many other commodities the early ordering of which for similar or other reasons is greatly to be encouraged. Hence the importance of forethought, not only with respect to garden, but also with respect to household, needs.

SUBSCRIPTION TO THE "GARDENERS' CHRONICLE." In accordance with the announcement published in our last issue, the price of the *Gardener's Chronicle* has been raised to fourpence. During three years of war our readers and advertisers have supported us in such a steadfast manner that it has been possible during that long period to keep the price unaltered, and we had hoped that this might have been the case until the termination of the war, notwithstanding the continuous increase of the cost of production. In spite of the support still so liberally given us, however, there is evidence at the beginning of the fourth year of still further increases in the costs of production, particularly with respect to the supply of paper, and it has hence become imperative to add one penny to the price. We are confident that our readers will recognise the cogency of the reasons which have made the change inevitable. The original price of the *Gardener's Chronicle*, from 1841 to 1862, was sixpence, and from 1862 to 1867 fivepence, when a decrease in the cost of production allowed of the reduction to threepence.

DESTRUCTION OF WEEVIL IN PEAS AND BEAN SEED. By subjecting Peas and Beans seed brought into the warehouse to the vapour of carbon bisulphide, American seed houses find that weevil is destroyed. The treatment, which is cheap, is carried out in an airtight chamber with double doors. The seed is shot direct from trucks into the chamber, subjected to the vapour arising from liquid carbon bisulphide, and then stored in the usual way.

LONDON ALLOTMENTS.—The persistent bad weather of last week prevented their Majesties the KING and QUEEN from carrying out their projected visit to London allotments. The tour of

inspection had been fixed for August 4, and Mr. Phipps, the President of the Board of Agriculture whose interest in "petite culture" is well known—was to have accompanied their Majesties.

BRITISH GARDENERS' ASSOCIATION.—We are informed that the members of the British Gardeners' Association have, by an overwhelming majority, decided to register the Association under the Trade Union Acts.

THE NATIONAL FRUIT GROWERS' FEDERATION.—It is satisfactory to learn that the National Fruit-growers' Federation is to be completely reorganised, with the help of Mr. DUNCAN GIBBS, of Pershore, as secretary. In the past the association has been a feeble and inactive body, which has not gained, as it has not deserved, the confidence and effective support of fruit growers generally. The new secretary has a high reputation for energy and business ability, and he will do all that he can to render the Federation effective. A new president, Major WHEELER, M.P., has been elected, and a vice president and a representative council are to be chosen. It is desired that every county in which fruit is grown extensively shall be represented in the council, and that local fruit growers' associations will affiliate to the central body. It is hoped that fruit growers generally will give the revived Association a good start, by joining and supporting it. By combination alone can they secure from the Board of Agriculture and Parliament the attention and consideration which their enterprise requires.

ACID PHOSPHATE FOR ROSES AND CARNATIONS.—Trials of the relative values of acid phosphate and bone meal as fertilisers for Roses and Carnations have led Professor F. W. MERRICK, of the Illinois Agricultural Experiment Station, to conclude that acid phosphate is to be recommended in preference to bone meal. Two sets, each of 144 plants of the Roses Richmond and Killarney, were treated, one with acid phosphate at the rate of 20 lbs. to 100 cubic feet of soil, and the other with bone meal of equal money value. The plants which received acid phosphate gave from September 15 to December 18, Killarney 2,391 blooms, and Richmond 2,069, as against Killarney 1,918, and Richmond 1,792, with bone meal. The application of acid phosphate to carnation soil led to an increase of bloom at the rate of 500 flowers to each 1,000 plants.

THE REMOVAL OF SNOW.—Although entirely unseasonal, it seems worth while to put on record the simple and efficacious method of removing snow practised by nurserymen in the colder parts of America. The path to be cleared is sown with finely powdered dark soil. As a result, the area so treated is ready for planting much sooner than would otherwise be the case. The method deserves the attention of municipal authorities in this country.

LOCAL SOCIETIES.—On July 19, the Freshwater Isle of Wight Horticultural Society held a garden produce exhibition, instead of their usual annual horticultural show. Over 250 exhibits were staged in the Rectory field. A handsome silver cup, which was the chief trophy, was won by Mr. W. STEPHENS. The annual summer show of the Wood Green Horticultural Society was held on July 21, and was chiefly remarkable for the excellent quality of the vegetables shown. The show was held in the Town Hall, and the local allotments were well represented by varied produce of good quality. A floral fête was organised on July 27, in Belfast, by the Irish Rose and Floral Society, in aid of the Sailors' and Soldiers' Service Club. The show took place in the Ulster Hall, and was opened by Viscountess BANGOR, accompanied by Lord BANGOR. There were many fine exhibits, including non-competitive displays by the leading Rose firms, notably MESSRS. ALEX. DICKSON AND SONS, MESSRS. HUGH DICKSON, LTD., MESSRS. S. McGREERY AND SON, and the DONARD NURSERY.

SIR HARRY AND LADY VEITCH.—All horticulturists will join us in offering to Sir HARRY and Lady VEITCH the heartiest congratulations on the celebration of their golden wedding, which occurred on Monday last. May they both be spared long to enjoy the comparative leisure which has succeeded long and strenuous days devoted so ungrudgingly to the public good, and in particular to the spread of horticulture in all parts of the world. The design shown in fig. 23 is taken from the commemorative card.

PEACHES AND NECTARINES.—Now that the outdoor Peaches and Nectarines are ripening, evidence of the bountiful crop may be seen in the markets and fruit stalls, where large numbers of these choice fruits are exposed for sale. Nectarines of the best quality, but of moderate size, are being sold at fourpence each, even in the fashionable shops. Earlier in the season, however, the fruits realised very high prices. One large grower informs us that he has sold consignments at 30s. a dozen. Those who remember the extraordinary exhibits of Mr. GEORGE WOODWARD, of the Bathin Estate Gardens, near Maidenhead, made at the R.H.S. Show at the Crystal Palace in 1902, to show the disastrous effects caused to the hardy fruit crops in that garden by hailstones, will be sorry to hear that three weeks ago the same garden was visited by a hailstorm only less disastrous than that of 1902. Hundreds of Peaches and Nectarines have been taken from the trees owing to hail-storm injury. The storm caught the south and west walls principally, and it is fortunate that a good number of the trees on east walls escaped. But for the unfortunate visitation, Mr. WOODWARD estimates that he would have marketed this season something like fifteen thousand Peaches and Nectarines. The storm was very local, and in its greatest severity was confined to an area of six acres, where the hailstones are described as having resembled great pieces of ice. Outside this radius they were only of ordinary size.

FRUITS IN SEASON.—Messrs. W. STAMBOOK AND SONS, Chelmsford, send us a sample of some Black Currants of a variety they have found to be immune from attacks of the Curculionid mite. The name of the variety is Chelmsford Black, it is described as being an exceedingly heavy crop, and as bearing fruit over a very long period. The fruits remain sound on the trees, after they are ripe, for about four weeks. We are told that it has been cultivated by Messrs. STAMBOOK AND SONS for thirty years, and that the bushes have never been attacked by the mite, though grown among plantations of other varieties which have been badly affected.

FLIES AND MANURE.—The subject of the house fly is ably dealt with in a leaflet lately issued by the School Nature Study Union, entitled *The House Fly and Its Kinfolk*. The difference between the house fly and the some what similar out door species is pointed out, and means indicated for the reduction of its numbers. The danger to health of the plan of dumping horse refuse on waste ground is emphasised, and the opinion expressed that all such refuse should be immediately taken to the destructor and burnt. The domestic dustbin can be rendered less attractive to flies by the use of disinfectants, but the reader of the leaflet is warned against using horse refuse which has been thus treated as manure, unless it is well known that the disinfectants used are not harmful to plant life.

WAR ITEM. Mr. A. J. WAIN, formerly Superintendent of the Shrewsbury Public Parks, who is serving with the Royal Garrison Artillery, was selected by the Navy and Army Canteen Board Committee to take charge of one of their Government farms in Dorsetshire. The application has, however, been refused by the Army authorities, as Mr. WAIN is shortly to be attached to a siege battery for service abroad.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See also Tables in *Gardeners' Chronicle* for July 23.)

(Continued from p. 46.)

4.—MIDLAND COUNTIES.

BEDFORDSHIRE.—Goozeage. Plums are cropping very well this season, and Damsons are exceptionally heavy. All other varieties are poor. Early varieties of Strawberries yielded a poor crop, but Givon's Late Profusion bore exceptionally well. Where the spraying of Apples has been neglected the crop is poor, but where the spraying has been attended to there are some good crops, and the trees remarkably free from insect pests. W. H. NODD, *Woburn, King's Fruit Farm, Rothmoor, Aspley Guise.*

Fruit trees in general are looking better in this district than they have been for several seasons. A. J. BELL, *Luckwell, Princes Risborough, Bucks.*

The fruit crops in this district are very satisfactory, the trees keeping clean and healthy. The absence of frost in spring permitted a good set of fruit. WILKIN BROOKS, *Mossenden House, Aylesham.*

The fruit crops in this neighbourhood are, on the whole, up to the average. Early dessert and culinary Apples are carrying good crops of clear fruit, but late varieties like Newtown Pippin and Bleheim Pippin failed to set. Pears and Cherries are excellent. Peaches and Nectarines are over average, and the trees are clean and healthy. Strawberries were small, and the crop a light one; the plants suffered from the late frosts in April, and were late starting into growth. Bush fruit of all kinds are doing well. Black Currants and Gooseberries are extra good. CHAS. PAGE, *Drayton Gardens, Maidenhead.*

CIRENCESTER. With the exception of Apples and Strawberries, the fruit crops are satisfactory. Caterpillars attacked the Apple trees suddenly and severely, especially where spraying had not been carried out. Many trees in the orchard, however, appear to have escaped, and are carrying good crops. The severe winter damaged



FIG. 23. SIR HARRY AND LADY VEITCH.

The weather was a fine show of Apple bloom which have not failed to set a full crop. The weather was too variable, but bees are very scarce in the district. There was no late frost. Pears are bearing a heavy crop. LARTON BROS., *Bell Busk.*

The fruit crops are very fair. Apricots are not quite up to expectations, but Peaches are bearing a splendid crop. Apples look very promising; the trees are fairly healthy. Strawberry berries have been abundant and very fine. Gooseberries and Currants are yielding good crops, but I have never known caterpillars so trouble some before. Filberts look very promising and Walnuts fairly so. THOS. H. STANTON, *Hawick Hall Gardens, near Wellingborough.*

BUCKINGHAMSHIRE. Apples, Plums, and bush fruits are much above the average. Strawberries blossomed freely, but the crop was much under average, both in quantity and quality. Fruit trees are, on the whole, healthy and clean, though Gooseberry bushes were badly attacked by caterpillars, and the foliage considerably damaged. Our soil is a heavy, retentive loam resting on clay, and the natural drainage is bad. W. HEDLEY WARREN, *Easton Chilton Gardens, Tring.*

The Strawberry plants, skinned, then of foliage, with the result that they threw up weak flowers, and the crop was small and third-rate in quality. CHARLES BLACK, *Cholmondeley Castle Gardens, Malpas.*

The season has been favourable for fruit generally, a late spring always suits this locality. The best crops of Apples are in such varieties as Grandeur, Pott's Seedling, Lord Suffield, Kew-ack Codlin, and Mer-de-Ménage. Raspberries, Gooseberries, Damsons, and Victoria Plums are bearing very heavy crops. JAMES ALLEN, *Stockton Lodge Gardens, Hail Croft, Stockport.*

The condition of the fruit crops proves the truth of the old Cheshire proverb, "a late spring for Cheshire," for after an exceedingly severe winter and backward spring, the fruit crops in our neighbourhood are mostly very abundant, especially Damsons, Pears, and Apples. An early spring is detrimental owing to the low set of fruit and late frosts. ALFRED N. JONES, *Morley Hall Gardens.*

There is every prospect of record crops, and so far the fruit is of excellent quality, and freer from pests than I have known it for some years past. P. HOLT, *Moon House, Middleton.*

HEREFORDSHIRE. The fruit crops in this district are very promising, but late. We had good conditions for the setting of the fruit, and favourable weather since; everything points to plentiful crops of all kinds. *J. Morfeld, Durbly Abbey Gardens, Durbly.*

HEREFORDSHIRE. The fruit crops here are good, with the exception of Plums. Although the Plum trees were laden with blossom, the flowers failed to set, the weather at the time of flowering being dry and cold. Things were different when the Apple trees were flowering, the weather being showery; these set well, and many trees have shed a number through over-crowding. The caterpillar plague has been bad, and measures must be taken to combat this evil; they destroy a number of fruits. The soil here is a very heavy loam, suiting fruit trees admirably. *William Fulford, Sulgrave House, Aldenham, Watford.*

The late season and absence of late frosts was conducive to a splendid set of all fruits, but what promised to be a bumper crop has been adversely affected by the long drought. Pests have not been so injurious this season as on some previous occasions. Peach leaf blister has also been less prevalent. The soil here is a very heavy loam overlying the London clay. *E. F. Hazleton, North Myms Gardens, Hatfield.*

(To be continued.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

RAMBLER ROBES FAILING TO BLOOM.

Insufficiently ripened wood is often the cause of Ramblers failing to bloom, especially when they are planted in a shady position and get very little sun. In such a position Ramblers will throw up green canes, but they remain sappy and fail to ripen or bloom. Where such is the case it is a good plan to stop the canes in June or early July and thus give them a better chance to ripen and throw out plenty of flowering wood the following year. This is worth noting for next year. *A. J. Gurr, Easton Hall Gardens, Grantham, Lincs.*

CARBON BISULPHIDE AS AN INSECTICIDE.

I notice in your issue of Saturday last, on p. 45 (R.H.S. Scientific Committee), a note on ants attacking the flowers of *Lilium regale*. The best remedy is extermination by means of carbon bisulphide (C.S.₂), which, while poisonous to insects, seems to be harmless to plants, in the open at least. The ant brings with it scale insects and even fly, and places them on plants conveniently situated for its own use. C.S.₂ can be used to kill many insect pests which make their abode in the garden. It is no doubt poisonous, and explosive when the vapour is mixed with air, but it evaporates fairly quickly. I have used it for killing ants and wasps in the rock garden, and have never seen any bad effects. Two fluid ounces poured into the entrance of a wasp nest in the ground, preferably after dark, will usually kill every wasp. To eradicate ants, pour the liquid into holes made in the soil where they are working, covering the ground to prevent any rapid evaporation. *William Lowe, Bullockwean, Margkirk, Kinross, Fife-shire.*

FRUIT TREES ON GRASS.—The orchard on grass has hitherto been left to take care of itself in most cases, never pruned, and frequently never manured, and yet some very good fruit has been grown in such conditions. Some years ago I was acquainted with a gardener on a large estate who lived in one of the entrance lodges, and who took great pride in an Apple tree which was growing in a grass lawn in front of the cottage. The soil was shallow and of a nature where tender might be expected, but his tree was a perfect specimen, and no tree wherever or however grown could have been vainer or more productive, or give better fruit. He always used it as a lesson to people in the neighbourhood who said they could

not keep trees healthy in such soil. I think it is well established that the colour of the fruits is better in grass. I have found it so. I had two trees within 30 feet of each other, one over grass and one without. The difference in colour was very marked, and both were identical in age, size and variety. I am strongly of opinion that if trees on grass were looked after as carefully as those in cultivated ground, the difference in results would be, apart from colour, practically negligible, and that they would not be great enough to warrant the expense of hoeing. An orchard need cost nothing at all for grass cutting, as grass would do that perfectly, and help to enrich the ground. Taking everything into account, I think that if the soil be good orchards on grass pay the best. As I always point out, in a state of nature trees flourish in grass. I should like to know why the colour is higher on grass and the fruit ripens sooner, as it was in my case. Of course, this isolated instance is not enough to prove that such is always the case, but others have observed a like result. I know of some Rose trees with grass right up to the stems, but they look quite healthy. One tree has been grown in such conditions for about ten years to my knowledge, and flowers freely. Trees of all kinds look well in grass, and that counts for something, too. Perhaps for the first two years it is best to keep the soil cultivated. Mine was cultivated for four years before sowing the grass round the trees. *W. J. Farmer, Ye Hill, Redruth, Cornwall.*

INTENSIVE CULTIVATION.—Some articles on intensive farming appeared recently in the *Scottsman* which demonstrate the big advance made in recent years by progressive agriculturists in Scotland. The increased crops are said to be due to the use of fertilisers in larger quantities than formerly, to improved varieties of Oats, and in Potatoes, among other things, to the practice of sprouting the seed-tubers previous to planting them. Deep cultivation always forms a part of intensive farming, but I did not notice that this fact was emphasised. The lack of potash is not a worry to the progressive farmer so long as he has "super," sulphate of ammonia, and lime; and the improved percentage he has reached is not the limit, for much larger crops are anticipated in the future. It means, however, that larger capital is necessary than was required hitherto, and it means also, not improbably, the elimination of the small holder, who, in the future, will be seriously handicapped by the rise in prices for labour, artificial manures and seeds. Is gardening also progressing at the same rate as high-class farming? Or, in other words, are gardeners turning out larger crops than were produced twenty to fifty years ago? The farmers have left the old-fashioned theories about the amount of manure required for crops far in the rear, and it is patent to all who have carried-out experiments that garden crops are capable of assimilating an amount of manure, animal and mineral, far in excess of that assumed to be sufficient by authorities. In fact, ground may be cropped and re-cropped without cessation and continue to yield unaltered returns, provided that the soil, by means of renewed applications of manure and good cultivation, is never allowed to lose its fertility. No crop shows this to be the case more clearly than Grapes. The theory that Grape vines are worn out after ten or twelve years' cropping is exploded. They will crop indefinitely, and always abundantly, provided they are fed, not intermittently, but continually. So with Cucumbers; the number of fruits that the plants will produce, provided the fruits are cut young and the plants grown with abundance of manure, is enormous. It is usual to restrict the crops far below what the plants are capable of producing. Again, with Cabbages, Onions, and many other crops, we fail to gain what the soil is capable of producing, because we do not know how much manure it is capable of turning into vegetable food. I planted a few hundred-weights of Potatoes with very considerable misgivings this season, owing to the diminutive size of the seed sets. The result so far is excellent. *R. P. Brothers-ton.*

SOCIETIES.

MIDLAND CARNATION AND PICOTEE.

JULY 27 AND 28.—The annual show of this Society was held at the Botanical Gardens, Edgbaston.

Although the display was not a very extensive one, and many of the flowers were under-sized, the quality was good. The old-fashioned way of showing Carnation flowers with stands and neat white paper collars still finds favour at Birmingham, but the flowers exhibited in vases with Carnation foliage produced a more pleasing effect, and were greatly admired by visitors.

In addition to winning six of the eight first prizes in the classes in which they were eligible to compete, Messrs. A. R. Brown's flowers also secured five premier awards. With the exception of Mr. S. Hyslop, of Langholm, Scotland, all the exhibitors came from the Midlands.

FIRST DIVISION (OPEN). FLOWERS SHOWN IN VASES.

Three classes were reserved for flowers staged in vases without cards. Competition was weak, Messrs. A. R. Brown, Ltd., King's Norton, being the only exhibitors in the leading class, which required 60 blooms of Carnations and Picotees in 12 varieties, arranged in fives on a space of 5 feet by 3 feet. Any section except Bizarres and Flukes was admissible, but not less than 3 vases of selfs, 2 of yellow-ground Fancies, 2 of yellow-ground Picotees, 1 of white-ground Fancies, and 1 of white-ground Picotees or Fancies other than white or yellow grounds were to be included. Messrs. A. R. Brown, Ltd., who were awarded the gold medal, had a beautifully arranged collection, which included 3 premier blooms. The varieties shown were as follows:—Frank Gottwaltz, Eclipse, Lieutenant Shackleton, Mrs. A. Bisterstone, J. C. Nitten, Betty, Bookham White, E. V. Lucas, Fortrose, W. L. Hodgkinson, Innocence, and Cayenne.

The same exhibitors also secured 1st prize in the next class, which was for 6 vases of self Carnations dissimilar, 3 blooms of one variety in each vase. Titan, Dora Blich, and Wyatt were shown in splendid condition.

See Vases of White-ground Picotees.—1st, Mr. C. H. HERBERT, with shiny flowers of Mrs. Hammond, Silas Osbaldeston (Premier), Fair Maiden, Gaynede, Fortrose, and Clytie; 2nd, Messrs. A. R. Brown, Ltd., whose specimens of Helen, Osprey and Lady Schil were very attractive; 3rd, Mr. T. M. TRAFFER, Solihull.

SINGLE BLOSSOMS ON STANDS.

Twelve Self Carnations, Dissimilar.—1st, Messrs. A. R. Brown, Ltd., with Henry Brett, Ann Hathaway, Mrs. Howard Green, Attraction, Cardinal, Gordon Douglas, Rosy Morn, Mrs. Arthur Trow, Irene, Jim Bludso, E. Shiffin, Irma, and J. C. Miller; 2nd, Mr. E. G. REED, whose best flowers were Bookham White, Mrs. F. W. Flight, Mrs. E. Douglas, Wyatt, and Earliest North (Premier).

Twelve Fancy Carnations, Dissimilar.—1st, Messrs. A. R. Brown, Ltd., with handsome flowers of Brilliance (Premier), Dr. Wilkinson, Pal of Mine, Butterfly, Lieutenant Shackleton, Frank Woodward, Watchman, Stanislaw, Linkman, Harry Woodward, and Maxed; 2nd, Mr. C. H. HERBERT.

Messrs. A. R. Brown, Ltd., won first prizes in classes for (1) Twelve Yellow-ground Picotees, and (2) Twelve White-ground Picotees, with very refined flowers. Mr. T. M. TRAFFER and Mr. C. H. HERBERT also showed well in these classes. The best stand of Twelve Flake or Bizarre Carnations came from Mr. C. H. HERBERT, whose exhibit included two Premier blooms, viz., St. Kenneth (Bizarre) and Cleopatra (Flake).

SECOND DIVISION (AWARDED). FLOWERS SHOWN IN VASES.

The principal class was one for 56 blooms in 12 varieties. The competition was good, and flowers of excellent quality were included in the five exhibits placed before the judges, who

awarded the gold medal offered as first prize to Mr. T. M. TRAMER, whose flowers were undoubtedly for their high culture and refinement. The varieties exhibited were Becky Sharp, Hercules, Lord Steyne, Onward, Rosy Morn, Dona Bick, Innocence, Mrs. J. K. Kent, Hidalgo, Mrs. E. Douglas, The Nizam, and Favourite; 2nd, Mr. E. KENWRIGHT, Smethwick, who had splendid flowers of Bunny, Bookham White, Lukman, John Kidd, and Margaret Lennox; 3rd, Mr. S. HYSLOP, Lake House, Langholm.

For three vases of self Carnations, dissimilar, Mr. E. KENWRIGHT won 1st prize with exquisite examples of Rosy Morn, Gordon Douglas, and Bookham White; 2nd, Mr. T. M. TRAMER, whose vase of Bookham White was very lovely.

The best three vases of white ground Picotees was exhibited by Mr. A. HALL, Harborne, and the varieties were Innocence, Fujiyama, and Border Yellow; 2nd, Mr. J. M. CAMM, Smethwick.

FLOWERS SHOWN ON STANDS.

Six Self Carnations.—1st, Rev. C. A. GOTTWALTZ, Hadzor, Deputwith, with lovely specimens of Madame Apollonia, Mount Everest, Mrs. Berkeley, Gordon Douglas, Armstrong, and Irma; 2nd, Mr. E. KENWRIGHT; 3rd, Mr. J. D. WILLIAMS, Smethwick.

Six Fancy Carnations.—The last named exhibitor led with Becky Sharp, Edenside, Sweetheart, Lord Steyne, Linkman, and Margaret Thurston; 2nd, Mr. E. KENWRIGHT.

Six Yellow ground Picotees.—Mr. J. D. WILLIAMS excelled with Margaret Lennox, Onward, Santa Claus, Edipse, F. W. Goodfellow, and Togo; 2nd, Rev. C. A. GOTTWALTZ, who showed W. L. Hodgkinson in fine condition; 3rd, Mr. E. KENWRIGHT.

Six White ground Picotees.—1st, Mr. J. D. WILLIAMS, who showed superb flowers of Gany mede, Carrie Goodfellow, and Mrs. Opushaw; 2nd, Rev. C. A. GOTTWALTZ.

Six Flats or Bicolor Carnations.—1st, Mr. T. M. TRAMER, with Edmet Houglave, Meteor, Black Diamond, Geo. McVillie, Sir Kenneth, and Admiral Curzon.

PREMIER FLOWERS (DRESSED).

Bicolor Carnation.—Sir Kenneth, exhibited by Mr. C. H. HERBERG.

Flake Carnation.—Chloëdra, exhibited by Mr. C. H. HERBERG.

Heavy edged White ground Picotee.—Gany mede, exhibited by Mr. E. KENWRIGHT.

Light or White edged White ground Picotee.—Clyde, exhibited by Mr. C. H. HERBERG.

Heavy edged Yellow ground Picotee.—Her Majesty, exhibited by Messrs. A. B. BROWN, LTD.

Light edged Yellow ground Picotee.—Onward, exhibited by Mr. C. H. HERBERG.

Yellow ground Fancy Carnation.—Brilliance, exhibited by Messrs. A. B. BROWN, LTD.

Self Carnation.—Furthest North, exhibited by Mr. R. G. RUD.

PREMIER FLOWERS SHOWN IN VASES.

Self Carnation.—Bookham White, exhibited by Messrs. A. B. BROWN, LTD.

Fancy Carnation.—Edenside, exhibited by Mr. S. HYSLOP.

Yellow ground Picotee.—W. L. Hodgkinson, exhibited by Messrs. A. B. BROWN, LTD.

White ground Picotee.—Silas Oshaldston, exhibited by Mr. C. H. HERBERG.

White ground Fancy Carnation.—Betty, exhibited by Messrs. A. B. BROWN, LTD.

Obituary.

GEORGE PATTINGTON. The *National Geographic*, of America, records the death, in May last, of George Pattington, an old established nurseryman in Aurora, N.Y. Mr. Pattington was an Englishman by birth, but emigrated to the States at the age of 17. He died at the age of 82, and leaves two sons to carry on the business.

CHARLES T. DREURY. As we go to press we are informed of the death of Mr. Chas. T. Dreury, V.M.H., on Wednesday last. The funeral will take place to-day (Saturday) at East Avon Cemetery, Horn Lane, Avon, at 3 p.m.

CROPS AND STOCK ON THE HOME FARM.

POULTRY.—SELECTING STOCK BIRDS.

The pullets and cockers should be separated, as they grow so much more sturdily when kept apart. All with crooked breast-bones, ill-coloured legs, wry tails, defective combs, blind eyes and wrong feather markings should be separated from the poked birds.

Now is the time to select birds of both sexes for stock. Pullets hatched at the end of March or early in April can reasonably be expected to lay in the autumn. But even with pullets of that age, very much depends upon the manner in which they are managed. Choice of breed is important, but it is purely a matter for personal choice and local circumstances. One sort is favoured in certain localities, wet or dry; in some other districts the same sort is not appreciated.

I am often asked what is the best breed for egg and table chickens. That is a difficult question to answer, because the best egg-producers are not the best table fowls; in fact, they are usually of the opposite character. For instance, White Leghorn is quite one of the best of egg-producers, but it is of no value as a table chicken.

English Game is probably the finest breed in existence for high table quality, but no one would recommend it purely as an egg-producer. The most easy method of combining the two ideals is to select a general utility breed and manage it well.

An important point, too, is that of strain, pure-bred birds of any sort vary in their laying properties, and the best are selected into strains. Birds of any breed are bred for one of two purposes, either exhibition or utility. Shape, size, comb and feathers are the essentials where exhibition is the aim. Where egg production is the aim the laying habit is the point to consider; the procuring of a good laying strain. This can only be achieved by a close test of the mothers in the previous season; by the aid of what is known as "trapping" a record is kept of the number of eggs each hen lays during a year. A hen producing anything like 200 eggs per year is a good layer, though this number is by no means a maximum. Pullets bred from such mothers are likely to be prolific layers. Whatever breed is decided upon, it should be true. As a guide to the beginner I will name a few desirable utility breeds, pointing out, however, that in the face of a shortage of food it is not wise to keep more than are sufficient for home use. Rhode Island Red is one of the best of utility breeds, laying fairly large brown eggs during the winter, and the brown eggs have a fastination that white eggs do not command. The chickens grow sturdily, and make fair table birds. The feathers are dark red, legs yellow, and comb single or double. Light Sussex lays tinted eggs freely during the winter; it is a good utility bird, feathers white, with neck hackles dark grey. Banded Plymouth Rock still maintains its reputation as a good winter layer; it is hardy, a good forager, and a useful table fowl. Buff Orpington is a much favoured fowl in many districts. It is a layer in July, when so many other breeds have gone off. It is a good table bird, and excellent mother. The feather colour is buff, with white legs.

White Orpingtons are larger than the Buff, and they lay brown eggs during the winter, and make large table fowls, much favoured in the market. White Wyandotte is a popular breed, laying freely rather small, tinted eggs, they are handsome in appearance, mainly of double combs, with deep orange-coloured legs.

Of white egg-producing breeds, White Leg-horn stands high in general estimation, and is probably the best of that type; pure white in feather colour, with a bold arching tail, a large, richly coloured comb, pure white earlobes, deep orange-banded legs, and a bold, upstanding carriage.

A good strain of Black Minorca lays the largest of all eggs; the birds are good for summer egg production, but of little value for table use. These and White Leghorn are not so strong a point in their favour.

Where hens of mixed breeds are kept together, it is wise to cross them with an Indian game bird, as well as birds for egg-producing, as it improves the table qualities.

No doubt the semi-intensive method of keeping fowls for winter egg production has much to recommend it. The hens are kept in a house with a southern aspect and with sufficient space to ensure that during wet or cold weather they need not be exposed; they are kept in the dry, warm quarters with plenty of exercise and judicious feeding of the scrap order. Fowls should not be fed too highly, especially where they are unable to get exercise. *Edwin Molynar.*

ENQUIRY AND REPLY.

I FOLLOWED your advice given last year as regards pruning, and my Peach trees are this year carrying a good crop of fruit. The border contains a lot of suckers. The roots are as thick as one's finger, and nearly on top of the soil. *Beche.*

REPLY.—We are glad to hear that your Peaches are bearing satisfactorily. It is not usual for Peach trees to throw up suckers in the way you describe, though Plums frequently give trouble in this way. In autumn remove the surface soil down to the roots, and cut off each sucker cleanly as near to the root as possible; then apply a top-dressing of fairly rich compost, to a depth of about 2 inches.

ANSWERS TO CORRESPONDENTS.

APPLE LEAVES.—*J. D. N.*—1. There is no fungus present in the leaf spots; in other apparently similar cases pyramida of a species of *Phyllosticta* often occur. The disease does not cause any appreciable injury. No. 2. This kind of "scorching" effect is probably due to soil conditions; a species of fungus (*Cladosporium*) is present, but it is probably living as a saprophyte on the parts already dead, and is not responsible for the injury.

EARLY VEGETABLES UNDER GLASS.—*E. C. B.* Potatoes form one of the most reliable crops for early production. They do well on shallow benches in a greenhouse, where the temperature does not often fall below 40° Fahr. If planted early in January the Potato is safe whilst under ground, even at 35° Fahr. One of the best early planting, plant early in February instead. Dwarf Peas can be sown in shallow benches on January 1, the crop cleared early in May, and Tomatoes planted afterwards. Early Radishes may be planted between the rows of Peas. If the houses are not lofty, Lettuces may be grown; Cammotto Nutt Cabbage Lettuce is one of the best early varieties. Carrots, such as Parisian Early Forcing, may also be grown. Early Vegetable Marrows may well, and could follow the Lettuces and the Carrots. If light can be excluded some early Ribwort might be grown, or possibly it would succeed under the benches. French Beans are too tender a crop to grow under cold treatment. It is not safe to sow them until the end of March in cool houses. Evergreen is a good variety to sow about that time. If there is an abundance of stage room, it is in a large span roofed Carnation house, an early crop of Extra Early Forcing Cabbiflowers may be attempted; they will come in useful early in May. Dwarf Early Cabbage are also a good crop, possibly one of the best where the temperature falls as low as freezing point. Mustard and Cress for salads are but little trouble to grow. Mercury (*Chromolaena Bains Henrietta*), as an early Spinach, is well worth attempting. It will thrive in a cold house, and if sown at once on a sunny border the plants could be lifted in October and put into shallow boxes. Keep them cold through the dark days, and bring them on in a light house towards the end of February. An excellent use for a cold house would be to bring on a crop of early Onions for planting out in early April. Early Lettuce, Cabbages, and Cauli-

flowers could all be raised in shallow boxes to plant on the outside borders in the early spring. Broad Beans scarcely pay as an inside crop, but if raised in pots and planted out early in April they will be in picking as soon as the autumn sown stock. Peas can be raised in pots from the middle of January to the end of the month for planting outside on an early border about the end of March. There are several books which would help you, e.g., *Vegetables for Home Consumption and Pickling*, by E. Beckett, 5s. 6d. post free; *The Vegetable Garden*, by W. Robinson, 15s. 8d. post free; and *The Culture of Vegetables and Flowers from Seeds and Roots*, by Sutton and Sons, 5s. 6d. post free. These can be obtained from our publication department if desired.

FRUIT SHOW: Inquirer. The Royal Horticultural Society's show of fruit will be held on October 2 and 3 this year.

HYDRANGEAS: H. J. D. The plants may be safely wintered in a shed without any further protection, providing that the structure is safe from hard frosts. Moderate frosts should not hurt the plants, as they do well out of doors in many of the warmer counties. Enough water must be given to keep the soil slightly moist. Pruning must be limited to the removal of any old and exhausted wood during the dormant season. The plump terminal buds on the strong shoots will produce the finest heads of blossoms. Iron filings mixed with the soil will cause the flowers to become tinged with blue, but other substances are used for the same purpose. For instance, alum water of a strength of 1 ounce to 2 gallons is recommended by many, while in the *Gardeners' Chronicle* for June 21, 1915, p. 422, mention is made of the success attending watering with iron alum. There are also two preparations which can be obtained from horticultural sundriesmen for the purpose, Azure and Cyanol, both of which are effective. Oxide of iron would doubtless serve the same purpose, but we have had no experience of it. The preparations above referred to are watered in, but the long one would have to be mixed with the soil, and it would therefore be necessary to repot the plants.

NAMES OF PLANTS: J. B. H. 1. *Salvia hians* (Cashmere Sage); 2. *Salvia sylvestris* (Wood Sage); 3. *Veronica virginica* (Great Virginian Speedwell); 4. *Lysimachia celtoides*; 5. *Aralia cordata* (often named *A. edulis*); 6. *Spiraea palmata* alba; 7. *Veronica virginica* (Great Virginian Speedwell); 8. *Apocynum androsaemifolium* (Tutsan leaved Dog's Ban). The white *Veronica* (No. 3) is some times distinguished as *V. virginica* alba, but it is really the original introduction, which now varies with white, flesh, lilac, and blue flowers. **W. B. C.** 1. *Catalpa bignonioides* (Indian Bean); 2. *Clematis heracleifolia* Davidiana; 3. *Sauraea canescens*—*Old Subscriber*. 1. *Resulobis Phytum* spicatum, but flowers are necessary to make sure of the genus; 2. *Swainsona coronillaefolia* (often named *S. Osbornii*); 3. *Cannanula raphanoides*; 4. *Cannanula raphanoides* alba; 5. *Lactuca Filixmas*; 6. *Polypodium aureum*; 7. *Silene pendula*; 1. *M. Magnolia tripetala* (the Umbrella Tree), a native of the United States—*E. D. Dixon*. 1. *Bignonia radicans*; 2. *Desfontainia tomosa*; 3. *Lathyrus salicaria*; 4. *Anthemis tricolora* Kewensis; 5. *Betonica officinalis*—*T. L. Manchester*. 1. *Nephtolepis exaltata* crispata; 2. we do not name varieties of Roses.

PEA ROOTS: H. G. Hatham. The roots of the Peas are attacked by *Thielavia basicola*. The disease is worst in wet and undrained soils, so excessive watering should be avoided. Affected plants should be pulled up and burned as soon as they show symptoms of the disease. Peas should not be grown on the same ground next year.

PLANTS THAT BLOOM AT NIGHT: C. G. A. As far as we have seen or heard, there is no book and no comprehensive article on plants that bloom at night, though there are scattered references to such plants extending over a long period in gardening literature. Some of the most remarkable plants that bloom at night are Amor-

phoballus titianum (syn. Conophallus titianum), *Cereus*, *MacDonaldiae* (Mrs MacDonald's great night-blooming *Cereus*), *Cereus coniformis*, *Cereus grandiflorus*, *Cereus leiodendensis*, and *Cereus nyctoides*. The *Amorpha* is powerfully scented but disagreeable. Many of the species of *Oenothera* (Evening Primrose) open during the early evening and are in perfection all night, including the naturalised British ones, *O. biennis* and *O. Lamarckiana*, both sweetly scented. Several of the species of *Silene* flower at night, including *S. noctolens*, *S. noctiflora*, *S. nocturna*, *S. mutans*, *S. dubia*, *S. vallesia*, and others. The second, fourth, and fifth of these are British. Amongst the *Stocks* *Matthiola tristic* and *M. bicornis* open during the cool of the evening and are sweetly scented. This also applies to the night-scented *Tobacco* (*Nicotiana glauca*, often named *N. affinis*), *Lychnis alba* (syn. *L. vespertina*) flowers best at night and is fragrant then. *Silene nutans* and *S. noctiflora* are also fragrant at night. You can get *Cactaceae* plants from Messrs. G. and A. Clark, Ltd., Dover. In pre-war days you could have got any number of species from Mr. H. N. Ellison, Bull Street, West Bromwich; and from M. Frantz de Laet, Contich, near Antwerp. *Cacti* cuttings and plants were offered recently by Ivanhoe, 7, Hartington Villas, Hove, Sussex, and by Mr. Hollis, Nurseryman, Norwich.

PLUMS SHOWING DISFIGUREMENT: G. B. The disfigurement of the fruit is caused by a Gall Mite (*Eriophyes padii*). It is too late to deal with the pest this season; the trees should be sprayed in winter with the lime-sulphur wash. With regard to the second query, the two Plums were separated when they arrived, and we can find no evidence that they are "twins." One of them is attacked by brown rot (*Monilia cinerea*), and the other Plum appears to have been attacked to it by a pad of fungal hyphae; this frequently happens when a healthy Plum is touching a diseased one. The disease would have soon attacked the healthy Plum through the point of contact.

POTATOS: W. T. W. The Potatoes are affected by common scab (*Osposora scabies*). As a rule, the disease does little harm, with the exception of disfiguring the tubers. The application of lime to the soil should be avoided, as the organism causing the disease is said to thrive in alkaline soils. The use of superphosphate and sulphate of ammonia is recommended to counteract the alkalinity. Certain varieties of Potato, such as "Golden Wonder" and "What's Wanted," are resistant to this disease, and should be given a trial on soil where the disease is prevalent. If *W. T. W.* The Potatoes are affected by the corky scab disease (*Spongospora scabies*). Diseased tubers should not be used as "seed." If possible, avoid planting Potatoes on the infected ground for at least three years.

PLOUGHING PASTURE FOR OATS AND WHEAT: C. H. To prepare for Oats, closely graze the grass until it is time to plough, so that there will be but little sward to encourage wire-worm. If the land is fairly dry, and the weather is suitable, ploughing may be done at the end of February or early in March. In opening the first two furrows with the plough, spread the turf over the land so that the next furrows can be effectively buried without raising too high a ridge. Plough the land in narrow furrows about 5 inches deep, with the skim (collar) affixed to the plough, to ensure the turf being thoroughly buried. Make each furrow firm with a heavy presser. Directly the ploughing is completed and the weather is dry, sow broadcast Black Tartarian Oats weighing not less than 40 lbs. per bushel at the rate of four bushels per acre. Harrow once, then sow 4 cwt. of agricultural salt, 3 cwt. of superphosphate, and 1 cwt. of sulphate of ammonia per acre over the surface. Then harrow many times, certainly not fewer than six, making the surface quite firm, but not enough to cause a callus. The artificial manure sown as directed accelerates the growth of the Oats so much that they grow out of the way of wireworm, which does not

injure cereal crops after the second leaf is formed. When the Oats are well through the soil choose a dry day, and thoroughly roll the plot, making the soil firm about the roots of the Oat plant. Should any Oat plants when 3 inches high exhibit signs of wireworm attack, sow 1 cwt. of sulphate of ammonia per acre as a further fillip to growth. Wheat: Early in October plough in a similar manner as advised for the Oats, and sow broadcast 3 cwt. of superphosphate per acre and 3 bushels of Red Standard Wheat, of clean, plump seed. Harrow at least four times, if light soil six times. In February sow sulphate of ammonia at the rate of 1 cwt. per acre. At the end of March or early in April, according to the weather, draw iron harrows across the furrows, loosening the soil about the plants and admitting air to the roots. Make the plot quite firm with a heavy ring roller, which should be used in fine weather.

THE GATHERING OF PEACHES: Miss P. Peaches should not be gathered before they are ripe as the flavour is never so good as when the ripening takes place upon the tree. In a soft, tender fruit like the Peach or Nectarine, there is, of course, a certain amount of danger in allowing them to ripen on the tree, as they may fall to the ground between the gatherings. For this reason many gardeners use nets which are so fixed that should the fruit fall no damage is done to it. Practice, however, enables the fruit-grower to arrange his times of gathering and so to judge the condition of each fruit that, whilst leaving the fruits upon the tree as long as necessary, at the same time he runs very little risk of losing them through injury from falling. If he is not quite sure that a fruit is ripe, though having reason to think it is near that stage, he places his thumb and fingers on the base of the fruit near the stem, and very gently feels if the flesh of the Peach is soft in that particular place; if it is, and the fruit parts readily from the stem when handled, he has no further doubt that it is ready for picking. Peaches and Nectarines intended for packing for long journeys, may have to be gathered at least 24 hours earlier than would be necessary were they to be consumed in the establishment where they are grown.

TOMATOS WITH HARD PATCHES: J. K. The Tomatos are not diseased, but are suffering from want of potash in the soil. Apply sulphate of potash to the roots, or, if unobtainable, a generous quantity of burnt wood ash.

TOMATOS: W. L. M., Abuss. We cannot find any pathogenic organism on the Tomatos; the only fungus present is a saprophyte (*Penicillium* sp.), which would not account for the trouble. May we assume that the spray fluids used were sufficiently diluted?

VINES AND PEACHES: Ignorance. You appear to be managing your vine very well as regards ventilation, and, as you are obliged to leave early, it is best to allow a little air to remain on at the top during the night when the weather is warm. If the house is in a hot position, it may be damped in the early part of a warm day, and occasionally in the middle of the day when there is bright sunshine, but never after closing, and the surface of the border, if it is inside, should not be made so wet as to become adhesive. Peaches do not require so high a temperature as vines; the house should be opened as widely as possible on a hot day, and during the ripening stage should never be entirely closed.

VIOLET PODODED CLIMBING FRENCH BEAN: F. Liddard. The Kidney Bean you send is Haricot à Cosse Violette, that is, Violet podded Haricot. The recorded English names for it are Purple-podded Bean and King Theodor Runner Kidney Bean. The pods are stringless, and are said to boil green like other varieties.

Communications Received—H. W. C. J. (Thanks for 1st. for R.G.O.F. box); J. B. R. C. H. P. E. M. G. W. H. H. F. G. G. D. Newtons; W. C. M. G. W. W. W. J. C. C. H. T. S. & S. D. M. R. W. J. R. N. G. P. L. G. L. G. P. E. T. S. A. W. E. B. T. S. E. M. W. B. H. W. H. D.

MARKETS.

COVENT GARDEN, LONDON.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eds.

Table with columns: Plants in Pots, s.d. s.d. Average Wholesale Prices, Ferns, con., s.d. s.d. Includes items like Aralia Sieboldii, Asparagus plumosus, Begonia rex, etc.

REMARKS.—This is a quiet time in the department, there being practically no flowering plants to offer. The market will be very dull for the next few months. The sale of cut flowers will be brisk for the next few months.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and foliage with prices. Includes Aster, Carnation, Calla, Chrysanthemum, etc.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and ferns with prices. Includes Adiantum, Asparagus, Liliolum, etc.

REMARKS.—The heavy rains during the whole of last week, and the cold, damp, and foggy weather of the present week, have done much to reduce the supply of cut flowers and foliage.

the present season, and a considerable quantity remained unsold. The supply of the standard White and Coloured Azaleas, which are sold in 5s. to 10s. per dozen bunches, is still plentiful, and in other kinds flowers are much more plentiful than in the previous season. There was a good sale of prices throughout the market for all grades. The prices of Liliolum longiflorum are very low, and prices for per dozen, Liliolum longiflorum are only of medium quality, and the best are difficult to find. Sibthorpe's (London) Gladiolus (Holland) and smaller Broomheads are still in the market, and a few bunches of Montebello are on offer. There is an abundant supply of white Heather, and 712 bunches are available at 1s.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices. Includes Artichokes, Beans, Broad, Carrots, Cabbages, etc.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices. Includes Apples, Apricots, Cherries, Currants, Dates, Figs, Grapes, etc.

There is a good supply of the standard White and Coloured Azaleas, which are sold in 5s. to 10s. per dozen bunches. The market is quiet for the present, and the supply of cut flowers and foliage is very limited. The prices of Liliolum longiflorum are very low, and prices for per dozen, Liliolum longiflorum are only of medium quality, and the best are difficult to find.

GARDENING APPOINTMENTS

- Mr G Osborne, 11, Grosvenor Gardens, London, W.
Mr H. B. Baines, 11, Grosvenor Gardens, London, W.
Mr E. Young, 11, Grosvenor Gardens, London, W.
Mr T. Wells, 11, Grosvenor Gardens, London, W.

ROYAL GARDENERS' ORPHAN FUND

B. WYNNE, Sec., 10, Bedford Chambers, Covent Garden, London, W.C.

The Tropical Agriculturist

[First issued in 1887 by the late Mr. John Ferguson, C.M.G.]

Journal of the Ceylon Agricultural Society.

PUBLISHED MONTHLY.

Editor: The Director of Agriculture, Ceylon.
Assistant Editor: The Secretary, Agricultural Society, Ceylon.

Subscription on Ceylon—Rs. 10 per annum; Foreign—£1, Rs. 12, or \$5 per annum, post free.

The Tropical Agriculturist occupies the leading place among British journals dealing with tropical agriculture. Articles on all branches of the tropical agricultural industries are included. Special reference is given to tea, rubber, coconuts, rice, and other products of Ceylon, and extracts from other agricultural journals and magazines are included. Important articles are given on the cooperative credit society movement.

CIRCULATION.

Europe: Belgium, France, Holland, Italy, Norway, Portugal, Russia, Spain, Switzerland, United Kingdom.
Asia—Andaman and Nicobar Islands, Asoe Islands, Brunei, Java, Malaya States, Philippine Islands, Sarawak, Siam, Straits Settlements, Sumatra, Tonquin, Cochinchina.
Africa: Central Africa, E. East Africa, E. West Africa, Egypt, Italian Somaliland, Madagascar, Mauritius, Portuguese E. Africa, Seychelles, Union of South Africa, Zulu, Zululand, Zulu.
America—Brazil, Canada, Cuba, Costa Rica, Guatemala, Mexico, Nicaragua, Panama, Peru, United States, Venezuela, West Indies.
Australia, Bismark Archipelago, Cook Islands, New Hebrides, New South Wales, New Zealand, Queensland, Solomon Islands, Tasmania, Victoria, West Australia, New Guinea, Oceania, New Caledonia, South Africa.

ADVERTISEMENT RATES:

Per Line 1s. or 75 cents.
SINGLE INSERTIONS, TWELVE INSERTIONS.
One page—Rs. 20.00, or £10.00, or \$10.00.
Half page—Rs. 10.00, or £5.00, or \$5.00.

Full particulars of Advertisements on application to: Messrs. MacLaren & Sons, Ltd., 37 & 38 Shoe Lane, London, E.C. 4.
PUBLISHED BY: Messrs. MacLaren & Sons, Ltd., 37 & 38 Shoe Lane, London, E.C. 4.

THE

Vegetable Garden.

This is an English translation, made by Mr. W. Robinson, of the celebrated work by the world-famous growers,

MESSRS. VILMORIN, ANDRIEU & CO.,

of Paris. There are no market growers to equal the French, and in this work English readers will find placed at their disposal, in readable and interesting form, all the experience and knowledge of centuries of successful cultivation. All the principal vegetables, including many which are at present unfamiliar to English growers, are fully dealt with; and numerous clear and informative illustrations give point to the instructions contained in the text.

EVERY FOOD PRODUCER

should obtain a copy of this book, which will enable him to get the very best results out of the ground at his disposal.

PRICE 15s. 7d. POST FREE.

From THE LIBRARIAN, 41, WELLINGTON ST., STRAND, W.C. 2.

A TREASURY OF INFORMATION

is contained in the

HORTICULTURAL DIRECTORY AND YEAR BOOK.

Nowhere else can the gardener obtain, within the small compass of four hundred pages, so much information on the subjects which interest him most. The knowledge which this little work contains is just what is indispensable to the gardener in his daily life. The

CALENDAR OF GARDEN OPERATIONS

takes him through the whole year, reminding him of the manifold small cares which make all the difference between health and ill-health in his plants. It also reminds him of the exhibitions which are to be held and of the most important annual meetings.

Another interesting section, which expands each year, is the list of

SCHOOLS OF HORTICULTURE.

with a brief description attached to the name of each such institution. Those concerned with the education of young gardeners—both men and women—will turn to this section with especial interest, and those who are seeking such education will find it of the greatest assistance in deciding which school to select. There are still for sale a few copies of the current edition.

SEND FOR ONE AT ONCE TO

The **LIBRARIAN, 41, Wellington Street, Strand, W.C. 2.**

PRICE 1s. 4d., POST FREE.

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S.

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE EUNYARD, V.M.H., lat. Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof. BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Aut. of "The English Flower Garden." (Double volume 2/6.)

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841.

No. 3999

No. 1599. VOL. LXII. {THIRD SERIES} SATURDAY, AUGUST 18, 1917.

{Registered as a Newspaper, {PRICE 4d. POST-FREE, 11d.

SUBSCRIPTION—Inland, 19 6; Foreign, 22- per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2.

Telegraphic Address—"Gardchron, Rand, London."

Telephone—Gerrard 1543.

For CONTENTS see page 55

NOTICE TO SUBSCRIBERS.

The price of the GARDENERS' CHRONICLE being now fourpence, the subscription, including the land postage, for one year will be 4s. 6d., for six months 2s. 9d., and for three 4s. 10d. As our readers are particularly requested to observe these alterations when renewing their subscriptions, in the event of any difficulty being experienced in purchasing copies, readers are invited to notify the publisher.

GREENHOUSE PAINTING & GLAZING.
"Vitreolite," superior to White Lead Paint, "Plastine" superoxide paint. Full particulars from W. CARSON & SONS, Glass Works, Battersea. Agents throughout the country.

NARCISSUS. Grand Primo 150,000 large selected Bulbs for forcing, 30s. per 1,000; Flowering Bulbs, 1s. per 1,000. VAN DER SLUIS, 11, Kamee, Guernsey.

J. GRAY, LTD., Builder of Conservatories, Greenhouses, A/c, and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3, Wre, 201, Western, London, Telephone 201, Western.

GISHURST COMPOUND. Insecticide and Fungicide—over 50 years' reputation; highly commended. R.H.S. Scientific Reports. Trials at Wisley, 1914-15. Sold by all agents in Garden, Sundries, Wholesale. PHIPPS' PATENT CANDLE CO., LTD., Battersea, London, S.W. 11.

RIVERS'S STRAWBERRY PLANTS. In all the leading varieties, well on roots from August onwards. Price list post free on application. THOMAS RIVERS & SON, The Nurseries, Sandridge, Wilt., Here.

BURNARD'S STRAWBERRIES. Our new descriptive list is now ready, and will be sent on receipt of card.
ALPINE STRAWBERRIES a specialty.
GEO. BURNARD & CO., Ltd., Royal Nurseries, Moulton, Leics.

ARMY BOOTS. (Reconstructed). A most comfortable and well made boot at a low price. Special service of these boots is their use in connection with gardening, farming, and other work. Large quantities post free. 100,000 pairs only the last 20,000 at a special price. Write for the approved Special List for quantities. THE THAMPS TRADING COMPANY, LTD. (Army Boots Dept.), 9, Eldon Street, London, E.C. 2.

ARMY BOOTS (reconstructed). A word of advice. The prices of boots and other footwear have gone considerably and all money spent in the coming winter will be a good investment to buy one here now. We desire to give our customers the benefit of our special conditions as above. THE THAMPS TRADING COMPANY, LTD. (Army Boots Dept.), 9, Eldon Street, London, E.C. 2.

ALLEN'S GOLD MEDAL NORWICH ROSES. Our new descriptive price list, with hints on how to grow roses, now ready. Write today. A. J. & C. ALLEN, Rose Growers & Cultivators, 59 years, Norwich.

CONTINUOUS PRODUCTION FROM THE GARDEN

Successive Catalogues of Seeds and Garden Requisites for present use.
See a full list of Vegetable Seeds for summer and Autumn Sowing, and also of cultural notes.
See a full list of Flower Seeds for present sowing and spring flowering.
See a full catalogue of 11,250 green, Baby, and other plants of the most popular kinds, including the most popular and desirable varieties of flowering and fruiting plants, &c. &c. These Catalogues will be sent post free on application.

SUTTON & SONS, The King's Seedsmen, READING.

BARRIS. Autumn and Winter-flowering plants, including Crocus, species, Colchicum, Narcissus, Hyacinth, Freesia, Lachenalia, Disca, &c. &c. Price list on application.
BARRIS & SONS, King St., Covent Garden, London, W.C.

MACKENZIE and MONCUR, Limited, Heating, Builders and Heating Engineers, 1, and 11, Edinburgh and Glasgow, by special Appointment to H.M. the King, London office, 8, Gauden Road, S.W.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also the famous Liquid Manure, Spawin. Proved superior for all applications to **DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.**

EVERY SUCCESSFUL BUSINESS MAN who is engaged in any branch of the trade, and who is desirous of increasing his profits, should have recourse to the "GARDENERS' CHRONICLE" for the information it affords. The paper contains the prices of all the principal articles of the trade, and other articles of interest to the business man. It also contains the names of the principal firms in the trade, and the names of the principal agents in the trade. It is a most valuable and interesting paper, and is well worth a trial. Write for a copy to the Editor, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C. 2.

WATERER'S ALPINE and HERBACIOUS PLANTS. New Catalogue now ready.

WATERER'S BRITISH-GROWN BULBS. New Catalogue now ready.

WATERER'S WARGRAVE ROSES. Catalogue and Supplementary List of new and the old varieties now ready.

WATERER'S RHODODENDRONS and OTHER SHRUBS. Catalogue free.

WATERER'S VEGETABLE SEEDS for PRESENT SOWING. List post free.

All orders of the above Catalogues forwarded post free on receipt of name and address.
JOHN WATERER, SOSS & CRISP, LIMITED, The Nurseries, Bagshot, Surrey, and Twyford, Berks.

SANDERS, Orchid Growers, St. Albans.

For Advertisement Charges see page v.

NOW IS THE TIME TO ORDER.

KELWAY & SON, The Royal Horticulturalists, Longport, Somerset, are now looking for orders for their Choice Hybrid Perennial Plants to be delivered in the Autumn. Plant a Colour Reader this Autumn, and you will be able to enjoy its beauty for many years without any additional expense or trouble. Send the measurements of your borders, and they will recommend a selection of flowers suitable for your climate and space, at their reduced prices.
Paeonies, Poplars, Pines, Hydrangeas, and other beautiful flowers included in their colour schemes, which provide blooms from early spring to late autumn.
Write now to the Retail Plant Department for Reduced Prices List.

WM. DUNCAN TUCKER & SONS, LTD., Laxey Road, South Tottenham, E. 15, Conservatories, Winter Gardens, Vinerias, Peach-houses, Potable Buildings, &c. Catalogues gratis.

PEED'S BULB LIST NOW READY. Please apply for a copy to be posted by return.

JOHN PEED & SON, The King's Seedsmen and Nurseries, WEST NORWOOD.

DOBBI'S Autumn List of Bulbs, Sweet Peas, Pinks, Anemones, and Flower Seeds and Cuttings post free. **DOBBI & CO., Royal Ferns, Elm 1026.**

FURNS' FERNS. Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogues free. **J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

PRIMULAS! PRIMULAS! PRIMULAS! 4th Year of Distribution. Our well-known Magnificent Stream Cinerarias, Chionodoxa, Calceolarias, &c.; 2s. per doz.; 12s. 6d. per 100, carriage paid. **JOHN STEVENS & SONS, Nurseries, Goswarty.**

100,000 LARGE GARDEN FERNS, 100,000 Palms, Begonias, Crotons, Begonias, R. c's, Ericas, Gloxinias, Lilies, Hydrangeas, &c. &c. Catalogues free. **J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

WALLFLOWERS Transplanted, Valerians, Bells, King, Covent Garden, Golden King, Crown Beauty, &c. 100, extra strong, 5s. 10d. per 100, address **MORLEY & CO., 150-156, Finsbury Road, S.W.**

WANTED, choice Fruit, Flowers, and Vegetable seeds and market produce returned, boxes, and surplus stock from Gardens accepted. **MORLEY & CO., 150-156, Finsbury Road, S.W. 3.**

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock; cash or exchange. See other advertisements; catalogues free. **J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

WANTED, GERANIUMS. Cuttings of Paul Crampel and Jacobae, Calceolarias (yellow and brown). Offers invited.—**MICHEL & CO., Nurseries, Albion Wick.**

SALE BY AUCTION.

SPECIAL TRADE SALES OF BULBS.
MESSRS. PROTHEROE & MORRIS

beg to announce that their Trade Sales of **HOME-GROWN BULBS**

will be held
EVERY WEDNESDAY
throughout the season, commencing
August 29th.

Catalogues on application. Growers and Merchants desiring to dispose of their Stocks are invited to include in these Sales.

Auction and Estate Offices, 67 and 69, Cheapside, London, E.C. 2.

BUSINESSES FOR SALE.

PROTHEROE & MORRIS, HORTICULTURAL, MARKET GARDEN, AND ESTATE AGENTS AND VALUERS, 67 and 69, Cheapside, London, E.C., and at Lynton, Ex. Monthly Horticultural Register had on application.

FOR SALE, FREEHOLD MARKET NURSERY, Essex.—14 acre land, 5 roomed bungalow, 2 houses (140 x 18), 2 houses (80 x 12), all heated, picking shed, &c.; all in good condition. Price £725. Bargain. All-health reason for selling.—S. J., Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

PROPERTY FOR SALE.

ESSEX. For Sale, with possession, Freehold Farm, about 24 acres, mostly Grass; good house and buildings and about 400ft. run Glass, heated. Particulars, S. J., Box 14, 41, Wellington Street, Covent Garden, W.C. 2.

SPECIAL NOTICE.

MR. R. GREENFIELD begs to remind all friends that, although engaged on National Service work he continues Midland representative to John Peel & Son. Officers this season will be very much appreciated, and must be directed either to the Firm at West Norwood, or to Mr. R. GREENFIELD, 61, Radford Road, Leamington Spa.

EXHIBITION.

GLASGOW FLOWER SHOW AND SALE
IN AID OF RED CROSS AND WAR FUNDS.

September 5 and 6, 1917.
For Schedules apply to Secretary, HIGH M. MARBLE, C.A., 121, St. Vincent Street, Glasgow.

PLANTS, &c., FOR SALE.

GERANIUMS.—Cuttings, single Pink, London or Mrs. Lawrence, also Snow Queen and various and many of Jolie Lavender Varieties, KEMP, 252, Bristol Road, Birmingham.

BAY TREES.—**ROBERT GREEN (1911), LTD.** beg to announce that they have a limited number of very nice Standard BAY TREES, in various sizes, for disposal. Prices on application. 25, Cranford Street, London, W.

APOLOGY.

Sawbridgeworth, August 8, 1917
DEAR SIR, In reply to your letter of the 7th inst., I make you a full apology for sending train to your boys to another schoolman. As they were boys in which I had purchased from my petal shop, I was unaware that I was infringing your Trade Mark by returning them to you. I am Yours truly, (signed) H. ROCHESTER, Messrs. Geo. Munro, Ltd., (Over it Garden Market).

MISCELLANEOUS.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipped Tweed; wears like leather; showerproof; 7 yards for 17s. 6d., Pattison Bros., BEAUFIELD WOOLLEN CO., 71, Bradford.

BUSINESS METHODS.—Experience in the world of commerce shows that there are two ways of conducting a business: the one being to charge as much as possible for what is sold, exacting a high rate from one customer and a low price from another, and the other to have a fixed price for everything and stick to it. The first method is to be condemned from every point of view, but mainly because it punishes the best purchasers, those who are ready to pay what is reasonably asked when the goods are marked in plain figures. The *Gardeners' Chronicle* adopts the alternative. It guarantees that its advertisement rates are not altered for any customer, big or little, old or new; all pay the same price for a similar thing. Consequently, while it is not possible to grant concessions, it is nevertheless the privilege of the paper to be in the position to assure each advertiser that he pays no more than anyone else.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

PRIVATE.

WANTED, HEAD GARDENER (WORKING) for North Lincolnshire, age not under 34, must have large experience of glass and outside Garden work, wages £250 per annum and good bonus. Reply, in first instance, with references, to T. W. H., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, HEAD WORKING GARDENER for 8 Northants, with experience in all branches of gardening, capable organiser of labour; 6 in staff; good cottage, &c., wife to undertake in winter; good references. Interview required at advertiser's cost—W. H., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, GARDENER (HEAD WORKING); one who takes a keen interest, is experienced in all branches, and reliable; ineligible; 5 others kept, wages 30s. and good cottage.—Address, HONBLE. MRS. F. COLBOURNE, Non-such Park, Chess, Surrey.

WANTED, GARDENER (HEAD WORKING); thoroughly experienced; 3 under; permanent situation to suitable man; good cottage, wages 75s.—Write, giving full particulars of previous experience, age, and family, E. S. HORN, Colney Manor, Royston.

WANTED, good all-round HEAD WORKING GARDENER, Glasshouses and outside, good house, coals, and vegetables, two Under Gardeners. Full particulars as to experience and wages required to H. V., Box 22, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, WORKING HEAD GARDENER, 5 men kept, good knowledge Inside and out, Grapes, &c. MRS TYNDALE, Meadowcroft, Cluske Hurst.

WANTED, HEAD WORKING GARDENER, cottages and good wages; ineligible. Apply, CROFTER, Mount Ballin, Cheltenham.

WANTED at once, SINGLE-HANDED GARDENER (some help given); about 1 acre, Lawns, Vegetables, Flowers, 2 small Houses, wages 25s. and small cottage.—Reply fully to S. G. PICKERING, Esq., Kentford House, Newmarket.

WANTED, SINGLE-HANDED GARDENER, good general knowledge; wages 25s. weekly.—Apply, MISS HORNBY, Eldondale, Crosswell Road, Arton, W. 3.

WANTED.—Can any gentleman recommend good SINGLE-HANDED GARDENER? in cottage. H. G., 7, Ludlow's Inn Fields, London, W. C.

WANTED, for September, SINGLE-HANDED GARDENER-HANDYMAN for North London; wages 25s., with good cottage, electric light, and coal; good references essential.—Write, stating age and full particulars, W. P., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, middle September, experienced GARDENER (single-handed, with boy); Stoke Poges neighbourhood, no Glass, good cottage, with garden.—Write, stating salary, to E. B., 360, Self's Advertising Offices, Fleet Street, E.C. 4.

WANTED, by September 8, a SINGLE-HANDED GARDENER; occasional help given, small Kitchen Garden and range of Glass; wages 25s. and lodge; also young Housemaid.—Apply, COLONEL MEYER, Tooting, Beds.

WANTED, GARDENER, for Fruit and Vegetable Growing; willing to be useful; a capable, conscientious man, about 55, or younger man if absolutely fit for military service, would suit; wages to start 30s. per week, with good cottage and garden, state family and give references. Reply GARDENER, c/o M. St. George, Heathcote Nursery, Comberley.

WANTED, good KITCHEN GARDENER, also good Cowman, and fill up time in Garden, ineligible; good wages. HEAD GARDENER, Thorpe Lea, Echom, Surrey.

WANTED, WORKING GARDENER; ineligible, 4-roomed cottage, with coal, gas, and vegetables; wages 23s.; must have good personal references. Apply to letter to A. WORTHINGTON, 35, Adlington Road, Streatham Park, S.W.

WANTED, GARDENER (ineligible), to work under Head Gardener, where others kept, good wages and cottage; permanent place if satisfactory.—Write, stating wages, with full particulars and references, to HEAD GARDENER, Banco Court, Faversham, Kent.

WANTED, WORKING GARDENER; ineligible, penmanship, Vegetables, Flowers, poultry, good references. Full particulars on experience. AUSTIN, The Elms, St. Margaret's, Tonbridge.

MRS WRAY HUNT, of West Manor, Riddington, Notts, requires a capable GARDENER; must understand growing of Greenhouse plants; wages 30s. a week and cottage.

WANTED, Couple, as GARDENER (Head or Under) of GARDENER-MOTOR DRIVER, wife houseless, good wages and cottage.—MRS. MARKER, Combe, Hampton, Devon.

WANTED, a MAN, who can grow Spring Bidding and other Hardy Plants, wages 40s. per week; 1 o'clock Saturdays, no Sunday duty. Also several GARDEN LABORERS, at 37s. per week.—Apply, SUPERINTENDENT, St. Marylebone Cemetery, East Finchley, London, N. 2.

WANTED, MAN to assist in Orchard Houses, meligible, good wages.—Particulars to J. W. FLECHER, The Globe Gardens, Sevenoaks, Kent.

WANTED, GARDENER (SECOND); ineligible, Kitchen Garden, Lawns, &c.; good wages and cottage. Full particulars to HARRIS, West Woodhay House Gardens, Newbury.

WANTED, UNDER GARDENER for House; Outside duty alternate Sundays; pumping in milk.—Apply, stating age, particulars, to ALFRED CHILD, Oatesley House Gardens, Daventry, Northants.

WANTED, UNDER GARDENER, used to Greenhouse and Stone Plants; single and ineligible. Apply, MRS. WAKEMAN NEWPORT, Sandbourne, Deal.

WANTED, UNDER GARDENER; cottage given. Write, stating wages and full particulars, LADY McMAHON, Southbroom House, Devizes.

WANTED, as UNDER GARDENER, young lad or young man (ineligible); good wages and comfortable place.—State particulars to G. GREEN, Porthead House, Porthead, Somerset.

WANTED, FOREMAN, by September 24, good all round, to take charge of Houses and superintend Outside during Head Gardener's absence in Army; single (ineligible), Bothy and vegetables.—State wages to A. THURSTON, Heveningham Hall, Yorkford, Suffolk.

WANTED, FOREMAN (ineligible); age 30; per week, but bonus 5s.; duty paid extra. State experience, full particulars, W. ANDERSON, Close House Gardens, Welton-on-Tyne.

WANTED, INSIDE FOREMAN; competent man, ex service or ineligible, wages 35s. weekly, with Bothy, &c. and attendance; duty and overtime paid extra. Apply, with fullest particulars, to GARDENER, Park Place, Henley-on-Thames.

WANTED, FOREMAN, or Good, Capable MAN, to take charge of Glass; 30s. per week, Bothy, &c.; duty and overtime paid.—Full particulars, A. BENNETT, Snelston Hall Gardens, Ashbourne, Derbyshire.

WANTED, JOURNEYMAN (INSIDE), with good general experience.—Apply, stating wages, with Bothy, F. GREEN, The Gardens, Aldermaston Court, Reading.

WANTED, JOURNEYMAN for the Houses, with experience, good wages; duty and overtime paid.—W. BUTLER, Wilton House Gardens, near Salisbury.

WANTED, JOURNEYMAN (inside); ineligible, 24s. per week, Bothy and vegetables; duty every third Sunday.—C. EARL, Somerhill Gardens, Tonbridge, Kent.

WANTED, a YOUNG MAN, ineligible, to work in the Garden, wages 24s., also UNDERPROVER, to work in the Houses, 17s., Bothy and vegetables, Sunday duty and overtime paid, 1 o'clock on Saturdays. Please write particulars to W. L. BASHIN, Ross of Gardens, Farnham, Berks.

WANTED, strong YOUTH, with little ex- perience, for general Garden work, take duty; 15s. per week, Bothy and vegetables; overtime paid; 1 o'clock Saturdays. J. A. MILDRED, Morevale Gardens, Atherstone.

WANTED, Strong YOUTH for Inside; wages 41 week; Bothy and vegetables; duty and overtime paid.—Particulars to W. PILGRIM, Bosdogan Gardens, Anglesey.



SLUGS SLUGS

“SANITAS” POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions free.

6d. & 1/- Tins & 15/- per Cwt. (Gross London) of all Chemists, Stores and Nurserymen.

THE “SANITAS” CO., Ltd.
Limehouse, London, E.

Awarded Medal at Royal Horticultural Exhibition, 1911.

Save our Food - Thousands of tons wasted through the ravages of Rats and Mice in our Farms, Store & Doms.

LIVERPOOL VIRUS exterminates **RATS & MICE**

Destroys the nucleus with Liverpool Virus. It kills the really prepared with bait for Rats 2/6 & 6 - for Mice 1/6 & 1/2. Call it TOMMORROW. EVANS BROS. LEICHER & WEBB Ltd., Liverpool.

IMPORTANT: Please write for a Catalogue, as the Paper Commission only allow us to send to those who apply.

LAXTON BROTHERS, BEDFORD.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.

STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.



Sample CRET Pot FREE with Booklet will convince you that the Treatment Erosity, Healthfulness of CRETS would help your plants. Write: **PETER BAILEY & SONS, Ltd.** 2 Heston Mersey Pottery, near MANCHESTER.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being unsold.

Particulars on application.

BOULTON & PAUL, Ltd., ROSE LANE WORKS, NORWICH.

WASP NETTING.

B. EDDY & SONS, Torleven Works, Porthleven, Cornwall.

Special No. 1 WASP NETTING. Extra strong and durable.

24 inches wide	16 per yard rim.
36	19 .. "
48	23 .. "
By 20 yard lengths.	Any length supplied. Also.
HEXAGON WASP NETTING.	
24 inches wide	8d. per yard rim.
36	1- .. "
48	2- .. "

Supplied by return, by post or passenger train, carriage paid

ROSES

(Vol. 10 of PRESENT DAY GARDENING), by H. R. DARLINGTON Edited by R. HOOPER PEARSON, Managing Editor of "Gardeners' Chronicle."

A good practical book for all Rose lovers. Contains much valuable information. 54 full-page coloured plates. A double volume. Price 2/10, post free. Special presentation edition with beautiful cover design, in cloth gilt, gilt top, price 3/10, post free.

THE PUBLISHER,
"Gardeners' Chronicle" Offices, 41, Wellington Street, Covent Garden, London, W.C. 2

THOMSON'S CELEBRATED MANURES

ONLY MEDAL INTERNATIONAL EXHIBITION EDINBURGH - 1886 ONLY GOLD MEDAL EDINBURGH - 1891

PERFECT PLANT FOODS. Prepared for all garden crops. Flower, Vine, Plant and Vegetable Manure, 1 cwt., 20 lbs. 1/9, 25 lbs. 7/6, 24 lbs. 4/6, 7 lbs. 2/6. Tins 2/6, 1/2 and 6d.

Carriage paid anywhere on 60 lbs. and up. Special Carriage Manure and Top Dressing Manure; 50 lbs. 30/-, 25 lbs. 16/-, 14 lbs. 6/-, 7 lbs. 3/6. Tins 1/-. Carriage paid anywhere on 25 lbs. and up, sold by all Stockmen. Sole makers, Wm Thomson & Sons, Ltd., Bedford, N.B.

SANKEY'S FAMOUS GARDEN POTS

the BEST and Cheapest.

Note quantity of each size required and have carriage paid (unless "carriage") frequently assumes to have "carriage" - write for Price List, free.

4th - 141 PLYMOUTH all descriptions. Path Dials and Fern Pots from 2/6 to 4/6.

RICHARD SANKEY & SON, LTP. Dulwell Potteries, NOTTINGHAM.

Established 1860.

JOSEPH BECKETT, LTD.,
Fruit Brokers and Commission Agents,
CENTRAL AVENUE, COVENT GARDEN.

Warehouses: 7, Garrick Street, W.C.

Consignments of Choice Hot House and Orchard Fruits Solicited.

Tomatoes and Cucumbers a Speciality.

Best Prices and Quick Returns Guaranteed.

References Supplied on Application.

EMPTIES AND LABELS SUPPLIED.

Ammanford and Pontyberem Collieries.

SOLE AGENT:

T. T. PASCOE,

York Chambers,
SWANSEA.

Telephone 1048 Central.
grams Pascoe, Swansea.

Best Anthracite Large Coal for Horticultural purposes and Cobbles for House Furnaces.

Quick Despatch. Best Quality.

Lowest Prices.

THE Gardeners' Chronicle

No 1699—SATURDAY, AUGUST 18, 1917.

CONTENTS.

Autumn shows ..	70
Centenarian market gardeners, a ..	70
Chinese Tea Plant, the ..	67
Corn prospects ..	70
Farm, crops and stock on the home ..	74
Frost a d evergreens ..	72
Fruit crops, remarks on ..	68
The ..	68
Local ..	70
Royal Horticultural ..	70, 73
Thalictrum dipterocarpum ..	72, 73
Tun ..	70
Varieties and food values ..	70
Week's work, the ..	69
Flower garden, the ..	69
Fruit under glass ..	72
Hardy fruit garden, the ..	69
Kitchen garden, the ..	69
Orchid houses, the ..	69
Plants under glass ..	69

ILLUSTRATIONS

Frost and Evergreens ..	72
Henry, portrait of the late Mr. C. L. ..	72
Nolina Loderi ..	66, 67
Thalictrum dipterocarpum ..	73

NOTES FROM A GALLOWAY GARDEN.—IX.*

THE clan of bell-flowers hold high festival in July, and there is no more generous race; but some of them are turbulent subjects. Although I had secured a treasure when, some twenty years ago, I bore away from Belyour Castle some seedlings of *Campanula latifolia*. It is indeed a fine thing, with its splendid panicles, whether these be the colour of skimmed milk or a hyacinth blue, but it is a dread tyrant in the borders, scattering seeds by the bushel, and driving its fanged roots a yard deep in the soil. The woodland, not the garden, is the right place for it, where it may settle accounts with our stately native, *C. latifolia*. Of the latter there is a charming border variety named *Van Houttei*, half the height of the type and very attractive when its dark maroon buds open to pale lavender bells. Among the newer sorts of *Campanulaceae*, *Adenophora megalantha* deserves favourable notice. Of neat, firm habit, with stems 12 to 15 inches high, it bears on each at the end of July six or eight bells of a clear shade of light blue, and continues a long time in bloom.

Another member of the Bellflower order, the Himalayan *Cyananthus lobatus*, is seldom to be seen happy in lowland gardens. The finest mass of it that I have met with grows on the flat in granite soil in Sir John Stirling Maxwell's Highland shooting-box at Corour, 1,250 feet above the sea, where the rainfall is excessive and there is much snow in winter. We have tried it many times here and failed, except with one plant, growing high and dry on a ledge of a retaining wall. Here it flourishes and gives us many shining blue-flowers, bearing a specious resemblance to some of the summer-flowering *Gentians*. We blamed winter wet for the loss of several plants, that being indicated by

* Previous articles appeared in the issues for Jan. 25, Feb. 17, Mar. 10, April 14, April 28, June 2, June 29, and July 21, 1917.

Mr. W. A. Clark in *Alpin Plants* as the cause of the mischance; but we do not get half the rain here that they endure at Corour.

Henry's St. John's-wort (*Hypericum patulum* Henry) is a decided acquisition, but we cannot afford to let it supplant the original type. It comes into bloom a month earlier than the older plant, and its flowers are of a deep purplish red, "red gold" of the old ballad. It is as profuse in blossom as can be, but it is half over before the other begins. It has now (July 30) been in beauty for a fortnight, and it will be another ten days or so before its rival opens a flower; but the latter will go on blossoming till stopped by autumn frost. Last year the mercury never fell below freezing-point till Christmas, and *H. patulum* remained a beautiful object right through November. Mr. Bean describes it as a dwarf shrub, "but said to grow as much as 6 feet high in Japan and the Himalayas." When I read that I went out and measured the nearest of many large plants here, and found it was just 5 feet high and 16 feet in circumference. Some of the plants were cut by last winter's frost; others escaped scot free. It sows itself freely in the borders, and it will be well if *Henryi* follows suit, for it is said that, being harder than the type, it can be grown where *H. patulum* is cut to the ground each winter. The handsomest of all the shrubby St. John's-worts is *H. Hookerianum*, for its thick golden petals have a satiny gloss that gives them a peculiar charm. It is impatient of drought and scorching heat; such plants as I have seen in the southern counties of England had grown very leggy, with sparse foliage and small flowers; but no doubt it would respond to such conditions as suit *Tropaeolum speciosum*, viz., a moist, peaty border shaded from fierce sunshine. It ripens seed freely, and may also be grown from cuttings; it fully repays patience in bringing it to perfection.

Life having been for me one prolonged defensive strife against rabbits, I thought that I had gauged their dig-stroke functions sufficiently to compile a list of plants that they would *not* eat; but one lives to learn. When visiting lately the quaint and interesting garden of Mr. Agnew Wallace, of Loch-on, I noticed that in the woods near the house several species of *Alstroemeria* flourished unharmed and were very ornamental. As these woods abound in rabbits and roe deer, the hint was not to be neglected, for in these days of scant labour it is impossible to keep this rampant spreader from overrunning better things. So out it shall all go, to bear company with *Monarda*, *Antholyza paniculata*, and *Funkia*, all of which are quite rabbit proof, for some occult reason, and have long been naturalised in our woods.

The most brilliant August-flowering shrub is *Desfontainia spinosa*, now in full bloom, covered with scarlet and yellow tubes, contrasting well with the dark, glossy foliage, which is so good an imitation of the holly. Although this fine bush simply revels in the climate of the West Coast, it is not always seen in vigorous com-

dition, owing to being put on too meagre a diet. It has a hearty appetite, and old plants are apt to get hollow in the centre unless liberally treated. A large bush here, having stood for five and thirty years without any attention, had exhausted the soil in what was originally a rich border and showed symptoms of going back. Two years ago, therefore, we gave it a heavy mulch of peat, sand, and wood ashes. It responded gratefully, and is now as fresh and floriferous as one could wish.

British gardeners and amateurs do not, as a rule, give annuals a fair chance. It is a common practice to sow them in patches and leave them unthinned, to jostle each other into a most debilitated caricature of what they become if given room to develop. Some people are incredulous when they are told that the way to get the best out of, for instance, *Nemophila insignis* is to thin the seedlings out until each has at least half a square yard of space to itself. Nevertheless, unless this is done, one can never enjoy at its best what is really one of the prettiest flowers in existence. Last spring we had to cut down a *Thujopsis dolabrata* 35 feet high in order to clear a fine bush of *Rhododendron cinnabarinum*. No labour was at command to take out the massive stump; the soil under the dense foliage was bone-dry and matted with roots, so to conceal the scar, 6 inches of loam, peat and sand was spread over it and sown with several varieties of *Leposiphon*, the seedlings being well thinned out when they were big enough. The effect now on a sunny day is quite charming; the multitude of gay little blossoms rose-coloured, lavender, orange, yellow and white, having the appearance of delicate jewellery.

When walking one morning along a solitary part of the sea-beach, with not a human dwelling within sight, my eye was attracted from a distance by some showy white blossoms. On approaching them, I found that they belonged to a stray plant of *Rosa rugosa* which had found its way thither and had spread far and wide along a sandy bank. Never before have I seen this *Rose* to such advantage, for it is far too coarse and rampant for the garden, although it grows and flowers well in our woodlands. Here, however, established on pure sea-sand and exposed to blazing sunshine, its over-luxuriance curbed by salt-laden winds, it has acquired a character vastly superior to that which it displays under cultivation. It shall be my care to give it a red-flowering companion before winter. The bank on which this *Rose* grows is thickly carpeted with *Convolvulus soldanella*, whose of the lovely rose-tinted vases have lured many amateurs to the unprofitable task of transporting it to their gardens; wherein, even if it flourishes, which it seldom does, it suffers in grace by divorce from its natural environment of dry, wiry grass. We in the North and West have escaped the deluge with which English gardeners and farmers have been afflicted. June and July have been months of continuous sunshine, with only two days of heavy wet to keep things luxuriant. *Herbert Maxwell, Monreith.*

NEW PLANTS.

NOLINA LODERI. N. E. BROWN

A PHOTOGRAPH (see fig. 24) and specimens of this novelty have been kindly sent to us by Sir Edmund Loder, of Leonardslee, Horsham, with the information that he received it some years ago from a nurseryman at Genoa under the erroneous name of *Dasylyron Bigelowii*. It was subsequently determined by a German botanist to be *Nolina crumpeus*, a name that is equally erroneous, for it bears very little resemblance to either of those species, and upon comparison with the material in the Kew Herbarium and the descriptions of the few

above the sheathing base, thence gradually tapering to the quickly withering recurved fibrous apex; basal sheath $1\frac{1}{4}$ inch (3.33 cm.) in breadth, gradually (not in the least abruptly) tapering into the leaf, flat on the face; blade about 1 line (2 mm.) thick, shallowly concave above, convex beneath, having on both sides a slightly raised line down the centre and another near one margin marked with minute pits, causing these lines to feel slightly scabrid to the touch, becoming evanescent towards the apex and base; margins minutely serrulate-scabrid. Flower stem about 6 feet (2 m.) high, stout, with the panicle part about $3\frac{1}{2}$ feet (1.7 m.) long and 5.7 inches (13.18 cm.) in diameter, entirely glabrous; bracts withering and falling away.

$1\frac{1}{2}$ line (3.3 mm.) long and rather less in diameter, oblong or globose-oblong, very obtuse. Perianth-segments of the male flowers $1\frac{1}{2}$ line (3.3 mm.) long, 1 line (2 mm.) broad, oblong, obtuse, reflexed, white. Stamens shorter than the perianth segments; filaments filiform, about $\frac{3}{4}$ line (1.5 mm.) long, white. Anthers 1 line (2 mm.) long, oblong, yellow. Ovary rudimentary, 3 lobed, white. Female flowers not seen.

Sir Edmund Loder states that the "whole effect of the flower-spike was decidedly yellow." This would probably be produced by the prominence of the yellow anthers, as the perianth segments appear to have been white when fresh, but, being revolute, would be partly concealed by the anthers.

The native habitat of the plant is not known, but the fact that Sir Edmund Loder states that it has been growing in the open air at Leonardslee without protection for nearly twenty years would seem to indicate that it probably grows on mountains at a considerable elevation, either in Central America or the south-western part of the United States. The size of the leaves, their very gradual taper above the sheath, the very long bracts, the small divergence of the branches and the branchlets of the panicle, the lax manner in which the branches are branched, and the oblong buds, seem to be the chief features which characterise this species and distinguish it from all others. The drawing of the base of the leaf (see fig. 25) was made by running a pencil around the margin, so that it quite accurately represents the very gradual taper from sheath to blade. N. E. Brown.



FIG. 24. NOLINA LODERI.

species not represented therein it seems to be very distinct from any species at present described. Although the existing descriptions are very poor, giving no details upon which a critical comparison can be based, yet in the characters given for the leaves and pedicels of those species not represented at Kew, they differ so widely from Sir Edmund Loder's plant that I think there can be no doubt as to its being an undescribed species, of which the following is a description:—

Plant stemless, the growths forming a large, dense clump. Leaves erect or ascending, hard and somewhat stiff, green on both sides, not at all glaucous, finely striate; $3\frac{1}{4}$ feet (1.46-1.62 m.) long, 6.7 lines (12-14 mm.) broad at a little

the lower 18-20 inches (45-50 cm.) long, 1- $1\frac{1}{4}$ inch (2.5-3.5 cm.) broad at the base, thence gradually tapering to a very long, slender blunt point, the upper shorter; branches diverging from the stem at an angle of 30-40°, ascending or suberect, 7-10 inches (18-26 cm.) long, laxly branched, with the branchlets 2-3 inches (5-7.5 cm.) long, diverging at the same angle as the branches, simple, arranged in 3-4 somewhat whorled groups, with one on each side at the very base. Bracteoles membranous, white, broadly ovate, acute or subacute, lobed at the margins, very concave, forming little oblique cups about 2- $2\frac{1}{2}$ lines (4-5 mm.) long. Pedicels not exceeding the bracteoles, about 1 line (2 mm.) long, jointed near the middle. Buds about

ORCHID NOTES AND CLEANINGS.

CATTLEYA LADY CARLILE.

This is a pretty, new *Cattleya*, raised in the gardens of Frederick J. Hanbury, Esq., Brockhurst, East Grimstead, between *C. dolosa* and *C. Mantinii* (*Bowlingiana* × *Dowiana aurea*). The flower is equal to *C. Mantinii* in size, but the colour of *C. Bowlingiana* in that hybrid blended with the rose purple of *C. dolosa* predominates; *C. Dowiana aurea* can scarcely be traced. The sepals and petals are bright purplish rose; the openly displayed lip is rose-coloured at the base, the front ruby purple, and the disc yellow.

DENDROBIUM AURANTIACUM.

This rare and distinct species is now flowering with H. J. Elwes, Esq., who showed a cut spike at the Royal Horticultural Society's meeting on July 31. It is of the *D. clavatum* section, the inflorescence bearing from one to three golden-yellow flowers, comparable to that species but without the dark blotch on the lip. It was first described by Reichenbach in the *Gardeners' Chronicle*, July 23, 1867, p. 98. The year following, plants of an importation from Assam were named *D. chrysseum* (Rolfé, in *Gard. Chron.*, Feb. 25, p. 235). It appears to be widely distributed in India. It flowered with Sir Frank Crisp, Bart., as recorded in the *Gardeners' Chronicle*, July 1, 1911, p. 422.

LAELIO-CATTLEYA GLAUCUS.

A TWO FLOWERED inflorescence of the original form of this richly coloured hybrid between *Laelia purpurata* and *Laelio-Cattleya Rubens*, which secured a First-class Certificate at the Royal Horticultural Society's meeting on August 13, 1912, is sent by Mr. Alexander, from the collection of Lt Col. Sir Geo. L. Holford, K.C.V.O., Westonbirt, Tetbury. The flowers are over 6 inches across, and the petals 2 inches wide. Both sepals and petals are of dark mauve colour, finely netted and veined with a darker reddish-purple tint. The broad, finely crimped lip is reddish maroon, and a yellow flush extends from the base to the centre.

ODONTOGLOSSUM CHIRIQUENSE REICHB.

A FINE specimen of this rare *Odontoglossum*, which is often called *O. coronarium* chiriqueense in gardens, is flowering in the collection of Sir Jeremiah Colman, Bart., where it thrives well. It is the best of the *O. coronarium* section, one of the many flowers on the plant sent measuring 3 inches across. The sepals and petals are pale yellow, barred and blotched with chestnut brown. The lip, which has two ascending auricles at the base, is pale yellow, with red markings in front of the crest. The column, which has two broad truncate wings, is white, marked with claret-red.

THE MARKET FRUIT GARDEN.

EXCESSIVE GROWTH IN JULY.

DURING the greater part of July the weather was sunny and warm, while there were many hot days. Showers or storms of rain were sufficiently inter-spaced to keep things growing, including weeds. Rain fell on eleven days at my station, making a total of 2.57 inches, a fair average for July, which is usually one of the wettest months of the year. Warmth, with the abundant supply of moisture, however, has caused an extraordinary growth in vegetables, flowers, and fruit trees. Steps will be taken to pick Scarlet Runners, where they have not been topped; Broccoli plants are already gigantic specimens, while Potato haulm is rampant. As to weeds, never has it been more difficult to keep fruit plantations in a clean condition. Three weeks after a thorough hoeing they have again covered themselves with weeds, and, where a horse cultivator cannot be used, frequent hand hoeing is necessary. Women at half-acre on a day, working from 3 a.m. till 5 p.m., make complete hoeing, where there are currants among the trees, cost about £1 per acre. It has been a comfort to have a considerable acreage in Lucerne, but the cutting of the crop occupied men and boys much longer than was expected, as the first growth did not stand well against the swap-hooks, so that the tools required frequent sharpening. The cut crop makes quite a thick layer of mulch where it grew well, and a thicker one may be expected to result from the second cutting.

WINDFALLS.

On two occasions in July we had strong and gusty winds, which blew many Apples and Plums off the trees. Fortunately the ground was soft, so that the Apples were bruised only when they hit branches in falling. If it had been hard, the Lucerne stubble and the mulch on it would have afforded protection. It is tiresome, however, to have to send a miscellaneous lot of Apples to market, and when windfalls are abundant they have a bad effect upon the prices of early gathered fruit.

THE NICOTINE QUESTION AGAIN.

Information from the Board of Agriculture is to the effect that I was mistaken in stating on a former occasion that nicotine is cheaper in the United States than it is in this country. It ought to be cheaper, because tobacco is so. But it appears that nicotine is made in this country from tobacco dust out of bond, and that a rebate of duty can be obtained by a manufacturer as soon as he proves that the material has been denatured so that it cannot be used for smoking. Also I am informed that there is no duty on 97 per cent. nicotine imported. The process of extraction, it appears, is expensive, mainly from the dearness of the ether used in the process. Efforts have been made by the Horticultural Branch of the Board of Agriculture to induce one or more of our colonies or dependencies to supply us with nicotine, but

hitherto without success. Difficulty in getting the requisite machinery and chemicals is cited as an obstacle, but surely this should not be regarded as insuperable. In the meantime the Excise authorities might be required by the Government to relax their restrictions against fruit-growers who desire to grow a patch of tobacco for spraying purposes. It appears that they will give a permit for the growing of one perch, but this would not be a tenth part of the area necessary to a grower who wished to make tobacco-wash sufficient for a large acreage. For any greater area the restrictions must be regarded as prohibitory, as they include entering into a bond for a considerable sum of money, the erection of special buildings, the keeping of elaborate accounts, and the admission of an excise-man at any time to examine everything. Another alternative would be that of allowing and facilitating the obtaining of tobacco-powder by a fruit grower out of bond, with easy arrangements as to its denaturing, and a fine on conviction of allowing any of the tobacco to go off his farm. But a supply of nicotine at a moderate price would

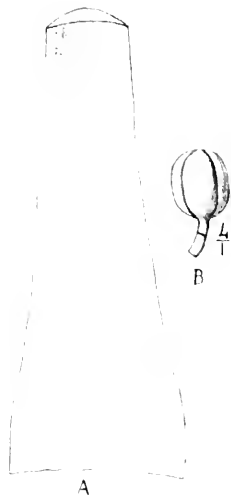


FIG. 25. SOLINA LODERI.

A. Stem and base of a leaf of about 1/2 inch.
B. Enlarged fruit of 3/4 diameter.
(See p. 66.)

be far preferable to any other arrangement, and as this is of great importance in relation to the fruit supply of the nation, Parliamentary action to secure that advantage might well be taken. Presumably the manufacture of nicotine is in only a few hands, and therefore not subject to much competition. Under such circumstances it may be that the price charged for it is much higher than is necessary to allow a moderate profit on the manufacture.

POTATO DISEASE.

This disease appeared in spots on the haulm of a small patch of Eclipse and British Queen in a damp situation on July 24. The Eclipse were taken up and marketed at once, while the haulm was cut off the plants of British Queen, leaving the tubers to ripen for a week or two. I grow Potatoes now only for home consumption, except that, in order to ensure an ample supply, there is always a little surplus for sale. When second earlies were grown extensively for sale spraying was done for some years, but was discontinued when it was found that the crop was raised before the dis-

ease had penetrated to the tubers to any extent worth notice. The conclusion was that spraying did not pay for first earlies or for second earlies to be taken up in the first and second weeks of August in my forward district. For late crops spraying is certainly advantageous, but the only late variety grown by me now is Arran Chief, which hitherto has been almost entirely immune from disease. *Southern Grower.*

THE CHINESE TEA PLANT.

CULTIVATION IN THE BRITISH ISLES.

THERE are two chief forms of the Tea plant (*Camellia theifera* Dyer)—the China Tea plant and the Assam Tea plant. The former is a shrub three feet high on an average, but occasionally eight to ten feet. The Assam Tea plant grows to be a small tree twenty feet high or more, and is much less hardy, only growing in the open air in England in places on the south and south-east coast, like Abbotsbury (Dorset).

I need, then, only speak of the Chinese form which is cultivated in China and in Japan, being imported long ago into the latter country from China. This is hardy in mild districts of England and Ireland. In China it is scarcely cultivated further north than latitude 31°, but in Japan it is cultivated to latitude 16°, where the thermometer often sinks to 16° Fahr.

For some reason or another, the Tea plant is extremely rare in Great Britain and Ireland. In 1915, the Dutch botanist, C. P. Cohen Stuart, who had been making a study of all the different varieties of the Tea plant in the Tea Experimental Station in Java, addressed to me certain queries; and I tried at the time to obtain specimens from living Tea plants throughout this country, and I could only find the following examples:—

Kew Gardens.—No plant now in the open air, and only one living Tea plant, not very healthy, which may be seen in the Himalayan House. It is the Chinese form. Mr. Lynch, of Cambridge, says that many years ago there was a Tea plant growing out of doors at Kew, on the wall of the Economic House.

Cambridge Botanic Garden. A small plant, a graft of the Kew specimen.

Glasnevin.—Only one small plant, Chinese form, in a pot indoors. Not thriving.

Abbotsbury (Dorset). Both the Assam and Chinese forms, growing out of doors; but the former suffers from frost.

Leonardslee (Sussex). Three plants, all of the Chinese form, which have been out of doors for a good many years.

Enys (Cornwall). A Tea plant is reported to be growing here in the open.

Restormel (Down). Two very small plants, not very thriving; Chinese form.

Kilnacouragh (Wicklow). A shrub, Chinese form, many years old, about three feet high and nine feet in circumference. It has never suffered from frost, but so far as is known has never borne flowers.

It is very remarkable how rare this interesting and valuable plant is in our botanic and private gardens. I have not been able to discover any other living plants, except one in a private garden in Berkshire. Needless to say, the Tea plant has never been cultivated on a commercial scale in these islands. Mr. Lynch tells me that the Tea plant is peculiar, as it invariably dies in a few years if grown in a pot, and he suggests that its roots need some special substance (bacteria?) in order to thrive. I suppose, however, that the unhealthiness of some cultivated Tea plants is due to unsuitable grafting on another species of *Camellia*.

* Lindley, in *Gard. Chron.*, 1856, p. 328, says that the Assam Tea plant is hardy in England, but this has not been borne out by experience.

† See C. P. Cohen Stuart, *Embarkedende Onderzoekingen ten Betreffe Van de Salafte des Theedant.*, 328 pp., 47 figs., 5 plates, 2 maps. (Amsterdam: J. H. de Bussy, 1916.)

There is an excellent account of the different varieties and of the manufacture of Tea by Sir George Watt in *Journal of the Royal Horticultural Society*, Vol. XXXII. (June, 1907), pp. 64-96.

The Chinese form is a pretty evergreen shrub, producing white flowers in winter and spring, like the common *Camellia* in that respect. It is propagated in China by seeds which are ripe in October, when they are gathered, and are then kept mixed with damp sand or earth till spring. The seeds are taken out of the sand and sown in March. The young plants are transplanted when a year old, and the first crop of leaves is plucked when the plants are three years old. The finest Tea, so far as my experience in China goes, is grown in poor granite soil in hilly or mountainous districts. Indian trees are grown in rich soils; they have much more tannin in their leaves, and are not as fragrant as the Chinese trees which are grown on poor soil. I have found out that, whether owing to the mode of preparation or to an inherent difference in the leaves, Assam Tea causes in some people a distressing complaint, known as preordinal anxiety, which is never occasioned by Chinese Tea.

China Tea could be grown as a crop in sheltered positions in the milder districts of England and Ireland, and if this is tried it would be preferable to have seeds from the most northerly parts of China where it is cultivated, as around Ningpo, Kinkiang, and Ichang. Seeds also might be procured from Japan. Seeds of *Thea viridis*, the Chinese form, were advertised in 1914 by the Yokohama Nursery Company.

Living Tea plants are advertised by some nurserymen in England, but as these are apt to be grafted, I do not recommend them unless a guarantee is given that the plants are really seedlings. The Yokohama Nursery Company also advertises living Tea plants, but these can not be imported at present. *J. Hogg*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See also Tables in *Gardeners' Chronicle* for July 23.)

(Continued from p. 62.)

4.—SHROUDLAND COUNTIES.

LEICESTERSHIRE. — This is not a favoured locality so far as fruit growing is concerned, as we suffer from high winds and late frosts. We did not have to contend with the frosts this season, however, so that crops all round are apparently well up to the average, both in quantity and quality. Out-door Peaches are making quite a good show. The soil is mostly clayey loam, resting in some places on clay and in others on rock. *A. Shukelton, Burrough Hill Gardens, Milton Mowbray.*

— Apples, after showing plentiful blossom, suffered from severe frost on the morning of May 7. I registered 8°, and in some parts as much as 12° was registered. My Apples show that it was the protected blossoms which are yielding fruit. *F. Paterson, Switland Hall Gardens, Loughborough.*

— The crops of Apples, Pears and Plums are much below our anticipation after the wealth of bloom on the trees in the spring. Of Apples, Bramley's Seedling, Newton Wonder, Lane's Prince Albert, Seaton House, and Stirling Castle are the most prolific. Orchard standards of Pears and Plums are disappointing. Wall trees are more satisfactory, although the crop is not abundant. Strawberries were a good crop, but the season was soon over. Givon's Late Prolific and Laxton's Latest were the most valuable. All small fruits are heavy and clean crops. Peaches are carrying excellent crops, and the trees are clean and healthy, and free from aphid and blister, although we had much cold wind from the N. E. and East during the spring

months. *Daniel Roberts, Prestwold Gardens, Loughborough.*

NORTHAMPTONSHIRE. — The Apple crop has not come up to expectations. The blossom was abundant, but weak. On trees where the blossom was stronger we have good crops. Caterpillars were plentiful, but the sparrows have helped to clear these off. *Alfred Child, Cudshy Gardens, Daventry.*

— We are very disappointed with the Apple, Pear, and Plum crops at Althorp, as there was such a wonderful show of blossom, but the Apple and Pear trees were stripped of foliage and bloom by caterpillars. The shortage of Plums is no doubt due to the absence of bees, which have been killed in this neighbourhood by the Isle of Wight Disease. *C. F. Crump, Althorp Park, Northampton.*

— The fruit crops in this district, generally speaking, are very good, especially Apples, Pears, Peaches, Nectarines, and bush fruits. Our soil is a light loam, overlying ironstone, and in a hot dry season the fruit crops are apt to fail unless artificial watering and mulching are resorted to. We have been fortunate this season in having local thunderstorms with heavy rains just when required, and all crops look promising. Cherries do not succeed in this locality. *John Meager, Harwooden Hall Gardens, Wellingborough, Northants.*

NOTTINGHAMSHIRE. The fruit crops this season are the most favourable we have had for a number of years, especially Apples, Pears, and small fruits. This I attribute to a very late spring and the absence of frosts. Most fruits were blooming quite a month later than usual, therefore Apples and Pears set well. Caterpillars have been troublesome, and appear to have attacked certain varieties, Gascoyne's Scarlet Seedling having suffered perhaps more than any other. Gooseberries and Currants are very plentiful. Damson Almyweather is carrying a heavy crop. Plums are under average. Our soil is sandy loam resting on sand. *S. Baker, Chamber Gardens, Worksop.*

The Apple and Pear crops so far are very promising. No frost interfered with the blossoms, and the growth of the fruit has been uninterrupted. The foliage is clean and healthy, and there is a marked absence of insect pests. Cox's Orange Pippin is carrying fewer fruits than is usual here. This is probably due to the heavy weight of last season's crop. Ribston Pippin is quite good. *James Gibson, Welbeck Gardens, Worksop.*

The fruit crops in this neighbourhood are, on the whole, very good, but in some orchards caterpillars have been very destructive. The varieties suffering most are Allington Pippin, Cox's Orange Pippin, Newton Wonder, James Grieve, and Warner's King. Strawberries in these gardens have been especially good and plentiful. Small fruits are good. Plums, Apricots, and Pears are very light. *J. C. Latham, Park Hall Gardens, Mansfield Woodhouse.*

— Apples, our most important crop, had a wonderful show of bloom, as was the case with most fruits. A very fair crop set, but the great heat early in June caused a good deal of fruit to drop. This was especially the case with Worcester Pearmain and Bramley's Seedling. The best crops are James Grieve, a never-failing variety, Allington Pippin, Lord Grosvenor, Emmet's Early, and Gladstone. The trees are very healthy. Plums are a half crop, but are looking well. Early Prolific is a full crop, and Damsons are very heavy. Black Currants suffered from frost in May, and the bunches are very small. Red and White Currants, Gooseberries, and Raspberries are good. Strawberries suffered much from the winter, and plants were late in starting, but such as survived have cropped well. Royal Sovereign leading the way. Others carrying good crops were Scarlet Queen, Bedford Champion, Fillbasket, King George, Reliance, The Earl, The Queen, Vicomtesse Hélicart de Thury, and Pineapple, the

last named, with Compois-seur, being of the best flavour, though The Early, St. Pierre, and St. Joseph were very good. Runners will be late and scarce, especially in the late varieties. *J. B. Pearson and Sons, Loughham, Notts.*

OXFORD.—The fruit crops in this district are well up to the average. We had a record quantity of bloom and a good set, but since then insect pests, especially caterpillars and aphids, have spoilt what promised to be a record crop. Apples are a fair average crop; they are better on established orchard trees than espaliers; bushes have suffered very much from caterpillars, particularly Cox's Orange Pippin and Allington Pippin. Pears are a fair crop, but not so good as the bloom promised. Plums are good, the trees clean, and the fruit is swelling satisfactorily. Marbled Cherries are a fair crop. Peaches and Nectarines, both indoor and out, are heavy crops. All small bush fruits are abundant and good. Strawberries were a very light crop owing to drought. The soil is a light, shallow loam on oolitic limestone. *Ben Campbell, Carbury Park Gardens, Charlbury.*

— All fruit crops are exceedingly plentiful, and the trees are free from insect pests. The soil is heavy and retentive of moisture. *H. Miles, Carleton Park Gardens, Reading.*

— The Apple crop promises to be a very fair one in this district. Our best varieties are Irish Peach, James Grieve, Magnum Bonum, Cox's Orange Pippin, Lane's Prince Albert (very good), Cellini Pippin, and Tower of Glanville. Pears are bearing a good crop, especially Josephine de Malines, Le Lectier, Marie Louise, Souvenir du Congrès, and Pittaston Duchess. Plums vary a great deal. Some varieties are very thin, our best are Cox's Emperor, Kirk's, and Jefferson's. Bush fruits are carrying excellent crops, and are very clean. Raspberries are abundant on Superlative and Semper Fidelis; this latter variety is a good cropper, and very useful for preserving. Apricots are a fair crop of nice clean fruits. We have had a very heavy crop of Strawberries; Kentish Favourite (good cropper), Royal Sovereign, International, Latest of All, and Givon's Late Prolific. The soil is loam on limestone. *William J. Short, Middleton Park Gardens, Beccles.*

— Although late, the Apple and Pear blossom was a fine sight this year, and the trees and fruit now look very well. Peaches on outdoor walls are healthy, and carry heavy crops. Apricots are a failure here, also Strawberries. Potatoes look promising, and are yielding a satisfactory crop so far. The soil is light loam on gravel and chalk. Recent rains have done much good. *J. A. Hall, Shipdike Court Gardens, Holeywell-Thames.*

— The fruit crops round here are good, but in some instances Pears and Apples are not too plentiful. All bush fruits are good and clean. Peaches are good, and there is no blister on the leaves. Plums and Damsons are good. The recent rains have proved very beneficial to all trees and crops. *A. B. Waddis, Engleford Gardens, Reading.*

— The severe winter and rather cold spring seem to have suited fruit trees in South Oxfordshire, as the blossom was retarded until the time for frost had passed. Many Apple trees are casting off large numbers of fruit, but this is a good thing, as there will be plenty left, and the fruits will be larger than when over-cropped. Plums are abundant, and the trees are free from insects. Gooseberry trees are here badly attacked by caterpillars; handpicking of the pest has taken place. Strawberry plants were slightly injured by the dry weather, but rain came in time to assist the swelling of the fruit. Taking it all round it appears 1917 is almost a record year for fruit; the trouble is where to get sugar for preserving. The soil here is stony and poor. *L. J. Long, Wyfold Court Gardens, near Reading.*

(To be continued.)

The Week's Work.

THE KITCHEN GARDEN

By J. DENN, Foreman, Royal Gardens, Windsor.

SPRING CABBAGE.—A second sowing of Cabbage seed should be made at once in a fully exposed position. Sow thinly in rows 1 foot apart and keep the ground free from weeds and carefully netted to preserve the seeds from birds. Plants from early-sown seed will require attention, or slugs may do them much harm.

ONIONS.—Autumn-sown Onions should be lifted as soon as the weather is favourable and placed in a dry, open shed where they can receive the necessary attention to prepare them for the store. The bulbs should be turned frequently, and if hurdles are available on which they can be placed and raised a few feet from the ground so much the better, as this will enable the air to pass freely amongst them, the aim being to keep these bulbs as far into the winter as possible, so that the spring-sown Onions may be made to last, if possible, until Onions come again. A sowing of *Alisa Craig*, *The Lord Keeper*, and *Wroxton Globe* may now be made with a view to producing bulbs next season which will keep throughout the winter. Plants raised now are seldom attacked by maggot, and if transplanted on good, rich ground in March these should prove a remunerative crop.

EARLY POTATO.—As soon as the ground is sufficiently dry early Potatoes may be lifted in order that the ground may be utilised for some other crop. If the tubers are exposed to the air for a few hours before being placed in the store they will be all the better for it, and a sprinkling of lime over them may be applied with advantage.

FRENCH BEANS.—Continue to plant French Beans in pits where a little heat can be applied in damp weather in October. If sufficient pits are available Beans should be planted freely and an effort made to maintain a supply as far through the autumn as possible.

RADISHES.—A good sowing of Radishes may now be made in rich soil for autumn supplies; let water be applied frequently to promote quick growth.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMY COLMAN, Bart., Gatton Park, Reigate.

DENDROBIUM.—If the cultural conditions have been favourable, many of the species and hybrids of deciduous *Dendrobiums* will be completing their growths. Soon after the terminal leaf appears the plants should be placed in a cooler and drier atmosphere, where they may receive the benefit of extra sunlight and air. It is not always advisable to remove *Dendrobiums* from their growing quarters immediately they appear to have finished growth. It is better, where practicable, to select a position on one side of the house, where more air and light can be admitted and less moisture given them. Gradually expose them to the sun for a longer time than usual in the morning, and draw up the blinds a little earlier each afternoon. Do not allow the plants to become dry at the roots; water should be applied whenever the compost appears dry. Any sudden check at this stage will cause to start into growth buds that should remain dormant until after the flowering stage. After a week or two of such treatment the plants may be removed to a house of considerably less shade, with a drier and more airy atmosphere. Give them just sufficient water to keep any roots in a healthy condition and to prevent any undue shrivelling of the pseudo-bulbs. The plants that are well established in small pots will require more water at the roots than the larger specimens. The new pseudo-bulbs may be loosely tied to neat stakes, or be allowed to assume their natural dependent habit. *D. Wardianum* flowers more freely and its flowers

are shown to better advantage when the pseudo-bulbs are permitted to droop. The plants that are still in vigorous growth should be afforded plenty of heat and moisture, and be treated according to their stages of development. Aerial growths sometimes push forth from the pseudo-bulbs; these should be taken off, and if it is desired to increase the stock they may be potted either singly or several together. Cuttings inserted as advised in the calendar for April 21 last should be developing roots from the base of the young growths. After being potted they should be given a shady position in the house until they are rooted in the compost, when they should receive treatment suitable to established plants. Plants of the ever-green section of *Dendrobiums* such as *D. thyrsiflorum*, *D. densiflorum*, *D. swainsonianum* and *D. chrysoctenium* will be in the middle of their growing season. When these plants commence to develop fresh roots from the base of the young growths they can be moved into fresh teakwood baskets; use well-drained *Osunda* fibre; make it firm and place the plants near the roof-glass in the Cattleya or intermediate house.

PLANTS UNDER GLASS.

By J. G. WYSON, Gardener to Lady Norman, Eastwell Park, Kent.

AGAPANTHUS UMBELLATUS. This blue-flowered plant will thrive well in a cool green-house under ordinary treatment. It makes a fine specimen when grown in a tub or large pot, and usually flowers best when thoroughly established and pot bound. At this season it requires plenty of water, and applications of manure-water twice weekly. The flower spikes will last in good condition for a long time, when the plant is standing in a cool, well-ventilated house.

PERPETUAL-FLOWERING GARNATIONS.—These are now having their roots well established and should be given a top-dressing of manure. During the summer months Garnations do best out of doors, but they should be half-planted in coal-ashes or soil. As the growth elongates, attention must be given to staking and tying. Light hessian canes are recommended. If intended for flowering in the autumn and early winter, Garnations should be forced early, and be at no time allowed to become saturated with rains. The end of the present month is not too early to get them indoors. Examine the plants at intervals to see if any red spider is in evidence, and spray them occasionally with an insecticide as a preventive of the pest. If a spell of bright weather is experienced directly after housing the plants, give them a good syringing in the afternoon, sufficiently early to allow of the leaves getting fully dry before nightfall. Varieties of the type of *Carola* should not be put outside at all, as they are more healthy if grown in glasses the whole season.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Hon. Arthur J. Tracy, Alder Wood, Godalming, Surrey.

PEAR RUST makes its appearance in June, and very gradually increases till August, causing a yellowish spot on the underside of the leaf. In the case of an attack upon young trees, or those trees which have no fruit upon them, apply a good spraying of a solution made from 4 lbs. of lime and 3 lbs. of sulphate of copper to about 50 gallons of water.

PEARS. These fruits have improved immensely, especially on orchard-grown trees, since the heavy rains in the early days of the month. We measured 5.90 inches in five days. The net should be taken off the main buds of *Green-baynes*, and dried and folded up and labelled, because, and dried and folded up and labelled, if not required again for use, but they are useful for protecting Pears from birds, and if Pears are protected from birds, the birds get a taste, they do not give much trouble. If birds commence eating the fruits near the stalk the wasps will soon finish them. Williams' Bon Chretien, L'Amourable, Bourne Giffard, and Clapp's Favorite are varieties that are most often attacked. These should be netted first.

PLUMS.—Ripening Plums should have all unnecessary growths taken away, especially those that are shading the fruits. The early varieties should be gathered as soon as ready and made the most of by using them bottling or for jam.

FRUITS UNDER GLASS.

By JAS. THOMSON, Horticulturist at Gimptonbury House, A. O. W.

FRESHLY PLANTED VINES.—Young Vines that were planted this spring should by this time have made a satisfactory and vigorous growth. Where such is the case more ventilation should now be given them so that the young wood will gradually harden and mature. I have before referred to the treatment of the lateral growths on these vines. Now, I should let all such growths hang down rather than keep them on the trellis. In this way I have had young shoots from 4 to 6 feet in length suspended, so to speak, from the main rod. By so doing the main buds gain in plumpness and the wood ripens better. I do not advise the use of the knife at all on these young vines at this season; all that is needed can be carried out by pinching with the finger and thumb. The ventilation should be reduced in time to raise the temperature some 10° or so, but a little air may now be left on all night. When reducing the ventilation continue still to syringe the vines freely and early in the morning when it is not fair for a fine day. No fire-heat is now essential for young vines. Keep a close watch as to the state of the border, and do not on any account allow the soil to become at all dry. Make young vines, in my opinion, suffer from want of water rather than anything else. A course of treatment almost similar to that I have described is suitable for vines of the second and third year upon which a few bunches of fruit may be ripening. These vines cannot, of course, be sprayed, but nevertheless the atmosphere must not be kept too dry. As soon as convenient let these young vines be removed by their handles; do not keep them hanging just to look at, rather think of what is necessary to get a good crop next year.

THE FLOWER GARDEN.

By W. J. GILES, Gardener to Mrs. DEWISBUR, Keele Hall, Staffs-shire.

SPRING BEDDING PLANTS.—Vacant ground in the kitchen garden may be utilised for transplanting spring bedding plants; soil recently occupied by Potatoes will only need to be raked and made moderately firm. Plants that need attention at once include *Abutilons*, *Myosotis*, *Dianus*, *Campanulas*, *Arabis*, *Polyanthuses*, *Amorals*, *Violas*, *Fansies*, *Brompton Stocks*, *Honesty* (*Lunaria biennis*), *Alyssum*, and *Fox*.

If the weather be dry the plants should be watered a few hours before moving them. Frequent attention will be necessary in the way of watering and hoeing.

THE ROCK GARDEN.—Plants that have over-taken their space must not be allowed to smother the more choice varieties. Keep the plants free from weeds by careful hand weeding; remove all dead flowers and foliage, and stir the soil lightly with a small hand fork. Replace the soil where the roots have been exposed by heavy rains. It is advisable to keep a few Alpine plants in small pots to make good any failures that occur at any period. The plants must not suffer for want of water, and some may be found quite dry at the roots, even after rain. Young plants raised from seed should be transplanted without delay, and fresh seeds may still be sown to produce plants for next year, provided they are sown at once.

DEPHINUM. A second display of bloom may be obtained by cutting down the flower stalk at once. If seed is to be saved it should be cut a few days before it is quite ripe. There is still time to sow seed, but the same results must not be expected as from those sown earlier in the season. The old plants will need stimulants in the form of liquid manure or some approved fertiliser.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the matter printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 61.3.

ACTUAL TEMPERATURE.
Gardener's Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, August 16, 10 a.m., Bar 29.2, temp. 69.0. Weather Sunny.

Varieties and Food Values.

Attention has already been drawn in these pages to the importance of taking chemical composition into consideration when estimating the value of a variety of food producing plant. There are, of course, many other qualities which are essential and must be taken into consideration by the seed-raisers who are responsible for putting new varieties on the market. Moreover, in suggesting that the seed merchant or seed raiser of the future will have analytical chemists on his staff of experts, whose duty it will be to ascertain the chemical composition of new varieties, we do not forget that the chemical composition of a given variety of food plant—for example, a Mangold or a Potato—may vary widely according to the soil and climate in which it is grown. Such qualities as earliness, high yielding capacity, disease resistance, flavour, and the like, must all be considered if an attempt is to be made to compare scientifically the true values of two or more varieties of a given kind of food plant. In other words, the seed raiser of the future will not simply hand over his intricate business to a staff of chemists, but will use that staff in order to ascertain whether the new varieties which he proposes to put on the market show what we may call a chemical improvement on existing varieties. In illustration of the wide differences in chemical composition which exist between the chief varieties of a given kind of plant we may cite the figures published by Dr. F. T. Shutt, Chemist to the Dominion of Canada.* Analyses of 36 varieties of Mangold show that whereas the variety richest in dry matter contains no less than 13 per cent., the poorest variety in this respect con-

tains only 7.32 per cent. Furthermore, the former variety contains 5.66 per cent. of sugar and the latter only 2.86.

Figures such as these taken by themselves offer no proof that the rich variety is actually superior from the point of view of agricultural manufacture to the chemically poor variety; but they suffice to show that there is a well-established case for further inquiry. Such inquiry would have to concern itself with yield per acre and actual feeding value as ascertained by experiment, as well also as the suitability of each of the varieties to different soil and climatic conditions. It is evident, therefore, that long and thoroughgoing investigation would be required before all the data necessary for defining the "best" varieties could be ascertained. Such investigation is clearly beyond the scope of seed raisers, and would have to be undertaken by well-staffed scientific institutions working in co-operation with seed raisers. Yet it cannot be doubted that inquiries along these lines would be productive of results of great value. The agriculturist and the horticulturist are manufacturers of food, and their ultimate object is to produce economically the maximum amount of the best kinds of food. Without the application of the chemical test there is always a danger that the advantages promised by a new variety may not outweigh chemical disadvantages. That this danger is a real one is apparent from the observation made by Dr. Shutt in the course of the Report already referred to: "The average yields have assuredly been affected by the introduction . . . of a number of new varieties of more or less low feeding quality."

We commend this article to the notice of all those who are engaged in the seed industry, for although it may contain nothing that is new to them, it cannot fail to focus their attention on aspects of seed raising which are apt to be ignored.

One of the most instructive tables published by Dr. Shutt is that recording year by year for a period of 16 years the composition of two varieties of Mangold—Gate Post and Giant Yellow Globe. The average sugar content throughout this time was, in the case of Gate Post 6.16, and in that of Giant Yellow Globe 4.63, although, of course, the percentage of sugar in the juice fluctuated from year to year; nevertheless the former variety maintained consistently its superiority over the latter in this respect, demonstrating conclusively that "blood will tell." The varieties had precisely similar treatment, and were grown side by side on the same soil in the Central Farm, Ottawa.

THALICTRUM DIPTEROCARPUM (see fig. 26).—The beauty of this comparatively new species of Thalictrum from China is so irresistible that it is not surprising that the R.H.S. Flood Committee decided a fortnight ago to give it the highest award available, namely, the First-class Certificate, the Award of Merit granted in 1906 being scarcely adequate. Its tall, branching inflorescences are most graceful, whilst the colour

of the flowers is the daintiest and most pleasing shade possible. It is perfectly hardy, and grows with the utmost freedom.

AUTUMN SHOWS.—The Royal Horticultural Society's Vegetable Show will be held on September 25, and the show of British-grown fruits on October 9. Schedules for both shows can be had on application to the Secretary, R.H.S., Vincent Square, Westminster, S.W.

CENTENARIAN MARKET GARDENER.—The *Times* announces the death, in the first week of August, of Mr. William Turner, a market gardener, of Carisbrooke, Isle of Wight, at the age of one hundred years.

KENT APPLES.—The annual auction sales of Apples on the trees in Kent have commenced, and good prices are being realised. Near Paddock Wood four acres of Apples were sold for over five hundred pounds, and a couple of acres at Tonbridge for two hundred and thirty pounds.

CROP PROSPECTS.—The Board of Agriculture, reporting on agricultural conditions in England and Wales on August 1, states that the weather during July was mostly warm and dry until the end of the month, when rain set in, and that the conditions were generally favourable to the crops on the whole, especially in the west. Wheat shows some improvement during the month; it is considerably better in the west than in the east of the country, prospects varying from about average in the counties bordering on the Severn, to nearly 10 per cent. below in Lincoln and Norfolk. Barley is the best of the corn crops, but promises to be over average only in the west and north. Oats are a variable but poor crop, prospects being much worse in the eastern corn growing districts, but average or even over in Wales and the north-west. The two latter crops, more particularly, have been a good deal damaged by the storms at the end of the month. Beans appear to be the worst crop of the year, especially in the east; Peas are better, but not up to the average. Potatoes are everywhere promising; no district anticipates a yield below average, and in many areas in the south they are expected to yield 10 per cent. above the mean. There is a certain amount of disease in the south-west, but in the rest of the country very little is reported. Roots are healthy and promising. All through the dry period of the month fly was very troublesome, and many fields had to be re-sown. The rain towards the end came in time to effect a material improvement. Mangolds were suited by the weather, and a further advance may be noted in their prospects, which are everywhere above the average, except in the extreme north. Summarising the returns, and expressing an average crop by 100, the appearance of the crops on August 1 indicated probable yields per acre which may be denoted by the following percentages: Wheat, 95; Barley, 99; Oats, 93; Beans, 85; Peas, 94; Potatoes, 105; Mangolds, 102; Hops, 101; and seed hay, 96; meadow hay, 91.

RAILWAY GARDENS.—The annual inspection of the gardens on the Underground Railways of London has just taken place, and prizes to the total value of about £50 have been awarded by the company. The three 1st prizes, £3 each, have been awarded respectively to Inspector FRIWELL (Northfields Station), Platelayer ECCLES (South Kensington Station), and Foreman MACEY (Waltham Green Station). Further prizes are being offered to the staff for the best collection of vegetables, whether grown on or off the company's property.

LOCAL SOCIETIES.—The annual show of the Nulley Cottagers' Horticultural Society was held on July 25. In consequence of inclement weather the number of visitors was small, but the exhibits were numerous and of good quality. Fruits and vegetables were the chief features. The exhibition of the Whetstone (Herts.) Amateur Gardeners' Society, held on the 26th ult.,

* Part of the Division of Chemistry, 1916, OTTAWA.



FIG. 28. THALICTRUM DIPTEROCARPUM. COLOUR OF FLOWERS A PRETTY SHADE OF MAUVE-BLUE.
Awarded R.H.S. Crystal Palace on August 16, 1906, and R.H.S. First-class Certificate on July 31, 1917 (see p. 70.)

in the Congregational Hall, was very successful. The fruit was especially fine. The Honeysuckle Amateur Horticultural Society held their eighth annual exhibition on July 23; the exhibits, which consisted chiefly of vegetables, were creditable and well staged, and there was keen competition in the class for allotment holders. The Leyton Allotment Holders' Society held a successful show on the 6th inst. The produce was afterwards sold for the benefit of St. Dunstan's Hostel for Blindfold Soldiers, one Vegetable Marrow fetching three guineas. On the same day the West End Association (Leicester) organised an exhibition on the Gandy Cricket Ground. The Challenge Cup presented by the *Leicester Daily Mercury* for the best collection of vegetables grown on an allotment was won by S. L. Coombs, who also won a prize for the best cultivated allotment. The twentieth annual show of the Gargrave (Yorks) Horticultural Society took place on the 4th inst. It consisted mainly of exhibits of vegetables and fruits, the most keenly contested classes being those for cottage gardeners.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

FROST AND EVERGREENS (see fig. 27).—Some weeks ago I gave a brief account of the results of stripping the injured leaves from evergreen trees damaged by frost (see *Gard. Chron.*, July 7, p. 8), and mentioned the particular instance of *Beithamia fragrans*. Since that note was written the effects of the removal of the leaves have become so striking, that it seems worth while to revert to the matter again, especially as they lend themselves to photographic illustration (see fig. 27).

In my previous note I referred to two branches which were stripped of their damaged leaves, and I should also have mentioned one small lateral branch on the opposite side of the tree, which was similarly cleared as a sort of control. The illustration shows clearly that the new leafy branches have pushed, and are developed well on these two main branches, which are on the side exposed to the north wind (left hand in the illustration), and also on the small lateral branch on the south side of the tree. Practically all the shoots which began to push on the unstripped branches have died, although at the very base, where the tree splits up to the main divisions, young shoots are now beginning to push. There is no doubt, from the results, that if I had stripped the leaves from the whole of the tree every main branch would have been saved. The experiment is interesting as throwing some light on the water relations that obtain in a tree of this sort during the winter. It is tolerably clear that the wood contains, in ordinary circumstances, a quantity of water, which is sufficient to meet the requirement of the young leafy branches when they push in late spring; and the roots, of course, continue to maintain the supplies which are lost by the transpiration of the tender leaves. But it would appear that the margin in frosty weather may become a small one. During heavy frost the roots are unable to discharge their functions properly, and as soon as the thaw comes, especially if it be attended by sunny weather, the old leaves begin to lose considerable quantities of water. If this goes on at too rapid a rate, damage occurs, and whether the leaves have been otherwise injured by frost or not they may wither, in consequence of shortage of water supply, and the effect will be greatly aggravated if they have already been really damaged. Loss of water continues, and it is not unlikely that air may ultimately replace part of the lost water in the wood vessels and tracheids. If this occurs in any serious degree the tree may at once die without showing any signs of renewed vitality. But if, as often happens, the loss of water from the wood has not been too great, the young shoots may sprout, only to wither back as the available water supplies that can be passed to them from the wood have to be deficient. I think that this is the obvious interpretation to be placed on the results detailed above. It seems certain that some

obstacle (such as air in the tubes) prevented the adequate water supplies reaching the shoots, in the unstripped boughs later on, as otherwise one would have expected the entire water contents of the tree as a whole to have been pooled. Instead of this we find a sharp separation between the boughs that were, and those which were not, defoliated, a separation that becomes more instead of less marked as the days pass by. It is not improbable that further experiments will afford some variety in the results obtained, and it seems reasonable to anticipate, not only that such diversity will actually occur, but that it will find its explanation in differences which obtain in the mode of water-and-air distribution in the tree. No doubt the facts and their causes are analogous to those observed in, e.g., a Yew bush when a number of its leafy branches have died. Everyone knows how the removal of the dead (evaporating) stuff is promptly followed by the pushing of new shoots, leading to the renovating of the bush. However this may be, the importance of preventing the loss of valuable evergreens is so great as to justify a full consideration being given to the matter as a whole, and it is the hope of inducing others to help in elucidating the rather complex, though very attractive, problems here indicated that must serve as the excuse for my returning again

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

July 31.—*President*: Mr. E. A. Bowles, M.A., (in the chair), Messrs. J. Fraser, H. J. Elwes, and F. J. Chittenden (hon. sec.).

Spencer Cupid Sweet Pea.—A Certificate of Appreciation was unanimously recommended to Mr. George T. Dickson, Newtownards, for his work along Mendelian lines in raising the Spencer type of flower combined with the dwarf habit of the Cupid form of Sweet Pea.

Damage by Hail.—Mr. Fraser showed a series of plants, including Onions, Potatoes and Peas, in which the damage done by hail storms in June was very evident. The Potato had its stem broken, and both Peas and Onions showed white spots as a result of the battering by the hail-stones.

Various Plants.—Mr. Elwes showed a number of plants from his garden, including *Poterium tenuifolium* album, which there attains to 6 feet in height; *Prunella grandiflora* and *P. Webbiana*; *Dendrobium aurantiacum*, the pseudobulbs of which are collected and used in Japanese medicine; *Lycoris squamigera* and *Crinum*



FIG. 27. FROST AND EVERGREENS.

(The leaves on the lower of *Beithamia fragrans* plant are dead.)

to the matter, and at greater length than before. J. B. Farmer.

SOME NOVELTIES.—I agree with Dr. H. E. Durham (see p. 42) if he applies the word "novelty" only to new plants or varieties. I did not, however, use the word thus; I intended to convey that the plants were *novel* in the garden. *E. Molyneux, Swanmore Park Farm, Bishop's Waltham*.

GRAPES WITHOUT FIRE-HEAT.—During a visit to a neighbouring garden I saw some very satisfactory crops of Grapes (Black Hamburgh, Madresfield Court, Buckland Sweetwater, and Muscat of Alexandria, which had not received at any period during the present year any aid from fire heat. The vines named are growing in a lean-to house; the bunches weigh from 2 lbs. to 5 lbs. each, the berries are swelling regularly, and some of the varieties are beginning to be tinged with amber. Often the night temperature was as low as 55° during the blossoming period. It is evident that Black Hamburgh, Madresfield Court and other varieties are quite amenable to cool house treatment, and succeed under such conditions. Last year similar methods were adopted, but during the month of September and onwards a little artificial warmth was given to ripen the berries, which kept in good condition until the middle of January. E. M.

Yemens, which thrive at Colebourne against a wall; *Crinum Rattrayi*; *Hydnocallis* sp. with an exceedingly sweet scent; *Alstromeria peruviana* alba; and a species of *Himmamania*, a tender plant which when treated as a half-hardy annual does well outdoors.

Nuttallia crassifolium.—*Fruiting*. Mr. Bowles showed fruits of *Nuttallia* from his garden. Most trees and shrubs of spring-flowering habit appear to be fruiting freely this year.

Curious Sport in Delphinium.—Mr. Berkley, of Redgate Hall, Wolsingham, Co. Durham, sent leaves from a Hybrid Delphinium in his garden, one branch of which, while bearing normal flowers, differed from the others in having entire leaves similar in form to those of *Clematis integrifolia*.

Blackthorn Growing on Apple Bark.—Sir Harry Veitch sent a piece of Apple bark from which a Blackthorn, *Prunus spinosa*, was growing much in the same way as does Mistletoe. Mr. Elwes mentioned the case of a Hawthorn which was growing from the branch of a Scots Fir, apparently, as in the Blackthorn shown, rooting into the branch itself.

Sport in Diervilla.—Mr. John Griens sent from his garden at Cardiff branches of *Diervilla rosea* in which, instead of the normal opposite decussate arrangement of leaves in the upper part of the shoots, the leaves were in whorls of three. This had first occurred in 1915.

ROYAL HORTICULTURAL SOCIETY.

Aug. 14.—There were some empty spaces in the Drill Hall on Tuesday last, and War notwithstanding a holiday air abroad. Some interesting exhibits were staged, but novelties were few, and the attendance small throughout the day. Mr. E. W. WALLACE gave a lecture on "Water Gardens" in the afternoon, and Mr. VINCENT BANKS followed with a demonstration on "Fruit and Vegetable Bottling and Drying."

The members of the Floral Committee turned up in goodly numbers, and gave their chairman, Mr. Henry B. May, a hearty welcome upon his return after a serious illness. A note of sorrow mingled with the gladness, however, when Mr. W. B. Cranfield rose to pay a tribute to the work and memory of the late Mr. Drueury, who was a member of the committee for many years.

Stokesia carynea, S. c. alba, the dark blue-purple *Acronium Spargeri* variety, and the elegant *Thalictrium diphyllum* were all well shown in a group of hardy flowers, notably *Phloxes*, set up by Mr. JAMES FOX, Mr. G. RENTHE made a feature of *Berberis pinnatifida* and *Eucryphia pinnatifolia*, both charming shrubs. A whole length of table was again occupied by *Gladioli* staged by Messrs. KEENE AND SON. On this occasion there were about four hundred spikes displayed, and a fine contrast was made by associating the deep purple-blue of *Baron Joseph Hulot* with the varying shades of yellow found in the *Lang-pain* hybrids derived from *G. primiflorus*. *Baron Broward* is evidently a descendant of *Baron Joseph Hulot*, but has lighter coloring in the throat.

A suggestion of autumn was provided by Messrs. J. CHEAL AND SONS, who displayed show *Cactusi*, *Faenoli*, and single and star *Phloxes*, as well as *Shrub*, and a collection of sprays of trees and plants, the latter including trailing branches of *Pyrus Aucuparia luteocarpa*, *Viburnum Lonicera*, and *V. Opulis*. *Fish-ton Wonder*, of a pale shade of heliotropine and very sweetly scented, was a fine Carnation in Messrs. WILWOOD BROTHERS' stand; this firm has now adopted Carnations at every meeting of the Royal Horticultural Society for two years.

A bright salmon-pink *Phlox* named *Andrey Alder* was submitted by Mr. W. WELLS, jun., and it is a very beautiful form, with a narrow centre. The wonderful variation in *Nephelepis* was made very evident by the many forms grouped by Messrs. H. B. MAY AND SONS. A group from the Alder River Nurseries was greatly admired; it contained *Crimm Poyellii alba*, *Thalictrium diphyllum*, the graceful *Coriaria japonica* (finely fruited), *Lilium Henryi*, *Lycomis samaritanica*, *Asparagus Mooreanus*, and varises of the deep blue fruits of *Clintonia Androsiana*. Interesting plants brought from Colchester by Mr. H. J. EWES included *Crimm Moorei* var. from South Africa, a splendid form, and finer than the other varieties shown; *Hedychium Gardenianum*, H. *Greenii* (scarlet), H. *occidentale*, H. *spicatum* (white), and H. *gracile*, with tiny, whitish flowers. SAREPS MORRIS, Esq. (Mr. G. Hebblethwaite, Norwich), exhibited three fine *Montbretias*, and of these the vivid orange *Queen Adelaide* was the larger and most brilliant.

Athyrium Filix femina *Christiana*, shown by Mr. W. B. CRANFIELD, Enfield Chase, was a superb and elegant specimen, with graceful fronds over a yard long, and about 15 inches across at the widest. Accompanying this plant was a letter from Mr. Cranfield to the Chairman of the Floral Committee, as follows:

East Lodge, Enfield Chase.

"DEAR SIR, I have thought the occasion appropriate for submitting to the notice of the Committee a division of the original plant of *A. F. F. Christiana* upon which the late Mr. C. T. Drueury discovered the phenomenon of Apospory. It was found by R. Monte, in North Devon, in 1868, and passed into the possession of the late Col. Jones. The form is the rarest and one of the most beautiful in our native *Athyrium* family, and possesses the additional merit of being a wild find. A number of Aposporous off-springs were raised and distributed by the late Mr. C. T. Drueury, but they differ materially from the parent, as many Aposporous off-springs do, in that their development is

nothing like so luxuriant or regular as the original.

"My plant has not been grown for exhibition, but in a herbarial shelter, with other choice forms. Yours faithfully,

W. B. CRANFIELD."

A Cultural Commendation was awarded to Mr. CRANFIELD for this fern, and it may be added that the variety gained a First Class Certificate in 1875.

The Fruit and Vegetable Committee had a fairly long sitting, but the only outward and visible sign of their deliberations was the award of a Silver-gilt Banksian Medal to Messrs. DOBBIE AND CO. for a superb exhibit of Potatoes. This group consisted of twenty baskets of exceptionally clean and sharply tubers; the examples of *Midlothian Early*, *Chimax*, *Great Scot*, *Edzell Blue*, *Witch Hill*, *Sir John Llewelyn*, *Empire*, and *Duke of York* were particularly fine. Mr. C. URMAN, Bushey Lodge, Teddington, sent a variegated form of the *Musselburgh Leek*, and Mr. BARNUM, Belsize Court, Hampstead, showed specimens of *Valparaiso Blood Peaches*. Mr. and Mrs. BANKS staged an interesting collection of bottled fruits and vegetables and dried fruits and vegetables, as used by them in the demonstration given during the afternoon. Judging from some branches shown in full fruit by Mr. H. CROSS, there are wonderful crops of them at his Ongton fruit farm.

Floral Committee.

Present, Mr. Henry B. May (chairman), and Messrs. W. B. Cranfield, W. G. Baker, W. J. Bean, G. Renthe, John Green, Sydney Morris, J. T. Bennett Post, R. W. Wallace, H. Cowley, F. Hooper Pearson, A. G. Jackson, John Heald, C. Dixon, C. R. Fielder, Thos. Stevenson, Arthur Turner, E. F. Hazelton, W. P. Thomson, J. F. M. Esal, J. Jennings, Chas. E. Pearson, E. H. Jenkins, George Paul and Wm. Howe.

Award of Merit.

Androsalis Lady Rosemary Portal.—A beautiful large-flowered variety with bluish white flowers, the lower inner segments having a creamy yellow shading and a median line and penicillings of lavender on the basal half, where the yellow tinting is deepest. From Messrs. J. KEENE AND SON, Longport.

Cultural Commendation.

To Mr. W. B. CRANFIELD, for specimen of *Athyrium Filix femina*.

Groups.

Silver-gilt Bankian Medal.—To Messrs. J. KEENE AND SON, for *Gladioli*.

Silver Flora Medal.—To Messrs. H. B. MAY AND SONS, for Ferns, and to Mr. J. FOX, for *Phloxes* in pots and hardy flowers.

Silver Banksian Medal.—To the Alder River Nurseries Co., for *Liliums*, etc.; to Messrs. ALWOOD BROTHERS, for Carnations; to Messrs. J. CHEAL AND SONS, for shrubs and *Dahlia*s; and to Mr. G. POTTING, for hardy plants.

Orchid Committee.

Present, Sir Henry J. Veitch (in the chair), and Messrs. J. O'Brien (hon. secretary), William Bellin, R. A. Rolfe, F. K. Sander, J. E. Shill, J. Charlesworth, Arthur Dye, C. H. Curtis, W. H. White, C. J. Lucas, R. G. Howates, F. J. Hensbury, E. R. Ashton, T. Armstrong, and Paulin Ball.

Awards.

Award of Merit.

Cattleya Alboni O'Brieniana alba s. *Saxonia Hoch*, from Messrs. ARMSTRONG AND BROSSE, Orchard House, Timberidge Wells. A charming addition to the *O'Brieniana* alba crosses, all of which are noted for the compact form and durability of their flowers. The *C. Alboni* is a model in shape, the flowers well displayed, and of firm substance, pure white, the prettily crimped lip having a clear chrome yellow disc. The small seedling plant bore a strong spike of two flowers.

Cattleya Acuminata var. The Baron (Re) s. *Dowiana aurea*, shown by Mr. J. E. SMITH, The Dell Gardens, Enfield Green. A showy flower, quite intermediate between the two parents. The sepals and petals are bright yellow, the petals having a rose-coloured veining at

the tips. The lip is large and of magenta crimson with rose margin, and with golden-yellow lines from the base to the centre.

GENERAL EXHIBITS.

Silver Flora Medal were awarded to Messrs. ARMSTRONG AND BROSSE, Orchard House, Timberidge Wells, for a group of showy *Lilium-Cat* (Leys), etc., among which were a fine example of the deep rose and purple *L. C. Geo. Woodlams*, with a selection of hybrids from it of fine quality, and including *L. C. Rhemus* and *L. C. Magueda*. A large white *Miltonia axillaria* *Queen Alexandra*, and various hybrid *Odontoglossum* and *Odontiodas* were noted; and Messrs. CHARLESWORTH AND CO., Heywards Heath, for a group which included *Lilium-Catleya Laura* (*L. C. Scylla* s. *C. Lord Rothschild*), with pale yellow sepals and petals tinged with rose, the lip having gold lines; and *L. C. Pica* (*L. C. St. Gothard* s. *C. Empress Frederic*), with rose and five purple lip having clear vein (s.).

Silver Banksian Medal to Messrs. SANDERS, St. Albans, for a group, the best plants in which were the very large and handsome *Lilium-Catleya Solange* var. *Britannic* (*C. Dowiana aurea* s. *L. C. Lustro*), with deep rose sepals and petals and large purple labellum with yellow disc; the albino *Catleya Leopoldii Sandersae*, and *Brassia Cattleya Rex* (*B. Digbyana* s. *C. Rex*), white, with yellow disc to the lip.

Messrs. FERRY AND BLACK, Slough, showed a fine form of their *Brassia Cattleya Bena*, very large, tinged with soft rose, the broad, fringed lip having a bright yellow disc.

Fruit and Vegetable Committee.

Present, Mr. Joseph Cheal (in the chair), Lord Lamborne, Rev. W. Wallace, and Messrs. E. A. Bayard, F. Perkins, A. R. Allan, J. C. Atterley, Edw. n. Bockett, P. C. M. Veitch, W. H. Dwyer, Owen Thomas, W. Bates, H. Somers Rivers, and A. Bullock.

Group.

Silver-gilt Banksian Medal was awarded to Messrs. DOBBIE AND CO., Edinburgh, for a collection of Potatoes.

Obituary.

C. T. DRUEURY. The death of Mr. C. T. Drueury, V.M.H., which we announced last week, occurred at his residence at Axton, after a long illness borne with exemplary patience. Deceased was a prolific writer on horticulture, an accomplished linguist, and the author of numerous works in poetry and prose, but it will be by his writings on British Ferns and their varieties that his name will be particularly associated.

Born in 1845, it was in the later seventies that he first commenced the cultivation of the varieties of British Ferns which he afterwards pursued with much enthusiasm, and recommended to others, with such conviction. As a Fern hunter and raiser he was second to none. The creation of the Superbum section in *Athyrium Filix femina*, and the *Gracillimum* types in *Polystichum aculeatum*, many of which have received recognition at the hands of the Royal Horticultural Society, were themselves achievements of the highest order, whilst his many wild finds testified to the keenness and accuracy of his observation. His three works on British Ferns and their varieties, viz., *Choice British Ferns*, published in 1891, *Book of British Ferns*, published in 1903, and *British Ferns and Their Varieties*, published by Routledge in 1910, are standard authorities. For many years he was a member of the Floral and Scientific Committees of the Royal Horticultural Society, whilst he was one of the first sixty to be awarded the Victorian Medal of Honour in Horticulture. His discovery of Apospory secured his recognition at the hands of some of the foremost contemporary botanists and scientists. He was one of the oldest members of the British Pteridological Society, of which Society he had acted as president and hon. secretary. He also founded and was the editor of the Society's *Gazette*.

His contributions to the horticultural press extended over a number of years. He was an accomplished draughtsman, and the illustrations in most of his works are productions of his own pen. He was one of the founders of the Horticultural Club, and served on its committee from its establishment in 1875. He was a regular attendant at its monthly meetings and at the annual outings.

The remains were laid to rest in Acton New Cemetery on Saturday last, in the presence of many relatives and friends, whilst floral tributes from absent friends and from the societies with which he was associated testified to the universal respect and esteem in which he was held.

We understand that the entire collection of British Ferns accumulated by the late Mr. Chas. T. Drury, and grown by him at Acton for many years past, and all his books, specimens, and papers relating to them will pass into the hands of Mr. W. B. Cranfield, of Enfield Chase, Middlesex.

CROPS AND STOCK ON THE HOME FARM

WINTER GRASS FOR COWS.

Pastures that have been heavily grazed during the summer should be given a rest, even if but for two or three weeks. Cut off any tufts of coarse grass, Thistles, or other obnoxious weeds that may be present, including Ragwort, which is very common this year, but may easily be got rid of by pulling it up with the roots. With a hoe spread the cow and horse droppings to free the grass underneath. Thoroughly scratch the surface with chain or tooth harrows, spreading the manure evenly. Well roll the plot to make firm the grass after the harrowing, and in two weeks an improvement will be manifest, especially if the weather is showery.

MAIZE FOR CATTLE.

The seed sown in May under favourable conditions has this year produced a vigorous plant, now 4 feet to 6 feet high, and it is quite ready for use, but as there is almost a plethora of grass the Maize is not yet required. A small quantity fed to the cows in the shed while being milked will improve the quantity, as well as the quality of the milk. For horses, too, Maize is a good food cut with the hay or straw chaff.

BASIC SLAG FOR GRASS.

The value of basic slag for grass as a means of improving the sward is becoming more generally appreciated, indeed, as it does, an increase in the growth of Clovers and the finer grasses. As basic slag contains as much as 55 to 55 per cent. of lime, many think that on grass overlying chalk the slag can have no good effect. But these scepticisms must be worn down.

For several years I have tested the value of basic slag on grass on the Downs, where but 4 inches of soil in some places overlies the chalk, perhaps 200 feet deep, yet the improvement in the grass after one dressing of slag at the rate of 5 cwt. per acre, four years ago, is obvious even after that lapse of time.

Basic slag will promote the growth of Clover where Clover was never known to grow. Too often those who decry its use have not applied it at the right moment. They are apt to think the month of April is soon enough, as in the case of some other artificial stimulants, whereas, owing to its slow rate of assimilation, basic slag should be applied early in November at the rate of 4 cwt. or 6 cwt. per acre, thoroughly harrowing the grass previously, and do not let cattle or sheep run over the grass for two months after the slag is sown. *E. Molynous.*

ENQUIRY.

CAN any reader inform me as to the price usually paid for bottling fruit, 1-lb. and 2-lb. jars, the price for bottling only, not including cost of fruit? *J. S. W.*

ANSWERS TO CORRESPONDENTS.

ASPARAGUS PEAS. *J. Radlett.* The seed of Asparagus Pea, or Lotus Tetragonolobus, should be obtainable from any of the leading seedsmen. Seed should be sown thinly about the middle of April, on a south border, leaving a space of 12 to 2 feet between the rows, and 6 to 8 inches between each plant. Prepare the ground carefully before sowing, and water the plants in dry weather, both at the root and overhead.

BRITISH GARDENERS' ASSOCIATION. *H. J. H.* The secretary of the B.G.A. is Mr. Cyril Harding, Ulysses, Fortune Green, London, N.W., from whom you can obtain all information.

FLORA. *R. H.* There is no general work on cultivated plants so complete and so fully illustrated as Bentham and Hooker's *Handbook of the British Flora*, but Nicholson's *Dictionary of Gardening*, including the 1900 Supplement, is the nearest approach to it. This work comprises six volumes and is encyclopaedic in character. It is illustrated by upwards of 3,200 uncoloured figures and a few coloured plates. Its work is now, unfortunately, out of print, but might be obtained at a second-hand bookseller's. There are cheap volumes

early, but if at all late, some protection will be needed, such as a piece of glass over a light staging. Protect the sides with garden netting, to prevent the birds from taking the seed, but be careful to secure ventilation. When ripe, pull up the plants, and thoroughly dry them, by hanging them up, before storing the seed.

MADRESFIELD COURT GRAPES. *C. B.* The cause of the splitting is bad ventilation. A chill has been caused by damp, cold, stagnant conditions in theinery at night, followed by sudden and intermittent outbursts of bright sunshine on the following day. To prevent a recurrence of the trouble next season, when the first berry shows sign of colouring, maintain a little gentle heat in the pipes night and day, with the top ventilators never quite closed. Regulate ventilation according to the sunshine. A light, buoyant, ever-moving atmosphere is necessary for this Grape. The other Grapes named are thicker-skinned varieties, and able to stand even a cold, stagnant atmosphere, but one of the parents of Madresfield Court (Black Morocco) also splits occasionally.

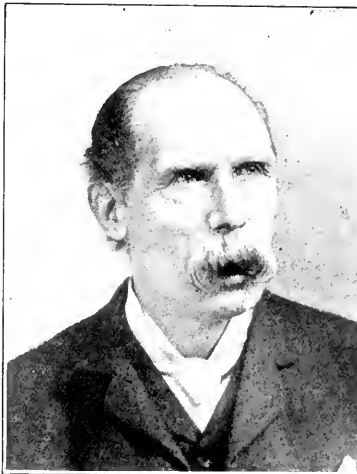
NAMES OF PLANTS. *F. C.* *Mentha sylvestris*, a common plant in southern Europe, usually found in ditches and along the roadside, but a doubtful native of this country. It is fairly general in the South of England, but rarely found in the North.—*J. R. B.* *Pernettya mucronata*. The colour of the fruits in different varieties of the species varies from white to purple. *H. W.* *Alnus cordifolia* (the Naples Alder), illustrated in the *Gardener's Chronicle*, March 5, 1883, p. 295.

PACKING PEACHES FOR TRANSIT. *Lightfoot.* The boxes used should be about one inch and a half deeper than the height of the Peaches. On the bottom of the box put a layer of half an inch of soft weed-wool, and a small roll of the same material, wrapped in paper, all round the sides. Place the Peaches in position, with a small piece of the wool between every Peach, until the box is filled. Then gently press down the wool with the fingers so as to make the whole quite firm. It is upon firmness that the safety from injury greatly depends. When the wool is well pressed down, half or a quarter of every Peach will be showing. After this is done lay a clean piece of paper over the fruits, upon which place a layer about an inch thick of the wool, to keep the fruits from shaking about.

PEAS. *T. and S.* The Pea specimens you sent us are of a species known as *Pisum elatius*, usually called the "Mummy Pea." It is quite distinct from the Sweet Pea (*Lathyrus odoratus*), and the plants are not in the least likely to be reversions from that plant. It would appear, therefore, that in some unexplained way the seed has become mixed.

POTATOS. *C. G. J.* The haulm has been destroyed by what is known as late blight, caused by the fungus *Phytophthora infestans*. The crop might have been saved if the plants had been sprayed earlier in the season with a fungicide, but the disease has now reached a stage which does not admit of remedial treatment. *T. A. R.* A species of *Verticillium* occurs on the stem, and may be the cause of the wilting of the plant. Avoid using such plants for seed purpose.—*Wolverhampton.* This is an extremely bad case of infestation of the "wart disease" (*Synchytrium endobioticum*). This disease is required to be notified to the Board of Agriculture, Whitehall Place, London, S.W., who will supply free an illustrated leaflet giving the best means for its eradication.—*Potato.* There is no fungus on this tuber.—*H. T. W.* This is an attack of common scab (*Actinomyces scabies*).—*D.* The pink-skinned Potato is of the variety known as Mr. Breeze.

Communications Received. E. M. S. A.—J. E. H. T. M. L. N. M. L. DE H.—B. L.—Miss E. A.—C. C. E. K. L.—C. H. R. H. E.—B. J.—W. B.—A. D. F. W. H. D.—J. P. D. B. (Adre. Barpe and Co.)—W. K. W. E. B. W. P. R. France.—D. C. W.—M. C. A. P. W. B. & S.—J. Mc G.—J. M.—W. E. J. Leicester.—C. H.—T. B.—R. J. H.



THE LATE MR. C. T. DRURY.

containing coloured illustrations on many classes of plants in the *Present-Day Gardening Series*, price 1s. 10d. each, post free.

GRAPES CRACKING. *C. M. L.* It seems probable that your vine border became dry in the early part of the season, causing growth to be checked and the skin of the berry to become prematurely hardened. When the rain came abundantly the pulp swelled more quickly than the skin could expand. Insufficient ventilation in hot weather, with a humid atmosphere in the house just when colouring and the second swelling commence, will also cause cracking, by forcing a superabundance of water into the fruit, which, under more natural conditions, would be transpired from the leaves by the stomata.

LEATHER CUTTINGS FOR MANURE. *H. G. K.* We learn that experiments have been made in the use of leather cuttings for manure, but they have not been successful, owing to the fact that the leather takes two or three years at least to disintegrate. However, if you write to Mr. M. C. Lamb, Leathersellers' College, 176, Tower Bridge Road, S.E.1, he may be able to give you further information, as we understand some of the experiments were conducted by him.

LETIVE SEED. *M. H.* If possible, the plants from which seed is to be saved should be

MARKETS.

(Continued from page 11.)

COVENT GARDEN, August 15. We cannot accept any responsibility for the unbalanced reports...

Table listing market prices for various plants in pots and ferns, including Aspidistra, Cacti, and Ferns.

Table listing market prices for cut flowers and various plants, including Asters, Carnations, and Gladioli.

our remark, however, applies to a good many of the common flowers...

Table listing market prices for vegetables, including Artichokes, Beans, Beetroot, and Carrots.

Table listing market prices for fruit, including Apples, Grapes, Lemons, and Peaches.

LADY GARDENER, with all round practical experience and training, requires Post in or out of London...

LADY GARDENER (disengaged) desires work in staff of private garden, inside and out...

GENTLEWOMAN, young, strong, capable, desires Post under trained Lady Gardener...

TWO LADY GARDENERS require Post in Fruit and Vegetables; some experience, Kent...

EXPERIENCED WOMAN GARDENER requires Post in October, near Godalming; single-handed job...

WOMAN (28) requires work; some experience Vegetables, Fruit, and poultry...

C. ADAMS highly recommends J. PAYNE as COWMAN, underlands Jersey, Short hills, management...

WANTED, to place Girl 18 (just left school) in Her Head Gardener for training...

TRADE.

GENTLEMAN (57) desires Working Management, Gardens, Farmery, Fruit, Mushrooms...

CUCUMBER and TOMATO FOREMAN seeks situation, 15 years Ley Valley experience...

The Gardeners' Chronicle SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements tendered for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table showing rates for ordinary positions, facing matter and back page, half and quarter pages, and line space.

Front page (no display allowed) 1/2 per line space. (Headline counted as two lines)

For discounts apply to address below. SITUATIONS WANTED.

26 words is 6L, and 6L for every additional 8 words or lower.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &., OUT OF EMPLOYMENT.

THE UNITED KINGDOM ... 19 6 per annum. ABROAD ... 22 .. "

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telegrams: "GARDENERS, RAND, LONDON." Telephone: 143 GERRARD.

GARDENING APPOINTMENTS.

- Mr R C Harris, 11, St. John's Street, London, E.C. 4. Mr H. H. Newburg, Berlin. Mr S J Weston, 11, St. John's Street, London, E.C. 4.

CLIMBING PLANTS

(Present-Day Gardening Series) By WILLIAM WATSON.

(Introduction by William Robinson.) A Practical Handbook on the Treatment of Climbing Plants, both hardy and tender species.

Illustrated with 24 full page plates, 8 of which are reproduced in colour. Price 2/10 post free from: The PUBLISHING DEPT., "GARDENERS' CHRONICLE" OFFICES, 41, Wellington Street, Covent Garden, W.C. 2

REMARKS: These are plants of Asteraceae family, although some show signs of being waterbeaten.

A TREASURY OF INFORMATION

is contained in the

HORTICULTURAL DIRECTORY AND YEAR BOOK.

Nowhere else can the gardener obtain, within the small compass of four hundred pages, so much information on the subjects which interest him most. The knowledge which this little work contains is just what is indispensable to the gardener in his daily life. The

CALENDAR OF GARDEN OPERATIONS

takes him through the whole year, reminding him of the manifold small cares which make all the difference between health and ill-health in his plants. It also reminds him of the exhibitions which are to be held and of the most important annual meetings.

Another interesting section, which expands each year, is the list of

SCHOOLS OF HORTICULTURE,

with a brief description attached to the name of each such institution. Those concerned with the education of young gardeners—both men and women—will turn to this section with especial interest, and those who are seeking such education will find it of the greatest assistance in deciding which school to select. There are still for sale a few copies of the current edition.

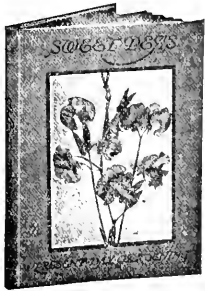
SEND FOR ONE AT ONCE TO

The **LIBRARIAN, 41, Wellington Street, Strand, W.C. 2.**

PRICE 1s. 1d., POST FREE.

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



16 net
for
Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.
DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.
CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD
TULIPS. By the Rev. JOSEPH JACOB.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. F. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof. BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double' volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WAL. ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

Each Volume 1 10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

SALE BY AUCTION.**LEE, S.E.****Annual Sale of Winter-Blooming Heaths.**

Boronia, Goni-Las, Epimae, Acaenas, Ferns, Palms, &c.

MESSRS. PROTHEROE & MORRIS beg to announce that they have been instructed by Messrs. B. Muller & Sons to conduct the above as usual this year at the**BURNT ASH ROAD NURSERIES,
LEE, S.E.,**

On Tuesday, September 11th.

Catalogues may be had, when ready, at the Nurseries, and of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2

SPECIAL TRADE SALE OF BULBS.

Wednesday next, August 29th.

UPWARDS OF

500,000 HOME-GROWN BULBS.

including 140,000 Polyanthus Narcissus, Paper-White, Grand Monarque, Solent d'Or, Double Roman, Grand Primo, &c., Narcissus Emperor, Sir Watkin, Golden Spur, Barn, Ornaus, France, and others for early forcing. Early and late-blooming Tulips, in variety. Freesias, Anemones, Callas, Scillas, Snowdrops, Winter Anemones, early-blooming Gladioli, &c.; also 35 cassettes Lilium longiflorum (retailed).

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., at one o'clock. Catalogues on application.**BUSINESS WANTED.****WANTED, small NURSERY; 2 acres or over, with or without Glass; low land. Particulars to H. W. L., Box 5, 41, Wellington Street, Covent Garden, W.C. 2.****BUSINESSES FOR SALE.****TO MARKET GARDENERS, NURSERYMEN, AND OTHERS.** Rare opportunity.**FOR SALE, by MR. MARK JEANS,** is the centre of a village and close to Comp, and with South aspect, a very valuable Small Holding, which comprises a nicely situated and well-sheltered Small DWELLING HOUSE, with buildings, and about FIVE ACRES of most productive deep sandy loam land, highly suitable for Vegetable, Fruit, and Intensive Culture, there being a ready sale at remunerative prices in the surrounding Military Camps. Immediate possession on completion of purchase. Price £700.

To view, apply to Mr. H. W. Jeans, Glebe House, Sutton Veay, Warrminster, and to treat to Mr. Mark Jeans, Land Agent, Surveyor, and Valuer, Marlborough, Wills.

WELL-KNOWN firm Carnation Growers desire DISPOSE of FREEHOLD NURSERY; about 4 acres; less 25 miles London; going concern; fully equipped; 10 Glass-houses (1,200ft. run, 25ft. wide); 2 good cottages; large stock plants; owners on military service; bargain; practical man; large market and private connection. Inc. price, £5,500.—Particulars, gen. enq. only, CHURCH & CO., 159, Victoria Street, S.W.**FOR SALE, FREEHOLD MARKET NURSERY, Essex.**— $\frac{1}{2}$ acre land, 5-roomed bungalow, 2 houses (14 x 16), 2 houses (50 x 12), all heated, packing shed, &c.; all in good condition. Price £725; bargain; ill-health reason for selling.—S. J., Box 21, 41, Wellington Street, Covent Garden, W.C. 2.**BUSINESS TO LET.****NURSERY GARDEN, with or without dwelling-house, to let, comprising 14 acres of good fertile ground, with 4 Glass-houses, 100ft. by 14ft., and one smaller one and frames, stable, piggery, and other sheds; situated at Stow-on-the-Wold, Gloucestershire; every opportunity for a good, energetic man.—Apply, THOMAS HIATT, Market Square, Stow-on-the-Wold.****BUSINESS GARD.****R. H. S. EXAM.**—Correspondence class, preparing Gardeners and students, start October; brilliant past record; prospectus.—MEDALLIST, Pictoria, Leithersdorf, Holt, Norfolk.**SPECIAL NOTICES.****MR. R. GREENFIELD** begs to remind all friends that, although engaged on National Service work he continues Medallist representative to John Peck & Son. Orders this season will be very much appreciated, and may be directed either to the firm at West Norwood, or to Mr. R. GREENFIELD, 61, Ralford Road, Leamington Spa.**THE OLD-ESTABLISHED SEED & BULB BUSINESS** carried on for sixty years in BASSNETT STREET, LIVERPOOL, will in future be styled**KER'S, LTD.**

There will be no change in the Management.

MR. ROBT. B. KER

will have associated with him

MR. ROBT. W. KING and MR. T. LANE BAKER.

Telephone: Royal 3066. Write for List.

PLANTS, &c., WANTED.**WANTED, choice Fruit, Flowers, and** Vegetables; best market prices returned; boxes &c., sent. Surplus stock from Gardens accepted.—MORLE & CO., 150-156, Finchley Road, N.W. 3**WANTED, 1,000 Large ASPIDISTRAS,** old plants suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**WANTED, GERANIUMS.**—Cuttings, single Pinch, Laverne or Mrs. Lawrence, also Snow Queen and Imperial and many or pale lavender Floras. KEMP, 232, Brighthelm Road, Birmingham.**PLANTS, &c., FOR SALE****100,000 LARGE GERANIUMS.** Dracenas, Roses, Eranos, Glaximas, Lilies, Hydrangeas, &c.; catalogues free.—J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.**PRIMULAS' PRIMULAS' PRIMULAS'** 44th Year of Distribution. Our well-known Magnificent Strain Cinerarias, (Caledonians, &c.); 2s. per doz.; 12s. 6d. per 100; carriage paid. JOHN STEVENS & SONS, Nurseries, Coventry.**FOR SALE, 6 large Kentias, 9 to 12 feet** high, 4 Lantanas, 10ft. across, 2 Phoenixs, 8 to 10 feet high, also 4 Tree Ferns and large Camellias.—A CHENEY, The Gardens, Shenstone Court, Shenstone, near Lichfield.**FERNS' FERNS'—Tree Ferns, Climbing** Ferns, Basket Ferns, Stone and Greenhouse Ferns, Hardy Garden Ferns; catalogues free.—J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**SITUATIONS VACANT.**

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.**Gardeners writing to Advertisers of Vacant Situations are recommended to send them** copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.**PRIVATE.****WANTED, HEAD GARDENER** for the country, experienced In and Out, and with some knowledge of estate work; 5 Under Gardeners best cottage and garden house; good character and references indispensable.—E., 255, 3, Union Street, Birmingham.**WANTED, HEAD WORKING GAR-**DENER for Northants; with experience in all branches of Gardening, capable organizer of labour, 6 in staff; good cottage, &c.; wife to caretake in winter; good references. Interview required at advertiser's cost.—W. H. L., Box 16, 41, Wellington Street, Covent Garden, W.C. 2.**WANTED, HEAD WORKING GAR-**DENER, cottage and good wages; ineligible.—Apply, CROPPER, Mount Ballan, Chesham.**WANTED, WORKING HEAD GAR-**DENER (ineligible), 3 others kept; good knowledge Inside and Out; excellent references; good cottage.—Apply fully, HON. MRS. F. COLBORNE, Nonsuch Park, Chesham, Surrey.**WANTED, HEAD GARDENER (WORK-**ING) for North Leicestershire; age and under 34; must have large experience of Glass-houses; good wages; £150 per annum and good bonus.—Reply, in first instance, with references, to T. W. H., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.**WANTED, HEAD WORKING GAR-**DENER (ineligible); experienced in all branches. Apply, G. WADDIFON, Branton Wall, Northumberland.**WANTED, HEAD WORKING GAR-**DENER; married; ineligible; good cottage and garden; wages 28s.—Apply, Todenham House, Chesham.**WANTED, HEAD WORKING GAR-**DENER (where 5 are kept); must be experienced in Flowers and Vegetables.—Sandhurst Lodge, Wellington College Station.**WANTED, HEAD WORKING GAR-**DENER; personal reference from last employer required; good wages and cottage; Second Gardener (ineligible). Apply, MRS. BEAZLEY, Quarry Hill, Reigate, Surrey.**WANTED, good SINGLE-HANDED** GARDENER, boy kept; good rooms on premises for man and wife (without family) or single man. Write age, wages, and particulars, C. GASELEE, Worcester Park, Surrey.**WIMBLEDON.**—Wanted, at once, capable SINGLE-HANDED GARDENER; no cottage.—Reply to S. V., c/o J. W. Vickers & Co., Ltd., 5, Nicholas Lane, E.C. 4.**WANTED, good GARDENER (Single-**handed, will help, near Gerrard's Cross; wages 50s. and modern cottage, with garden.—Write, E. D., Box 10, 41, Wellington Street, Covent Garden, W.C. 2.**WANTED, capable SINGLE-HANDED** GARDENER, no Glass; also to milk and look after 3 or 4 cows; good cottage in Heris; wages 50s. and cottage.—Apply, W. G. Vinton & Co., Ltd., 8, Bream's Buildings, Chancery Lane, London, E.C. 4.**WANTED, GARDENER (SINGLE-**HANDED); useful; married (no children); good wages and 3 good rooms. Write age, experience, &c., H. WILMOTT, Eindhoven, Guildford.**REQUIRED, for the Surrey County** Asylum, Northorn, Mersham, Surrey, a WORKING GARDENER, who will be responsible for the proper cultivation of the land used for garden purposes and the production of Vegetables, &c., for asylum consumption, age not to exceed 45; wages 40s. per week and cottage, subject to deductions under Asylum Officers' Super-annuation Act.—Apply, enclosing copies of not more than three testimonials, to MR. R. A. BODGES, Clerk to Committee, County Hall, Kingston-on-Thames.**WANTED, GARDENER; accustomed to** running engine for electric light; wages 35s. and house. H. F., Box 29, 41, Wellington Street, Covent Garden, W.C. 2.**EXPERIENCED GARDENER** required, to drive Under Gardeners' mind, understand working of electric light engine and plant; wages 42s.—D. E., Box 3, 41, Wellington Street, Covent Garden, W.C. 2.**WANTED, experienced GARDENER** competent Director, to take charge of Plant and Palm House; as much assistance given as present circumstances permit; wages 50s., cottage, milk and vegetables.—Write, S. H., Box 1, 41, Wellington Street, Covent Garden, W.C. 2.**WANTED, good GARDENER, imme-**diately, for students' hostel; man or woman; married or single, but work for wife if desired.—St. Michael's, Grove Park, Lee, S.E. 12.**WANTED, GARDENER** (another man or wife), ineligible; experienced in all branches. Viney, poultry, central heating; 5-roomed lodge.—Full particulars, references, wages, &c., to L. CHARBONNEL, Great Woodstock House, Purley, Surrey.**WANTED, GARDENER** (man or woman); competent working; lodging, coal, and light provided.—Apply, THEVERELL, Maidenhead Court, Berks.**WANTED, SECOND GARDENER** (where 5 or 6 kept); must be competent to take entire charge of Flower and Fruit Gardens; ineligible; wages 30s. a week, 5 or 4 rooms.—Apply, MISS UPOHNS, Lympne Place, Hyde, Kent.**WANTED, SECOND GARDENER** for greenhouse work and Herbaceous Borders; very good wages.—Apply, SIR JOHN RICHARD-JONES, Br., Elstree, Herts.**WANTED, UNDER GARDENER; cot-**tage given.—Write, stating wages and full particulars, LADY MCMAHON, Southbrook House, Devizes.**WANTED, UNDER GARDENER** for outside duty alternate Sundays; pumping in House; wages 28s. per week, good cottage and garden, milk.—Apply, stating age, particulars, to ALBERT CHILD, Catesby House Gardens, Daventry, Northants.

WANTED, UNDER GARDENER: married, 42-year-old, sober, or intelligible, must be experienced, 25s. and cottage. Write to M. A. Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, FOREMAN, by September 25, good all round, to take charge of Houses and supervising outside sitting. Head Gardener's absence in various single orchards, both and vegetables. State wages to A. THURSTON, Haveringham, Holt, Norfolk, S14 6k.

WANTED, FOREMAN or good capable MAN (ineligible), to take charge of Glass, 30s. per week, both, and duty and overtime paid. Full particulars, W. REID, Covent Park Gardens, Sunningdale, Berks.

WANTED, FOREMAN, or good capable MAN, to take charge of Glass, 30s. per week, both, and duty and overtime paid—Full particulars, A. BENNETT, Nishton Hill Gardens, Ashdown, Dorsetshire.

WANTED, FOREMAN (ineligible); also Youthful, Inside and Out, wages 30s. and 15s., both, and bonus 5s., duty paid extra, due experience.—W. ANDERSON, Close House Gardens, W. London, E.C. 4.

WANTED, INSIDE FOREMAN: competent man, ex-Surveyor or intelligible, age 30, weekly, with both, and overtime, duty and overtime paid extra. Apply, with full particulars, to GARDENER, Park Farm, Henne, in Thames.

WANTED, JOURNEYMAN (INSIDE), with good general experience. Apply, stating wages, with full particulars, to GREEN, The Gardens, Adlam, near Court, Reading.

WANTED, JOURNEYMAN or IM-PROVER for Houses, married or single, but in-eligible. Apply, HEAD GARDENER, Denton Court, Bucks.

WANTED, JOURNEYMAN for Inside, good general all round, in IMBROGLIO or Inside—State wages, with both, and good full particulars to H. KEMP, Priory Gardens, B. 2 20.

WANTED, MAN (ineligible); used in head and pony both in yards, 25s. weekly and 10s. war bonus. Apply, A. P. RAMBECK, Park Lodge, Watlington, Northamptonshire.

WANTED, LADY GARDENER, to take charge of Plants and Flowers under Glass, must have a knowledge of Orchids, a good general all round. State experience and wages required to GARDENER, William Lodge, Felham, Middlesex.

WANTED, TWO WOMEN GARDENERS for Houses, one qualified to spray. Bonus, and also experience in the House and in the garden. Full particulars, cottage provided. State full particulars, wages required, to ALMOND, Haverhill, London, E.C. 1.

WANTED, Young MAN, to help in Flowering grounds and Kitchen Gardens. State experience and wages in full, to B. W. HAWKINS, The Gardens, Galsdon, Haver, Kent.

WANTED, strong, intelligent YOUTH, for Inside, in large establishment, one with some experience preferred, good wages, both, milk and vegetables, overtime and duty paid. State age and experience to HEAD GARDENER, King's Walden, Herts, Hitchin.

WANTED, active LAD for the Houses, wages common to 17s. Sunday, duty paid, aged both; 1. Brock Sandon, 2. HOWARD, Benthams, Valence Gardens, Newbury.

TRADE.

MAN WANTED, by a Market Gardener, to take charge of 5 or 6 acres Glass, 20 acres open land, experienced in Tomatoes. Apply, stating wages required, A. W. SMITH, Felham, Middlesex.

WANTED, a Good, Practical GARDENER for a small Both Farm in West of England where Vegetables are also grown, must be married, sober, and industrious, comfortable living quarters. Write to B. Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, (in immediately), PROPAGATOR, GROWER, or skilful worker, Tomatoes, good at weathers. Private Gardeners used to weathering soil, State wages, references. RYTRAY, Ash Vale Nursery, Ash-street.

WANTED, in September, GROWER (in-eligible), thorough knowledge Tomatoes, Cucumbers, Chrysanthemums, and market produce. Apply, stating experience, wages, full particulars, G. J., Northgate Nurseries, Devizes, Wilt.

WANTED, GROWER for Branch Nursery, Tomatoes, Cucumbers, Chrysanthemums, &c., for shop trade. W. CROWDER & SONS, Hereford.

WANTED, immediately, NURSERY PROPAGATOR (outdoor), chiefly for Fruit and Rose Trees and Conifers. Apply, W. SHAW & SONS, Nurserymen, Leicester.

PRIVATE GARDENERS awaiting Situations may obtain temporary employment until special Particulars, &c., from JOHN RESELL, Devonshire Nurseries, Haverstock Hill, N.W. 3.

WANTED, KNIFE-MAN, and as GENERAL FOREMAN, for 12 acres young Fruit Trees, ages 40s. and odd, the cottage, State age and full particulars of training to STORRIE & STORRIE, Fruit Tree Specialists, Gleadless, Fife-shire.

WANTED, WORKING FOREMAN for Nursery of 20 acres; no Glass, must be well up in Fruit Trees and have a knowledge of Trees, Shrubs, Roses, &c., permanently.—State age, wages, full particulars, and references to HILLIER & SONS, The Nurseries, Winchester.

NEAR MANCHESTER—Wanted, active and capable WORKING FOREMAN, to take charge of single Nursery, 25 per cent. of profits, in addition to wages. Address, stating age, experience, references, and wages required, M. R. Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, as FOREMAN, thoroughly experienced man in Horticulture and Rock Plants, 2 or 3 acres, must have first-class references. Apply, R. C. SPOWELL, The Nursery, Woodbridge.

WAREHOUSEMAN wanted for the Agency, 10, South Trade. Apply, T. & R. OAKLEY, Hastings.

SITUATIONS WANTED.

Twenty-six words for 1s. and 6d. for each succeeding eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

PRIVATE.

GARDENER, BAILIFF or ESTATE SUPERVISOR, 12½ years' experience in all branches of general gardening, very highly recommended, over 20 years' experience in practical, leaving nothing to be desired in working arrangements. Woodstock Park, Epsom, Surrey, in Thames.

A GENTLEMAN highly recommends his Head Gardener and Bailiff, thoroughly experienced in all branches of Gardening, Farming, and Estate Work, Wood Accounts; good manager of men; also a very capable general. J. PEPPER, 10, Gooding Road, Berks, in Thames.

GARDENER (HEAD) or GARDENER (BAILIFF), well up in all requirements of a good establishment, very highly recommended, over military age. For particulars, W. R. GARDNER, Antons, Horse Guards, Piccadilly, Devonport.

GARDENER (HEAD), FRUITS, with 20 years' experience, good; highest references for the best and highest; good worker and organiser. Life spent in large places. age 46.—A. Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD): life experience in Fruit, Flowers and Vegetables, Inside and Out; crops 2c. Peaches, Melons, Eggs; also Herbaceous Borders, Lawns, and Pleasure Grounds; married; age 37. G. D. HOOD, Home Park Gardens, Thame, Oxon.

GARDENER (HEAD): special on Vines, P. in, Roses, Saffed Peas, Chrysanthemums, and Cucumbers, constant supply of Vegetables and general management of a good Garden; age 39.—B. Box 4, 41, Wellington Street, Covent Garden, W.C. 2.

SITUATION required as HEAD GARDENER or SINGLE-HANDED; thoroughly practical with Fruit, Flowers, and Vegetables, under Glass or Outside. Please state wages, &c., H. MORRIS, 45, Rompark Road, Salisbury, Wilt.

GARDENER (HEAD), open to engagement; highly accomplished; expert in every branch of Horticulture.—Apply, G. ABBEY, High Street, Wallington, Oxon, via Wallingford.

HEAD GARDENER: life experience in all branches, 10 years as Head, good references, age 47. Apply, WM HITCHMAN, 1, Orchard Street, Spalding.

LADY SUDELEY can fully recommend her very experienced late Head Gardener for charge of recreation ground or similar position of trust where reliability, but not heavy manual labour, is required.—C. TAYLOR, Garden Cottage, Ham Common, Surrey.

GARDENER (HEAD WORKING).—Col. BASTARD, Kitley, Yeovilton, highly recommends F. BRINCOMBE as a thorough, practical man, desires arduous engagement; life experience; well versed in the requirements of good establishment; 10 years present situation, age 46, married (2 girls, youngest 12); leaving through death.—BRINCOMBE, Buckland Court Gardens, Ashington, Devon.

GARDENER (HEAD WORKING), where several are kept; thoroughly experienced in all branches, over military age.—Please state wages, &c., to GARDENER, Bonley Cottage, near Kentworth, Warwickshire.

GARDENER (HEAD WORKING or SINGLE-HANDED); age 48, married (no family); life experience in all branches, Inside and Out; good references.—A. H. HAWES, 72, Hamilton Road, East Finchley, London, N. 2.

GARDENER (HEAD WORKING) seeks situation in good establishment; age 43, thoroughly experienced in all branches, including Orchids; excellent references; used to positioning Fruit and Vegetables in large quantities.—WARREN, The Gardens, Sandhurst Lodge, Wellington College Station, Berks.

GARDENER (HEAD WORKING); thoroughly experienced in all branches; can be highly recommended; over military age. Apply, H. BORTON, 59, Rosenthal Road, Catford, S.E.

GARDENER (HEAD WORKING) seeks situation, 4 under in last place; also versed in Landscape Gardening; married (no family); over military age. H. RUSHAM, Stockton, Gt. East St. Mary, Wilt.

GARDENER (HEAD WORKING); good all round experience, Inside and Out; age 46; married (2 children); good references.—BEAN, Downe, Uppington, Kent.

GARDENER (HEAD WORKING) requires permanent situation; life experience, Inside and Out; age 40; married; present situation 14 years; good references.—G. CORNWELL, Honica, Cottage, Cross-in-Hand, Sussex.

GARDENER (HEAD WORKING); good all round practical experience, Glass, Fruit, Flowers, Fencing, &c.; above military age; married (no family); 11 years as Head, excellent references.—F. BRISSON, Westport, Statham, Midhurst, Sussex.

GARDENER (HEAD WORKING); age 50; in good establishments, thoroughly experienced in all branches, including Orchids; excellent references; a general all round.—RICHARDS, Fenmore Place, Fulmouth.

GARDENER (HEAD WORKING), with a thorough practical experience, Inside and Out; excellent references; married, age 50. H. NEWTON, White Horse Hill, Chislehurst, Kent.

GARDENER (HEAD WORKING); good all round practical experience; Glass, Fruit, and Flowers, Fencing, &c.; above military age; married (no family).—GARDENER, Fulmer Grange, Stoke Poges, Slough.

GARDENER (good SINGLE-HANDED); Nursery and private experience with Stoves, Orchids, and routine of Garden; 47; good reference.—H. LUCAS, 94, Cock Lane Street, St. John's Wood, London, N.W. 4.

GARDENER and HANDYMAN seeks situation, single life; married (small family); disengaged; good refs.—P., Douglas Villa, Orchard Grove, Chalfont St. Giles, Bucks.

GARDENER seeks situation (SECOND or SINGLE-HANDED); experienced Inside and Out; Please state wages. KILLICK, 47, Kambala Road, Balfour, S.W. 11.

GARDENER (SECOND), in medium establishment, or good SINGLE-HANDED might suit; good experience in all branches; married (no family); Army discharge; Surrey preferred; late of Heathfield and Osterley Park. Full particulars to R. J. HORTLOCK, 4, Great Woodside Cottages, Purley, Surrey.

SITUATIONS VACANT continued on page v.



THE

Gardeners' Chronicle

No. 1000 — SATURDAY, AUGUST 25, 1917.

CONTENTS.

Agriculture in Jamaica ..	80	Market fruit garden, the ..	76
Asplenium Filix-foemina var. Carlissimum ..	81	Novice, confessions of ..	77
Cabbages, nugget, the ..	82	Obituary ..	78
"Chronicle," the ..	82	Gealt, A. ..	82
Farm, crops and stock on the home ..	83	Harriot, Paul ..	83
Ferns, protection of wild ..	80	MacVinish, A. ..	83
Food production, on increased—		Orchid notes and gleanings ..	
House Sparrow, the ..	78	Brasso-Laehlo-Cattleya Windsor ..	76
Onions, autumn-sown ..	77	Cattleya Flacandra ..	76
Onions, bolting in ..	78	Cypripedium Wilmsii ..	76
Pasture, the treatment of old ..	78	Potatoes, the storage of ..	76
Pests, protection of wild ..	78	Rainfall and gundrie ..	80
Vegetables for nutrimentioners ..	78	Societies ..	80
Food, the preservation of ..	77	Royal Horticultural ..	82
France, notes from ..	77	Scottish Horticultural ..	82
Fruit crops, remarks on ..	81	Tea plants ..	82
Fruit in season ..	80	Tomatoes, how to can ..	80
Intensive cultivation ..	82	Vegetables and fruits ..	81
		Weeds ..	81
		Wine-birds, renovating a ..	82
		Week's work, the ..	81

ILLUSTRATIONS.

Apple-shot affected with brown-rot canker ..	76
Asplenium Filix-foemina var. Carlissimum ..	81
Vegetables produced at a nutritionist's garden ..	81

STORAGE OF POTATOS.

THE methods of storage of Potatos adopted in different parts of the country and by different types of growers are so varied as to suggest to a hasty observer that they cannot all be based on sound principles. Nor, indeed, is it our present object to prove that "whatever is"—in the way of Potato storage—"is right." Nevertheless, careful inquiry and consideration will show that the differences in method are in the main due to attempts to settle a difficult matter—which admits of no absolutely perfect settlement—by compromise. The reasons why a compromise, and not a perfect system, must be adopted are, first, that to store Potatos in absolutely perfect conditions would cost more than they are worth, and second, that the conditions required to ward off one danger are those which, if adopted too thoroughly, are likely to expose the tubers to another danger. The stored Potato is undoubtedly then the devil of heating and the deep sea of dampness. For example, if a clamp be made impervious to rain, it is well-nigh inevitably impervious also to air. The free circulation of air among the Potatos is checked and the worst of all evils, the sweating and heating of the heap, befalls the tubers. The danger of loss from this cause is, of course, greatest during the first months of storage; for during that period the tubers are not yet dormant. They are gradually passing into a dormant or somnolent state, but in the meantime they are respiring—that is, performing chemical operations which require oxygen for their initiation and result in a liberation of carbon dioxide.

Now, it is well known that if living

vegetable matter be in active life it is possible to cause it to kill itself by packing it closely in a confined space. For instance, if young leaves be packed closely together, the heat which they produce in the course of their respiration is so great that the temperature in the centre of the mass rises to and beyond the death point, and the leaves are killed.

So in like manner it is possible to kill Potatos, as it were, by kindness. If as soon as they are lifted they are packed away snugly in a perfectly made and finished clamp, heating, sweating and subsequent rotting are almost bound to occur. The risk of this result is rendered the greater by reason of the fact that, like men, no crops of Potatos are perfect. No matter how carefully they may have been hand-picked, some unsound and diseased Potatos are almost certain to be included in the stored tubers. Each diseased Potato is a source of danger to its fellows. The disease lurking on or in it may and will, if the conditions are favourable, spread to and infect its healthy neighbours.

Certain good general rules may be deduced from these considerations. These rules are:—

- (1) The more perfect the ventilation, the better the clamp.
- (2) The more recent the digging, the greater the need for perfect ventilation, and in those cases in which the clamp is finished off at making time occasional opening of the clamp and overhauling of the tubers.
- (3) The fewer diseased Potatos included in the clamp, the less the risk of loss.

The philosophy, though not the whole philosophy—of clamping may be summed up thus:—In the early days let air into the tubers, even though in doing so some rain may get in also; in the later days, keep rain out, even though by so doing some air is kept out also.

There are, so far as our observation goes, three general methods of clamping. One, which we think is the least satisfactory, is to make haste to build and complete the clamp soon after the Potatos have been lifted. The thick covering of straw and earth which is put in at the finishing of the clamp—even though ventilation pipes are inserted—impedes the free circulation of air, and the Potatos are bound to suffer. Another method which is often adopted by good growers is probably the best where large quantities of tubers have to be handled. After grading and rejecting diseased tubers, the tubers are built up in the clamp, leaving a base about 3 feet or 3 feet 6 inches wide, and with sides as straight as possible, so that ultimately the section of the clamp will have the form of the arms of the letter A. The straw (long wheat, or, failing wheat, barley straw—not oat-straw) is put in position along the sides and ends of the clamp, care being taken to push the bits of straw well down to the ground. For the edge of the clamp is its Achilles' heel on which frost later on makes its attack. Earth from the drainage trench is thrown over the base of the straw, and also about the middle,

in order to keep the covering in position. The cap of long straw covering the ridge and passing over the straw of the sides is also put on, and kept in position by similar means. Circulation of air takes place readily through the 4 inches of straw and also through the mass of Potatos, provided that the mass be not too broad. Later on, when the waning vital activity of the tubers has ceased and when frost is to be expected, the clamp is completed. The 6 or 12 inch rampart of earth is built up over the straw almost to the apex of the ridge, and the narrow ridge is closed by means of short straw.

What, in our opinion, is the best method of all is to carry the Potatos to the dry part of the field in which the clamp is to be built: if sorting and grading can be done before they are carted, so much the better. If not, they must be sorted and the diseased tubers rejected (boiled and fed to pigs). They are put in heaps, either on the dry ground or on a layer of Bracken previously spread thereon. The heaps, not more than 2 feet or 2 feet 6 inches in height, are covered lightly with Bracken. At intervals of two weeks the tubers in the heap are looked over and the diseased tubers, many at the first inspection and fewer at the last inspection, are removed. Late in November in a normal year the clamp is made. As a further preventive of the spread of disease quicklime, or quicklime mixed with flowers of sulphur, is dusted among the Potatos. This precaution should also be followed by those who practise other methods of storage.

It is evident that in many cases at the present time labour difficulties may prevent the adoption of the last described method. Nevertheless, it is one which is to be recommended whenever it is practicable.

In this method of deferred clamping no ventilation chimneys are required; but if the clamp is made earlier it is advisable, though in the opinion of some good growers not essential, to put in ventilation shafts at intervals along the clamp. The ventilation shafts, made of drain pipes, should not, however, be upright, but should be placed near the top of the sides, not quite horizontally, but pointing somewhat downwards. In the outlet of the shafts a little loose litter—Bracken, Heather, etc.—is placed.

Unless the clamp shows signs of giving in, it may be left undisturbed until February. If left longer before it is examined, many of the tubers will have sprouted.

The storage of Potatos for seed purposes is a difficult subject to discuss, because the method to be adopted must be governed by the facilities of space, buildings, and labour at the disposal of the grower. There is little doubt, however, that if a sufficiently large frost-proof and well-lit shed is available, boxing, essential for earliest, is best, also for second earlies and main crop varieties. Boxed in November, and kept in a well-lit, cool, but frost-proof shed, the tubers will green

thoroughly, and the sprouts will be stocky and solid. Needless to say, the boxes, if piled over one another, must nevertheless not be so close as to obstruct light and air. This method, only possible to the small grower or to the specialist large grower, has the great additional advantage that tubers which have failed to sprout or have produced only poor shoots may be discarded and not planted, for there is reason to believe that these tubers are often the foster-parents of late blight. If planted, they will only produce weakling plants which, suffering from premature old age, readily contract the disease. Hidden by the taller neighbouring plants, they escape notice, and spread the disease to the lower leaves of the plants in their vicinity. So, like a thief in the night, the disease makes its attack. It cannot be insisted on too strongly that late blight is, like some human diseases, a disease of old age. Old age, though generally associated with length of days, may display its symptoms in things which, though young in years, have raced in a futile way through the course of their life and "are rotten ere they are half ripe." It appears probable that the prematurely old-aged Potato is a frequent source of infection. Naturally, the debility of old age may be brought about either by untoward soil conditions, or it may be due to constitutional weakness. By boxing and rejecting the tubers the sprouts of which have failed to develop in a normal manner the constitutional weaklings may be discarded.

The storage of allotment Potato crops presents in some cases considerable difficulty. Clamping is often out of the question, owing to danger from pilferers. Where small quantities are to be stored a larder, if not too damp, is a suitable place. If the Potatoes are stored in thick sacks, stood on boards with wooden battens, dusted with a little quicklime, or quicklime and flowers of sulphur, and picked over both before and occasionally during storage, they should keep well. If the larder is not proof against frost a covering of loose litter, Bracken, Heather, or crumpled, but not crushed, newspapers will give protection; or the sacks may be taken, on nights of hard frost, into the kitchen. Failing a larder, a cellar, if it is well ventilated, may be used. The Potatoes should be laid in heaps on the floor, but the heaps should be shallow—about 1 foot or 1 foot 6 inches in depth. Old sacking or litter may be placed over them in frosty weather. Although not connected with storage, a word may be added on choice of seed. Many allotment-holders will be tempted to use their own seed tubers. But unless they grew Scotch or Irish seed, and unless their plots lie in good Potato districts, such as the silt of Lincolnshire and Cambridgeshire, and the warp of Yorkshire, they should on no account rely on own-saved seed. They should obtain either Scotch or Irish seed, or else once-grown Scotch or Irish raised in a good Potato district, such, for example, as one of those already mentioned. Although "own-saved-one-from-Scotland" seed may be used where experience has already shown that it gives good results, its use should be avoided in other cases, and particularly by those whose plots are on light soil.

ORCHID NOTES AND CLEANINGS.

NEW HYBRIDS

CATTLEYA PHAEDRA.—This is a brightly coloured hybrid, between *C. Dowiana amica* and *C. Elvina* (*Schilleriana* × *Trianae*), sent by Mr. F. C. Puddle, gr. to W. H. St. Quintin, Esq., Scampston Hall, Billington. The sepals and petals are rose-pink, the lip, which strongly indicates *C. Schilleriana*, is ruby-purple in front, and on the tips of the erected side lobes. The

rose-coloured base bears gold lines. Mr. Puddle also sends a home-raised *C. Warszewiczii*.

BRASSO LAELIO CATTLEYA WINDSOR.—A flower of this cross between *Brasso-Cattleya Thouronii* and *Laelio-Cattleya callistoglossa* is sent by Messrs. Mansell and Hatcher, Rawdon. The sepals and petals are rose-pink, the slightly fringed labellum light rose, veined with rosy mauve. The disc is yellow on a white ground. The brightly coloured veining on the inside of the side lobes of the lip is an attractive feature.

MALFORMATION

CYPRIPEDIUM MILLEMANI.—A three flowered inflorescence of this hybrid, between *C. callosum* and *C. philippinense*, is sent by Mr. F. C. Puddle. One of the flowers is curiously malformed. The upper sepal is divided and joins the lower sepals, extending on each side, while the imperfect petals are joined and placed erect in the position normally occupied by the dorsal sepal. The column is malformed and straightened, but the lip is almost normal.



FIG. 20. APPLE STEM AFFECTED WITH BROWN ROT CANKER. THE DEAD SPUR WAS ATTACKED WHEN IN FLOWER.

THE MARKET FRUIT GARDEN.

A VALUABLE REPORT ON BROWN ROT

UNDER the title of "A Blossom Wilt and Canker of Apple Trees," a report on Brown Rot experiments by Mr. H. Wormald, has been issued by the Cambridge University Press, as a reprint from the *Annals of Applied Biology*, April, 1917. Brown rot, it is pointed out, is increasing in intensity year by year, and has now assumed epidemic proportions, causing considerable loss to fruit growers. In some cases 50 to 75 per cent. of the blossom trusses and spurs of Apples have been killed by the disease (see fig. 20). At present no spray material for effectively checking the disease has been discovered, trials hitherto having given only negative re-

sults. Much benefit, however, has been obtained by cutting off the withered spurs as soon as possible after they have been observed. This is in accordance with apparent results in my experience, as, after cutting off and burning the diseased spurs from all but one badly-attacked variety in 1915 and 1916, the attack was greatly diminished in 1917, while the excepted variety is more extensively injured this season than ever before. It is of importance to cut off the diseased spurs as soon as possible after they have been observed, in order to prevent the extension of the rot to the branches from which the spurs issue. Where the extension has taken place, as it has done in many cases when the withering has been noticed, brown rot canker is found on the branches at the bases of the spurs, and such parts should be pared out as far as the bark is brown, and jet into the sound bark, which should be dressed with Stockholm tar. In many cases I have found cankers two to four inches in length at the bases of diseased spurs, and even at those of tiny snags which few pruners would think it necessary to cut off, unless they had noticed the result of leaving them intact. When the canker is found to extend all round a branch, there should not be any hesitation in cutting off the branch below the diseased place, at once if there is no fruit upon it, or after the gathering of the fruit when there is any above the cankered spot, as the speedy death of the portion above that spot is certain. The permanency of the injury caused by the disease is indicated by the fact that where many spurs have to be shaved off a branch, the latter will be bald to a great extent for the whole of its subsequent existence. Still, by cutting off the withered spurs before they have decayed down to their junctions with the branches, the extensions above the treated places may possibly be saved from future injury, whereas every diseased spur left on a branch will be a source of infection for the following season. Where sufficient men are not available, women should be employed to do the necessary work. Investigations at Wye support the conclusion of some foreign mycologists as to the existence of two species of brown rot, one of which attacks the blossom and the wood, and the other the fruit. This is in accordance with the fact that, while there is a great deal of the disease on some varieties of Apples in my orchards, as seen in withered spurs and cankered branches, there has never been any considerable proportion of mummified fruits. Conversely, there has been a considerable proportion of mummified Plums even where hardly any brown rot has appeared on the spurs or the ends of shoots. I have very little brown rot on Plums this season, an exemption attributed to the cutting off and burning of diseased parts in recent years. The disease appeared on Plums in my oldest orchard some years before any attack on Apples was noticed.

LUCERNE IN ORCHARDS.

My attempts to obtain a full plant of Lucerne in some orchards has been mainly, but not entirely, successful, in spite of the fact that a hot fortnight's drought succeeded each sowing. Failure in one case was due to the seed having been buried too deeply by simply hoeing it in. The land had been hoed a short time before, and was nearly free from weeds. In this case there was no room between the rows of trees to harrow the seed in. In another orchard, after horse cultivation, the seed was harrowed in between the rows of trees, while the land in these rows was hoed before the sowing, and the seed was covered by means of hayrakes afterwards. Here there is an excellent plant of Lucerne, although in places the pestilent Bindweed has grown rampantly with it. Whether the weed or the Lucerne will gain the upper hand after the first cutting remains to be seen. Where the failure took place, re-hoeing, re-sowing, and raking in the seed have resulted in a full plant, now almost smothered in places, however, by Bindweed. *Southey Grove.*

CONFESSIONS OF A NOVICE.—XVI.

NOVICE AS ALLOTMENT HOLDER.

As those may remember who have read my confessions, no motive of material gain clouded the pure passion with which I fell in love with gardening. If anything of calculation there was, it lay rather in the direction of gardening as a kind of old-age insurance. It was a new game that can be played all the year round, in all weathers, and alone. It is true that, like Bacon, I took "all learning for my province," and felt as deep an interest in the tragedies of the kitchen garden—club root and fly and mildew, wireworm and maggot and blight—as in the happy dramas of the flowering shrubs and herbaceous borders where any pests that harbour can compass no complete tragedy. They may strike down the Antirrhinums, but if they do the Delphiniums and the Larkspurs bring flowers to the Snapdragon's grave.

Now, since in obedience to the exhortations to grow more food, I have turned my garden into an allotment, the flowers, like Boy Scouts and Girl Guides, seem to have resolved to do good deeds every day. Left alone, they are flourishing in a wild riot of colour, far more luxuriantly than when they were so carefully watched and tended. The Ramblers, left unsprayed, make light of mildew, and like Apollon straddle all over the way, blooming alike high up the Laurels and low on the ground in the high grass of the unknown borders. I am aware that the neglect which the flowers are enjoying bodes no good for their future welfare. In the Rose beds Manetti stocks have begun to rob their *Edgors*—the onions planted upon them.

But it is of the "allotment" gardens—my own and those of my neighbourhood, that I wish to speak. So far, in spite of the forebodings of the wireworm, has done little or no damage. The season, together with a dressing of sulphate of ammonia, enabled the Potatoes sprouted when set out to grow away quickly. A dressing of agricultural salt seems also to have done good.

Our plot of early Potatoes *Kelpe*, Lincolnshire seed, one year from Scotland, has been dug, and has given a good crop, about 12 tons to the acre. But the chief interest of this plot is the wonderful illustration it gives of the mode of operation of late blight. Except for two patches which are badly diseased, the haulm is clean. The two patches lie each above a field drain, which, owing to the position of the outlet had to be placed within 6 inches of the surface. The ground on which the two diseased patches stand is always damp. No Potatoes have been grown on this plot for many years, and there are no diseased Potatoes near. It is evident, therefore, that the disease came with the seed, and that it only broke out in those spots in which the soil conditions—as a result of the late muggy and rainy weather—were favourable to its development. Whether, as is probable, it arose from one or two diseased plants, and spread to the neighbouring haulm, or whether the original outbreak was more general, I cannot say. But the point which seems to me to be of great importance is this, that it is certain that other tubers planted in other parts of the ground must also have been carrying the germs of the disease. Will the new tubers of Potatoes, the haulm of which is entirely free from signs of blight, contain the fungus, or will they be free from it? I believe the modern view is that the course of disease is from tuber to growing haulm, on the leaves of which the spores appear in due season, fall to the ground and infect the young tubers. But is it certain that the disease may not proceed direct from mother to daughter tuber? For if the latter event may occur, the importance of change of soil becomes self-evident. It is easy to imagine that this direct tuber to tuber infection may only occur under certain unfavourable soil conditions, and in that case the belief, common among gardeners, that change of seed—not only change to Scotch or

Irish seed, which is admittedly safest—but also change, say, from a chalky to a sandy soil, owes its beneficial effect to this—that direct tuber infection only occurs generally on "bad" Potato soils. I wish that the experts who have made a special study of the course of infection in the case of late blight would enlighten this novice on the subject. I wish also that they would collect a summary of spraying results, preface it with a simply-written account of what is known with certainty of the life history of the disease, and publish it for our benefit. For I have seen plots in allotments marked not to be sprayed side by side, with others bearing placards "to be sprayed." I venture to think that it would be better, where practicable, to segregate unsprayed and sprayed plots, so that all the Potatoes on one allotment field are sprayed. If this were done, the conscientious objectors to spraying might give effect to the faith that is in them without detriment to the plots of their neighbours. I. N.

NOTES FROM FRANCE.

BY A MEMBER OF THE B.E.F.

A GARDEN GARDEN. There is a fine little garden "somewhere in France" belonging to a country cure who is very keen on getting plenty of food from his soil. That it is not far behind the line may be judged from the fact that five or six shells dropped in the precincts of the garden while I was in the neighbourhood. A bomb from an aeroplane has uprooted and destroyed a promising pyramid Pear, and shrapnel has cut the bark of many of the wall trees. The garden is surrounded by a wall about 6 feet in height, enclosing nearly a quarter of an acre of land. There is a border about 5 feet wide against all the walls. A path, 4 feet wide, skirts the borders, and a central path 5 feet wide, drains the inner portion of the garden into two spiral plots. The walls are covered with trained trees of Pears, Apples and Apricots. The latter trees, of which there were only two, showed no sign of fruit. The Peach trees, however, gave promise of a good crop, notwithstanding the unorthodox method of pruning, which, I understand, was done by a superannuated inner-tuned gardener. The border skirting the wall facing north was planted with a row of Raspberries, bordered by a thick line of Sorrel. The waste of space was to be regretted, and was surprising in view of the economic arrangement of the garden in other respects. The Raspberries did well, for the wall shaded them but slightly, and I had the pleasure of gathering practically the whole crop. The border facing east was planted with young Strawberries, which gave a good crop, though a fair portion of it was still by reason owing to the bed not being struck. The south border was used for Lettuces, *Batishes*, Cucumbers (for pickling, being known, I gather, by the name of *Cornichons*), and seed beds. The Cucumbers are sown and not transplanted; they are allowed to grow very thickly. They give a good crop if the fruits are picked when quite small. I undertook the work of thinning the Lettuce bed, and the small plants, even when there were only a couple of leaves, were used for salad. The border facing west was used for grass, which was cut as required for the poultry. Bushes of Gooseberries and Red and Black Currants skirted the outer sides of the large plots, planted barely 2 feet from the path. The space between the bushes was used for Strawberries, Sorrel and Chives. Sorrel seems to be largely grown in French gardens. Standing a little back from the line of fruit bushes were two Cherry and two Plum trees. The Cherries gave a good crop while I was there, and the flavour was greatly appreciated by one who now eats very few of such

luxuries. The main path had a border on either side about 3 feet wide. The background was a line of Pyramid Pears of such varieties as *Doyenne du Comice*, *Williams's Bon Chrétien*, *Marie Louise*, *Easter Beurre*, and other varieties which I do not now remember. These borders were given over to flowers such as *Lilium candidum*, Carnations, Roses (Frau Karl Duschki, *Caroline Testout*, and *Gloire de Dijon*), *Yuccas*, *Spiraea filipendula*, *Paeonies*, and others. The vacant spaces were planted with winter greens—obviously a war-time venture only. A fair breadth was given over to Potatoes, and almost an equal area to Haricot Beans in successive sowings. Only dwarf Peas were grown, four rows at a foot apart being sown every few weeks. A fair-sized plot was planted with Leeks just before my departure. Drills were cut out a foot apart and the plants set at 4 to 6 inches apart in deep holes, which were not filled in. The tops were cut off, as is the practice sometimes in England. Leeks, though of small size, are largely grown by every garden owner in the neighbourhood, being used for soup. Haricot Beans also form a large crop. Despite the language difficulty I had several interesting though disjointed chats with the good cure. One crop grown was called "Belle Dame"—I must confess that I did not recognise it. Perhaps some reader can enlighten me. Shallots were grown in considerable numbers, and although planted only 9 inches apart, were intercropped with Lettuces. "Ail," which I understand to be a species of Garlic, was also grown and intercropped in the same manner. *William F. Roulès*. "Belle Dame" is one of the many names given to the plant *Atriplex hortensis*. The young leaves are used as a substitute for Spinach. You are right in supposing Ail to be Garlic.—EHS.]

ON INCREASED FOOD PRODUCTION.

AUTUMN SOWN ONIONS.

THE Onions raised in autumn constitute the most useful crop. One continually hears complaints of the loss of the spring crop, and a great loss it is, as in kitchens of any importance Onions are required every day in the year. But if autumn sown Onions were more extensively and generally grown the supply would be more certain and satisfactory. By sowing at once young plants will be produced by November, and in the absence of others some of these may be employed in the kitchen, and many people will use them as salad.

In April and May they will have formed good bulbs, which will keep excellently for culinary purposes well into the autumn. Indeed, good varieties will keep as well throughout the following winter as any of the spring-sown bulbs, and anyone may easily keep up an all-the-year-round supply of Onions from autumn-sown seed alone, while there is this important advantage, that the plants are not so liable to be attacked by grubs as spring-sown plants.

I strongly recommend two sowings, one now and the other about the second week in September. Good ground must be used. It may be deep or shallow, stiff or loose, but it must be rich. Firm soil is an advantage, as the plants grow robust in it and bulb much better than in very loose soil; indeed, the latter will never produce first class Onions. Although autumn-sown Onions are not so liable to become maggoty as the spring raised plants, they are not altogether proof against the enemy, and it is best to take precautions against this pest when the soil is being prepared for sowing the seed. It will most likely require manuring, and besides this a good sprinkling of salt and soot should be put in; or wood ash is as good as either. Ordinary lime is also valuable, and each or all of these materials should be thoroughly

mixed with the soil as it is turned. The seeds may be sown immediately after digging, in rows 16 inches apart, and not more than 2 inches below the surface. If the drills opened for the reception of the seeds can be filled with better material than the ordinary soil of the quarter it will benefit the seedlings when they are very small. In covering them, the surface over the seeds should be trodden firmly and then made smooth. The following varieties are to be strongly recommended: Ailsa Craig, White Leviathan, Lemon Rocca, and Monster White. *James J. Paice.*

BOLTING ONIONS.

THE plan of pulling off the flower-heads of autumn-sown Onions as soon as they appear (see p. 52) has been the practice of good gardeners for many years, and if carefully attended to for a few days a good crop can be secured. The flower-stems will develop afterwards to the usual size; they are easily removed when the bulbs are harvested, and very little difference occurs in the weight of produce, but the bulbs are not so shapely as those which do not run to seed.

The Royal Horticultural Society is doing a good work in trials of vegetables. I have seen the Wisley collection several times this season; the percentage of bolting plants seemed to

satisfactory results in the way of crops, but thanks to excellent results from advertisements in the *Gardeners' Chronicle* and the *Journal of the British Gardeners' Association*, and assistance from the local Labour Bureau, gardeners were obtained and the ground prepared.

All the sites that had to be cleared were as the builders and contractors had left them: on one site alone there were 500 cartloads of rubbish, including two large beds of cement and railway-track ballast, which had to be carted away before the land could be cultivated. About 60 tons of timber had to be removed from another plot, and a further 50 tons of felled timber and brushwood cleared. As most of the land was old turf it had to be hasted trenched by manual labour, and I doubt if any other class of labour of any description would have been capable or willing to make the sacrifice these gardeners made in the national interests. They worked seven days per week on work of the very hardest nature, and the remarkable progress made has enabled the scheme to produce, since the second week in July, vegetables in sufficient quantities to supply the workers' canteens, where several thousands are fed daily. The illustration in fig. 29 and list of quantities below will give some idea of the amount of vegetables deli-

over 2,200 sales were transacted. The firm has decided to open a shop in the works to supply workpeople who reside in the colony attached to the works with fresh vegetables.

We have now over 60 acres of land under cultivation, two-thirds of which have been brought under cultivation by hard manual labour. It is a fine example of what can be done in a short time, and I trust that this war will bring the practical gardener to the front as a food producer, and that he will receive his due recognition, as up to the present he has been sadly neglected. It is evident that the country has learned a home truth which should enable the gardeners to be placed in a proper sphere in the near future. This terrible war has rather reduced the value of the adage "Man doth not live by bread alone," for events have fully convinced us that without bread men cannot live. *R. Greenfield.*

THE TREATMENT OF OLD PASTURE.

It is not yet sufficiently realised by growers who wish to use old pasture for vegetable production that such ground requires very long preparation. The ideal method is to plough the land, leave it for several months to give the turf an opportunity of rotting, and then plough

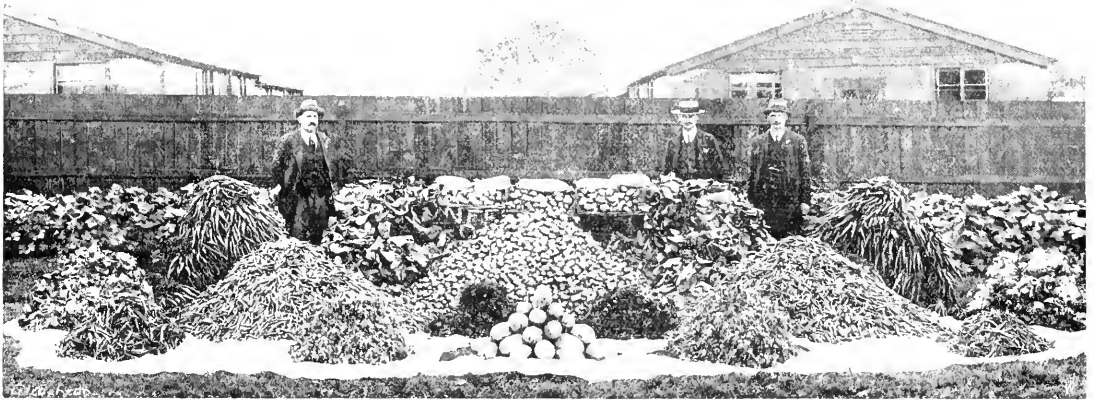


FIG. 29. A DAY'S SUPPLY OF VEGETABLES FOR MUNITION WORKERS.

be much the same among those that were transplanted in March and those which remained where they were sown. Probably much of the bolting is due to the abnormal winter and spring, but it is partly owing to wrong measures in sowing the seed. White Spanish and Autumn Triumph have done well as autumn sown varieties. The Tripoli varieties cannot be recommended for keeping after November. For the midland and northern districts Giant Rocca or the Red Italian Tripoli are valuable for hardness and weight of crop; Ailsa Craig or one of its near relations may also be grown. Giant Lemon Rocca has produced a heavy crop at Wisley, and would be preferred by the market grower for ripe Onions, as the Red Italian kinds are not favoured by the dealers when fully grown. White Italian Tripoli, and similar white varieties, are not to be trusted on cold, heavy soils, as they are more subject to mildew than the red or brown varieties. Transplanting in March has proved the best system at Wisley. *W. H. Drewes, Westdean, Hook.*

VEGETABLES FOR MUNITIONERS.

AT a large munition factory in the Midlands a "Works Garden Scheme" was commenced on March 24, 1917. This was far too late to expect

covered daily to meet the requirements of the factory workers' canteens:—25 cwt. Potatoes, 1,200 lbs. Peas, 360 bunches of Carrots, 200 bunches of Onions, 300 Cabbages, 200 lbs. of Runner Beans, 1 cwt. of Marrows, 250 Lettuces, and 6 doz bunches of Parsley. No farmyard or stable manure has been used in the production of these crops.

The value of a scheme of this nature, supplying thousands of workers with wholesome fresh vegetables (which will eventually be the means of doing away with the unsatisfactory system of workers bringing their own food from home), cannot be over-estimated. There is a marked change in the environment of present-day factory life which will go a long way to solve the existing dissatisfaction amongst the working classes. Our own doctor states that the improvement in the general health of the employees since the garden scheme commenced is remarkable.

In connection with the scheme we have 160 allotments for the workpeople, which are let out in one-eighth and one-sixteenth acre plots; also 120 girls' garden plots, the latter being cultivated in the girls' spare time.

All surplus vegetables, plants, and seeds are sold to employees, and up to the end of July

again, disintegrating the turf, and breaking up the clods of earth, which afford harbourage for wireworm. When treated in this way, turf is one of the best rooting media obtainable. Those who have made the mistake of ploughing only once before cropping, can still do much to repair the error by ploughing again directly the harvest is gathered, then laying the ground open to the beneficial influences of frost, rain, and wind. *E. M.*

THE HOUSE SPARROW.

I CAN corroborate Mr. Stanbury's statements regarding house-sparrows clearing Gooseberry bushes of caterpillars. The first proof I had of it was some years ago, when I noticed that caterpillars were present on the bushes, but, owing to pressure of work, could not take measures to destroy them for a day or two. In the meantime I noticed that a lot of house-sparrows (not hedge-sparrows) were busy in the garden, and especially among the Gooseberry bushes. Thinking that they were causing mischief, I kept frightening them away, but they were soon back again, and on examining the bushes, I was surprised to find that the caterpillars had entirely disappeared. I have also noticed the same thing this season in the gardens here. *R. Simpson, Sewerby House Gardens, Bridlington.*

The Week's Work.

THE KITCHEN GARDEN

By J. DUNN, Foreman, Royal Gardens, Windsor.

LETUCES FOR WINTER SUPPLIES.—A sowing of hardy varieties of Lettuce should be made now, and another in ten days' time, so that supplies of this salad may be available throughout the winter. Sow on a south border and thin to 9 inches apart as soon as the plants are large enough, and if cold pits are available the seedlings which are removed from the rows in thinning may be carefully transplanted and the lights left off until late in autumn, when they should be replaced on the approach of heavy rains or frost. The bed should be within 18 inches of the glass and the soil light and rich. Maximum and Monument are fine varieties for this purpose, also Hardy White Cos.

HERBS.—Advantage should be taken of dry weather to cut Mint and other herbs intended for use in a dried state during the winter. Place them in a dry, open shed and allow them to become quite dry before bunching. In order to keep a supply of green shoots of the tender herb Sweet Basil during the winter a sowing should be made now and another a fortnight later. Grow the plants in a temperature of 60° and near to the glass. As soon as the seedlings are large enough to handle prick them into 6-inch pots, putting five or six plants in each pot, in light, rich soil, with plenty of sand. Sweet Marjoram should now be ready for potting into 6-inch pots, using loam and leaf-mould in equal parts; the compost should be pressed tightly about the roots and the plants placed in a cool pit or frame that can be ventilated freely. As the season advances they may be placed in a slightly heated pit and still ventilated in favourable weather.

TURNIPS.—Thin freely the winter turnips as soon as the plants are of sufficient size, to 4 inches between the plants, and hoe the ground frequently. Soot and wood ashes may be applied to the bed in showery weather. Turnip seed may still be sown in spare ground with a view to raising plants that will furnish green tops in spring.

ONIONS.—Spring sown Onions should be lifted as soon as the foliage begins to show signs of decay. Lay the bulbs thinly on clean, hard ground, and turn them daily until they are ready to be placed in the store. The crop should be carefully picked over, and only the hardest and best ripened bulbs stored for spring use. All thick-necked specimens may be used early in the season.

GLOBE ARTICHOKE.—As soon as this crop has been utilised the stems may be cut close to the ground and the ground hoed or dug, so that the plot may be free from weeds during the autumn.

GREEN CROPS.—The ground between the winter and spring greens should be hoed as soon as dry weather occurs. Make good all blanks in the rows. Continue to plant Coleworts, allowing the plants less space as time advances.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JAMES H. COLMAN, Bart., Gatton Park, Reigate.

MILTONIA VEXILLARIA.—*M. vexillaria* and its hybrids which flowered early in the season have started well into growth. Some will need repotting; but first each plant should be closely examined for thrips, which secrete themselves in the centre of the young growths and in the axils of the leaves. If thrips are found to be present, the leaves of the plants and growths should be immersed in a solution of Quassia extract, in the proportion of half a pint of extract to three gallons of tepid water. After dipping, the plants should be laid on their sides so as to allow the liquid to drain from the leaves without coming in contact with the roots or compost. Afterwards rinse in clear water. *M.*

vexillaria requires rather a shallow compost, the fibrous roots preferring to roam just under and over the surface. The compost should consist of *Osmunda* fibre cut up rather short. Remove all the small particles, and add small quantities of chopped Sphagnum-moss and crushed crocks. In repotting, keep the base of the young growths on a level with the rim of the pot, working the rooting materials in and around the roots moderately firmly. The cool house will suit them for the present, but when the nights become cooler, the plants should be removed to the intermediate house. They will be benefited by a light spraying overhead at least twice daily during bright weather. At first, and until the new growths begin to root freely, sprinkle the surface of the soil whenever it is dry; as the plant becomes re-established, the quantity of water should be increased. Spray them overhead every two weeks with Quassia extract, rather weaker than that recommended above for dipping.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DEXTER, Abbots Wood, Godalming, Surrey.

STRAWBERRY PLOTS.—These should be kept free from weeds and runners. The plants should be cared for in every possible way to ensure the ripening of the crowns for another season.

FIG TREES.—Continue to tie in these trees, tying in all growths that are not necessary for them well being. When large fruits are opening place muslin bags over them it wasps are troublesome, but this should not be done in wet weather, or it will cause the fruits to decay, and it should not be attempted until the fruits are approaching the ripening stage.

PEACHES AND NECTARINES.—When all the fruits have been taken from a tree, syringe it with clear water applied by the garden syringe or overhead syringe, thoroughly forcing the water on to both sides of the leaves. On the tree being dry wash it in the same manner with a dilute permanganate mixture. This will cleanse the foliage and kill all insect pests. The reason for employing clear water for the first application is that the foliage having been kept putridly dry for some time the first application of moisture entices the insects out of their hiding place, and hence they are trapped by the second application. Look carefully over all trees and see that they are loose enough to allow of the shoots swelling. Late varieties should have good supplies of farmyard manure or Leaf-Fertiliser. Expose the fruits as much as possible to the sun's rays, and keep all growths tied neatly and the laterals pinched out.

GENERAL WORK. Mark the trees that are to be not pruned, trees that are too vigorous to fruit well, and any that have to be kept in confined limits. All work of this kind should be planned when the trees are in active growth. After the removal of ripe fruits from wall trees give a good washing with some approved insecticide to cleanse the trees from insect pests. Marbled and other varieties of Cherries on north walls can be kept a long time if suitably covered with wasp-proof netting.

FRUITS UNDER GLASS.

By JAS. HUNTS, Head Gardener at Gumsbury House, Aston, W.

VINES IN BEARING.—Where only a few bulky ripe bunches are left upon vines, it will be well either to use them as soon as possible, or to cut them and place them in bottles in the Grape or Fruit room. Then the house can be suitably treated, both as regards watering the roots if the border be an inside one, and by thoroughly syringing daily to rid the vines of such insect pests as red spider and thrips. Give all such borders (as previously advised) one good dressing of a well proved artificial manure. Employ the first opportunity to thoroughly cleanse the Grape room and put it in readiness for receiving the late fruit. Such a room is extremely useful, not only for the Grapes, but also for Melons and Figs as they ripen. Keep the room as sweet and clean as possible.

FIGS: TRAINED TREES.—Figs of late varieties that are promising a good second or late crop should be kept on the warm side, for if a check is given them the leaves may turn yellow too soon, and some of the fruit fail to mature. Do not let any sappy or late growth continue; in fact, it will be better to keep all young shoots pinched. Water somewhat sparingly, giving only sufficient for the fruit, and not enough to excite root action and leaf growth.

OUTSIDE AND INSIDE VINE BORDERS AND RENOVATIONS.—September is a good season for giving attention to the renovation of vine borders. In many respects it is much better than the winter or spring periods. In fact, I prefer mid and late September to any other season for lifting the roots of vines from which the crop has been taken. It will be well, therefore, to look to the loam, and if the supply be at all short add some newly-cut turfy loam to it so as to secure a sufficient quantity. Let it be all broken down and well mixed together, adding both old mortar rubble and some nuts of charcoal, if this latter be still obtainable. Turn the mixture at least twice during next month, and cover it with a tarpaulin in rainy weather. A slight sprinkling of an artificial vine manure may be applied once during these turnings, but if used in excess it will be certain to cause injury.

THE FLOWER GARDEN.

By W. J. GRICE, Gardener to Mrs. DEMPFSTER, Keele Hall, Staffordshire.

PENTSTEMON.—Supports will now be needed for these plants, one to each. Encourage the lateral growths to throw up line spikes, by occasional waterings of liquid manure, soot-water, and a little fertiliser placed in the water-can, after the soil has been stirred with the flat hoe. During dry weather, clear water should be given in abundance.

PANSIES AND VIOLAS.—Unless the seed pods and faded flowers are constantly removed, the Pansies and Violas soon cease to flower. Cut off straggling growths, stir the soil lightly with a hand fork, and encourage the plants to continue flowering by giving them light dressings of some artificial fertiliser.

SPIRÆA. The late flowering plants that have served their purpose in the conservatory should not be discarded. Plant them 2 feet off at in reserve borders, and in two years they will make excellent specimens for decorative purposes.

LAVERNER.—Cut the flower spikes of Lavender before they are fully expanded, and place the flowers to dry on sheets of paper in a cool house or frame. By adopting this method the perfume will be retained for a long period. Bushes or hedges of Lavender may be trimmed at the present time with a sharp pair of shears.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcott, Eastwell Park, Kent.

FRANCOA RAMOSA.—As this plant passes out of bloom, a certain number of the best specimens in 4's and 3's should be potted into 24's and 16's. These will make large plants for greenhouse decoration next season, and will throw a large number of flower spikes. Seedling plants should be repotted, and if there is any scarcity the old plants can be split up, and healthy rooted pieces placed in medium-sized pots. Ordinary good potting soil will suffice. Keep the plants rather closer in a frame until they have got over the check, after which the lights may be withdrawn entirely. Francosas remain quite healthy if kept in a cool house or frame all winter.

CALADIUM. When Caladiums have completed their growth for the season, gradually acustom them to more air, after which they can be kept in the greenhouse or conservatory for a time. If the weather becomes dull and cold, care must be taken not to give them too much water. When the foliage begins to get shabby, return the plants to the warm end of the intermediate house. Expose them to the sun and reduce the water supply, preparatory to drying them off for the winter.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C. **Editors and Publisher.**—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 60.4.

ACTUAL TEMPERATURE.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. Thursday, August 25, 10 A.M.: Bar 29.4; temp. 69.0; Weather—Sunny.

BALES FOR THE ENSUING WEEK.

WEINSTEAD.
Sale of Home-grown Bulbs at 67 and 68, Cheapside, E.C. 2, by Protheroe & Morris, at 1 o'clock.

The Cabbage Maggot.

A very full and valuable account of the history and control of the Cabbage maggot (*Phorbia brassicae*) has been published by Mr. W. J. Schoene.* This pest, so well and so unfavourably known to British horticulturists, is now widely distributed over northern Europe, and also in Canada and the northern States of America.

The white eggs, about 1-25th of an inch in size, and marked by longitudinal furrows, are deposited by the fly near Cabbage or other Cruciferous plants. Within three to five days the larvae hatch out, and attack the collar and root of the plant. The larva, which matures in 18 or 20 days, is between one-third and a quarter of an inch in length. It enters the soil, where it pupates. The pupal stage may last from 12 to 18 days, or the stage may be prolonged for a long time—several months. Within a few days of their emerging the females begin to lay eggs. The adult fly may live for five or six weeks.

The insect hibernates in the pupal stage, and in that case the development is completed in the spring, when the adults emerge. Their appearance extends over a period of four or five weeks. In conditions favourable to the development of the insect three or even four broods are produced in a year; but inasmuch as the Cabbage maggot is essentially a northern insect, the hot weather of July and August is unfavourable to it.

It is important to remember that the insect not only attacks cultivated plants of the Cabbage tribe in the spring, but also feeds on Turnips and Cabbages in the autumn.

By the use of cheesecloth screens Cabbage seedlings may be protected from

attack, and tarred paper discs, described in these pages (April 28, 1917, p. 172), if put on immediately the plants are pricked out in their permanent quarters, suffice to prevent the larvae from gaining access to the roots. The pricked-out seedlings should have a certain clear length of stem so that the discs may be easily put in position, and the discs themselves should be just clear of the ground.

Among the food plants of the maggot are Cabbage, Cauliflower, Radish, Turnip, Swede, and Stock. Hedge Mustard (*Sisymbrium officinale*) and Common Winter Cress (*Barbarea vulgaris*) are also attacked. Mr. Schoene adds to this list Wild Mustard and all Cruciferous weeds, except, perhaps, *Brassica alba* and Shepherd's Purse.

The adult male insect is bristly, generally dark in colour, with grey markings; antennae black, three-jointed; wing veins brownish; legs black and bristly. The female is much lighter in colour; body and legs ash grey with a tinge of brown. The adults are about a quarter of an inch in length, but their size varies considerably. Some growers are of opinion that the fly prefers Radish to Cabbage, and plant the former as a trap-crop; but though this preference may exist, the trap-crop does not always succeed in attracting the insects to itself.

Experiments made with cheesecloth (20-30 threads to the inch) stretched tightly over frames and placed over the seed-bed show that attacks by the fly may be prevented, though, of course, the seed-bed must itself be free from the pupae. The cheesecloth screen is beneficial rather than detrimental to the growth of the plants.

HOW TO CAN TOMATOS.—The following recipe for canning Tomatos appears in one of our American contemporaries, the *Florist's Exchange*: "Select firm, well-formed Tomatos. Clean 1½ minute or until the skins loosen. Dip quickly into cold water. Peel, and remove stems and cores. Pack directly into cans or hot jars. Press down with a tablespoon (add no water). Add a level teaspoonful of salt per quart. Put the rubber rings and caps of jars into position but do not tighten fully. Seal tin cans completely. Place the packed containers on a false bottom in a vessel of water sufficiently deep to cover them by 1 inch and allow to remain at a boiling temperature for 22 minutes when using hot water bath canners."

RAINFALL AND GUNFIRE.—The popular view that the heavy gunfire in the west is the cause of abnormal rainfall is discussed* in a thorough manner by M. ANGER, the Director of the French Meteorological Service. After examining and condemning the various hypotheses put forward to support the view that gunfire begets rain, he turns to consider the question whether the rainfall of the past three years has any feature which requires to be accounted for by the invocation of a special agency. M. ANGER reaches the conclusion that it does not. We are having a run of bad luck—of wet years, which balance the run of dry years 1898-1905. In the dry spell 1903 and in the wet spell 1911 were exceptions and balance one another.

FRUITS IN SEASON.—MR. J. TRELOAR, ZOO-KEEPER to Mrs. W. BICKFORD SMITH, TREVARNO

Gardens, Sithney, Helston, Cornwall, sends us a bunch of Muscat of Alexandria Grapes remarkable for the size of the berries. They weigh just over one-half ounce each, and are well coloured, a quality not always well developed in extra large berries. It is a first-rate sample of this peerless Grape, and the grower is to be congratulated on his success; the bunches weigh from 1 lb. to 2½ lbs. each.

THE PRESERVATION OF FOOD.—MISS ETHEL M. CHAPMAN has compiled a valuable bulletin on the subject of food preservation.* From among the many useful hints the following may be mentioned:—After completing the bottling of fruits, etc., turn the jars upside down to make sure they are airtight. Sun preserved Strawberries.—Pick and preserve on a sunny day. Remove stalks, and put the berries in a single layer on shallow plates. Cover them with a syrup made of six cups of sugar (Miss CHAPMAN writes in Canada) to one cup of water. Cover the plate with a sheet of glass and set in the sun for eight hours. Pack in glass jars, cover with paraffin or parchment paper, and keep in a cool, dry place. Sauerkraut.—Shred Cabbage. Put a layer 3 inches deep in large jar or barrel. Cover with a layer of salt. Repeat till the jar is full. Fit a cover inside the jar or cask and weight it to force down the contents. The Cabbage will be cured in from 16-18 days at room temperature. Use 2½ lbs. of salt for 100 lbs. of Cabbage.

AGRICULTURE IN JAMAICA.—The annual report, 1916-17, of the Agricultural Department of Jamaica contains a useful record of work done, but its value is reduced by the inconvenient form in which it is published, and also by the absence of a table of contents. We would point out to those responsible for the publication of such reports that by changing the form from folio to a more handy quarto, and by replacing the general observations by a detailed table of contents the reports would be sure of a wider publicity than they at present enjoy. At the Hope Gardens experiments are being made in the cultivation of Uba sugar cane, a variety the introduction of which the late Lord KITCHENER—then Colonel KITCHENER—urged long ago.

PROTECTION OF WILD FERNS.—Devonshire, as is well known, is the home of choice wild Ferns, the indiscriminate uprooting of which in the past has seriously diminished their numbers, and in some cases threatened extinction. So serious has this menace become that it has been found necessary to protect the plants by legislation, and the removing of Ferns from private property is rigorously punished. A few days ago, at the Dawlish Petty Sessions, a visitor at Teignmouth was fined 15s. for digging up four Ferns. This sum was not intended to represent the value of the Ferns, but to be, as the chairman remarked, by way of a warning.

LOCAL SOCIETIES.—The Harlech Agricultural and Horticultural Show was held on August 6 in the grounds of the old Castle. There was a good collection of exhibits, and much of the produce was of high quality. The proceeds of the show was handed over to the Y.M.C.A.

—A successful flower show was held at Quarry Bank, Worcestershire, on August 8. The classes were well contested, and the number of exhibits was swelled by several very fine displays from local nurserymen, notably Messrs. E. WEBB AND SONS, Stourbridge. The exhibits were afterwards sold by auction, the proceeds being given to the local hospitals.

PUBLICATIONS RECEIVED.—*Morphology of Gymnosperms.* By John M. Coulter and Charles J. Chamberlain. (Chicago: University Press.) Price 85 net.—*The Practical Bee Guide.* By J. G. Digges. (London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd.) Price 2s. net.

* *The Cabbage Maggot—Its Biology and Control.* Bull. No. 419, New York Agric. Experiment Station, Geneva, N.Y.

* See *Nature*, August 9, 1917.

* Bull. 252, Ontario Dept. of Agric. (Women's Institutes).

ASPLENIUM FILIX-FŒMINA VAR. CLARISSIMUM.

The illustration in fig. 30 shows the fine plant of *Asplenium* (*Athyrium*) *Filix-fœmina* var. *Clarissimum* exhibited by Mr. W. B. Cranfield at the meeting of the Royal Horticultural Society on Tuesday, July 31 last, when the Floral Committee made the award of a Cultural Commendation. The plant is a portion of the original Fern discovered as a wildling by Mr. B. Moule in North Devon in 1863, and has a classic interest in that the phenomenon of apospory was discovered by the late Mr. C. T. Drury on its fronds. It is one of the most beautiful varieties of the Lady Fern, which is among the most attractive members of our native flora.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See also Tables in *Gardeners' Chronicle* for July 23.)

(Continued from p. 68.)

5—ENGLAND, S

BERKSHIRE.—The fruit crops in this neighbourhood are much above the average, and Apples, small fruits, Nuts and Walnuts are bearing heavy crops. Wall trees are very free from insect pests. The orchard trees have been attacked by caterpillars, but the recent rains have almost cleared them. The soil here is a light loam on a gravelly subsoil. *J. Howard, Babam Palace Gardens, Newbury.*

DORSETSHIRE.—The fruit crops here are well up to the average. We have had no late frosts to do any material damage, and so far an absence of serious sea fogs, which are generally disastrous. Plums are very plentiful. The soil is of an ironstone, sandy loam. *H. Kempshall, Abbotsbury Castle Gardens.*

—Apples and Pears blossomed well, though much fruit has dropped, and there is a good crop of Apples. Pears on walls are also bearing heavily. Strawberries blossomed well, but the dry weather made the fruit small, the rain coming too late. Peaches are showing a good crop, and Apricots fair. Bush fruit is in abundance, and of excellent quality, except Raspberries, the canes being much damaged by the severe frosts of last winter; but the quality of the fruit is very good. Morello Cherries are carrying a good crop, and Figs are looking very promising, in spite of the severe winter, although the trees had no protect on. The soil is fairly stiff, though shallow, with a chalk subsoil. *J. Jaques, Brimston Gardens, Blandford.*

—The fruit crops here are the best for many years, the only light crops being Gooseberries and Strawberries. The latter were affected by the dry weather, although, for the first fortnight after the season commenced, Royal Sovereign was good. The Apple crop is very good, and the Pear crop even better. Of Plums, Rivers' Early Prolific, Czar and Victoria set in such clusters as to require severe thinning. Trees of all stone fruits are clean and healthy. Both Sweet and Morello Cherries, Peaches and Nectarines, are very good, but the windy weather in April made a failure of the Apricot crop, and a partial failure of the Gooseberries. Red, White, and Black Currants, Raspberries and Loganberries produced heavy crops of fine berries. All kinds of Nuts are very plentiful. *P. Barton, Coth. Gardens, Sherborne.*

—Apples are heavily cropped, and promise to be very good. There are not many insect pests, but many trees are attacked by brown rot disease. Pears are very good, and the fruit clean; Plums and Damsons are carrying heavy crops; Cherries, both Sweet and Morello, cropped

freely. In very few seasons the crops all round have promised better than at present. *Thos. Denny, Down House Gardens, Blandford.*

HAMPSHIRE.—All the fruit trees in this part blossomed well, and an abundance of fruits is seen everywhere. There was no late frost to injure the flowers. All trees look remarkably healthy and quite free from aphids. Our soil is heavy, and the subsoil is clay. *H. Martin, Beatty Lodge Gardens, Cadnam.*

—The fruit crop generally promises to be one of the best for some years. The trees benefited from the rather light crops of last year, and were enabled to make some good wood. The late spring kept the flowering period back, until danger from spring frosts was nearly past, consequently the fruit had every encouragement from the beginning. Strawberries were a light crop generally, owing to drought at the ripening stage; the fruit ripened quickly and was soon over. Apples, Pears and Plums are carrying very heavy crops, and the rains have

numbers of Apples and Pears to drop; since rains have fallen those that remain have swelled rapidly. Most of the crops are clean and healthy and promise to be well up to the average in quality; Raspberries and Gooseberries have been exceptionally good. Caterpillars have given more trouble than aphids. The soil is a heavy loam on a chalky subsoil. *T. Gimson, Borden House Gardens, Petersfield.*

KENT.—The fruit crops in this district are very good, especially Apples, Pears, Plums, Peaches, Nectarines and Sweet Cherries. Strawberries, Raspberries, and all bush fruits have been very satisfactory. The heavy rains did much good on our chalky soil. *J. T. Shann, Bettshanger Park Gardens, Eastre.*
—The show of blossom on Apple trees was exceptional, but late frosts caught certain varieties, notably Peasgood's Nonesuch and Gascoyne's Scarlet Seedling, and few fruits set. Cox's Orange Pippin and Baummann's Red Winter Reinette, however, promise fine crops. Straw-



FIG. 30.—ASPLENIUM (ATHYRIUM) FILIX-FŒMINA VAR. CLARISSIMUM.

helped to open the fruits. *Leone Smith, Cold Pond Park Gardens.*

—Apple trees are bearing large crops. They have escaped caterpillar pests and scab; they are now making growth freely, and the fruit is swelling. Cox's Orange Pippin, Worcester Pearmain, Lady Sudeley, James Grieve, Abington Pippin, and Devonshire Quarrenden are the best in the dessert section. Among kitchen sorts Bramley's Seedling, Lord Grosvenor, Grenadier, Mere de Menage, Lane's Prince Albert and Norfolk Beauty are the more conspicuous. Plums are heavily cropped, standard trees of Rivers' Prolific, The Czar, Victoria, Monarch, Jefferson, Perry's Seedling and Belle de Louvain, also the Merryweather Damson, are bearing exceedingly well. Cherries were of excellent quality. Peaches and Nectarines are very clean in foliage and fruit. Strawberries, owing to the drought in June, were not so good as usual. The soil is heavy in texture. *E. Molyneux, Swinmore Park, Bishops Waltham.*

—The fruit crops early in the season promised to be excellent, but dry weather caused

berries were good, considering the season, and Raspberries yielded a phenomenal crop. *C. E. Shaw, The Elm, Foots Cray.*

In this district Apples have dropped very badly, and the crop will probably be of meagre dimensions. Sprayed and unsprayed trees have alike suffered. *Geo. Fennell, Bowden, Tonbridge.*

—Apples are looking extremely well, and the foliage and growth are clean and healthy. The trees flowered exceptionally well during good weather; plenty of fruit set, and though a quantity has fallen off there is every prospect of a heavy crop. Pears are also clean and healthy, and looking promising. Apricots and Peaches are carrying the best crops seen for years. Small fruits generally are good. Strawberries were very early, but yielded a lighter crop than usual; this is attributed to the dry weather during May and June. Though small, the berries were excellent in flavour. *J. G. Weston, Eastwell Park Gardens, Ashford.*

In Mid-Kent the fruit crop is, generally speaking, entirely dependent this year on the

presence or absence of caterpillar. Clean orchards have crops rather over the average, those neglected are in many cases bare. The value of spraying early with lead arsenate was never more evident. *E. A. Bunyard, Royal Nurseries, Maidstone.*

MIDDESEX. Apples and Pears were late in flowering. Both set freely, but Apples have dropped somewhat more than usual. The fruits are, however, swelling freely. Peaches and Nectarines were also late. These have set well, and aphid has given very little trouble. Small fruits carried heavy crops, especially Currants and Raspberries. Strawberries were earlier than usual in ripening. The soil is a light loam resting on gravel, which overlies the London clay. There was no frost during the last week in May. *James Hudson, Gammersbury House Gardens, Acton.*

—On the whole, the Apple crop is good, and in some places above the average. Pears and Plums appear to be good, and yielding heavy crops. Victoria and Prince of Wales Plums are particularly good. Gooseberries are remarkably free from American Gooseberry mildew. Wall fruits, especially Peaches, Nectarines and Apricots, are much better than in previous years, having escaped the spring frosts. *John Weathers, Park View, Isleworth.*

(To be continued.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

"THE CHRONICLE."—I have been for a holiday on Deeside, and have not seen the *Gardeners' Chronicle* for three weeks until to-day. I soon, however, brought my reading of it up to date. I note that the price has been increased by one penny, and if I am surprised, my surprise is that the increase is so small, for I know well the increased cost of everything connected with printing. One concrete example: Paper for 120,000 copies of my firm's catalogue cost before the war between £800 and £900, now it costs for the same quantity over £5,200! Paper to print the *Chronicle* must have risen in like proportion. I am sure you have, in the interests of the paper and of horticulture, adopted the best policy by deciding to keep up the high standard of the paper. Some thirty years ago I spent a Sunday with the late E. S. Dodwell, at Oxford, and I remember as it were yesterday what he said of the *Chronicle*. "The combination of what is best in practical horticulture with what is best in scientific horticulture makes its position supreme; it is like a thoroughbred, well-trained racehorse." I thought it a strange simile, and said so. Mr. Dodwell added, "The care bestowed on a racer suggests to me the care that must be bestowed on the production of the *Gardeners' Chronicle* week by week." Speaking of a fine old gardener and gentleman like Mr. Dodwell, let me tell you of another whom I met last week, James Bezz, who was for fifty years gardener to Sir Robert Jardine at Lanrick Castle, Doune. Mr. Bezz, who is in his 87th year, and has been living with his sister in retirement at Boyndie Cottage, Culter, Aberdeenshire, for a number of years, is still hale and hearty. He was a noted man in his day, a fine grower of Grapes and Peaches, and vegetables too. I remember he gained a number of prizes at the International Show in Edinburgh. Nearly all his old contemporaries are gone; he speaks of Donald McBean, Ned Glass, Tom Hoag, great gardeners all; of John Downie, George Goodall, Alexander, and Dicksons and Co., and James Gray, too, almost the only one left, he said; Palfie Methven, James Dobbie, and others. He talked to me as if I was only a boy! Mr. Bezz still does his own garden, and his Potatoes I have not seen this year, some half dozen varieties, splendidly grown, and kept standing erect, 5 feet high, by lines of coarse rope stretched along each side of the rows. He still writes well, this old gardener and gentleman of 87. He reads, too, and is interested in many things, particularly his little kirk, which has sent more than one

noted man out to make his mark in the great world. He is very proud of his present minister, who is doing his bit in France—Captain Somerville, son of the late Rev. David Somerville, D.D., one of the most sympathetic and scholarly men it was ever my lot to meet. *W. Cuthbertson, V.M.H., Edinburgh.*

INTENSIVE CULTIVATION.—Mr. Brotherton observes that in the article he quotes from the *Scotsman* the need for deep cultivation was not emphasised. I am of opinion that very deep cultivation is not desirable for cereal crops. Wheat, Oats, and Barley require a firm base. Deep cultivation, while producing more straw, would diminish the quality of the corn. I have often noticed that when a drain has been cut across a Wheat field, or a ditch filled up, the straw growing on such sites is always several inches taller and of a deeper green than that in the rest of the field, but the grain is lacking in quantity and quality. It is the same with soil on which a manure heap has lain. In growing Onions, on the contrary, especially of the Ailsa Craig type, too much manure cannot well be employed. I have seen it dug into the ground annually 2 feet thick with perfectly successful results. As regards the cropping of vines, I support Mr. Brotherton's views. The vines I planted here forty years ago produced crops this year equal to any during previous years. Change of cropping may be an advantage, but it is not a necessity, as some would have us believe. I have seen much evidence to the contrary in the case of many crops, including Potatoes. *E. Molyneux, Sycamore Farm, Bishop's Waltham.*

PRICES OF VEGETABLES AND FRUITS.—The establishment everywhere of allotments, and the consequent enormous increase in the quantity of food produced in this country, was expected to have the effect of lowering prices. This expectation, except in the cases of Potatoes and Vegetable Marrows, does not seem to have been realised, at any rate, in London. Peas have been expensive all through the season, the lowest price being 3d. or 4d. a pound. From 3d. to 4d. is still asked for a single Cabbage, and Lettuces are correspondingly dear. Fruit has also been very expensive. Strawberries, Cherries and Gooseberries having all been sold over a long period at 8d. to 10d. a pound. Part of the trouble is no doubt due to shortage of transit facilities, though there is a good deal of waste in this direction, notably on the part of Government authorities. A flagrant case in point was reported a short time ago by Dr. D. L. Thomas, Medical Officer of Health for the borough of Stepney, who stated that 15,000 bags of rotten Potatoes and unsound margarine, which arrived at Harwich from a Dutch port, in a condition totally unfit for consumption, instead of being destroyed on the spot, or dumped into the sea, were loaded on to a hundred and twenty-one railway trucks, and sent to Bishopsgate Station. It would be difficult to find a better example of the victory of red tape over common sense. *W. T.*

RENOVATING A VINE BORDER.—May I ask why Mr. Kidd (see p. 46) does not remove all the soil from the unsatisfactory border? The idea of adding fresh soil annually is good, but what is to prevent some of the young roots from going down into the old, inert mass of soil underneath? I have seen sand stones on vine borders, but have yet to learn their utility. Considering the time taken to collect and cart the stones, move them, and replace annually, where is the saving of labour in watering? *J. Bates, Marford Gardens, Stone.*

TEA PLANTS.—Prof. Henry's note (p. 67) on Tea plants is very interesting. The Assam variety is certainly more tender than the Chinese variety. I have tried several times to establish the plant in these gardens from specimens generously supplied me by a friend near Newbury, Berkshire, but it will not survive even a little frost. This year I had five small plants in the open; the largest was about 2 feet high, and made fine, large, healthy leaves, but cold winds blasted them so badly they all eventually died. The ordinary Chinese form, however, has not suffered

in the least. We have also another variety which seems to be intermediate between the Assam and Chinese varieties, both in size and hardness. This plant suffered badly last winter, but is still alive, and has started growing again. Perhaps Prof. Henry would like specimens, and I will gladly send him a leaf or two. I quite agree with Mr. Lynch, that it is useless to attempt to grow the plant in a pot, as it never makes roots, and eventually collapses altogether. Cuttings of the Assam variety strike fairly freely. *H. Kempshall, Abbotsbury Gardens, Dorchester, Dorset.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

August 14.—*President*, Mr. E. A. Bowles, M.A., (in the chair), Sir Everard in Thurn, Messrs. H. J. Elwes, J. Fraser, W. G. Baker, J. W. Odell, and F. J. Chittenden (hon. secretary).

The late Mr. C. T. Drury, V.M.H.—Mr. Bowles referred to the loss the Committee had sustained in the death of Mr. C. T. Drury, who had for many years been a member of the Committee. It was unanimously agreed that a vote of condolence be sent to his relatives, with an expression of the Committee's appreciation of the work Mr. Drury had done in furthering a knowledge of our native Ferns and in the discovery of aspidogy.

Various Plants.—Mr. Elwes exhibited a number of plants from his garden, including *Allium micranthum*, a species which he had collected 35 years before in Sikkim; *A. Wallichianum*, an almost stoloniferous species with a singularly compressed and winged stem, also from Sikkim; a woolly species of *Delphinium* from Kashmir; *Zeyheranthus candida* major; a species of *Halimolobos* from the Argentine with a jointed bulb; *Glabidium Papilio*, and others.

Potato Black-leg.—Mr. Odell showed specimens of Potatoes affected by the bacterial disease called black leg, which seems to be rather more prevalent than usual this year. The most marked symptom is the presence of dark patches in the vascular bundles when they are cut across near the base of the stem owing to the vessels being filled with bacteria. Such plants should be lifted at once and their produce should not be used for seed next season.

Ants and Lily Flowers.—Mr. Bowles showed buds of *Lilium sulphureum* from Mr. Fletcher, of Aldwick Manor, Bognor, which had been damaged by ants in the same way as had those which came from Norwich recently. A further communication concerning the latter from Dr. C. A. P. Osborne, from whose garden they came, pointed out that the buds attacked in many cases failed to open properly, but split across one or more of the petals, while in others the edges of the petals were damaged. It would be of interest to learn whether other species besides regale and sulphureum are attacked by ants in this manner.

Raspberry Canker.—Some canes of Raspberry attacked by a species of *Coniophyium* allied to or identical with the one which causes canker in Roses came from Mr. Beresford, of Prestbury, Cheshire. The bark was split and a considerable amount of corrugated growth had developed on the edges of the wounds. This growth was soft in character, and had dried up to some extent in the specimens sent. A similar complaint had occurred some years ago on Chinese Brambles at Wisley, but had not spread, so that cutting out the diseased canes will probably prove an effective check upon the disease.

SCOTTISH HORTICULTURAL.

August 7.—The monthly meeting of this Association was held at 5, St. Andrew Square, Edinburgh, on this date, Mr. Phillips, the president, in the chair.

A paper by Mr. James Gibson, Welbeck Abbey Gardens, Worsop, on "Vegetable Growing for Present-day Requirements," was read by the Secretary. The war, Mr. Gibson said, had revolutionised our methods of cultivation. No one had rendered a greater service to the country than the gardener, and in this crisis, instead of being faced with a vegetable famine, we were

now enjoying an ample supply of everything the garden could produce. But owing to shortage of labour and other causes, old methods had to be abandoned, and in every garden of ample enough dimensions the plough, although an inferior implement of cultivation to the spade, must of necessity find a place. The paper dealt in detail with the cultivation of the leading kinds of vegetables.

Messrs. DOBBIE and Co., Edinburgh, exhibited a collection of Radishes and the hybrid Tea Rosses. Mrs. Wemyss Quinn and H. V. Machin, and Mr. F. BAILLIE, Eden Garden, Liberton, exhibited new varieties of Ox-eye Daisies.

Obituary.

A. GALT.—We regret to record the death, on August 5, of Mr. A. Galt, for 45 years gardener at Aldermaston Court, Berkshire. Mr. Galt was a native of Perthshire, and 77 years of age. During his gardening career, which was commenced at an early age, he was engaged successively at Drummond Castle, Kew Gardens, Royal Agricultural College, Cirencester, Wivenhoe Park, Essex, and Aldermaston Court, Reading. During his long period at Aldermaston he served under four employers, including the present owner, Mr. C. E. Keyser. Mr. Galt was a skilful craftsman and gained many prizes at London and local shows. He was held in high esteem by all who knew him, a fine, upstanding man of venerable appearance and high character. The gardens at Aldermaston were largely laid out under his supervision, and the principal features were described and illustrated in *Gard. Chron.*, December 4, 1915. Deceased lost one son in the early period of the war, and another is now in France. A third son, Mr. A. S. Galt, holds an appointment in the University of Leeds. The funeral took place at the parish churchyard on the 10th inst., Mr. Keyser and members of his family being present.

ALEXANDER MACVINISH.—We learn with deep regret that Mr. Alexander MacVinish died, at the Gardens, Beau Manor Park, Loughborough, Leicestershire, on the 15th inst., aged 62 years. He was gardener to the late Mrs. Perry Herrick, and W. H. Curzon Herrick for the past 10 years. Previously he was gardener for a period of 13 years to N. Curzon, Esq., Lockington Hall, Derby. Mr. MacVinish was a skilful cultivator of fruits, flowers, and vegetables, both under glass and in the open, and judged at the Leicester, Nottingham, and local shows. He was connected with the Loughborough Chrysanthemum and Mutual Improvement Association, and the Woodhouse Leaves Horticultural Society. His remains were interred on the 15th inst. in the beautiful churchyard of St. Mary's, Woodhouse, where, within the last two years, three of his sons have been laid to rest. There was a large assembly of friends and associates present, including W. H. Curzon, Esq., and his mother, Mrs. King. Deceased leaves a widow, two sons, and two daughters.

M. PAUL HARIOT. We learn with regret of the death of M. Paul Hariot, a well-known worker in French horticulture, in his 63rd year, and the author of some important books, one of the best known in this country being *Livre d'Or des Roses*. For over thirty years he was and was a member of the National Horticultural Society of France, and held the post of honorary assistant librarian. He was also Assistant de Cryptogamie at the Museum of Natural History, and secretary of the Society of Vegetable Pathology of France. He was a Chevalier of the Mérite Agricole and an officer of the public instruction. For some years past he had suffered from a serious malady.

PLANTS AND SEEDS LIST, PERADENYA.—We have received the 1916-17 list of plants and seeds offered for sale by the Department of Agriculture, Ceylon. It includes shade and foliage trees, flowering shrubs, ornamental shrubs and perennials, ornamental climbers, plants, and fruit trees. The list has been compiled by Mr. T. H. Parsons, the curator, and is published by H. M. Richards, Colombo, Ceylon.

CROPS AND STOCK ON THE HOME FARM.

HARVESTING VETCHES FOR SEED.

THE scarcity of good seed of Vetch, owing mainly to the severe wintry weather, is keenly felt this season. Where even half an acre can be harvested the grower will reap the benefit later on, as seed is sure to be scarce and dear. To the sheep farmer, both winter and spring Vetches are indispensable as food for stock from May to September, especially where lambs are fattened, or ewe lambs kept for stock. Green Vetches, too, are also appreciated by cows, horses, and pigs. No time should be lost in cutting the crop. The pods near the base are the most valuable, as they contain the best seed. It is useless trying to save all the pods on the haulm, those near the top do not mature before those at the base become too ripe. A sickle and a short hooked stick are the best tools for harvesting this crop; it should be cut into small heaps or grips, which are easily turned with a long-handled prong. If the weather remains dry after cutting until the seed becomes hard, one turning will suffice, but in showery weather it will be necessary to turn the haulm several times, though it should not be forgotten that the oftener it is turned the more risk there is of the seed "bitting". When thoroughly hard, either thrash direct from the field or cart the crop into a rick, to be threshed when required for sowing during September or October for the early feed, or in the spring for a succession.

TRIFOLIUM INCARNATUM.

This Clover is commonly known as the Italian Crimson Clover. This and the late white variety provide one of the most valuable spring feeding crops. Horses, cows, pigs and sheep all thrive on it. An acre when well grown furnishes much excellent food. The middle of August is a good time to sow the seed, which is usually done on a clean stubble of Wheat or Oats. If the sowing is deferred much beyond that period slugs are apt to be troublesome to the weakly plants in October. The advantage of early sowing enables the plant to obtain a firm root hold of the soil, and it is better able to withstand excessive rains and autumn frosts.

Directly the corn is cleared thoroughly, scratch the surface to bury the seed. Where the soil is high, heavy harrows or drags will suffice; where it is stiff, with a baked surface, a cultivator will be necessary to crack the crust. Ploughing the land is seldom practised, as Trifolium prefers a firmer rooting base than can be had by ploughing. The bulk of the long stubble after cultivating would be better cleared off, as too much is liable to harbour slugs.

With the land seed harvest sow 25 lbs. of seed per acre. Late white Clover provides a serviceable succession to the early red variety. After sowing draw fine-toothed harrows over the ground twice, and should the weather be dry, roll the whole firmly. *E. Molyneux*

Pigs.

Instead of being fed largely on cereals, as they were before the war, pigs in England must now be reared mainly on such things as grass, roots, silage, coarse milling offals, fishmeal, dried yeast and grains, malt culms, offbees, and waste products like wherf and household refuse. Even before the war, Mr. F. S. Edge and others had shown that pigs could be reared more healthily and profitably on the open-air system than in sties. The out-door system results in a great saving of meal; breeding sows kept on this method are more prolific and much harder than sty-kept sows; and their young are bigger and more vigorous than pigs bred in sties. Practically all pigs may with advantage in these times be turned out from April to October. Pig sows and gilts turned out to pasture from April to October need only a very little concentrated food—indeed, on good grass, they may do without any concentrated food at all. Obviously they should be ringed before being run on pastures, or folded there, or they may disturb the turf. Hurdles make a good fold, and a length of barbed wire fixed close to the ground will prevent pigs from nosing under any fence;

two strands of barbed wire fixed respectively six and fifteen inches from the ground should keep in any pig. Store pigs from ten weeks and up wards may be relied upon to find most of their food out of doors, if given a fairly large run.

ENQUIRIES.

CLEMATIC.—Can anyone tell me what is the earliest date on which Clematic can be sown without risk of bolting next season? Being hardy, it should stand some frost. *H. E. D.*

SUGAR BEET.—Having grown a few rows of Sugar Beet, I should be grateful to any reader who will advise me what is best to be done with the crop. If I merely boil the roots and mix with jam the proportion of Beet to jam, it is said, must be about one half. How can I get rid of the earthy taste in the roots? Can I prepare a syrup from them? Will someone give me the address of a Beet sugar factory? *H. M.*

Will a reader be good enough to give me a rough-and-ready method of curing and preparing Tobacco; also the proper time or appearance of plants to harvest them? I have no curing shed, but simply an airy room, the temperature of which could be regulated by the windows. I am growing a few common Virginia plants as an experiment, and shall be glad of any hints to make them a success. How long should the leaves be kept before using, and does the flavour depend on the time they are stored? *Verice, Ireland.*

ANSWERS TO CORRESPONDENTS.

Correspondents are asked to note that in sending Priches or Scutellums for identification it is necessary to send also a shoot from the tree, bearing leaves, as the glands at the bases of the leaves assist in determining the varieties. It is also a help if it can be stated whether the tree bears large or small blossoms; the difference between the different varieties in this respect is very marked. It should also be noted that the fruits will be crushed, however well packed, if they are fully ripe when gathered. Two specimens of each variety should be sent.

AMOUNT OF LABOUR FOR 1½ ACRES.—*W. P. Devine, Westminster.* To keep 1½ acres of kitchen garden well stocked and in order would require the labour of one man of average capabilities from 5 to 4 days a week, according to the nature of the soil.

BOOKS.—*C. G. A. Thomas, The Fruit Garden*, by Geo. Bunyard and Owen Thomas, price 15s.; *Apples and Pears*, by Geo. Bunyard, 1s. 10d.; both, post free, can be obtained from our publishing department.

BONGAINVILLEA GLABRA.—*M. L. V. Bongainvilleas* are among the most freely flowering of pillar plants, and we are surprised that you should have found yours so shy. You state that your specimen is growing on the wall of the conservatory—perhaps this is the "back wall," against which the roof is built, in which case it may not be sufficiently exposed to the sun. Moreover, you have made a mistake in drawing a blind over the glass on very sunny days, as no sunshine in this country is too strong for this plant. It will grow and flower best if permitted to climb right to the top of the conservatory, so that there is nothing between it and the glass roof. Severe cutting in winter is correct practice, and thinning out the growths if they become too thick, so as to allow the sunlight to reach each individual growth. The *Bongainvillea* flowers well enough in a cool conservatory, but blossoms rather earlier and better if the structure be slightly heated in the winter. Do not keep the plant too dry in the winter, especially if the house be heated.

CABBAGE ROOT MAGGOTS.—*H. E.* See leading article on p. 30.

COLOR ARRANGEMENT.—*M. B.* The best book on the subject is *Colour Schemes for the Flower Garden*, by Gertrude Jekyll, price 15s., post free, from our publishing department.

FLOWERS IN AN UNHEATED GREENHOUSE: *Winter Flowers.* To produce flowers for button holes during the winter months taxes the skill of the grower, even when a heated greenhouse is available. Having only an unheated greenhouse, you will find the difficulties are increased. Suitable plants should be prepared during the spring and summer, so that by the time they are required to flower they are well ripened and matured. It is much too late to sow seeds of plants that would likely be of service this coming winter, but good plants of Violets could be potted up in September, also such subjects as Lily-of-the-valley, Freesias, and Roman Hyacinths. These would flower from November onwards, but, of course, much would depend on the weather, and also whether the roof-glass can be covered up at night. Perpetual-flowering Carnations, Bouvardias, double white and other Primulas, Cyclamens, Zonal Pelargoniums, Heliotropium, and Cineraria stellata, also annuals sown in pots now, such as Mignonette, Stocks, and Clarkias, would flower in the late spring, and would be the best things to grow, unless the plants named above can be procured, and prepared ready for flowering in the winter.

IMPROVED RUNNER BEAN: *R. C. P.* The next meeting of the Royal Horticultural Society is fixed for Tuesday, the 26th inst., in the Drill Hall of the London Scottish Volunteers, Buckingham Gate, Westminster. The Beans should be addressed to the Secretary, Royal Horticultural Hall, Vincent Square, Westminster, and should be entered to go before the Fruit and Vegetable Committee. It is unlikely that an award will be made, but if considered of exceptional merit you would probably be asked to send seeds for trial next season to Wisley Gardens, where the varieties' merits would be decided in comparison with existing sorts, and, if superior, an award made.

LISIANTHUS RUSSELLIANUS: *C. J. E.* The correct name is *Eustoma russellianum*. It is a well-known garden plant, and, in former times, when stove plants were more popular than now, was extensively grown. It is best treated as a biennial, the seeds being sown one year and the plants flowered the next. Do as you suggest, and exhibit a batch in flower at one of the R.H.S. fortnightly meetings. We can find no record of the plant having been certificated by that Society.

NAME OF PLANT: *R. J. H., Cork.* *Tenarium fruticosum*, Linnaeus, sometimes named *T. latifolium*.

PEACH LEAVES INHURED: *H. W. J.* There is no fungus at the spots in the Peach leaves. The injury resembles that caused by "scorching" rather than any insect or fungous disease.

PLOUGHING OF PASTURE LAND: *E. M. C.* No matter what crop is to be grown, the land should be ploughed forthwith, not more than 5 inches deep, thoroughly burying the grass by the aid of the skine counter on the plough. The object is to get the turf rotted thoroughly as early as possible. By ploughing at once you would have the opportunity to dig again ploughing during the winter several times, the third time deeper to thoroughly disintegrate the turf and soil, and thus make the whole ground in a better condition for the spring crops. Where the soil is deepest plant early Potatoes, and in other parts Cabbages, Vegetable Marrows (the bush or dwarf varieties), Brussels Sprouts, Curled Kale, and Savoy. Parsley should also succeed. Apples should be successful, especially strong growing varieties, such as Bramley's Seedling, Grenadier, Lord Grosvenor, Norfolk Beauty, Worcester Pearmain, and Ben's Red. The trees should be standards, planted 25 feet apart, with Strawberries, Gooseberries, and Red Currants below. If the site is much exposed to south-west winds, substitute bush trees for the standards. If animal manure is not available apply basic slag at the rate of 3 cwt. per acre, not later than November, say before the second ploughing. In the spring apply high-grade superphosphate at the rate of 5 cwt. per acre. For the vegetable crops give occasionally dressings of sulphate of ammonia at the rate of 1 cwt. per acre. It is

against our practice to recommend individual firms; scan our advertisement pages.

PLUMS: *C. H.* The Plums are attacked by brown rot *Monilia fructigena* and *M. cinerea* are both present. As you refer to two trees only affected, it should be possible to remove all the affected fruits at once and destroy them by burning. In any case, to reduce the amount of infection next year, no diseased Plums (i.e., mummified fruit) should be allowed to remain on the tree throughout the winter, and all dead twigs and branches should be cut out.

PRIVET IN TOPIARY SHAPES: *J., Radlett. The Book of Topiary*, by Curtis and Gibson, price 2s. 10d., post free, from our publishing department, would be of service to you.

PRUNING BOX HEDGES: *C. C.* The best time to clip evergreen hedges is in the spring and early summer, when growth is quickest, and the new leaves push forth almost immediately, filling up any spaces caused by the cutting. In the case of the Box, however, this is not so important as, for instance, with the Laurel, which has very large leaves, and there will be no harm in your taking the opportunity of a little available labour now to clip the hedge in question.

RUNNER BEANS FAILING TO SET PODS: *B. Y.* It is characteristic of the Runner Bean to fail to set the earliest blooms at the base of the plant, but after making more growth and gaining vigour the pods develop satisfactorily. You will doubtless, therefore, have a good crop as the season develops. The trouble is more pronounced in dry seasons; indeed, it is seldom that a satisfactory crop of Beans is produced when the roots are suffering from drought. If your plants are in a dry situation, such as at the base of a wall or fence, drought may be the cause of failure, in which case a good watering would doubtless rectify matters.

TOMATOS: *Constant Reader.* To grow Tomatos on the double stem system, pinch out the growing points when four to six leaves have been made beyond the seed-leaves. Being stopped too early has a crippling effect on the little plants, because they have few roots and not much stamina. Most Tomato seedlings "break" naturally sooner or later if grown strongly, but pinching hastens matters and gives more uniformity of growth. Additional side shoots are removed. Either system can be adopted for market work, whether the plants are grown in pots or in borders. The following are reliable sorts for such a purpose, and will respond to either method of training: *Sunrise*, *Masterpiece*, *Kondin*, *Red Duke* of York, *Best of All*, *Money-maker*.

VARIOUS QUERIES: *E. B.* The plants of *Richardia* (Arum Lily) and *Azalea* should be brought under glass in the autumn before frost occurs. By that time the growth should be well ripened, and the plants in a good condition for flowering, the time of which may be regulated by the degree of warmth to which they are subjected. Now is a suitable time to insert cuttings of both Zonal-leaved and Ivy-leaved Pelargoniums. Choose well-ripened, stout shoots for cuttings, with relatively short internodes. They should be cut below a joint, i.e., the part immediately underneath a leaf, the stipules and a few of the lower leaves removed and inserted in soil containing plenty of sand. They may be struck in pots, pans, or boxes, and the receptacles should be provided with plenty of drainage to allow surplus water to pass away freely. The *Lilium* is probably *L. martagon*, but this could only be determined by us if we received a specimen. With regard to the neglected Plum trees on walls, you would be well advised to train in some of the young shoots to take the place of any that are worn out. The majority of the older shoots should be pruned hard back to induce spurs to form. Apples are ready for gathering when they part readily at the stalk, which may be determined by lifting the fruits gently upwards. The condition of the pips is also a good indication. When ripe they are dark

brown, almost black. The only method of preventing squirrels from taking the nuts is to place a net over the bushes.

VEGETABLES: *Old Reader, Sheffield.* To obtain a constant supply of vegetables all the year round for 60 adult persons you would require 8 to 10 acres of ground, 30 tons of manure, and the labour of four to six men, according to requirements. One acre should be planted with early Potatoes, and 2½ to 3 acres with late varieties. Much would depend on the nature of the soil, the details of management, proper rotation of the crops, and the practice of inter-cropping. A certain amount of glass structure, such as pits and frames, is necessary for successful kitchen gardening.

WEIGHING AND MEASURING MILK: *J. A. A.* A pint of milk weighs 1½ lb., and a quart 2½ lbs., and a gallon 10 lbs. The Sandringham recorder is a spring balance on a tripod, intended to stand in the cow house, which weighs or measures the milk as taken from the cows. It can be obtained from any dairy supply company. It is not customary to feed Lettuces to cows, but it should do no harm. Maize and Cabbage are both valuable for milk production, the former especially in August, September, and October, and the latter during the following months.

WHITE FRUITED WHORTLEBERRY: *J. M. C.* The white-fruited variety of *Vaccinium Myrtillus* is seldom seen on account of its rarity in the wild state, and the difficulty of cultivating it in gardens. It was known in ancient times, however, for it is mentioned by D. Rembert Dodoeus in 1578. Describing "*Vaccinia nigra*" (Black Whortles or Whortel Berries), he says: "Of this sort there are founde some that beare white Berries when they be ripe, howbeit they are but seldome seene." London records it in his *Encyclopaedia of Plants* (1829), under the name of *V. Myrtillus fructu albo*, and states that it is a native of Britain on moors. Normally the flowers are pale yellow-green tinted with rosy-red, but this variety had green flowers, and white fruits. When writing a description of *V. Myrtillus* for his *Arboretum et Fruticetum Britannicum* on June 6, 1836, he was visited by Mr. John Booth of the Blackbeck Nursery, near Hamburg, who stated that a patch of 154 plants of the white-fruited variety had lately been discovered in the Black Forest, and that he had plants of it for sale. To this, Loudon gave the name of *V. Myrtillus baccis albis*. He repeats this in his *Trees and Shrubs* (1842), adding the name Booth as the authority. The discovery of the patch of 154 plants of the white fruited variety was made in 1835. Mr. W. J. Bean, in his book, *Trees and Shrubs Hardy in the British Isles*, maintains the name *V. Myrtillus fructu albo*, which is evidently the oldest. Old English names for the fruits are Whortles, Whortel Berries, Whortleberry, Biberry, and Blueberry (Scottish for Blueberry). Modern names are Whorts and Harts; hence we have the name, *Hurtwood*, of which there are two in Surrey, where the plant is still abundant. *Whinberry* and *Whinberry* are recent.

WOODLICE IN MUSHROOM BED: *D. G.* Place part of a half-boiled Potato (in the cooking of which no salt must have been used) into a small cardboard box, and cover the Potato with some very dry swamp moss. Lay the box on its side on the Mushroom bed, and open it at one end. The woodlice will enter the box to eat the Potato, and will remain because they will find the moss a comfortable resting-place. As many such traps as desired can be used, but they must be examined every morning, the lice shaken out into a pail of insecticide or paraffin water, and the Potato renewed as soon as it becomes unappetising. Paraffin emulsion can be poured over the woodwork and walls to destroy or discourage the lice, but should not be allowed to reach the beds.

Communications Received.—A. O.—W. A. H. (thanks for 2s. for R.G.O.F. box)—A. D. & Sons.—W. S. Miss. B.—R. A. C. H.—Mrs. W. J. T.—A. D. F. T. S.—A. H.—J. R. J.—Lady G.—J. A. E.—F. G. P.—T. B. A.—S. A.

MARKETS.

(Continued from page 111)

Plants in Pots, &c.: Average Wholesale Prices. Table listing various plants like Aralia Sieboldii, Asparagus plumosus nanus, and Ferns in thumbs.

Vegetables: Average Wholesale Prices. Table listing items like Artichokes, Beans, Beetroot, Cabbage, Carrots, Cauliflowers, Cucumbers, Garlic, Greens, Herbs, Horseradish, and Leeks.

TWO discharged soldiers desire re-engage-ments as FOREMEN, each 2 years' experience. In sale and 100% excellent references.—E. C. KING, W. P. M-COMBE, Little Holston, Wetherby, Yorkshire.

JOURNEYMAN (FIRST) seeks situation; 5 years' experience; good references; meligible; Somersetshire or Wiltshire preferred. State wages, and particulars to A. W., Box 28, 41, Wellington Street, Covent Garden, W.C. 2.

OFFICER'S daughter, trained Gardener, requires Post under Lady Head Gardener, or where other Lady Gardener kept. South England, Ad- dress, D. K. Gardenhurst, Queen's Park Road, Bourne-mouth.

LADY GARDENER; 4 months' experience in Houses, desires Post where others are kept.—G. M., Box 27, 41, Wellington Street, Covent Garden, W.C. 2.

LADY GARDENER requires post as SECOND GARDENER, experience on farms in Eng- land and Canada; general experience in Allotment Gar- dens. Apply, F. HANSON, Waterloolane, N. Ferrary, Yorks.

SITUATION required as LADY GAR- DENER (Under) and IMPROVER in good establish- ment, where several are kept. See E. L. MACDONALD, Besterne Gardens, Ringwood, Hants.

Fruit: Average Wholesale Prices. Table listing items like Almonds, Apples, Apricots, Black Currants, Blackberries, Raspberries, and Strawberries.

Cut Flowers, &c.: Average Wholesale Prices. Table listing various flowers like Asters, Carnations, Chrysanthemums, and Gladioli.

Vegetables: Average Wholesale Prices. Table listing items like Melons, Mushrooms, Nectarines, Nuts, Peaches, Peas, and Potatoes.

MANAGER or FOREMAN; life experi-ence in Cucumber, Tomatos, Mushrooms, Grapes, Christmas-trees, and General Market work under Glass; highest references; meligible; married. These state- ments of E. F. SERRINOS, The Villa, Glazewood, near Bournemouth, Essex.

OPEN for engagement as TRAVELLER, MANAGER, or HEAD SHOPMAN. Life experience, both wholesale and retail; some military age. Write, H. E., Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

SITUATION required by advertiser, middle-aged, for light work in Nursery or Pleasure Farm; office, Farm, and Garden experience; also at Cirencester College, students of London preferred. "Rural," Box 3, 41, Wellington Street, Covent Garden, W.C. 2.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Table detailing advertising rates: Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m. Rates for ordinary positions, facing matter and back page, half and quarter pages, column and half column spaces, pro rata.

GARDENING APPOINTMENTS

Mr. C. H. FAIR, the principal and only Gardener of High Street, 215, Strand, London, W.C. 2, is looking for 8 years' experience. Apply to Mr. C. H. FAIR, 215, Strand, London, W.C. 2.

CATALOGUES RECEIVED.

R. W. WATKINS, Co., Kilmfield Gardens, Colchester Essex. JOHN DALL, 8, N. West Nile road, London, S.E. Billin- gham works.

'MY GARDEN' SERIES

MY GARDEN IN SPRING. By E. A. BOWLES, M.A. MY GARDEN IN SUMMER. By the Same Author. MY GARDEN IN AUTUMN AND WINTER. By the Same Author.

Price 5/6 each post free from— THE LIBRARIAN, 'THE GARDENERS' CHRONICLE,' LTD., 41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

Remarks: With the brighter weather of the past few days flowers from our outdoor display, Early Chry- santhemums are marketed in larger quantities and variety. The new variety R. Barnes is of great promise as a market sort. Best Carnations are firm at 2s. 6d. per dozen blooms, although plenty of inferior ones are sold at half that price, but these are of little use for sending orders in transit. There are a few blooms of Eucharis and Gardenia, but Stephanotis is very scarce, as also are Orchids. Hardy autumn foliage in- cludes Acer palmatum and oak.

Choppy and P.O.'s to be made payable to 'GARDENERS' CHRONICLE,' LTD., 41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2. Telegrams: 'GARDENERS, RAND, LONDON.' Telephone: 1543 GERRARD.

NOTICE TO HEAD GARDENERS.

Revision forms for the "Gardeners' Chronicle" HORTICULTURAL DIRECTORY have been posted to Head Gardeners in every county in England, Wales, Scotland, and Ireland. In order to facilitate the early publication of the revised edition for 1918, gardeners are asked to return the forms with the necessary corrections **AS SOON AS POSSIBLE**. It is only by the co-operation of all gardeners that the 1918 edition of this invaluable work of reference can be made perfect.

Any Head Gardener who has failed to receive a form, should fill in the form attached below, and return it to

THE EDITOR, Horticultural Directory,
41, Wellington St., Strand, London, W.C. 2.

Name of Employer's Place

Name of Employer

Name of Head Gardener

Post Town

County

Nearest Railway Station

No. of Miles from Station to Residence

ORDER FORM FOR HORTICULTURAL DIRECTORY.

Messrs. GARDENERS' CHRONICLE, LTD., 41, Wellington Street, Strand, W.C. 2

Please send me copy (copies) of the HORTICULTURAL DIRECTORY FOR 1918.

I enclose remittance £ s. d. in payment. (PRICE, 1s. 4d. each, post free.)

(Signed) Name.....

Address

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 4001

No. 1601. Vol. LXII. {THIRD} SATURDAY, SEPTEMBER 1, 1917. {Registered as a Newspaper.} PRICE 4d. {POST-FREE, 4d.}

SUBSCRIPTION—Inland, 19 6; Foreign, 22 - per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 85

NOTICE TO SUBSCRIBERS.

The price of the GARDENERS' CHRONICLE being now fourpence, the subscription, including inland postage, for one year is 19 6d., for six months 9s. 9d., and for three 4s. 6d. Subscribers are requested to address their communications when renewing their subscriptions to the extent of any difficulty being experienced in purchasing copies, readers are invited to send by the publisher.

NOW IS THE TIME TO PLANT

KELWAY & SON.
The Royal Horticultural Society's LANGPORT, SOMERSET.
Are now looking for orders for the following Plants: Plants, Fruit, & Flowering Plants. A large stock will be added to my lists before the autumn, at any additional expense or trouble.
Send measurements of your flowers.
Fuchsias, Begonias, Hibiscus, Geraniums, and beautiful flowers, including in this Catalogue, the double blooms from early Spring to Autumn.
WRITE NOW to the BULB, PLANT & SEED DEPARTMENT for Reduced Price List.

GISHURST COMPOUND. Insoluble and Fungicide. Over 50 years' reputation. Highly Commended R.H.S. 8. Manufactured by the Chemical Works, 1914 St. Sold by gardeners in all Colonies. Wholesale: FROES, PATENT CANNING CO., LTD., Battersea, London, S.W. 11.

DOBBIE'S Autumn List of Bulbs, Sweet Peas, Roses, Vegetable and Flower Seeds and Plants, post free.—DOBBIE & CO., Royal Victoria, Edinburgh.

J. GRAY, LTD., Builders of Conservatories, Greenhouses, Ax and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wire, 201, Western, London, Telephone: 201, Western.

GREENHOUSE PAINTING & GLAZING. "Vitreoline," superior to White Lead Paint, "Platinum" super-durable putty. Full particulars from W. GARRAN & SONS, Grove Works, Battersea. Agents throughout the country.

BUNYARD'S STRAWBERRIES.
Our new descriptive list is now ready, and will be sent on receipt of card.
ALPINE STRAWBERRIES a specialty.
GEO. BUNYARD & CO., Ltd., Royal Nurseries, Maidstone.

BATH'S HOME-GROWN BULBS. New illustrated catalogue of the finest Narcissi, Tulips, A.C., as supplied in the Royal Parks and Gardens, with full cultural directions, is now ready, and will be sent post free on application (Dept. M, R. H. BATH, LTD., The Floral Farms, Wishes).

BATH'S ROSES, and PARONIES. New illustrated catalogue, containing full cultural notes of the best and standard varieties, is now ready, and will be sent post free on application (Dept. M, R. H. BATH, LTD., The Floral Farms, Wishes).

SANDERS, Orchid Growers,
St. Albans.

CONTINUOUS PRODUCTION FROM THE GARDEN.

SUTTON'S CATALOGUE OF SEEDS and the **WALDEN** leaflet for present use.
SUTTON'S LIST OF VEGETABLE SEEDS for summer and Autumn sowing, with full notes.
SUTTON'S LIST OF FLOWER SEEDS for present sowing and spring flowering.
SUTTON'S CATALOGUE OF ENGLISH and **DOWN BULBS**, containing particulars of them in popular English, Narcissi, Magnolia and Darwin Tulips, etc., and sent post free on application.

SUTTON & SONS, The King's Seedsmen, Reading.

ROSES, ALLEN'S GOLD MEDAL No. 1000 series, etc. A large list of the best of the new and old roses.
W. & A. C. ALLEN, Royal Nurseries, N. Tottenham, London.

RIVERS'S STRAWBERRY PLANTS in all the leading varieties, sent ready from Aylesbury, Bucks. Price sent post free on application.
THOMAS RIVERS & SONS, The Nurseries, Reading, Berks.

THE DIFFERENCE between a good flower and a bad one is not only in the quality of the petals, but in the quality of the leaves. The leaves of a good plant are full of greenness, and are the source of the life of the plant. The leaves of a bad plant are thin and yellow, and are the source of the death of the plant. The difference between a good plant and a bad one is not only in the quality of the petals, but in the quality of the leaves. The leaves of a good plant are full of greenness, and are the source of the life of the plant. The leaves of a bad plant are thin and yellow, and are the source of the death of the plant.

FELLS BULBS, PEAS, SEEDS.
PEAS, BLUE LIST NOW READY.
List of 100 varieties sent post free on return of card.

JOHN FELL & SON, The King's Seeds, 100, Strand, London, W.C. 2.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also Dickson's Improved Mushroom Spawn. Free catalogues free on application to **DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.**

WM. DUNCAN TUCKER & SONS, LTD., 1, Victoria Road, South Tottenham, N. 15. Catalogues free. Winter Gardens, Vineries, Greenhouses, Pottery, Buildings, etc. Catalogues gratis.

BARR'S Autumn and Winter-flowering Bulbs, including Crocus, species, Colchicum, Narcissi, Hardy Cyclamen, Primula, Lachenalia, Iris, etc., for early planting. List on application.
BARR & SONS, King St., Covent Garden, London, W.C. 2.

For Advertisement Charges see page v.

BULBS, ROSES, GARDEN PLANTS.
Our Winter Lists of these have just been issued. Every article has been posted to every client whose written request we were furnished with. Prices gladly sent free on receipt of postcard.
DICKSON & ROBINSON, MANCHESTER.

WATERER'S ALPINE and HERBACEOUS PLANTS.—New Catalogue now ready.

WATERER'S BRITISH GROWN BULBS.—New Catalogue now ready.

WATERER'S WARGRAVE ROSES. Catalogue and Supplementary List of new and varieties now ready.

WATERER'S RHODODENDRONS and CHOICE SHRUBS. Catalogue free.

WATERER'S VEGETABLE SEEDS for PRESENT SOWING. List post free.
All or any of the above Catalogues forwarded post free on receipt of name and address.

JOHN WATERER, SONS & CRISP, LIMITED,
The Nurseries, Bagshot, Surrey, and Twyford, Berks.

WEBB'S BRITISH GROWN BULBS.
The finest varieties of Tulips, Narcissi, Daffodils, Snowdrops, Iris, etc. PRICE LIST post free on application. **WEBB & SONS, LTD., The King's Seedsmen, Stourbridge.**

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipsop, Towed; wear the leather, cheywood, 7 yards for 17s. 6d. Patterns free. **BRADFORD WOOLLEN CO., 71, Bradford.**

BANSTARD or WALTON HEATH LOAM. A splendid soil for Vines, Chrysanthemums, Carnations, and general use. Fresh out of the pit. For particulars of **G. G. FROES, Battersea, Surrey.**

FOR SALE, excellent Turf Loam for Gardening purposes, Letch, Glendon and Tushon Street, N.E. 1. For further particulars apply C. R. KNOWLES, E. end office, Brompton House, Kettering.

PRIMULAS! PRIMULAS! PRIMULAS!
4th Year of Distribution.
Our well-known magnificent Strain. Carnations, 2000, 10s. 6d. per doz.; 1s. 6d. per 100; carriage paid. **JOHN STEVENS & SONS, Nurseries, Coventry.**

100,000 LARGE GARDEN FERNS.
200, 10s. 6d. per doz.; 1s. 6d. per 100; carriage paid. **JOHN STEVENS & SONS, Nurseries, Coventry.**

WALLFLOWERS, Transplanted, Vial (1, Royal King, Covent Garden, Golden King, Covent Garden, &c.), 3s. 100, 6s. 100, 10s. 100, 15s. 100. Address: **MOTTE & CO., 189/190, Finchley Road, N.W.**

FERNS! FERNS! Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogues free. **J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

SALE BY AUCTION.

LEE, S.E.

Annual Sale of Winter-Blooming Heaths, Begonias, Geranias, Epimiss, Acaacias, Ferns, Palms, &c.

MESSRS. PROTHEROE & MORRIS beg to announce that they have been instructed by Messrs. B. Muller & Sons to conduct the above annual sale this year at the

BURNT ASH ROAD NURSERIES, LEE, S.E.,

On Tuesday, September 11th, at 11 o'clock. Catalogues may be had, when ready, at the Nurseries, and of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

UPPER EDMONTON.

Three minutes from Angel Road and eight minutes from Silver Street Stations, G.E.R.

CLEARANCE SALE. — MESSRS. PROTHEROE & MORRIS are instructed by Messrs. H. B. May & Sons, Ltd., who are concentrating at their Chelsea Nurseries, Upper Edmonton, to sell by auction on the premises, Great Road, 1,000 Plants of various sizes, large quantities of Ferns, comprising Pteris major, Nephrolepis Scottii, and others, &c., &c., Geranias, Cyclamen, Asparagus plumosus and Sprengerii, Aralias, Venusia, Solanum (two varieties), Eucalyptus, Golden Privet, &c., 5 Market Vans, 4,000 ft. of 3in. and 4in Hot Water Pipe, and sundry effects.

On Wednesday, September 12th, 1917, at 11.30 a.m. precisely. May be viewed any day previous to the sale. Catalogues may be had on the premises or of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

TRADE SALES OF HOME-GROWN BULBS.

Every Wednesday at 1 o'clock. The sale on September 5th will include thousands of Narcissus in all the best named varieties for early forcing. Large consignments of Polyanthus of sorts in sacks is being, early and late-flowering Tulips, Frezias, Snowdrops, Anemones, Scillas, Lilium candidum, Acorn Iris, early-flowering Gladioli, Eranthis, Golden Pheasant Iris, &c. in roses, Iris, &c.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2. Catalogues forwarded on application.

BUSINESS WANTED.

WANTED, to Rent, a small NURSERY, with about 2 acres of land and house. Write, G. J. Box 17, 41, Wellington Street, Covent Garden, W.C. 2.

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORISTS' AND SEED BUSINESSES to be Let or Sold. Published by **MESSRS. PROTHEROE & MORRIS** every month. Copies may be obtained post free on application.—Estate Offices, 67 and 68, Cheapside, London, E.C.

SMALL FREEHOLD NURSERY, with front showdow, main road, S.E., 7-roomed house, 1/2 acre, 5 Greenhouses (heated) £500; part could remain. — A. Box 8, 41, Wellington Street, Covent Garden, W.C. 2.

BUSINESS CARD.

R. L. S. EXAM. — Correspondence class, preparing Gardeners and students, start October; brilliant past records; prospectus. — MEDALLIST, Pugh's, Leathersellers' Hall, Norfolk.

SPECIAL NOTICES.

MR. R. GREENFIELD begs to remind all friends that, although engaged on Special Service work he continues Midland representative to John Peed & Son. Orders this season will be very much appreciated, and may be directed either to the firm at West Norwood, or to Mr. R. GREENFIELD, 61, Radford Road, Leamington Spa.

THE OLD ESTABLISHED SEED & BULB BUSINESS carried on for SIXTY years in **BASNETT STREET, LIVERPOOL**, will in future be styled

KER'S, LTD. There will be no change in the Management. **MR. ROBT. W. KER** will have associated with him **MR. ROBT. W. KING** and **MR. T. LANE BAKER**, Telephone: Royal 3066. Write for List.

PLANTS, &c., WANTED.

WANTED, choice Fruit, Flowers, and Vegetables; best market prices returned; boxes &c., sent. Surplus stock from Gardens accepted.—**MORLE & CO.**, 150-156, Finchley Road, N.W. 3.

WANTED, 1,000 Large ASPIDISTRAS, old plants suitable for stock; cash or exchange. See other advertisements in catalogue free. **SMITH**, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, PINEAPPLE SUCKERS, in 2 or 3 standard varieties, 2 or 3 dozen.—Offers to **C. F. WOOD**, Chesham Park Gardens, Chesham, Sussex.

WANTED, cuttings of *Vida* Bridal. Norm. Price per 1,000 to **CAHNS**, Southall Gardens, Biggleswade.

WANTED, 150 GLASS CLOCHES — If anyone is going up Intensive Gardening and wishes to part with their Cloches, will they kindly communicate with **LADY L.**, 51, Rutland Gate, S.W.

PLANTS, &c., FOR SALE.

BULBS AND PLANTS

MORLE & CO. beg to announce that their revised list is now ready, and will be sent to any address on application.—150-156, Finchley Road, N.W. 3.

MISCELLANEOUS.

THEY WILL KEEP YOU DRY!

BEACON OILSKINS never fail to keep out the wet. That's why they are worn by hundreds of farmers, gamekeepers, and other outdoor men, women, and children. You should wear them if you want weather comfort. They aren't sticky like ordinary oilskins. We return your money at once if they don't satisfy you. The Beacon Booklet will show the style which suits you best. **Men's Coats** from 10 up. **Children's**, 10s. 6d. up. **London's** new Oilskins, 2s. **Soot wipers**, from 1s. **Long Leggings**, from 5s. **Send postcard to-day for this Free Booklet of "Weather Comfort."** Send now before you forget to **BARBOUR'S, LTD.**, 65, BEACON BUILDINGS, SOUTH SHIELDS. (1)

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand. Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

WREHAM GARDEN VILLAGE TRAINING CENTRE (Approved by the Ministry of Pensions).

A THOROUGHLY practical INSTRUCTOR is required for the above Training Centre for Train Disabled Sailors and Soldiers in Horticulture. A practical knowledge of Market Gardening in all its branches is essential. The Instructor will be expected to give lectures in addition to practical instruction. Apply, stating age, salary, training, and experience, with copies of testimonials, to **MRS. DEEHL**, Bryn-y-pys, Eilleshire, Salop.

WANTED, HEAD GARDENER; 10 miles from London; must have good knowledge of Flowers, Vegetables, Fruit; must also be able to do Conservatory work, glazing, painting, &c., and to milk cows, and manage milk flock; either married or single, but no children. Also an UNDER GARDENER wanted. Apply by letter, stating age, full details of previous experience, and wages required, also references, to **HAMSTEAD**, at Home-steads, 60, Cheapside, London, E.C. 2.

WANTED, WORKING HEAD GARDENER, married, intelligent; good cottage and garden; wages 28s. Apply, Tidenham House, Chesham.

WANTED, good SINGLE-HANDED GARDENER; boy kept; good rooms on premises for man and wife, without family, or single man.—Write age, wages, particulars, to **C. GANSELEE**, Worcester Park, Surrey.

WANTED, good SINGLE - HANDED GARDENER, immediately, for students' hostel; man or woman, married or single, but work for wife if desired.—**St. Michael's**, Grove Park, Lee, S.E. 12.

WANTED, about September 7, a strong capable Man as SINGLE-HANDED GARDENER, for a moderate-sized Garden; must be married, over 30 years age, and well recommended; cottage supplied.—Apply to **E. C. J.**, Crete Hill, South Nutfield, Surrey.

WANTED, experienced WORKING GARDENER, where a boy is kept; Vegetable and Flower Garden and Glass; small cottage; good references required.—Address, **C. D. TWOPENY**, Tynwald, Hythe.

WANTED, reliable Man as GARDENER; one who understands Orchids; must be ineligible for military service.—**J. HORRIDGE**, Bolbait House, Bury.

WANTED, for a private place, good Man as an all-round GARDENER; accustomed to Glass; not eligible for Army. Apply, **W. BELLAMY**, Park House, Wainborough, March, Cambs.

GARDENER (male or female) required at once; sole charge of 2-acre Garden, poultry, engine pump; wages 30s.—Apply by letter, stating experience and references, to **MRS. JESSEL**, Elmhurst, Ruislington, near Worthing.

WANTED, an experienced MAN, over military age, for Kitchen Garden; with knowledge of plants; good wages paid to a suitable man.—Apply, **F. W. T.**, Stanley's Library, 56, Stamford-hill.

WANTED, practical SECOND GARDENER (single); experienced (Inside and Out); good wages to suitable man. Full particulars to **SMALLEY**, Hall Gardens, Derbyshire.

WANTED, UNDER GARDENER for Outside; duty alternate Sundays; good cottage and garden given.—Apply, stating age, wages, and full particulars, to **ALFRED CHILD**, Cutsby House Gardens, Doveney, Northamptonshire.

WANTED, UNDER GARDENER, ineligible, where 4 or 5 are kept; one with good knowledge of stock and general farm work preferred.—Apply, stating age, wages required, with full particulars of experience, to **ARTHUR WEBB**, Alnacealgaon, Co. Chester.

WANTED, as UNDER GARDENER, young man (ineligible) or strong lad; comfortable lodgings.—State particulars to **W. JOHNSON**, Hillcrest, Camberley, Surrey.

WANTED, UNDER GARDENER (ineligible); also strong Youth to assist.—State ages and references, age, and particulars to **F. SIVELL**, c/o Mrs. R. P. Morgan, Brynhyfryd, North, S. Wales.

UNDER GARDENER for Kitchen Garden only, required at once; cottage provided if desired.—Write, stating age, if married, family, experience, references, &c., to **MANAGER**, Stoke Poges Club, Slough.

WANTED, at once, Two smart UNDER GARDENERS or discharged soldiers; wages 28s. weekly, both, &c.—Full particulars, **HEAD GARDENER**, Goldsboro' Hall, near Knarborough, Yorkshire.

WANTED, FOREMAN, by September 24, good all round, to take charge of Houses and superintendent outside during Head Gardener's absence in Army; single (ineligible), both and vegetables.—State wages to **A. THURSTON**, Heveningham Hall, Voxford, Suffolk.

WANTED, INSIDE FOREMAN; competent man; ex-service or ineligible; wages 30s. weekly, with both, &c. and attendance; duty and overtime paid extra.—Apply, with fullest particulars, to **GARDENER**, Park Place, Henley-on-Thames.

FOREMAN wanted immediately to take working charge in absence of Head Gardener (on service). Both (vegetables, root, light).—Apply, stating wages and experience, to **G. L. JARRATT**, Abberley Hall, Worcestershire.

WANTED, FOREMAN or good capable MAN, to take charge of Glass; 35s. per week; both, &c.; duty and overtime paid.—**BENNETT**, Snelston Hall Gardens, Ashbourne, Derbyshire.

FOREMAN UNDER GLASS REQUIRED for Asot, wages 50s.—Write particulars to P. B. B., c/o Streets, 30, Cornhill, E.C. 3.

WANTED, good JOURNEYMAN (inelligible), for Houses and outside; wages 25s. per week, with good Body and vegetables; Sunday duty and overtime paid.—Particulars to H. HATCH, The Gardens, Covenham Park, Micknall, Suffolk.

WANTED, JOURNEYMAN for Inside: good general experience, also IMPROVER for Inside. State wages, with Body, &c., and full particulars of experience, to H. KEMP, Prory Gardens, Reigate.

WANTED, HANDY MAN for Gardens, single, live on place; soldier or sailor discharged would suit. H. MORRISON, Willoughby House Gardens, near Rugby.

GARDENER-CHAUFFEUR required immediately, must also work electric light plant.—W. A. TENNANT, Orford House, Uxley, near Stansted, Essex.

WANTED, LADY GARDENER: trained to instruct pupils, School of Gardening, commencing this autumn, healthy country; near large town; salary, commensurate with position and qualifications; references exchanged.—Write, K. A., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, FEMALE GARDENER: one accustomed to Hardy Fruits, Fungus and mauling Wall Trees, &c.; Body and vegetables, at London. References exchanged.—State wages required to W. R. WRIGHT, The Gardens, Ashby Saint Ledgers, near Rugby.

WANTED, W. Sussex, strong capable WOMAN, with experience. Vegetable growing and all sorts of pigs, willing to make herself generally useful, good wages, comfortable home. Full particulars to MRS. STAVERS, 2, Curzon Street, W.

WANTED, IMPROVER for the Houses, wages £1 per week, Body, &c., duty paid extra 1 week Saturdays. E. BRIDLOW, Leyswood Gardens, Grouseholme, Tunbridge Wells.

TRADE.

NURSERY MANAGER Wanted, competent MAN, with an edge of General Nursery stock, especially Fruit Trees and house and suburban planting. Full particulars, with references and wages required, E., Box 6, 41, Wellington Street, Covent Garden, W.C. 2.

MANAGER or FOREMAN: His experience in the trade, controlling labour and profit-making everything possible, for established estate, most good references. LAWRENCE, 85, Warwick Avenue, Finsbury.

PRIVATE GARDENERS awaiting SITUATION may obtain temporary employment under suited Particulars, &c., from JOHN RUSSELL, Devonshire Nurseries, Haverstock Hill, N.W. 3.

NEAR MANCHESTER—Wanted, active experienced WORKING FOREMAN, to take charge of a small Nursery, 25 per cent profit, in addition to wages. Address, stating age, experience, references, and wages required, M. B., Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, as FOREMAN, thoroughly experienced man in Herbaceous and Rock Plants; good wages; must have first class references.—Apply, R. C. NOTT, The Nursery, Woodbridge.

WANTED, FOREMAN GROWER for Greenhouses, Tomatoes, and Potting Plants; good wages, exchange, and vegetables found.—Apply, MAX AGER, Co-operative Garden Firm, North Hylkham, Lincoln.

WANTED, FOREMAN for Landscape work, including Robbery Construction. Write, giving full particulars of salary required, A. to JOHN WATERER, SOSS & CRIST, LIMITED, The Nurseries, Bagshot, Surrey.

SEED TRADE SHOP ASSISTANTS and WAREHOUSEMEN WANTED, permanent. Applicants, who must be eligible for military service, are requested to give full particulars of their experience and state age and wages required.—SEEDS, Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

SEED TRADE—Wanted, smart, experienced ASSISTANT for Good Seed Department.—Particulars, stating experience, salary expected, &c., to W. D. MORGAN & SOSS, LTD., Dawson Street, Dublin.

WANTED, KNIFE-MAN, and as GENERAL FOREMAN, for 30 acres young Fruit Trees; wages 40s. and free cottage.—State age and full particulars of training to STORIE & STORIE, Fruit Tree Specialists, Gleanacre, Perthshire.

WANTED, October 1, young LADY ASSISTANT for Florist's shop, well up in floral work, good saleswoman, one with a knowledge of seeds preferred. State wages, position and references.—E. J. FAUCHELOK & SOSS, 19, Station Square, Harrogate.

WANTED, FLORIST—Young Lady as First Hand. Apply, stating experience, &c., S. FAY & SONS, Elm Grove, Southsea.

WANTED, a good BOOK-KEEPER, to take charge of general Nursery office; liberal wages to a competent and reliable man.—Wm. PAUL & SON, WALTHAM CROSS, LTD., Waltham Cross, Herts.

NURSERY STOKERS WANTED; good wages to suitable men, Apply, LOWE & SHAWYER, LTD, The Nurseries, Uxbridge.

SITUATIONS WANTED.

Twenty-six words for 1s. and 6d. for each succeeding eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Individuals at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

ADVERTISER seeks to engagement as **GARDENER** (under **GARDENER** of **BAILIFF** or **STEWART**), life experience in good establishments, experienced in the management of garden and stock, and in the cultivation of all crops. Apply, A. B., Box 1, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (under **ESTATE STEWARD**), 12 exp. years, all branches of garden and stock, and in the cultivation of all crops, well recommended, over 10 years' experience in horticulture and practical knowledge of the art of raising and working arrangements. Woodville Park, Kent, Home Counties.

GARDENER (HEAD), highly efficient & experienced, in the Home Counties. Apply, M. G., Box 1, 41, Wellington Street, Covent Garden, W.C. 2.

SITUATION required as **UNDER GARDENER** or **SINGLE HANDED**, thoroughly practical in Fruit, Fungus, and Vegetables, under glass or out of glass. State wages, &c., H. MORRIS, 41, Rumpall Court, Salisbury, Wilt.

GARDENER (HEAD); His experience in Fruit, Fungus, and Vegetables, House and out of glass, Potting, &c., &c., and Herbaceous Borders, Lawns, and Potting Grounds, married, age 30. GEO. HOWE, Frame Park Gardens, Ham, Oxon.

GARDENER (Head or otherwise), who understands the situation of work of national importance, and is a good vegetable grower, under glass or out of glass, married, single, &c., M. E., Box 1, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING)—Col. J. R. Wright could be proposed to recommend J. ASHDOWN as a top of garden requiring the services of a good practical man (Head and Out), who is several years' experience in Head, being through to London, no history and over 10 years' age. J. V., Box 1, 41, Wellington Street, Covent Garden, W.C. 2.

HEAD WORKING GARDENER offers His services as body or gentleman requiring a thoroughly practical man. His experience in the management and requirements of a large establishment, discharge certificate, personal references. CLEMENS, Somerhill Gardens, Tonbridge.

GARDENER (HEAD WORKING); good all round practical experience, Fruit, Fungus, Flowering, &c., above military age, married (no family), 14 years' Head Gardening, excellent references. E. B. S. SOSS, Wipers, Statham, Malvern, Sussex.

GARDENER (HEAD WORKING) proposes permanent situation; life experience, inside and out, age 46, married; present situation 14 years; good reference. G. CORNWELL, Brunica Cottage, Cross-in-Hand, Sussex.

GARDENER (HEAD WORKING), where 2 or 3 are kept, life experience, age 30, married (no family), cottage. E. J. JENNER, the Gardens, Bramshott Court, Liphook, Hants.

GARDENER (HEAD WORKING), with 2 or 3 under, excellent references, married one child, income experience, Cross C. J. KNOWLES, The Cottage, Wintonington, near Morio, Cambs.

GARDENER (HEAD WORKING); good all round experience with Grass, Fruit, Flowers, and all other gardening, Fencing, &c.; above military age, married, no family.—GARDENER, Farmer Grange, Stoke P. ges, South.

GARDENER (HEAD WORKING); good all round experience (inside and out), age 45, married (2 children), excellent references. BLAN, Devon, Otlington, Kent.

GARDENER (HEAD WORKING); life experience in all branches, knowledge of the running of electric light plant; married, age 48.—ORDER HILL, Ridgemoor Cottage, Slades Hill, Harlow, N.

GARDENER (HEAD WORKING) where 2 or 3 are kept, good all round, first class references. See military age.—GARDNER, Box 15, 41, Wellington Street, Covent Garden, London, W.C. 2.

GARDENER (HEAD WORKING); age 30; where several are kept, 14 years' experience in all branches, discharged from Army, good reference and well recommended; married when started, H. C., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD WORKING) seeks permanent situation, end September, over military age, married (1 child), life experience, 12 years' present situation. Please state wages. Write, R. C., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (GOOD SINGLE HANDED); life experience gained in good establishments, highly recommended, excellent references. Army discharge, age 42, married (1 child). Please state wages. Write to H. B. R., 41, Wellington Road, Walthamstow, Essex.

GOOD SINGLE HANDED GARDENER; married, experienced, highly kitchen Garden, Glass, and Lawns, London district preferred. J. T., Box 19, 41, Wellington Street, Covent Garden, W.C. 2.

SITUATION required as **UNDER GARDENER**, highly recommended; strong LAD, age 17 years. Please state wages given, with Body, Apply, E. MORRIS, 47, Rumpall Road, Salisbury, Wilt.

JOURNEYMAN (FIRST), age 17, seeks situation (inside). 5 years' experience, 2 years at Horticultural School, thoroughly capable of duties. State wages and particulars to H. W. E. Augusta Villa, High Road, Longford, Essex.

LADY GARDENER seeks Post, experienced in practical work and in lecturing and teaching. Reading College certificate, instructorship preferred.—MISS STABBE, Woodford Lodge, Thurston, Norfolk.

LADY GARDENER requires Post under 12 good Head, inside of the 1 year's training; some experience may, some of preferred.—G. SMYTH, French Gardens, Stoneham, Wilt.

TWO LADY GARDENERS wish situation as Head and Under, where several kept; well trained, 10 and 6 years' experience, inside and out, good references. Please state ages and full particulars. P. B., Box H, 41, Wellington Street, Covent Garden, W.C. 2.

TRADE.

GARDENER (59); Inside experience; first-class Melons, Grapes, Chumbers, Tomatoes, Peaches, Baking Plants, Bulbs, Chrysanthemums, Mushrooms, &c., &c., 21, New Windsor Street, Exbridge.

TWO LADY GARDENERS, with little experience, to join Post together in Market Nurseries, Scotland preferable. J. B., Dalton Green, Dalton, Loderbie, N.B.

OPEN for engagement as **TRAVELLER, MANAGER, or HEAD SHOPMAN,** life experience, both wholesale and retail, over military age. Write, H. R., Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

AS TRAVELLER; age 46; steady, active, reliable business man offers his services, 4 or 5 days weekly, or more if desired. F. R. H. S., Box 9, 41, Wellington Street, Covent Garden, W.C. 2.

FLORIST (situated London). Early requires re-employment; 14 years' experience Floral Desserts, Bouquets, Plants, Seeds; willing to take charge; refs. F. M., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

THE Gardeners' Chronicle

No. 1601.—SATURDAY, SEPTEMBER 1, 1917.

CONTENTS

American Goseberry mildew ..	92	Gift, a munificent ..	91
Crisp, Sir Frank, golden wedding of ..	90	Keeble, Professor, and the new Orders ..	90
Earwig, the ..	90	Law notes— ..	90
Farm, crops and stock on the home ..	93	Propositions under the Seed Potatoes Order ..	93
Food production, on increased— ..		Lilium, a hybrid ..	86
Autumn-sown Cauliflowers ..	87	Market fruit garden, the ..	86
Cabbage, Spring ..	88	Orchid notes and gleanings— ..	
Disease-resistant varieties of Cabbage ..	87	New hybrids ..	85
Finger-and-toe disease ..	87	Pettigrew, Mr. W. W. ..	90
Fruit conserving ..	87	Primo Pisarri's fruiting ..	90
Fruit trees on grass ..	88	Rosarian's war-shifts, a ..	86
Pea-disection ..	88	Societies— ..	
Potato disease ..	87	National Rose ..	90
Profile Potatoes ..	87	Royal Horticultural ..	92
Seed germination ..	87	United Hort. Benefit and Provident ..	93
Wal and fruit-growing ..	87	Stevenson, Mr. Thomas ..	90
Winter Spinach ..	87	Sutton's pruning ..	89
Week's work, the ..		Tea plants ..	92
Fruit crops, reports on the ..	91	Tobacco curing ..	93
Fruit register— ..		Veronica lobeloides ..	92
Strawberry Lord Suffield ..	85	Week's work, the ..	
Gales, destructive ..	92	Flower garden, the ..	89
		Fruits under glass ..	88
		Hardy fruit garden, the ..	89
		Kitchen garden, the ..	89
		Orchid houses, the ..	89
		Plants under glass ..	89

ILLUSTRATIONS

Apple affected by brown rot ..	91
Balfasia East-in-Star and Primrose Star ..	91
Lilium, a hybrid ..	86

A ROSARIAN'S WAR SHIFTS.

IN normal times I adopt a very convenient rotation of crops in borders suitable for the purpose as follows:—1st year, Briars for budding; 2nd year, Roses; 3rd year, Sweet Peas, Pinks, or Carnations, followed by Daffodils, flowering in the 1th spring, when Briars are again planted among them, and the cycle is resumed. The Daffodils need not be lifted after the first year, but grown on to the second, as they will not harm the Briars, and are lifted rather early in the second spring of their growth, before the end of May, while the maiden Roses are not far advanced. The cycle may, of course, be started either with the Briars or the Sweet Peas, but the autumn after lifting the maiden Roses is, I find, a convenient time for re-making the beds.

This year I have planted no fresh Briars, as I intend to use the beds for the growing of food plants. The Briars are usually planted 1 foot 3 inches to 1 foot 6 inches apart, and this regulates the distance of the other crops; and the question arose, what would make the most convenient food plant substitute for the current year?

In some of the borders this has been solved by making use of the modern dwarf Peas, such as Carter's Daisy and British Wonder, which only grow one foot to one foot and a half high and can be conveniently planted between the rows of Daffodils; in others Broad Beans, raised in boxes and planted between alternate rows, have been used. When these are cleared they will be followed by Kale, which are comparatively ornamental as kitchen garden plants go.

In the case of beds at other stages of the cycle, room will be available between the plants in possession for growing Lettuces and other salad plants.

Most of the borders received a good

dressing of basic slag in autumn or early winter, but where this was omitted its place is supplied by spring dressings of superphosphate.

Where there are no bulbs in the ground, advantage will be taken of the coloured leaves of the Beetroot, which have been used with good effect before this, either for edgings or temporary beds.

Of all the salad plants in the garden there is none that gives so good a return with so little trouble as Watercress. This can be grown in the open garden, and is, I think, more wholesome than when grown in water. At the end of April or early May, shallow trenches about a foot wide are taken out, and manure worked in the bottom, somewhat in the way that a Celery trench is made. Some fine soil is broken on the top of the manure and cuttings inserted in a double row. No plant grows more easily from cuttings than Watercress, the cuttings appearing to begin growing before they could be expected to have rooted. This is owing to the fine roots readily formed anywhere up the stem. These shallow trenches furnish a full supply till November. They can very conveniently be made between the rows of Daffodils when these have been kept the distance apart recommended.

In November some boxes are prepared with sides about 4 inches deep. Some old manure is put in the bottom about 2 inches deep and rammed down. On this is placed a layer of leaf mould, and finally the box is filled up with soil, in which the Watercress cuttings taken from the plants in the shallow trenches are inserted, and the boxes are placed in a cool greenhouse. They soon grow, and continue to produce supplies until they in turn furnish cuttings for the trenches. Three or four boxes give a good supply through the winter. By this means a plentiful supply of Watercress is secured through the whole year. I think we have never appreciated it so much as this year, when, except for the hardiest Kales, there was no green stuff left in the garden when spring arrived. Perhaps I should add that we have found it better to take fresh cuttings than to put out the old plants, for by the end of the season the soil in which they have been growing has usually become rather sour, and the stems hard and woody.

The Rose house itself becomes a useful place for a few vegetables grown as makeshifts. In between the Roses in pots young Cauliflowers and Lettuces can be grown in 5-inch pots without detriment to the Roses; in fact, to their advantage, for it lessens the risk of overcrowding, and this is a danger to which many of us are liable. As our Roses increase we often fail to discard the older ones to the extent that is desirable, and there are few more serious troubles to Roses under glass than those which arise from overcrowding. *White Rose.*

FRUIT REGISTER.

STRAWBERRY LORD SUFFIELD

MR. TAYLOR, gardener at Stanmore Hall, Middlesex, states that he has always held this very distinct, richly-coloured, and finely flavoured Strawberry in high esteem, especially for preserving, as the berries retain their form and flavour better than any other kind. The plants at Stanmore Hall have cropped well this year, and the supply has been unusually prolonged, the plants being still in bearing. The berries in jams made last year are as perfect and brightly coloured as when gathered. For trade purposes the variety is not likely to be a favourite, but for private gathering it is well worth attention. *B.*

ORCHID NOTES AND GLEANINGS.

NEW HYBRIDS.

LAELIO-CATTLEYA JACINTH.—A flower of this beautiful hybrid, raised in the collection of Lieut. Col. Sir Geo. L. Holford, Westonsairt, Leighton, between C. Trianae and L. C. Pizarro (C. Dowiana x L. Jongheum), is sent by Mr. H. G. Alexander, who was also the raiser of L. C. Pizarro, one of the parents of L. C. Jacinth. In size and shape the flower resembles C. Mossiae aurantiaca, but the bright orange colour of the basal two-thirds of the lip is more pronounced and extended into the side lobes. The sepals and petals are rose pink, the lip dark orange colour, the lines from the base being on a bronzy red ground and the margin bluish white. L. Jongheum is esteemed for hybridising for the rich yellow of the lip, but it has a tendency to restrict the expansion of that organ. In this case, in the second generation the good feature has been preserved and improved in a labeum of good size, and with an ample crimped edged front.

HYBRID ORCHIDS.

(Continued from July 14, p. 13.)

Hybrid.	Parentage.	Exhibitor.
Brasso-Eulahe Cattleya Wonder ..	B. C. Thuretiana x L. C. callistoglossa ..	Mansell and Hatcher.
Cattleya Albion ..	O. Breconiana alba x Suzanne Hyde Cron ..	Armstrong and Brown.
Cattleya Florida ..	Walkeriana x Dowiana aurea ..	W. H. St. Quintin, Esq.
Cattleya Lady Carlisle ..	Melania x Barbara ..	W. H. St. Quintin, Esq.
Cattleya Phœnix ..	Elyna x Dowiana aurea ..	W. H. St. Quintin, Esq.
Cattleya Rosta ..	Prince John x Bicolor ..	Armstrong and Brown.
Cattleya Washington ..	Empress Frederick x Wanda Kiezi Sanderma ..	Sanders.
Cattleya Westwood ..	Herminium areolatum x St. Alban ..	P. South, Esq.
Laelio-Cattleya Laura ..	L. C. Sevilla x C. Lord Rothschild ..	Charlesworth and Co.
Laelio-Cattleya Marina ..	L. C. St. Gothard x C. Hardyana ..	Charlesworth and Co.
O. Ionilla C. Lina ..	John Halli x Oba. Charlesworth ..	Armstrong and Brown.
Ochto-glossum Catinina ..	Bolivia x Gairdner ..	W. H. St. Quintin, Esq.
Ochto-glossum Lilian ..	Dora x Empress of India ..	Charlesworth and Co.
Cattleya Imogen ..	Mollis x Lord Rothschild ..	
Cattleya Virginia ..	Dorothea x Bolivia x S. Imbricaria ..	
Laelio-Cattleya Hma ..	L. C. Myra x L. C. Tigula ..	
Laelio-Cattleya Lilias ..	L. C. Odier x L. tonobrosa Walton Grange ..	
Laelio-Cattleya Miriam ..	L. C. Myra x L. C. Albion ..	
Laelio-Cattleya Sallow ..	C. Schroderae x L. C. Bhetra ..	
Sopiro-Laelio-Cattleya Fadon ..	S. grandiflora x L. C. Anceiro ..	
Sopiro-Laelio-Cattleya Poidol ..	C. Dowiana aurea x S. L. C. Danna ..	
Sopiro-Laelio-Cattleya Robinetta ..	C. Hardyana x S. L. C. Danna ..	

Raised in the gardens of Lieut. Col. Sir Geo. L. Holford, R.C.V.O., by Mr. H. G. Alexander.

HYBRID LILIUM.

MANY years ago great interest was shown in a remarkable hybrid Lily which had been raised in America, between *Lilium speciosum* Melpomene and *Lilium auratum*. It was known as *Lilium Parkmanni*, and a coloured plate of this remarkable Lily appeared many years ago in *The Gardener*. I always understood that the stock was growing at the Knip Hill Nurseries, but that it eventually died out. A somewhat similar hybrid is illustrated in

SUMMER PRUNING.

A WRITER in a contemporary states that "standard trees should not be pruned in summer—and very lightly at any time, because it encourages an undesirable growth of lateral shoots." My opinion is that standard Apple trees receive as much benefit from summer pruning as any form of tree.

I have standard Apples of Bramley's Seedling with cord-on-like branches radiating from the centre 8 feet or more on all sides, and they

by the admission of air and sunlight to the base of the shoots pruned, thus aiding the ripening of the wood in those parts of the tree. In the case of established trees, much discrimination as to which shoots to cut is not required, because the form of that particular tree has already been determined, but in the case of young trees some care should be exercised in retaining shoots that are required for extension, all surplus shoots being shortened to within 4 inches of their bases, leaving the leaders intact. Sometimes the leading shoot on a side branch is so placed that it grows inward. This irregularity of growth is usually the fault of winter pruning, the bud at the point of the pruned shoot being on the inside of the tree instead of pointing outwards. In summer pruning this error should be corrected by the removal of the shoot down to the next branch which aims outward; this growth is thus made a substitute for the previous leader, and the correct balance of the tree is maintained.

The middle of July is a good time to summer prune fruit trees, as they seldom make secondary growths after that time.

No fruit tree responds more to summer pruning than the Red Currant. When the shoots are trained cord-on-like from the centre of each bush, such branches yield an immense weight of fruit annually. E. M.

THE MARKET FRUIT GARDEN.

APPLE SUCKERS AND FRUIT SETTING.

THIS season, for the third time, I carried out an experiment with the object of testing the extent to which infestation by the Apple sucker affects the setting of Apples. In the first season trusses of blossom that were infested and an equal number free from infestation were labelled on four varieties, and the result was that more Apples set on the infested than on the non-infested trusses. But it is one thing for fruit to set, and another for it to continue to hold its place up to maturity, and the latter point was not tested in 1915. In 1916, however, the number of fruits set was taken first on June 5, and again on July 4. At the former date the experience of 1915 was repeated, more Apples having set on the infested trusses than on those free from suckers. But on July 4, when the fruit was nearly mature, the converse was the result, 20 Apples being found on what had been 24 trusses that had been free from the pest, against 14 on the same number of infested trusses. This season the trial was made with ten infested and ten non-infested trusses of each of four varieties, Mr. Gladstone, Beauty of Bath, Worcester Pearmain, and Lane's Prince Albert. The results were as follows on July 12, when the fruit found might be regarded as set for good: Mr. Gladstone, five singles on infested, and two singles and one double on free trusses. Beauty of Bath, three singles on infested and two on free trusses. Worcester Pearmain, six singles on infested and three singles on non-infested trusses. Lane's Prince Albert, only one on each. The summary is as follows: 40 infested trusses set 15 singles, and 40 free trusses set 7 singles and one double. By the way, this season is remarkable for Apples singling themselves—a very useful action.

Now, I have been censured for having stated the opinion that the damage done by the Apple sucker is greatly exaggerated. But what other conclusion can I form from my observations? Those observations cover, not only the results of labelling infested and free trusses, but also the growing of great crops on varieties worse infested than any others. Last year, for example, I found 39 out of 40 trusses of Royal Jubilee infested with suckers, and by "infest-1" I mean that at least two of the pests were seen. Yet the crop of Royal Jubilee Apples was the greatest grown by me in that season.



FIG. 31.—HYBRID LILIUM (*L. SPECIOSUM* MAGNIFICUM × *L. AURATUM* PLATYPHYLLUM): FLOWER SPOTTED WITH CRIMSON.

fig. 31. It was raised by Mr. P. S. Hayward, gardener at Holland House, Clacton-on-Sea. The cross was effected three years ago between *Lilium speciosum* magnificentum and *Lilium auratum* platyphyllum, the latter being the seed parent. The plant is now over 3 feet in height, strong and vigorous. The blooms are 11 inches in diameter, with petals nearly 4 inches across; the spotting is bright crimson. It is a very distinguished-looking plant, showing so much vigour already that it seems likely that eventually it will grow to a height of 5.6 feet and bear 12-15 blooms. It is remarkable that in such a wide genus as *Lilium* so few effective hybrids should have been produced. R. W. Wallace.

annually bear good crops, the result of yearly summer pruning. To me it always seems to be good practise to summer prune fruit trees, especially erect-growing varieties of Apples, such as Lord Derby and Benoni, erect-growing Pears and Plums, and certainly Red and White Currants. The object of summer pruning is to aid in the maturation of the branches so that they will form fruit spurs naturally, aided by the checking of the growth of the other shoots.

I do not, however, say that the cutting away of a portion of the summer growth on any branch will result in a fruit spur forming forthwith, as many persons assert. The assistance summer pruning gives to the fruitfulness of the tree is

This year, again, Lane's Prince Albert was so badly infested that it took me over an hour to find ten trusses free from the pest on the tree labelled. Yet there is a profuse crop on this variety. The choice of the tree labelled was an unfortunate one, as it was in a somewhat shaded position, and it bears an exceptionally thin crop, although other trees were as badly infested. But the number of blossom trusses on the variety generally was so enormous that one Apple to ten trusses would mean a fair crop. Let it not be supposed, however, that I maintain that the sucker does no harm at all. What I do maintain is that the injury done by it is much exaggerated. In at least two seasons, when Apples in my orchards, as in those of the country generally, set badly, and the failure was commonly attributed to an attack of the sucker, careful examination of a great number of the withering blossoms proved that this was not the case. It is my intention to carry my observations of infested and non-infested trusses further than they have been carried hitherto, by taking note of the sizes of the Apples set when nearly mature. Such observation as has been made on this point conveyed the impression that there was no noticeable difference, but no precise notes upon it were taken. *Southon Grower*.

ON INCREASED FOOD PRODUCTION.

PROLIFIC POTATOS.

It would seem likely that many records will be broken this year in regard to Potato crops; the following result is, I think, worth recording for an early variety. Thirty-six plants of *May Queen* variety were lifted at The Gables, Beckenham, the residence of Mr. A. J. Lees (gardener, Mr. A. Scutcher), and the heaviest crop from an individual root weighed 10 lbs., whilst the lightest yield was 2 lbs. The total weight of the crop was 203 lbs. Has this weight been surpassed with an early variety? *F. H. Price, Broadblyt Garden, Beckenham*.

SEED GERMINATION.

I ENDORSE *J. E.*'s remarks (p. 55) about the irregular germination of Brassica seeds. We had three crops from one sowing. The first sowing of Thyme quite failed, yet a second sowing gave us enough plants to stock the parish, as *J. E.* remarks. Beans here are all good, and Peas also, with one exception. Our worst failure was with early Potatoes, the "seed" of which was purchased from a well-known firm. We sprouted the tubers in boxes, but they have completely failed after planting. Frosted seed would no doubt account for this. Early Potatoes from our own stock have done very well, and the later varieties look very promising.

In reply to *J. E.*'s query as to how to preserve Beans, the way we proceed is to gather the pods when just at their best for table use. Slice them as for cooking, and then place in wide-necked bottles, a layer of Beans and a layer of salt, until the bottle is filled. When the Beans are covered in the brine, make the bottles air-tight and store them in a cool place. When the Beans are required for use, they should be soaked in water for two or three hours. By this method we have kept them good for months. *Thos. B. Archer, Preseat*.

POTATO DISEASE.

The Food Production Department issues the following description of late blight in order to enable allotment holders and others to recognise the disease:—

The first sign is the appearance on the leaves of dark brown or blackish spots of irregular size and shape, from the under surface of which a delicate white mould grows out, especially round the margin of the diseased areas. The dark coloured patches rapidly spread, the leaflets

become curled, and if weather conditions favour the blight the whole of the foliage and the stems too may soon become blackened. In wet, muggy weather the greyish mould which is the most characteristic sign of the disease) may grow out from the upper as well as the under surface of the leaves. If dry weather follows an attack of blight, the affected leaves shrivel rapidly and fall off, leaving the haulm bare.

WAR AND FRUIT GROWING.

In war we discover that many things which in peace we regarded as necessities are but luxuries, and we learn cheerfully to do without them. The converse is also true, for in war some luxuries become necessities. This is true of hardy fruits. Man does not live by calories alone. The food which he eats must maintain health as well as strength. Among the most wholesome of foods are fruits. The Medical Services, recognising this, insist on a liberal ration in the Dietary of Navy and Army. But imports of fruit are scarce and restricted, and the jam must therefore be made from home-grown fruit. There is, however, not enough home-grown fruit to satisfy fully the requirements of H.M. Forces and of the civilian population. The former require 45 or more per cent. of the Plum crop, 75 per cent. of the Raspberry crop, and little, if any, less percentage of Strawberries. It is not likely that these demands will be reduced in the coming year. They are more likely to increase. Therefore it is of the greatest importance that fruit-growing should not be discouraged. Fruit-growing requires skilled labour. The men in charge of commercial orchards are indispensable to the maintenance of these orchards. Unless proper attention to pruning, spraying and the like are provided the yield of fruit will fall off immediately both in quantity and quality. It is therefore to be hoped that Tribunals called upon to decide between the exemption or calling up of skilled commercial fruit-growers may understand that our hardy fruits are no longer to be regarded as a luxury but as what they are—of national importance, and less essential only than corn and meat. The need for men is very great, and the Army must have men; but since the Army must also have fruit it is essential that the skilled fruit-grower be left to direct the cultivation of the crops.

FRUIT CONSERVING.

The Food Production Department intends to establish pulping or drying plants in each of the chief fruit-producing districts. At Cheltenham the works are already in existence, and surplus fruit is being pulped. The supplies handled in this way are additional to those covered by the scheme of controlled jam-making establishments under the War Office.

To deal with the pulping of Plums, centres will be opened at Cambridge, Bewdley, Pershore, Cheltenham, the Harper Adams Agricultural College in Shropshire, at Maidstone, Sittingbourne, Marden, and Chester. The drying scheme in Kent will be attended to from Wye College, whose experts have a close personal knowledge of the county. Farmers' cooperative societies and market growers' associations are also being brought into intimate touch with the scheme.

For the Apple crop, pulping stations are being established or are contemplated, at Plymouth, Totton, Crediton, Newton Abbot, Tiverton, Bridgewater, and Wedmore, near Cheddar.

The scheme is developing rapidly and satisfactorily. An encouraging circumstance in connection with these plans is the cordial cooperation of many business firms, not normally connected with food production or preservation. A notable instance of this admirable public spirit has been afforded by the action of Messrs. Edward Lloyd, Ltd., paper manufacturers. Their mills at Sittingbourne are situated in the midst of a large fruit-growing district, and it was deemed desirable

by the Department to open a pulping works there. Mr. R. H. Bell, the representative of Messrs. Lloyd, was approached, and at once offered to place at the disposal of the authorities ten free a commodious shed that could be turned quickly and conveniently into a pulping works. Moreover, he agreed to loan to the Department the firm's engineering and carpentering staff and to facilitate the transfer of some of the female employees from the paper mills to the pulping concern.

At Maidstone, Messrs. Sharpe and the Farmers' Union have been brought together by the Food Production Department in a mutually advantageous scheme.

AUTUMN SOWN CAULIFLOWERS.

Is the old method of sowing Cauliflower seed towards the end of September in cold frames and on a south border to be given up? Many growers say that with the introduction of quick-maturing varieties, that may be sown in early spring in gentle warmth, and gradually hardened off, there is less trouble than in sowing in autumn. But if Cauliflowers are worth growing, they are worth growing well, and for cutting in early spring one cannot beat autumn-sown plants. Last September I sowed Danish Giant and Magnum Bonum; the seedlings were pricked out 6 inches apart each way in cold frames, and freely ventilated during winter when possible. In April the plants were put out on a south border, and protected from cold winds. Some of the best plants were taken up with a good ball of soil and planted in deeper frames, and we were able to cut nice firm heads long before the spring-sown plants were fully established. *C. Davis, Holy Wells Park Gardens, Ipswich*.

DISEASE-RESISTANT VARIETIES OF CABBAGE.

In an address given before the American Seed Trade Association, Detroit, Dr. L. R. Jones, Plant Pathologist in the University of Wisconsin, describes the results of his experiments directed to raising varieties of Cabbage resistant to the disease known as Yellows. The disease, due to a fungus of the genus *Fusarium*, is serious in that it not only destroys the growing plant, but persists in the soil "Cabbage sick," so that it is said to be useless to attempt to grow Cabbages in that soil.

By selection from Ferry Hollander and Danish Ballhead, Dr. Jones has raised a resistant strain, which, it is claimed, grows well even in the sickest soil. He has named the strain Wisconsin Hollander.

WINTER SPINACH.

Of all winter vegetables Frickly seeded Spinach is the best. The seeds should be sown at intervals of fifteen or eighteen days during August and September. The crop sown in August will give a supply before the New Year, and the later sown batch will furnish leaves during spring. Choose moderately rich ground and an open, dry situation. Where space is limited the rows may be placed 15 inches apart, but 13 inches is better. Sow the seeds very thinly, about 14 inch below the surface. Should the soil be very dry, water the drills before sowing. As soon as the plants begin to meet in the rows, they should be thinned to 8 inches or more apart. In severe weather a little bracken or litter thrown over the plants will afford all the protection necessary. *James A. Peice*.

FINGER-AND-TOE.

I WORKED for some years in a Kincardineshire garden, where my predecessor was unable to grow members of the Brassica tribe with any degree of satisfaction, most of the crops being failures. The gardener was a great advocate of trenching, and to that alone he attributed immunity from Finger-and-Toe, for there was none in the garden while I was there.

Some years ago, in a suburb of London, I commenced gardening on a site that had been a bare playground for children for many years previously, so that the ground could not have been considered weedy. Previously to the building of the houses, the land had been part of an orchard, and I grubbed up some of the Plum tree roots. Flowers and vegetables were grown, and some of the earliest sowings consisted of Cauliflowers and Wallflowers, both of which were ruined by the *Plasmodiophora*. Unless the disease was imported with manure, it would be difficult to account for its presence, for it could scarcely be carried on the seeds. On an old allotment ground in my neighbourhood this disease has attacked several varieties of Cauliflower and Cabbages on one of the holdings. The first lot of Cauliflowers was reared upon the ground, but a second lot, obtained from a large private garden, is following the course of the first. The Cabbages were obtained from the private garden, and succumbed just as they commenced heading. Brussels Sprouts from the last named source are still thriving vigorously, also Curled Kale. Two sowings each of Turnips and Radishes attained full size, and were free from the disease, although quite close to the ruined Cabbages. This allotment changed hands last year, and, being badly infested then, the new holder has not had time to clean the ground. J. F.

SPRING CABBAGE.

The spring of 1917 must surely rank as one of the most disastrous seasons on record for this useful vegetable in many localities in this country. The continuous cold east and north-east winds were no doubt responsible. I have some large plantations practically ruined. Autumn sown plants were almost untenable and one had to depend to a great extent on early spring-sown plants. I was interested and pleased to see Mr. James A. Paine's notes on the above in the *Gardeners' Chronicle* for July 21 (p. 24). I concur entirely with his remarks almost in every detail, and having seen his Cabbage plantation on several occasions, during winter and spring, not only this year, but in previous years, I know he is writing with a full knowledge of his subject. I do not hesitate to say that it was quite the best bed I have had the pleasure of seeing this year, and it was a complete testimony to the practice he advocates.

PEA "DISTINCTION"

NEARLY every year I try some new Pea against older and well-known varieties. The variety Distinction was sent to me last spring, and I sowed a row 100 yards long. I am glad to say it has proved to be, with us, a valuable variety. The haulm grows to a height of about 5 feet, literally laden with shaggy pods, and may be described as an early "Gladstone" in the shape of its pod; above all, its table quality is first-rate. All desirous of growing a Pea of this height will do well to make a note of this new sort. E. Roberts, Aldham.

FRUIT TREES ON GRASS.

ON p. 62 Mr. Faener draws attention to a subject that has been debated until it is almost threadbare, and yet his remarks are interesting to those who have had experience of growing Apple trees on grass. It is well known that Apple trees will flourish on grass when the land is properly prepared by trenching and manuring, and left clear for several years after planting; but merely to make a hole, stick the trees in, and allow the grass to grow at once close up to the trees is to court disaster. The subject of canker, too, is still a problem. No doubt the main cause is defective root action. Certain varieties, too, are more prone to the disease in cold soils than others. For example, Stirling Castle fails to grow on heavy soils except with special treatment, to which, I think, all varieties are amenable. Even Cox's Orange Pippin, which is very liable to canker, can be made to resist the evil. JF.

The Week's Work.

THE KITCHEN GARDEN

By J. DENN, Foreman, Royal Gardens, Windsor

WINTER CUCUMBERS. As soon as possible plant out young Cucumber plants which were raised from seeds sown a month ago, so that the trellis may be covered with short-jointed growth before autumn. The structure in which they are to be grown should be thoroughly cleaned and the walls washed with hot lime. Burn a little sulphur in the house previous to making the bed, in order to make quite certain of the destruction of red spider and thrip, which may have escaped the scrubbing-brush. When the fermenting material has been prepared, it should be placed in position and trodden tightly together. The soil may then be placed on the bed in small mounds and allowed to become heated through before planting takes place. Great care must be exercised about the temperature of the soil, for although cold soil would be injurious, overheated soil would destroy the young roots. Only small amounts of light compost should be introduced to the bed at first in order to leave room for frequent light top-dressings, which is the best means of keeping the plants in a healthy condition throughout the autumn and winter. The compost may consist of turfy loam and leaf soil, and should never be applied in sufficient quantities to become sour before permeated with roots. Seeds of Dickson's All the Year Round and Every Day should be sown now in small, clean pots for planting a month later.

CAULIFLOWER FOR PLANTING IN APRIL. Some growers do not favour the autumn sowing of Cauliflowers, but I have found the best results to be obtained in this way: the plants are stronger and the heads much finer than those raised in heat in spring. At Frognor, we sow the seeds in a cold pit as near the middle of September as possible, but in northern localities sowing should take place a few days earlier. The seeds thinly and protect them from birds with ordinary garden netting stretched over the pit, the lights being removed. When the plants are large enough they should be potted into 60 sized pots and the soil made firm. When potted, place the plants on a bed of ashes within 15 inches of the rafters, and keep the lights off until the weather becomes frosty. Old loam from a Molton bed will suit the purpose well. Great Dane, Magnum Bonum, and Early London are good varieties, and have all done well here this season.

TOMATOS. Plants intended for putting in December should be ready for their final potting. Those in 6-inch pots with a truss of bloom on each will require very careful handling, for if the roots are damaged the first trusses may fail to set. Pot moderately firm in a compost consisting of three parts turfy loam and one part decayed horse droppings, with sufficient sifted lime rubble to keep the soil porous. The plants should be grown in a well-ventilated glass structure, fully exposed to the sunlight, and not far from the roof glass. Endeavour to obtain stocky growth and a good set of fruits. Secure the stem to a stout stick, and remove all secondary growth. As time advances and a full set of fruits is secured, a little more top growth may be allowed, as this will favour healthy root action. At this stage manure water may be applied twice weekly. Plants which are swelling their fruits should be stimulated on frequent occasions with artificial manure previous to watering. Let the house or pit be freely ventilated during favourable weather.

POTATOS. Lift the crop of second early Potatoes forthwith, and place the tubers in a well-ventilated shed. Later varieties should also be lifted as soon as the haulm begins to die down. The recent heavy rains have been very unfavourable to this crop, and as soon as the soil is sufficiently dry the work of lifting should be commenced. If shed room is available, the tubers should be placed under cover, to be examined during wet days before they are placed

in store for the winter. It is good practice to dust the tubers freely with lime as they are stored.

FRENCH BEANS.—Continue to plant French Beans in heated pits in order to maintain the supply of pods as far into the autumn as possible. Seeds may also be sown in 7-inch pots with the same object in view. The pots may be placed in any position until the plants are through the surface, and at that stage they should be raised to within 18 inches of the roof-glass and watered liberally. Ventilate freely to obtain robust plants that will be capable of carrying a crop after the ordinary supply is finished.

LETTUCE.—A sowing of Lettuce may be made on a warm border, where protection from early frost and heavy rains may be given. The seedlings may be transplanted into spare cold pits when other crops, such as French Beans, are over. If the bed is raised to within 18 inches of the roof-glass, good Lettices will be produced throughout the winter. The soil should be light and rich, and stirred frequently on the surface. All the Year Round and Maximum are good varieties for pits in winter; the last-named is of recent introduction, and is a very fine Lettuce for winter and early spring supplies.

TURNIPE.—Winter Turnips are ready for thinning to 9 inches apart in the rows. Stir the soil frequently with the Dutch hoe. This crop will benefit by frequent light dustings of soot and sifted wood ashes.

BEEF. All roots which have attained their full size should be lifted at once, and, after the foliage has been carefully removed, placed behind a north wall for use during the autumn. If this work is not accomplished before the roots are too large a certain number will be unfit for use.

MINT. Mint intended for forcing in winter should be cut close to the ground as soon as the foliage shows signs of ripening and the plants allowed to remain dormant until the end of October, when the roots may be lifted, placed close together on a gentle hotbed, and lightly covered with sifted soil.

FRUITS UNDER GLASS.

By JAS. H. DUNN, Head Gardener at Gannorsbury House, Avon, W.

PEACHES AND NECTARINES.—All permanent trees of Peach and Nectarine that have been even slightly forced will by this time have been cleared of their crops. September is about the best time of the year to give attention to the borders. Some may need renewal of soil, owing to the gradual process of exhaustion, following years of successful cropping, or the plants may be growing too vigorously, and not fruiting so freely as may be desired. In each case remedial treatment may be applied by paying attention to the state of the border, and of the roots. Trees that lack vigour should have some of the soil taken away and replaced by fresh, turfy loam from the stack kept in reserve. To this add some old mortar rubble that has been passed through a half-inch sieve. If the loam be not so good as one could desire, add a small quantity of manure from an old Mushroom bed, or some well-rotted manure that is on the dry side. Start by riddling out the old soil around the extremities of the border and down to its base, so that the drainage can be inspected. Work onwards towards the stem, gradually reducing the quantity of soil removed, and when it is found that the roots are abundant it will be well to cease digging. As a rule, one-third of a border may in this way be removed and renewed with distinct advantage to the trees. Having carefully pruned the roots that are healthy and sound, replace them with equal care in the new soil and make the border firm during the process; should any roots be deficient of lateral or fibrous roots, it will be well to notch them slightly to induce fresh fibrous roots to form. Put back just about as much fresh soil as was taken out. When the work is completed, give one good watering and syringe the trees twice or thrice daily; some of the leaves may drop, but that is immaterial so long as the wood does not shrivel. It is remarkable how soon root action takes place. This com-

mences long before the flowers begin to unfold or there is any wood growth. Take care not to stand pot plants of any kind whatever on these new borders, but expose them to both light and air. In the case of over vigorous trees the treatment is about the same as for the exhausted trees, with the exception that all, or practically all, the soil may be replaced, only a little fresh soil being added next to the roots. This is more a case of root pruning to induce fertility, therefore search out any too sappy roots and shorten them as may be found to be desirable. Notch them also in this case to encourage fibrous roots to form, and both syringe and water as in the former instance. Those strong-growing trees may still have some sappy shoots, which should be shortened. Have the soil necessary for these operations mixed and prepared beforehand, and keep it in a rather dry condition.

THE FLOWER GARDEN

By W. J. GRISB, Gardener to Mrs. DELPSTER, Keele Hall, Staffordshire.

PROPAGATING BEDDING PELARGONIUMS.—Cuttings of zonal leaved Pelargoniums may be propagated successfully in several ways, and this season the quickest method should be adopted. Use boxes to hold fifty or sixty cuttings each, or, still better, if a shallow heated frame is available, insert the cuttings in the bed of the frame 4 inches apart, and let the bed be composed of sandy soil. Remove the lights entirely, exposing the cuttings to the air and sunshine. Let the cuttings of the zonal section dry for a few hours after they are trimmed, as the wood may not be well ripened, owing to rains. Make the cuttings quite firm in the soil and water them through a rosed can. If boxes are used, they should be stood on a bed of ashes in a sunny place, or in a shanty frame, where they can be easily protected from rains. When the cuttings have been sown, remove all dead flowers and foliage, stir the soil between the plants, with the flat hoe, pinch the edging plants into shape, trim the verges, and freshen the gravel paths by raking them with an iron rake.

PLANTS IN VASES. Plants in vases should be given attention at least once a week, to remove dead flowers, foliage and seed pods, and trim the growths. Stimulant mists be given frequently or light top dressings of rich soil.

EARLY FLOWERING CHRYSANTHEMUMS. Stimulants in some form should be given early Chrysanthemums twice weekly. In a dry manner, sod-water, or concentrated fertilizer, forked lightly into the soil, followed by a soaking of clear water, will be beneficial. Keep the shoots neatly tied, and disbud any varieties that need it, but many are better when they flower in sprays.

ORDERING BULBS. Orders for spring flowering bulbs should be placed with the merchant without further delay.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to St. JOHN'S COLLEGE, Bart., Gaitton Park, Reigate.

LÆLIA ANCERS and its varieties are fast developing their pseudo-bulbs, and the flower spikes are making good progress. Liberal supplies of water at the roots, and slight syringing overhead, should be given during hot weather. The plants should not be excessively shaded, but should be protected during the hottest part of the day to prevent scorching. Close the house early in the afternoon, and open again on warm nights, as the night air is very beneficial.

CALANTHE. The deciduous *Calanthes* are in full growth, and forming new pseudo-bulbs. If healthy and well rooted, they will require more water at the roots now than at any other period of their growth. Expose them to as much light as possible, short of their being scorched by the sun. They should be placed near the roof glass, and whenever possible should be afforded plenty of fresh air.

ODONTOGLOSSUM. Plants of *Odontoglossum crispum*, *O. Pescatorei*, and their hybrids, which flowered early in the year, are making new shoots and roots are on the point of developing at the base. Give fresh rooting material at

once to those that require it. Plants that have grown to the sides of their pots and others in compost that has become exhausted should be repotted, removing them from their pots and shaking all the old materials from their roots. Decayed roots should be cut away, also the old pseudo-bulbs, leaving two or three healthy pseudo-bulbs behind the young growth. Use a pot large enough to accommodate the plant for two seasons, and fill it to one-quarter its depth with clean crocks for drainage. Over the crocks place a thin layer of Fern rhizomes cut in short portions. Work the compost with moderate firmness, between and around the roots, keeping the base of the young growth about on a level with the rim of the pot. The front portion of the rhizome must not be buried, but allowed to rest on the surface of the soil, so that when roots develop they may enter the materials direct. Plants that are in bad health should be taken from their pots, cleaned thoroughly, and placed in the smallest receptacles that will hold them. Back bulbs that have been removed may be placed in small pots filled with crocks, and when they break into growth, potted. Plants which are growing satisfactorily and have sufficient room in their pots for another season's growth, may, if the compost is good, remain undisturbed, but some of the old material should be carefully poked from the surface and replaced with fresh compost. A good rooting medium consists of short pieces of Osmond fibre and Al. blue in equal proportions, with a liberal addition of chopped Sphagnum moss and crushed crocks. Exercise great care in watering, and keep the surface layer always moist, syringing each morning. Many other *Odontoglossums*, including *O. simulans*, *O. Hoveyana*, *O. polyanthum*, *O. Tuto-nurumense*, and their hybrids, should also be given attention at the roots as it becomes necessary, and the work must be completed before the end of September.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Hon. Arthur J. DAVEN, Abbots Wood, Godingham, Surrey.

MORELLO CHERRIES. These have cropped well this season. The nets should be taken down and the trees well cleaned. If any black aphid is present, give a washing, with the potassium solution, treating every portion of the foliage. Any fruit still on the tree at this time should be suitably protected to keep away wasps and flies, and if the fruits can be kept dry they will keep good and fit for use for a couple of months. These fruits make very collect preserves, and are far superior to sweet cherries to fairs. The Morello Cherry needs different pruning from the sweet cherry, and should be treated more like the Peach, that is, cutting out the old wood and retaining the young shoots, which will produce fruit next season. They will grow and fruit from spurs, as will the Peach, but after a year or two the trees begin to get very ugly, and as I have recommended, it is the best practice to prune as I have recommended. If the trees are pruned now the shoots will not need to be closer than 6 inches.

PEACHES AND NECTARINES. *Grosse Magnonne* Peach is generally at its best after the first week of September, and is followed by *Diamond*, *Belle-Garde*, *Princess of Wales*, and *Sea Eagle*. The roots of the trees should be fed to enable the fruits to finish perfectly. Draw some of the leaves aside to allow the sun's rays to reach the fruits. If red spider has been kept under, the pest will not be very troublesome after this date. All trees from which the fruits have been gathered should receive attention in watering and syringing, in order to keep them in good health. Trees that have been condemned should be rooted up and the ground set ready for the reception of healthy specimens. It is good practice, if time permits, to cut away all old fruiting wood as soon as the fruit is gathered. In this way extra light and sunshine will enter the trees, and ripen the shoots. Early varieties of Peaches and Nectarines that have nearly completed their growth may be transplanted if desired. Before lifting the tree, see that all the branches are unfastened from the wall or trellis. Make the soil firm about the roots, shade the tree in times of bright sunshine,

and syringe the leaves and shoots several times daily for about a fortnight.

FRUIT GATHERING. Proceed to gather all fruits that are ripe and store them in the fruit room. When all are gathered, give the trees a good cleansing with petroleum emulsion or nicotine soap. The operation should be done thoroughly, and several applications may be necessary.

STORING OF NETS.—Nets used for protecting bush fruits from birds should be dried and stored for another season. The heavy rains have shortened the season of these nets, and except on walls it is difficult to keep *Gossieberis* longer, as they have commenced to drop. Those on walls, which can be kept drier, should be protected with wasp-proof netting. If any wasps' nests are discovered pour in a quantity of cyanide of potassium, dissolved in boiling water. This is a dangerous poison, and should be kept tightly corked, under lock and key, and only entrusted to competent and responsible persons for use.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcott, Eastwell Park, Kent.

EVERGREEN OR PERPETUAL-FLOWERING BEGONIAS.—These *Begonias* include *President Carnot*, *Indisolds*, *Cocoonia*, *Andra* and *Andra alba*, *Prætor*, *ascotensis*, *curvata* and *knobs*, *lyana*. They are all attractive plants, and if given suitable treatment will flower almost perpetually. *B. cocoonia* is one of the most showy, its coral red flowers, produced in large panicles, being most attractive, and when the whole roof of a house can be given up to the plant, it makes a picture not soon to be forgotten. The plants in this section should not be restricted to pots, but given liberal treatment in tubs, boxes, or planted out in small prepared borders, as best suits the individual case. There is no doubt that a small border is the better plan in many ways, but owing to the arrangements of the water pipes, stages, and paths, this is not always practicable, and tubs or boxes must be used. We have for some years made a feature of *B. cocoonia*, and have found it very satisfactory when grown in large boxes. In this case the house is furnished with Ferns, principally *Nephrolepis* and *Adiantum*. With dot plants of *Andra Savitzii*, these make a capital undergrowth for the pendulous blooms of the *Begonia*, which bring in great profusion from all parts of the roof. Our treatment in the spring consists of pinching off any blooms and giving the plants a little rest. Afterwards they are overhauled and all old, rough pieces of stem cut out, leaving in the healthy and vigorous young shoots. In this way the plants are kept in good condition. The soil in the boxes is pricked over, as much of the old soil as possible is taken off, and a rich top dressing put on in its place. The plants quickly respond to this treatment, and with extra warmth will grow quickly as the days lengthen. During the summer months the growth root be regulated over the roof space, keeping it somewhat thickly dressed in subsoil, top dressing, and plentiful supplies of water when the plants are in full growth, are necessary.

GREENHOUSE CLIMBERS. Climbing plants grow very rapidly during summer, and unless given constant attention quickly degenerate into a tangled mass of growth, which has a tendency to become dirty. Cut out all the weak shoots, and reduce the number of healthy growths, disposing of the remainder thinly in the space at command. It should be borne in mind that the roof of the greenhouse or conservatory should not be entirely covered with creepers, as this would make it too dark for the plants underneath. As a rule, a restricted space under the rafters should be utilised, leaving a certain amount of open space between. At this season abundance of water will be required, and where the climbers are in boxes or very small borders, some artificial manure should be given to keep the plants in healthy growth. Liquid Farmyard manure and sod water are beneficial, but in conservatories these materials may be objected to, hence the preference for artificials. Fumigate regularly as a preventive of aphid.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations. — The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Local News. — Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 59.5.

ACTUAL TEMPERATURE —
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, August 30, 10 a.m.: Bar, 29.7; temp. 62.7. Weather—Fair.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Six of Horn-grown Bulls at 67, Cleapside, E.C., by Frother & Morris, of 1 Colindale.

Forficula auricularia, the common earwig, often enough a minor pest in British gardens,

The Earwig.

appears to have become serious in Newport, Rhode Island, U.S.A., in spite of the fact that it was first observed there as recently as 1911.

The female lays from 50-90 shiny white eggs, each of about 1-20th inch in length. A favourite site for egg laying is mellow garden soil, where may be found, some 2-3 inches beneath the surface, both eggs and hibernating females. This in winter; in spring the young earwigs may be found in the ground, or at night on the surface. Except for the lack of wings, they resemble the adult insect. At first white, their colour darkens to a shiny olive-green. In June they are dusky olive-green or steel-grey. After four larval stages the adult form is assumed. The young larva feeds on tender shoots of grass, clover, and, of course, of garden plants, such as the buds of the Dahlia. Mr. Jones states* that the adults feed almost entirely on the petals and stems of flowers; but in this country they are not averse from the young leaves of Nectarines, and of not a few herbaceous plants. They are also cannibals and scavengers, devouring dead and dying earwigs, dead flies and sluggish larvae.

Their congregation near food plants in crevices in late summer is a result of the mating instinct. Adult males do not generally survive the winter of Newport, but die in autumn after having fertilized the females; but, as before stated, the adult females hibernate in the ground, at a depth of from 2-8 inches. The eggs also survive the winter. Hens devour earwigs ravenously, and toads are fond of them; but, unfortunately, the earwig is an adept at concealment during the day, so the hens are at a disadvantage. The numbers

of earwigs at Newport are so great as to be a nuisance—in some districts, on opening the awning of a house, a pint of earwigs may be collected at a time.

Poisoned bait consisting of stale white bread 16 lbs., Paris green 1 lb., and water is effective; but the Food Controller would have something to say if bread were used here for the purpose.

The recipe (which we give for use in times of greater plenty, both of bread and earwigs) is "grind the bread finely in a meat-chopping machine, and mix it with the Paris green whilst dry. Stir thoroughly, adding water sufficient to make the mixture run through the fingers. It should be of such consistency that when thrown broadcast it breaks into fine particles. Spread the bait between dusk and dark, choosing warm evenings.

Instead of bait a contact spray may be used. Good results have been obtained with a spray consisting of soft potash soap, 30 oz.; nicotine sulphate (40 per cent.), 20 teaspoonfuls; water, 96 oz.

The soap is dissolved in a little water over a fire, and the rest of the water and the nicotine sulphate are added. This stock solution is diluted before use by the addition of 22 parts of water to 1 of the stock solution.

If flower-pot traps are used, the catch of earwigs may be got rid of each day by immersing the pot in water over which a little kerosene oil has been poured—enough to form a film on the surface of the water.

A MUNIFICENT GIFT.—SIR HARRY JAMES VEITCH has forwarded to the Secretary of the Gardeners' Royal Benevolent Institution a cheque for £500, accompanied by the following letter:—"Dear Mr. INGRAM. Twenty-five years ago my wife and I had the great pleasure of giving a 'Silver Wedding' thank-offering of £500 to the funds of the Gardeners' Royal Benevolent Institution. God in His great mercy has spared us to commemorate now the 50th anniversary of our wedding, and we have very much pleasure in sending as a 'Golden Wedding' thank-offering a similar amount to that we gave in 1892. I shall be glad to hear that the enclosed cheque for £500 reaches you safely. My wife and I hope the Committee will treat this donation in the same way as that we sent on the previous occasion."

PROFESSOR KEEBLE AND THE NEW ORDERS.—PROFESSOR FREDERICK KEEBLE, F.R.S., the Scientific Editor of the *Gardeners' Chronicle*, has been created a Commander of the Order of the British Empire, for having "rendered valuable services to the Food Production Department."

GOLDEN WEDDING OF SIR FRANK AND LADY CRISP.—SIR FRANK and LADY CRISP, whose garden at Friar Park, Henley-on-Thames, is known far and wide in the horticultural world, have just celebrated their golden wedding. By way of celebrating the occasion, they entertained at Friar Park all the inmates of the Poor-law Institution, and Lady CRISP also presented to St. Mary's Church, Henley, a silver-gilt chalice.

NATIONAL ROSE SOCIETY.—Instead of the usual autumn show, the National Rose Society will hold a non-competitive display of Roses in the London Scottish Drill Hall, Buckingham Gate, Westminster, on Tuesday, September 11, from 1 to 6 p.m., in conjunction with the fortnightly meeting of the Royal Horticultural Society. Awards of medals and certificates will be made to such exhibits which the judges may

consider worthy. There will be three divisions—one for new seedling Roses, one for nurserymen, and one for amateurs.

MR. W. W. PETTIGREW.—The Food Control Committee of Manchester has appointed Mr. W. W. PETTIGREW chief officer to the committee. While Mr. PETTIGREW will devote his main energies to the work of the Food Control Department, he will continue in his office as superintendent of the local public parks. The *Manchester Evening News* states: "It is agreed on all hands that a better appointment could not have been made. Since he came to Manchester Mr. PETTIGREW has shown himself not only a capable organiser, but an exceedingly able Corporation servant in many other directions. His work on the Foodstuffs Committee, like that on the Parks Committee, was invariably characterised by a thoroughness which has been beyond criticism."

FIRE AT MESSRS. W. WOOD & SONS.—On Monday last, the 27th ult., a destructive fire occurred at the Wood Green premises of Messrs. W. WOOD AND SONS, horticultural sundriesmen. Some thousands of pounds' worth of damage was caused, but we are glad to learn that, owing to the location of the conflagration, only a portion of the building was damaged, and Messrs. WOOD AND SONS are able to carry on their business and supply their customers as usual.

PRUNUS PISBARTII FRUITING.—This handsome ornamental-leaved tree is a familiar feature of our gardens, and reports of its fruiting this season have reached us from several districts. We hear from Lady THEODORA GREST that this year it has fruited in her gardens at Inwood, Templecombe, for the first time. The fruits are deep crimson, and add much to the beauty of the tree. She also informs us that Yuccas have flowered unusually well, one plant having thrown up ten splendid spikes.

SOUTHERN VEGETABLE SHOW.—The local food production society at Southend-on-Sea will hold an exhibition of garden produce on September 14 and 15. The schedule includes some thirty classes for Vegetables and six for Fruit. Two of the Vegetable classes are open to all allotment holders. One is for a collection arranged on a space 6ft. by 4ft., in which prizes amounting to £12 are offered; the other for six kinds, in which the prize money totals £9. The hon. secretary is Mr. G. F. TINSLEY, "Lomea," Westbourne Grove, Westcliff-on-Sea.

IMPORTS OF FRUIT FROM FRANCE.—A general licence has been issued to the Customs Authorities permitting the importation of all kinds of fresh fruit and vegetables from France into this country.

MR. THOMAS STEVENSON.—MR. THOMAS STEVENSON, who has been for some years past head gardener to E. MOCATTA, Esq., at Woburn Place, Addlestone, Surrey, is shortly leaving private service to take up a position with Messrs. LOWE and SHAWVER at their nurseries at Uxbridge. MR. STEVENSON joins the firm, as one of the directors, on October 1. He is well known as a successful cultivator; as an exhibitor of Sweet Peas and Chrysanthemums he is world-famous, but these are only two of the many subjects he grows so well. MR. STEVENSON is a member of the Floral Committees of the Royal Horticultural Society, the National Chrysanthemum Society, and the National Sweet Pea Society.

PUBLICATIONS RECEIVED.—*The Perpetual-Flowering Carnation.*—By Montagu C. Allwood. (London: Cable Printing and Publishing Co.)—Price 1s. net.—*Webster's Practical Forestry.* By Angus D. Webster. (London: William Rider & Son, Ltd.) Price 6s. net.—*Annual Report of the Agricultural and Horticultural Research Station, Long Ashton, Bristol, 1916.* (Bath: The Herald Press.)

* *The European Earwig and its Control.* By D. W. Jones. Bull. No. 566, U.S. Dept. of Agriculture, June 18, 1917.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See also Tables in *Gardeners' Chronicle* for July 28.)

(Continued from p. 82.)

5.—ENGLAND, S.

MIDDLESEX.—Crops of Apples, Pears and Plums are somewhat patchy. Some trees are bearing very well, and others are considerably below the average. Peaches, Strawberries and Gooseberries were exceptionally good, but the season for Strawberries was short, owing to want of rain. Our soil is light and shallow, and needs a good deal of manure. Caterpillars have been most troublesome during the past two years, no matter how carefully the trees have been sprayed. *H. Markham, Wrotham Park Gardens, Barnet.*

— Apples, generally speaking, are yielding light crops this year in cases where they were heavy in 1916. Exceptions are the varieties Keswick Codlin, Lord Suffield, Worcester Pearmain, James Grieve, Striped Beefing, and Warner's King, which bore heavy crops last year, and are equally good this season. Pears are very good; in my garden not more than two out of fifty-five varieties have failed. *W. P. Spurr, Marsh Farm, Twickenham.*

SURREY.—Apples flowered freely, but heavy storms unfortunately spoilt the blossom a few days before setting. Pears, although damaged by insect pests, promise clean, fine fruit. The Strawberry crop suffered by the severe winter; many plants barely survived, and continued rains shortened the duration of the crop. The soil here is light and sandy. *James Cook, West End, Lodge Gardens, Weybridge.*

— The fruit crops here are good, except for Apricots, which are very unsatisfactory. Wall Pears are poor, but other trees are average. Black Currants suffered rather severely from "big bud." The Strawberries were poor, as they suffered from early drought. The soil here is sandy loam on chalk and very porous. *W. Payne, Norbury Park Gardens, near Dorking.*

— Apples bloomed profusely, but on old trees the fruits dropped, as they were attacked by caterpillar. Plums were plentiful on trees not touched by bullfinches. Strawberries (except Louis Gauthier) suffered owing to the dry weather. Gooseberry mildew is disappearing, but the tips of the shoots are cut off early in September. *James Watt, Myrthall Gardens, Reigate.*

— The trees here were dressed with winter wash in February, but a remarkable show of bloom was followed by one of the worst attacks of caterpillar I have ever seen. Plums and many Apples were completely stripped of all foliage. *F. Jordan, Ford Manor Gardens, Lingfield.*

— There was an extraordinary promise for fruit of all kinds, but most of the Apples, Pears and Plums fell off during the hot weather. Insect pests were also very bad. *S. T. Wright, R.H.S. Gardens, Wisley, Ripley.*

SUSSEX.—The Apple crop was reduced to half an average by caterpillar attacks and bad setting combined. Plums were average, excepting *Czar* and *Pond's Seedling*, which fruited largely last year. An extra crop of *Monarch* may counter-balance the deficiencies. Cob Nuts promise unusual abundance, but may be undersized in consequence of the foliage having been riddled by caterpillars. Our soil ranges from a lightish loam over the Tunbridge Wells sand to a heavy soil over clay and sand. *W. E. Bear, Maybom Down, Hailsham.*

— The late spring retarded blooming, so the trees escaped injury by frost. The warm

weather afterwards caused growth to be very rapid, and on the whole growth was as early as after a warmer spring. The bloom on all fruit trees was abundant, and set well, but caterpillars thinned the fruit. The weather has lately been favourable, and rain seems to come just when needed. The soil here is a rich yellow loam on a gravelly subsoil. *Leon Squibbs, Stonehurst Gardens, Ardingly.*

— Fruit trees in these gardens were a mass of blossom. Unfortunately, as the fruit began to swell, caterpillars appeared, and did much damage to fruit and foliage. Some of the Apple

three weeks later than usual, the result being that the flowering and setting periods were almost immune from frosts, and the weather in other respects was favourable to vegetation. *T. Challis, Herbert Cottage, Wilton, near Salisbury.*

— All kinds of fruit trees flowered splendidly. Apples are not so heavy a crop as was expected; some varieties set very well, but others failed. Strawberries were not quite so plentiful, and were smaller on account of prolonged hot, dry weather after the flowering period was over. All kinds of bush fruits were



FIG. 32. NEW STAR DAHLIAS, ABOVE; EASTERN STAR, BELOW; PRIMEBRO STAR. Both varieties received the R.H.S. Award of Merit on the 10th Dec. (see p. 92.)

and Pear trees were quite bare. Owing to lack of labour very little spraying has been done. There is, however, a good average crop. *J. W. Buckingham, Milland Place Gardens, Liphook.*

— Strawberries in this district were not a good crop; about the same as eight years ago, when the weather was very severe in winter. Apple and Pear trees suffered from caterpillars; Gooseberries also, in some cases, were badly affected. The soil is heavy clay. *Wm. J. Longridge, Otte Hall Gardens, Burgess Hill.*

WILTSHIRE.—In consequence of the severe winter and early spring, vegetation was quite

good. The soil is of a sandy nature. *J. Knight, Boswood Gardens, Calne.*

7.—ENGLAND, N.W.

LANCASHIRE. Following a long and very severe winter, fruit blossom opened strongly and showed great promise, but the prolonged drought in June and the early part of July caused many Apples and Pears to drop. Sufficient fruits remain, however, to give an average crop. Strawberries were very scarce, and soon over. *C. H. Cook, Knowsley, Preston.*
(To be continued.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

TEA PLANTS (see pp. 67, 82).—In the interesting communication by Mr. Henry on the cultivation of the Chinese Tea plant in the British Isles, reference is made to the article on Tea and its Cultivation by Sir George Watt in the *Journal of the Royal Horticultural Society*. I am not a fortunate possessor of this *Journal*, but an exhaustive account of the Tea plant, and the manufacture of Tea is to be found in Sir George Watt's monumental work, *The Dictionary of the Economic Products of India*. Probably these articles are the most complete of any written on the subject. The first, under the heading of "Camellia theifera," extends from p. 70 to p. 85 and gives a long list of "Tea bibliography," followed by a history of China Tea and Indian Tea. A further article is given under the simple heading of "Tea," which covers 65 pages, and deals with area and cultivation, imports, revenue, plants raised in the Botanic Gardens, Calcutta, British and foreign trade, and home and foreign consumption. I quite well remember, in my earlier days at Kew, a Tea plant growing against a wall, either on the eastern side of the wall separating the herbaceous ground from the nursery, or on that which was then known as the Duchess of Cambridge's garden, and consequently with a southern aspect. My memory at this distant period cannot recall the exact locality. *John B. Jackson*.

AMERICAN GOOSEBERRY MILDEW.—One of your correspondents, in his remarks on the fruit crops, states: "Gooseberries are remarkably free from American Gooseberry mildew." This statement agrees with the experience of a friend of mine, who informs me that his plants had the disease previous to last winter, but he has not seen any signs of the mildew since; possibly the severe winter may be responsible for the destruction of the disease, and it would be interesting to know whether readers of the *Gardeners' Chronicle* can confirm this supposition, and if the disease has been found in other gardens where it had not previously occurred. *W. H. Divers*.

VERONICA LOBELIODES.—On page 255 of the issue for June 23 last, your correspondent *J. E.* refers to *Veronica lobeloides* as being a common plant in London. The specific name of *lobeloides* was unknown to me, but I found it referred to in the *Kew Hand List of Toxaria*. *Veronica lobeloides* as synonymous with *V. speciosa*, which is hawked about London by costermongers during the autumn. It is of a compact, freely branched habit of growth, with blue flowers, and will stand most winters in the neighbourhood of London. *W. T.*

DESTRUCTIVE GALES.—Gales of exceptional violence occurred on the 24th ult. and the night of the 27th ult. and throughout the following day. At least half the crop of Apples here of all varieties not picked when the gales occurred have been blown from the trees. About 200 bushels were picked up after the first gale, and, at the time of writing (August 26), there is a still greater quantity on the ground as the result of the second gale. The most lamentable part of the damage is the blowing down of late Apples, such as Cox's Orange Pippin, Charles Ross, Allington Pippin, Bramley's Seedling, and Newton Wonder, as these, and particularly the three dessert varieties, are immature, and not fit for market. As for mid-season varieties, including Worcester Pearmain, Lord Grosvenor, Royal Jubilee, Warner's King, and Lord Derby, their windfalls can be marketed at low prices, provided that empties can be obtained, exceeding the considerable proportions bruised or chipped. But the markets for Apples are completely congested, and prices have fallen so low that it hardly pays to send windfalls any considerable distance by rail. The Pear crop has suffered as badly as the Apple crop. The damage to my Plum crop is only less serious because my acreage of Plums is much less than that of Apples. All varieties of Plums not picked when the gales occurred have been blown off the trees to a serious extent. Those which are mature enough for marketing have been rendered dirty, so that they can be sold, if at all, at only half price,

while late varieties, quite green, are not worth picking up. My loss is all the more remarkable on account of the fact that my orchards are exceptionally well protected by shelter trees and hedges. Gales have occurred in many previous seasons, but without doing a tenth part of the damage now under notice. The peculiarly gusty character of the recent gales rendered them much more destructive than steady gales of nearly equal force have been. It is also to be remarked that September is usually the month for gales, and then the proportion of ungathered fruit is much less in my early district than it is in August. Branches of trees of various kinds have been torn off and hurled to considerable distances, and we shall probably learn that great numbers of whole trees have been blown down. It is impossible to estimate with any approach to certainty the pecuniary loss incurred. There is not only the direct loss to consider, but also the great reduction of prices caused by the glutting of the markets, from which no recovery can be anticipated until all the mid-season varieties of fruit have been disposed of or rotted. *Southern Grower*.

SOCIETIES.

ROYAL HORTICULTURAL.

August 28.—The exhibits at the fortnightly meeting held in the Drill Hall on Tuesday last were very few in number. The weather was in element, and prevented any but the most enthusiastic visitors from putting in an appearance.

Dahlia formed the chief floral exhibits, and the novelties were judged by a joint committee of the National Dahlia Society and the Floral Committee of the Royal Horticultural Society. Several new varieties were submitted, of which eight were selected for award. The Floral Committee also gave an Award of Merit to a pink variety of *Eastonia Russellianum* named *Ellisi*. The groups in the floral section were not so important as usual. The Silver Flora Medal was given to Messrs. H. B. MAY and SONS for *Ferns*, and to Mr. E. J. HICKS for *Roses*. Mr. Hicks showed varieties chiefly of his own raising, including a new Hybrid Tea named *Mrs. Dunlop Best*, which is especially beautiful in the bud stage; the petals are of amethyst tint, shaded in the centre with bluish pink. Dahlias were shown by Messrs. J. CHAL and SONS. Their exhibit comprised the two new star varieties *Eastern Star* and *Primrose Star*, illustrated in fig. 32. The Rev. J. H. PEMBERTON had a stand of seedling *Roses*, including a new Hybrid Musk variety named *Pax*, which has creamy-white, boss-petalled blooms, forming a bold cluster. Mr. C. TURNER, Slough, showed varieties of *Hibiscus sriusius* and *Cleodendron Bungei*, with large coriaceous tubular flowers, red outside and deep pink on the face of the petals. Mr. C. J. ELLIS showed *Eastonia Russellianum*, and the bluish-pink variety referred to above. The novelty was shown grouped with the species, which has flowers of deep mauve with violet markings in the centre of the petals. There were very few exhibits of hardy plants; Mr. H. CLOSE, Orpington, showed bunches of border flowers, and Mr. G. BETTIE Abingdon and hardy plants. Messrs. W. WELLS, junr., showed their new bluish-violet variety of perennial *Aster*, known as *Aster Amelius King George*.

A few good exhibits of Orchids were shown. Awards to novelties included one First class Certificate and three Awards of Merit. In the fruit and vegetable section the most interesting exhibit was a collection of preserved and bottled fruits and vegetables shown by Mr. and Mrs. VERNER BASKES. The Gold Medal awarded to this exhibit was well deserved, for it comprised a great variety of fruits and vegetables, all in the pink of condition, though some of the bottles were marked with the date "1911." A Silver Knightian Medal was awarded to a collection of hardy fruits shown by Messrs. S. SPOONER and SONS of Hounslow. Messrs. LAXTON and BROS. showed a number of new fruits, and gained an Award of Merit for Plum *Titbit*. Another Plum of great merit in their collection was named *Lax-*

ton's Gage, raised from Green Gage crossed with *Victoria*. The colour is greenish yellow, and the flavour is that of the Gage—the tree is said to be exceedingly prolific. The same firm showed a number of new Apples. General French bears some resemblance to *Lady Sudeley*; the parents are King of the Pippins and Blenheim Pippin. Duchess of Bedford is a fine, large Apple, but not of quite so refined a flavour. Messrs. H. CHAPMAN and CO. showed their new Marrow Rotherham Coo, a round custard variety, of a pleasing buff colour. Sir ALBERT K. ROLLIT, St. Anne's Hill, Chertsey, showed a dish of black Figs, for which a Cultural Commendation was awarded. Capt. STOKES, St. Botolph's, Milford Haven, showed bulbs of Sutton's Improved Reading Onion. This exhibit was remarkable in that the seed had been sown in March, 1916, and the crop harvested in August of the same year, so that the bulbs, which were in perfect condition, had been kept for twelve months.

At the three o'clock meeting of the Fellows Mr. H. E. P. HODSOLL gave a lecture on "The Manuring of Garden Crops."

Floral Committee.

Present: Messrs. H. B. MAY (chairman), John Green, George Paul, G. Reuther, W. B. Cranfield, E. Bowles, S. Morris, H. Cowley, A. G. Jackman, J. Heal, C. R. Fielder, J. W. Moorman, J. F. McLeod, A. Turner, W. H. Page, W. P. Thomson, H. J. Jones, C. Dixon, J. Dickson, E. R. Jenkins, and Chas. E. Pearson.

AWARDS OF MERIT.

Eastonia Russellianum var. Ellisi.—A pale pink variety, equal in all other respects to the type, which has mauve flowers. The foliage is cordate, sessile and glaucous. The plants were shown in pots, and made capital little specimens about 18 inches high, suitable for arranging on conservatory or greenhouse stages. Shown by Mr. C. J. ELLIS, Weston super-Mare.

DAHLIAS.—The following varieties of Dahlia received the R.H.S. Award of Merit and the First class Certificate of the National Dahlia Society:—

Eastern Star (see fig. 32).—A charming variety of the "Star" type. The blooms are not large, but they are shapely, and carried erect on long, stiff stems, making them very suitable for vase decoration indoors. The colour is deep, rich mauve, with maroon shading at the base of the florets.

Primrose Star (see fig. 32).—Another beautiful new "Star" variety, the colour being bright primrose-yellow, with the usual long, wiry stem. The disc is rather larger than in most members of the group; in nearly every bloom shown one or two short florets were twisted close to the disc, but they did not detract from the beauty of the flower. Both these were shown by Messrs. J. CHAL and SON.

Bianca.—This large white variety belongs to the Decorative section, and its wide, overlapping florets suggest a white *Water-Lily* without the central cluster of stamens. The variety should prove valuable to florists, the large, pure white blooms being suitable for the making of floral designs. Shown by Mr. CHARLES TURNER, Slough.

Mrs. J. J. Jarrett.—A bold, Paeony-flowered variety of the largest size, and with a larger number of florets than many of the varieties possess. The florets are flat, but rather irregular in size, sometimes waved and sometimes slightly twisted, thus giving the immense blooms an appearance of artistic indifference to florists' standards. The colour is somewhat near the shade known as "flame," with a trace of orange or vermilion. Shown by Mr. J. JARRETT, Anerley.

Golden Rain.—A charming Cactus variety, shape alike in form and colour. The blooms of first rate exhibition size, elegant in build, and coloured clear canary-yellow.

Mrs. Herbert Blackman.—A Cactus variety of full size and good exhibition form. The colour is soft pink, with a white-shaded centre.

Harry Crabtree.—A Cactus variety of particularly elegant and refined form. The centre is pale flame colour, shading into maroon and deep rose-red at the bases of the long, slender florets, and this tone shades off into purplish mauve at the tips.

Meddion. — A happily-named Colerette variety. The full sized blooms are of excellent form, all the segments being broad and slightly overlapping, so as to make up a "full" and rounded bloom. The colour is clear, soft yellow, and the collar florets are of similar tone but with white shading. The outer segments are stained on the back with red-purple, and in some of the flowers this shows through on to the front surface, where, combining with the yellow, it appears as the faintest possible suffusion of orange. These four were shown by Messrs. J. STREDWICK AND SON.

GROUPS.

The following medals were awarded to collections —

Silver Flora Medals to Messrs. H. B. MAY AND SONS, for *Ferul*; Mr. ELISHA J. HICKS, for *Roses*; *Silver Banksian Medals* to Messrs. J. CHEAL AND SONS, for *Dahlia*; and Mr. C. J. ELLIS, Weston Nurseries, Weston-super-Mare, for *Eustoma*; *Bronze Flora Medals* to Mr. H. CROSS, Orpington, for *hardy border flowers*; the Rev. J. H. PEMBERTON, for *Roses*; Mr. G. RETCHE, for *Alpine and hardy plants*; and Mr. C. TURNER, for *hardy plants*.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Vetch, Messrs. Jas. O'Brien (hon. secretary), Bolton, T. Armstrong, J. Chalesworth, Panita Rall, W. H. White, C. H. Curtis, Walter Cobb, Arthur Dee, Frederick J. Hanbury, W. H. Hatcher, R. A. Rolfe, J. E. Shill, and Fred K. Sander.

AWARDS.

FIRST-CLASS CERTIFICATE.

Brasso-Cattleya Lady Vetch (patented unrecorded), from Messrs. FLORY AND BLACK, Slough. A fine hybrid, probably a cross with *B. C. Hene*. The flowers are large, broad in all the segments, and of fine substance. The sepals and finely displayed petals are silver-white with a slight bluish tint and delicate purple markings on the outer halves of the petals. The lip is fringed and bluish-white, with a golden-yellow disc.

AWARDS OF MERIT.

Laelio-Cattleya Canhamiana var. Golden Fleece (Canhamiana × Laminosa), from Messrs. ARMSTRONG AND BROWN, Orchidhurst, Tunbridge Wells. The plant bore a spike of four hand-some flowers, in the colour of which the *Cattleya Dowiana aurea* in *L. C. luminosa* prevails. The sepals and finely crimped petals are light yellow. The lip, full at the margin, is flecked with rosy-mauve colour, and there are gold-coloured lines running from the base to the centre, which is suffused with light orange.

Cattleya Mrs. Pitt, Chalesworth, variety (*Harrisoniana × Doaniana aurea*), from Messrs. CHALESWORTH AND CO., Haywards Heath. A richly coloured variety, and the darkest of its class. The spike bore four very showy magenta-rose coloured flowers, the front of the lip being purplish crimson and the disc golden-yellow. The varying shades of colour render the flower very attractive.

Cattleya Naulia exquisita (Hildebrand × Hartwegii), from Messrs. HAYWARD AND CO., Southgate. A beautiful addition to the crosses of *C. Hildebrand* raised at Southgate. The flowers are fragrant and of fine form; the sepals and petals are light yellowish-salmon colour, with a rose shade. The lip is dark crimson with an orange-coloured disc.

GROUPS.

Mr. J. E. SMILL, The Dell Gardens, Enghfield Green, showed *Laelio-Cattleya Golden Queen*, a large and handsome copper-yellow flower tinged with rose colour, and having a broad, magenta-coloured lip; *Cattleya Astron* (Dusseldorf) *Undine × Harrisoniana alba*, and *C. Capella* (Mossian-Wagneri × O'Brieniana alba).

Messrs. CHALESWORTH AND CO. were awarded a *Silver Flora Medal* for a fine group in which *Laelio-Cattleya* and *Cattleya* were specially good. *Laelio-Cattleya Britannia Regina* (*L. C. Canhamiana alba × C. Warszewiczii* (E. M. Beyrodt)) is a noble flower, and the best of their

white-petalled type of this favourite hybrid. The plant bore a three-flowered inflorescence of large, pure white flowers with bright violet front to the lip. *L. C. Serbia*, of model shape and rich in colour, showed well among the graceful sprays of *Odontoglossum* and *Oncotidias*.

Messrs. ARMSTRONG AND BROWN were awarded a *Silver Flora Medal* for a showy group; at the back were finely flowered specimens of their richly coloured *Laelio-Cattleya* (*George Woodham*), arranged with *Brasso-Cattleya* and *Laelio-Cattleya*, the centre being of white-flowered *Cattleya*. *Iris* varieties made a fine feature, the variety *Majestica* being specially good.

Messrs. SANDERS, St. Albans, were awarded a *Silver Banksian Medal* for a group of rare and pretty *Orchids* of botanical interest and a selection of showy hybrids. Attractive varieties of rich colour were *Laelio-Cattleya Longueval* (*C. Dowiana aurea × L. C. Berthe Fournier*) and *L. C. Irensis perfecta* (*C. Iris × L. C. blotchleyensis*).

Messrs. FLORY AND BLACK, Slough, showed a good rosy blue form of their *Brasso-Cattleya Hene*.

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (vice-chairman), Sir Albert Rollit, Rev. W. Wilks, Messrs. E. A. Burnard, A. W. Mottelie, A. Bullock, H. Markham, J. C. Allrove, W. H. Divers, John Harrison, W. Bates, and Owen Thomas.

Plum Utility. — A medium-sized, oval variety, raised from Jefferson's Peach Plum. The flavour resembles that of a Gage variety. A first rate dessert variety. Shown by Messrs. LAXTON BROS.

GROUPS.

A *Gold Medal* was awarded to Mr. VINCENT BANKS for dried and bottled fruits and vegetables, and a *Silver Knightian Medal* to Messrs. S. SPOONER AND SONS, for hardy fruits.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

August 15. The monthly meeting of this Society was held in the R.H.S. Hall on Monday, the 13th ult., Mr. Chas. H. Curtis presiding. One new member was elected. Three members were allowed to withdraw interest amounting to 29/18.

The sum of £76 9s. 3d. was passed for payment to the respective nominees of five members killed in battle; also 29/18 3d. was paid to the nominee of one member who had lapsed for three years. One member was assisted from the District Fund. The sick pay for the month included 4 1/2% 2d. ordinary benefit, £21 10s. 10d. (state) and 29s. maternity benefit.

The special general meeting to consider the Juvenile Section was again adjourned until October 8, 1917.

CROPS AND STOCK ON THE HOME FARM.

RYE AND WINTER BARLEY

For the sheep farmer Rye and winter Barley form an almost indispensable crop, especially where lands are sown in quantity during the early months of the year. In the provision of food there is at times a blank between the finish of the Swedes at the end of May and the grass in June. Apart from a scarcity of food, Rye and winter Barley are useful in providing a change of food for the sheep after eating roots for some months. The wholesale rotting of the Swede crop on some farms this year proved the value of these two catch crops as food for sheep.

Rye and winter Barley should be sown as early in September as possible, to enable the plant to obtain a firm root hold of the soil before the winter rains and frost check growth. Rye sown first, usually follows late Vetches, or sheep feed or ripened winter Barley. This latter can be sown a trifle later, following early Wheat or winter Oats.

Well plough the land twice if this can be done. Where there are many weeds on the surface a

second ploughing may not be possible, as the weeds should be buried and allowed to rot. Pre-part a fine till for the seed-bed by harrowing and rolling if the soil is clodding. Drill 3 bushels of seed per acre, and once narrow after wards.

CLEANSING STUBBLES.

OWING perhaps to a shortage of labour stubbles are more infested with weeds this season than usual, including Thistles, Couch Grass, Convolvulus, Polygonum, and grasses in variety. As fast as the corn is cleared and the weather suitable—dry—shallow plough, or, what is better, use a scarifier or stout cultivator to disturb the weeds to their full depth. With drags and harrows continually move them, disintegrating the soil until the weeds can be burnt in small heaps, spreading the ashes on the surface, for the ash is a valuable stimulant to the future crop. Before the war large fires were made in convenient parts of the field, but now the lighting regulations prevent this method of burning refuse. *E. Molyneux.*

THE BREAKING UP OF GRASS LAND.

The results, as a whole, of this year's cropping on newly broken land have been very satisfactory, especially in view of the conditions attending the work last spring, the inexperience of many farmers in the breaking-up of old grass, and the unskilled labour which had often to be employed. It has been argued that it is hopeless to plough up old grass in the expectation of thereby adding materially to the nation's food resources, but the results reported in the present year do not support this contention. The failures which occurred were mostly in the south and east, and were attributed to wireworm. But most of the damage was primarily due to the drying-out of the newly ploughed soil through lack of proper tillage. Wireworm is most destructive in loose, open soils, and the best remedy is thorough consolidation of the land. The effectiveness of a firm seed bed has also been observed. The benefits due to consolidation were especially noticeable this year because of the long period of dry weather in early summer.

Land newly ploughed should not require manure, and the limited supply of fertilisers available should be reserved for old arable land. However, there are a fair number of cases in which manuring has proved useful.

LAW NOTES.

PROSECUTIONS UNDER THE SEED POTATO ORDER, 1917.

A DURHAM farmer was fined £75 by Sheriff Sym at Perth, on August 6, for selling 35 tons 16 cwt. of seed Potatoes at prices above those fixed by the Seed Potato Order. There were 151 charges, and it was stated that the defendant was liable to fines amounting to £13,200, or imprisonment for 91 years, or both. The defendant pleaded guilty. A number of other cases of a similar kind have been before the Scottish courts, but this is the highest fine yet imposed. The alternative was three months' imprisonment.

At Bow Street Police Court, before Mr. Garrett, Mr. George Howlands Barr, head of the firm of Messrs. Barr and Sons, seedsmen, 12, King Street, Covent Garden, appeared in answer to twelve adjourned summonses for having on various dates, in contravention of the Seed Potato Order, 1917, sold seed Potatoes by retail at prices in excess of the maximum price of 3d. per lb.

It was stated for the defence that Messrs. Barr had acted on the view that under a concession granted to them by the Food Controller they were entitled by their licence to sell any variety of seed Potatoes at a price not exceeding the maximum quoted in their catalogue. It was also pointed out that in the cases where Potatoes of varieties not appearing in their catalogue had been sold, these were only supplied in substitution for others mentioned in the catalogue which were no longer obtainable.

Mr. Garrett said there had been a breach of the Order and of the licence granted by the Food Controller, but that there was no

ground whatever for supposing that the defendant had acted with the deliberate intention of fixing the prices with a view to obtaining unfair profits. He ordered him to pay fines amounting to £15, and £10 10s. costs.

Horticulturists generally who know the high standing of the firm of Barr and Sons, and the esteem in which the members of the firm are held, will note with satisfaction Mr. Garrett's observations.

REPLY.

CURING AND PREPARING TOBACCO.—The following extracts are from an article I wrote some years ago on curing Tobacco, and they are equally applicable at the present time. "When the plant begins to turn yellow or becomes spotted it is time to harvest it. It should then be cut off close to the ground by a single stroke of a hatchet or sharp knife, and, after cutting, left on the ground for a short time to partially wither, when it may be handled without fear of tearing or injuring the leaves, which are next made up into bundles by threading them loosely together and hanging them on poles arranged transversely in a drying house, which may be slightly heated in damp, or ventilated in dry weather. When sufficiently dry the leaves are stripped from the stalk until about one-third of the plant is so collected, when a single leaf is twisted round the stalks to keep them together. These bundles are called "hands." While stripping it is usual to separate the leaves into their distinct qualities, the first of which includes, of course, those which are not torn or discoloured. They are then packed one upon another and subjected to heavy pressure, but care must afterwards be taken to see that no heating or fermentation takes place. In the absence of these eventualities the tobacco will keep good for a long time." *John R. Jackson, Clarendon, Lympstone, Devon.*

ANSWERS TO CORRESPONDENTS

APPLE TO BE RE-GRAFTED: *A. D. F.* We think that you would most successfully re-graft your crab tree with an Apple if you were to shorten some of the main branches and graft on these in the orthodox manner, rather than on the main trunk. If, however, the main stem is healthy, and the bark seems likely to unite satisfactorily, and, as you suggest, make a better shaped tree, since the present branches are so unsymmetrical.

APPLE SUCKERS: *Ravencourt.* As long as you continue to cut off the suckers with a knife, they will grow again, as this method leaves the base intact. The suckers are best removed with what is known as a "sucker-iron," a heavy, blunt instrument, which tears them out, including the base, which is dragged out of the stem. They may also be pulled out bodily by hand.

APPLES DISEASED: *Correspondent.* Your trees are affected with Brown Rot disease, which is illustrated in fig. 33. Particulars of this disease, with the latest methods of treatment, were published in last week's issue, p. 76.

CALIFLOWERS EATEN: *T. B.* The grubs were probably weevils. Treating the soil with bi-sulphide of carbon or Vaportite will help to get rid of them, but the best way to catch them is to go out at night with a lantern and flash it on the plants, having first spread beneath them a layer of sticky paper. The insects, surprised by the light, will drop on to the paper, and can then be destroyed. The pests may, on the other hand, have been Cabbage maggots (see p. 80, in the issue of August 25).

CINERARIAS: *Incurios.* It is not to be wondered at if new Cinerarias, very highly cultivated and carefully selected, should fail to set seed as freely as the lax-flowered *Stellata* type,

which is nearer to the natural species. The few seeds which you have saved can be sown at the present time, as their germinating properties are not likely to improve by keeping. It might help if you were to flower the plants rather later than has been your habit. Further, plants which are grown for seed are commonly cultivated in comparatively small pots, the idea being not to encourage great vigour in the plants, which would tend rather to make them produce foliage than to throw up flowers. The plants should not be exposed to hot sunning, but be slightly shaded in the middle of the day when the sun is extra hot. These and many other points can be found out by experience, and if you persevere in experimenting, you will gradually be enabled to save a greater quantity of seed.

FUNGUS ON LAWN: *J. P.* The condition you describe is probably what is known as a "fairy ring," caused by the mycelium of several species of fungus, which impoverishes the grass in a circular patch. This patch increases in size each year if the fungus is not destroyed. Choose a day when the soil is wet, and the roughly soak the ground with sulphate of iron in the proportion of one pound to a gallon and a half of water. Apply two or three times more, at intervals of about a fortnight, with a solution of half the above strength. Lifting the

therefore when the ground is next dug apply a good dressing of some ground insecticide, such as Vaportite.

NAMES OF PLANTS: *W. M. F.* We do not undertake to name varieties of Roses.—*Roslyn.* *Pilea Spruceana*, a native of Peru.—*E. H. M.* (*Carthamus tinctorius* (Saffron Thistle)).

NERITRA DEPRESSA: *J. P.* You do not state your treatment of the plants, but it seems possible that you have grown them in a very warm house, containing too much atmospheric moisture. The species needs plenty of sunlight, and is best grown in a cool frame or greenhouse during the winter, where the temperature is 40° to 45°. In the spring the plants should be moved to a light house with a temperature of 50° to 55°, and given moisture in moderation. It is only necessary to shade the plants during very hot weather, and then only in the middle of the day. They grow best in light, sandy loam.

POTATOS: *C. H.* The Potatoes are affected by wart disease (*Oedomyces leproides*). Notify the attack of this disease to the Board of Agriculture, 3, St. James's Square, London, S.W., from whom you will receive a leaflet telling you what treatment to adopt.—*B. A. H.* We do not undertake to name Potatoes. It is almost impossible to do so from tubers only; it is necessary to see also the habit of growth,

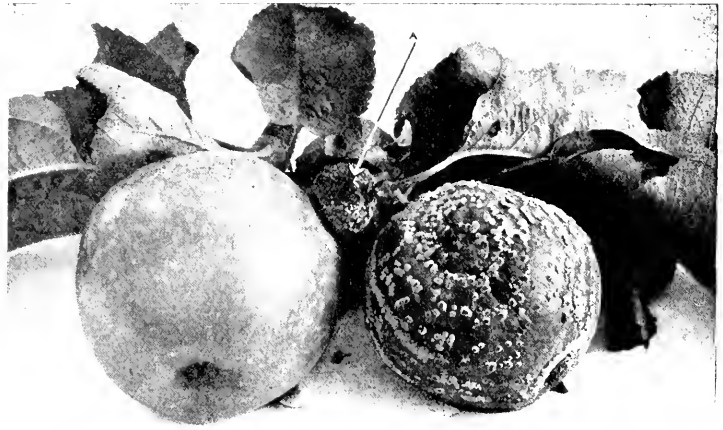


FIG. 33.—BROWN ROT DISEASE OF APPLE.

A moulded fruit of the previous season affecting sound fruits of the present year.

turf with a fork enables the solution to penetrate the ground more readily. Take care to treat the ground just outside the ring, as the fungus will probably have penetrated further than the actual disfigurement of the turf.

GALLED RUSH: *M. J. H.* The Rush you sent is *Junca sylvaticus*, Reichard (syn. *J. acutiflorus*, Ehrhart). It is not fasciated in the ordinary sense, but galled by an insect named *Lixia punctum*, Latr., and in this respect resembles the wheat ear lamination. Each cluster of leaves contains one larva of the insect, but a stem may bear three to eight clusters of leaves. Yours bore six, and the leaves were tinted with red, but they may be green when much covered with Rushes, grasses, and other vegetation. Other Rushes may be galled in the same way, including *J. articulatus*, of Linnaeus (syn. *J. limnocarpus*, of Ehrhart), *J. bulbosus*, of Linnaeus, and *J. squarrosus*, of Linnaeus. The first two, namely, *J. sylvaticus* and *J. articulatus*, being tall, are used for thatching corn stacks in the north of Scotland, where they are known as sprots. Bogs are sometimes entirely covered with them, and the galls may be found there or on moors or heaths that are more dry but peaty.

GUBBS: *W. G.* The grubs are "cut-worms," the larvae of the Heart-and-dart Moth. The moth lays her eggs on leaves near the ground,

height of haulm, colour of flowers, and other details only to be determined by someone on the spot.—*P. E. N.* Allow the plants to become mature before lifting the tubers, which are always smaller than those raised from established varieties. They can be kept, as you suggest, in sand, but examine them from time to time, and if they seem to be deteriorating it will show that the conditions are too moist, or too dry, and should be altered. As there do not seem to be many of the seedling tubers you might make a small clamp in a dry part of the garden, such as under a wall facing east. You will find directions for making a clamp in the issue for August 25, page 75.

TOMATOS: *Miss C.* Your Tomatos are evidently attacked by the fungus *Cladosporium fulvum*, or Leaf Mould. Pick off and burn all the diseased leaves, including all which have little brown spots on the underside, and keep the house in which the plants are growing well ventilated. Next season spray the plants early in their growth with weak Bordeaux mixture or potassium sulphide, as a preventive.

Communications Received.—R. A., J. C. B., W. C. P., Brynderwen—Old Subscriber, W. A., J. E. M., F. S., B. L., W. F. R., A. O., W., G. O., W. A. C.

By Special Appointment to



His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

NOTICE TO SEEDSMEN, NURSERYMEN, MARKET GARDENERS, FRUIT-GROWERS, HORTICULTURAL BUILDERS, BOILER MAKERS, COAL MERCHANTS, AND SUNDRIESMEN.

Revision forms for the "Gardeners' Chronicle" HORTICULTURAL DIRECTORY have been posted to all the above whose names are already in the Directory. In order to facilitate the early publication of the revised edition for 1918, it is requested that the forms, with the necessary corrections, be returned **AS SOON AS POSSIBLE**. It is only by the co-operation of all interested in Horticulture that the new edition of this invaluable work of reference can be made perfect.

Anyone in the above categories who has failed to receive a form should send for one to

THE EDITOR, Horticultural Directory,
41, Wellington St., Strand, London, W.C. 2.

SALE BY AUCTION.

BULBS.

MESSRS. PROTHEROE & MORRIS are holding Sales of Bulbs every Monday, Wednesday and Friday. Sixpence stamps will ensure a supply of the latest catalogues.—AUCTION ROOMS, 67 and 68, Cheapside, London.

TRADE SALES OF HOME-GROWN BULBS.

Every Wednesday at 1 o'clock.

The sale on September 12 will include thousands of Narcissus in all the best named varieties for early forcing; large consignments of Polyanthus of sorts in sacks is received; early and late-flowering Tulips, Fescuas, Snowdrops, Anemones, Scillas, Lilium candidum, Acemils, early-flowering Gladioli, Beards of Iris, 200 Kentia and Gees Palms, 15 to 20, Lilium longiflorum (London), in cases, &c.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2. Catalogues forwarded on application.

LEE, S.E.

GREAT ANNUAL TRADE SALE.

By order of Messrs B. Mallot & Sons, **MESSRS. PROTHEROE & MORRIS** will sell by Auction at the **BURN TASH ROAD NURSERIES, LEE, S.E.,**

On Tuesday, September 11th, at 11 o'clock,

a remarkably well-grown Stock of **Winter-Blooming Heaths, Stove and Greenhouse Plants,** comprising

20,000 Erica myalis, gracilis, in emalls, per-hita alba, &c. 12,000 Ferns of sorts, 2,000 Kentias, in various sizes, 1,000 Boronias, 1,000 Cyclamen, 1,000 Begonias Glorie de Hollande, 4,000 Gimpelias, 500 Epianths, 500 Acanthas, also quantities of Amelopsis, Hydrangeas, Dracaenas, Gardenias, Camellias, Chrysanthemums, and other stock.

Catalogues may be obtained at the Nurseries, and of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

UPPER EDMONTON.

Three minutes from Angel Road and eight minutes from Silver Street Stations, G.E.R.

CLEARANCE SALE. **MESSRS. PROTHEROE & MORRIS** are instructed by Messrs. H. B. May & Sons, Ltd., who are concentrating at their Chingford Nurseries, to sell by auction on the premises, Gemtula Road, 1,000 Palms of various sizes, large quantities of Ferns, comprising: *Platanus minor*, *Nephrolepis*, *Saxifraga*, and others, &c.; &c.; Genietis, *Cyclamen*, *Vepitagus plumosus* and *Sprengeri*, *Aralias*, *Vernonia*, *Solanums* (well brined), *Eraniums*, *Golden Privet*, &c.; 5 Market Vases, 4,000 ft. 3in. and 4in. Hot Water Piping, and sundry other goods.

On Wednesday, September 12th, 1917,

at 11.30 a.m. precisely.

May be viewed any day previous to the sale. Catalogues may be had on the premises or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

THE ESTATE OF THE LATE J. S. CHARLES, Esq., **PELSALL, STAFFORDSHIRE.**

THE PELSALL HALL ESTATE of 247 a.c.s., which will be offered for Sale by Auction by

Messrs. WINTERTON & SONS

at the Stock Hotel, Walsall, on TUESDAY, October 2nd, 1917, at 6 o'clock, will include (lot 45)

A VALUABLE MARKET GARDEN.

known as "RAILWOOD GARDENS," Pelsall, a Wood with a Cottage and GREENHOUSES thereon, about 5 minutes from station, containing an area of about 7 acres.

The Gardens are in a high state of Cult. Various, and the Three Greenhouses measure (1) 80ft. long by 20ft. wide, (2) 60ft. long by 20ft. wide, (3) 50ft. long by 40ft. wide, heated by two cast-iron saddle boilers, which can be separately or jointly worked. The Houses are well built, with extra strong rafters, and are covered with double glass.

Purchaser will be required to take to Stock in Trade, Stocks, Tools, &c. Possession 1st November or earlier by arrangement.

For further particulars, apply to the Auctioneers, Lichfield, and Darwell Street, Walsall, or Messrs. H. Russell & Son, Solicitors, Lichfield.

SURBITON.

The remaining contents of the residence, including Outdoor Effluents.

NIGHTINGALE, PHILLIPS & PAGE will Sell by Auction at "Albany House," Surbiton Hill Road.

On Monday, September 17th,

and following day at one o'clock, the high-class

FURNITURE

and Effects, Garden Implements, Tools, Pot Lights, Chicken Coops, and a large quantity

GREENHOUSE PLANTS, ORCHIDS, &c. On view the Friday and Saturday preceding. Catalogues of the Auctioneers, Eagle Chambers, Kingston-on-Thames. Phone 235.

BUSINESS WANTED.

WANTED premises to London or large town, MARKET GARDEN, with about 6000 of Glass, in first-class condition. Full particulars to H. D., 20, Victoria Street, London, S.W. 1.

BUSINESS GARD.

R. H. S. EXAM.—Correspondence class, preparing Gardeners and students, start October. brilliant past records: prospectus. MEDICALIST, Pictoria, Letheringsett, Hants, Norfolk.

SPECIAL NOTICES.

MR. R. GREENFIELD begs to remind all friends that, although engaged on National Service work he continues Midland representative to John Peet & Son. Orders this season will be very much appreciated, and may be directed either to the firm at West Norwood, or to Mr. R. GREENFIELD, 61, Radford Road, Leamington Spa.

THE OLD ESTABLISHED SEED & BULB BUSINESS formed on for sixty years in BARNETT STREET, LIVERPOOL, will in future be styled

KER'S, LTD.

There will be no change in the Management. **MR. ROBT. B. KER** will have associated with him **MR. ROBT. W. KING** and **MR. T. LAKE BAKER**. Telephone: Royal 3066. Write for List.

PLANTS, &c., WANTED.

WANTED choice Fruit, Flowers, and Vegetables, best market prices returned, boxes, &c. and surplus stock from Gardens accepted.—**MORRE & CO.**, 150-152 Finchley Road, N.W. 3.

WANTED, 1,000 Large ASPIDISTRAS. See old plants suitable for stock, cash or exchange. See other advertisements; catalogues free.—**SMITH**, London Fern Nursery, Loughborough Junction, London, S.W.

MISCELLANEOUS.

THEY'RE NOT STICKY.

Beau's is the only adhesive from any stickiness, and, when used, is completely invisible. It will keep the hardest man or set of hundreds of letters, name-cards, and other outdoor mail, window, and other things; them it means they being weather-proof. You ought to wear them if you want to keep dry in any deluge. The Beau's Booklet will help you to choose the style you need. Chisholm's Cards from the old. Men's from 10s., Ladies' Smart outfits, 45. Your money back if you are not satisfied with our service. Send a postcard today for our Free Booklet of "Weather-Proofing." Send now, but do not forget to **BEAU'S S. LTD., 60, BEACON BUILDINGS, SOUTH SHIELDS.** (2)

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

PRIVATE.

WANTED, HEAD WORKING GARDENER—one who others are kept, must have thorough knowledge of all branches of Gardening, including Potting, Pruning, Mowing, Fencing, and all other duties. References and other particulars, Book Garden, &c., 25, Essex Street, and 10, Park Road, give in full to our confidential Secretary, and have good references. Write, stating age, experience, &c., and wages required, to **Z. O. 2, 288, S. B. House, 2, Backhill Street, E.C. 5.**

WANTED, 24hr. first-rate HEAD WORKING GARDENER—a single-handed, or married, man, with 10 years' experience in all kinds of large Houses, and Pleasure Grounds (long under). State age, weight, wages, references.—**WINEY**, Ruckington Hill, Gosport.

WANTED, immediately, HEAD WORKING GARDENER, excellent cottage and garden. Walsall. State age and all particulars to **ANSTEE**, Show House, Dinnington.

WANTED, HEAD WORKING GARDENER, good all-round man; married, intelligible, and under 40 years of age, country, and cottage and wages about 30s.—Write fully, to **HARDY**, Falbeck, near Grantham.

GARDENER wanted to take charge four Greenhouses and private Garden, with experience Anne Ross, Chambers, Lambtons, &c.—**ERNEST KING**, 45, Victoria, Clapham, S.W.

WANTED, SINGLE HANDED WORKING GARDENER, small amount of Glass, good cottage. **WYNHAM SMITH**, Stratford, Hereford.

GARDENER—Wanted, a good man for general Garden work, including for Service or disengaged soldier, wages 30s. per week and modern cottage rent free if married, must have first-class character. Apply with full particulars, to **HEAD GARDENER**, Garden Manor, near Watford, Herts.

WANTED, married GARDENER, no timber, residential, interview necessary. Apply at 11, Friars, &c., to **A. W. MILLER**, Forest Hill House School, Home Oak Road, Forest Hill, S.E.

WANTED, SECOND GARDENER, intelligible, experienced Inside, good wages to suit, if married, good cottage found. For particulars, apply **F. G. GERRISH**, Penderly Manor, Gardens, Tring.

WANTED, UNDER GARDENER, single, intelligible, boots, knives, &c.; good wages. Apply, **MRS. DODD**, Church Hill, Pictoria, Surrey.

WANTED, UNDER GARDENER for outside. Apply, stating age, wages required, to **J. MANSELL**, Bishamstead Hill Gardens, Birkhamstead, Herts.

REQUIRED, Strong Lad as UNDER GARDENER, age 17, room provided, others kept. State age and particulars of experience to **HON. MRS. C. COLDRIDGE**, Nonchuck Hall, Chesham, Surrey.

WANTED, FOREMAN, competent man; intelligible, 2nd class and cottage, also three or four extra hands. Full particulars, apply, **W. HOBBS**, The Lodge Gardens, H. Esq., near Madingley.

WANTED, FOREMAN or good capable Man, to take charge of Glass, 30s. per week; for extra duty and overtime paid. **BENNETT**, Snelshill Road, Ashburton, Devonshire.

WANTED, FOREMAN; good general experience, wages 25s., Boots, &c.; also strong LAD for 12 to 15 hours, both day and extra for Sunday duty. Apply, **HOWARD**, Bannan & Green Gardens, Westbury, Wiltshire.

WANTED, FOREMAN, good all-round, to take charge of House and superintend outside work of Gardeners abroad in Army, single, intelligible, 2nd class, good boots, &c.; family, to **A. HASTON**, Birmingham Hall, Aylesford, Suffolk.

WANTED, JOURNEYMAN, for Inside & Outside work, intelligible, age 20 to 25, wages 25s. per week, with Boots, &c. Apply, **W. THOMAS**, 11, J. FOSTER, Grantham, Northamptonshire, Grantham, Leics.

WANTED, good JOURNEYMAN, to assist in House, 1st class, or suitable man; boots and wages for full particulars, apply to **THOMAS STUBBS**, Chesham, Bucks, St. Albans.

GOOD JOURNEYMAN wanted; intelligible, for House or outside, wages 28s., with Boots, &c., and vegetables. Full particulars to **HON. MRS. C. COLDRIDGE**, Nonchuck Hall, Chesham, Surrey.

WANTED, JOURNEYMAN (intelligible), for 10 hours, wages 24s. per week, Boots and vegetables, day and extra. **C. FAIR**, Somerfield, Leamington, Kent.

WANTED, JOURNEYMAN GARDENER, or disengaged soldier with general experience, wages 25s. per week, with Boots and other references. Single, 4th class, good extra. Apply with full particulars to **HEAD GARDENER**, Lambton Castle, Fence House, Durham.

WANTED, JOURNEYMAN (Inside and Outside) for 10 hours, wages 24s. and vegetables, apply, with full particulars, to **H. SWAIN**, The Gardens, Walton Park, Boreham, Bucks.

WANTED, experienced MAN for 10 hours, 1st class Garden work, wages 25s. per week, with Boots, &c. State wages, &c., for particulars to **GARDENER**, Mill House, Boreham, Essex.

GARDENER and HANDYMAN wanted; man sharp in. Apply, **MR. HUTCHINGS**, The Orchard, Dulwich Common, Dulwich.

WANTED, four LADY GARDENERS; one to manage and two partially trained, own cottages, ready and light, near London. Good testimonials, state names asked, and full particulars, to **MRS. N. PARK PLACE**, Hensley on Thames.

WANTED, LADY GARDENER, with some experience, good wages, help given.—**TIDD**, Chesham, Ashley Rise, Walton-on-Thames.

PHENOMENAL SUCCESS OF BULL'S SHRED.

FUMIGATING REVOLUTIONISED.

No Methylated Spirit or Apparatus required.
 MESSRS. GODFREY & SON, of Exmouth, write: "Enclosed please find cheque and sent at once 12 packets Fumigating Shred. We put it to the test of all."
 MR. H. WHATELEY, of Kewborough, writes: "Will you please send on another 1 cwt. of Shred for fumigating."

1 lb. sufficient to fumigate 20,000 cubic feet of space above double strength 5/-. Specially recommended to large growers
 Sufficient to fumigate 1,500 cubic feet of space 6d. per pkt.
 " " " 10,000 " " " 2/6 "

Sold by all Seedsmen and Nurserymen throughout the United Kingdom. Manufactured solely by—

BULL'S PLANT FOOD CO.,
 536, King's Road, Chelsea, London, S.W.



IMPORTANT. Please write for a Catalogue, as the Paper Commission only allow us to send to those who apply—
LAXTON BROTHERS, BEDFORD.

FLOWERING BULBS.

A large and comprehensive Stock of

Choice Home Grown Bulbs

Descriptive Catalogue Free.

DICKSONS

(Limited)
 Bulb Growers and Merchants,
CHESTER.

WASP-PROOF ENVELOPES

For Protecting Grapes, Fences, Nectarines, Peas, Apples, etc.
 DIAM. WHEN OPEN—4 5 6 7 7 20 9 12 12 18 in. deep
 No. 1 Hexagon ... 19 6 20 36 51 75 99 98
 No. 2 Hexagon ... 25 31 42 69 90 ...
 Soft White Tiffany 15 20 24 31 60 ...

BROWN MINERALISED TIFFANY BAGS WITH STRING
 Sizes (measured flat) 7 1/2 10 12 17 6; 9 7/8 7 in. at 22 6
 11 1/2 x 8 in. at 25/- per gross.

WASP HEXAGON NETTING.
 No. 1 Strength ... 1 1/2 15 110 2 6 3 per yd. 100
 No. 2 Strength ... 1 14 18 2 2 3 3 ...
 (extra strong)

WASP DESTROYER FOR TAKING NESTS.
 Powder 1/6 and 2/6 per bottle.

All other prices 2/6 per gross or 1/6 per dozen, packed on 5/- orders.
 Parcels of every Horticultural Requisite Specified Lists by Wm. WOOD & SON, Ltd., Wood Green, LONDON, N. 22
 Phone Palmer's Green 577.
 Tigras. "Fungibeta" Wood, London.

FRUIT IN THE GARDEN.

Root up useless shade trees and unproductive Shrubs, and replace with Fruit in these times, when food is all important.

Specially grown trees of
APPLES, PEARS, PLUMS,

of fine quality for the Walls, Edging or Vegetable and Flower Borders. Many of fruiting size. Also

FINE STANDARD TREES

A grand lot of Peaches, Nectarines and Cherries for the House and Garden Walls, also

BUSH FRUIT TREES.

Catalogue free on request and special quotations given on hearing exact requirements.

STUART LOW CO., BUSH HILL PARK, MIDDLESEX.

BLACK CURRANT BUD MITE.

Are your bushes free of this incurable pest? If not Dazzling "SEABROOK'S BLACK" Currant, the only proved mite resister.
 This variety has also every other good quality, being the heaviest copper and stoutest grower, producing large, firm berries.
 Young Bushes 6/- and 8/- per dozen.
W. SEABROOK & SONS,
 Fruit Tree & Rose Nurseries, CHELMSFORD.

SANKEY'S FAMOUS GARDEN POTS
 The BEST and Cheapest.
 State quantity of each size required and have "catalogue" sent in return (carriage & freight) amounts to half value of goods, or write for Price List, free.
 SPECIAL POTTS of all descriptions. Bush Plants and Ferns sent from 2d. each.
RICHARD SANKEY & SON, LTD.
 Bulwell Potteries, NOTTINGHAM.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.

STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
 Kindly send for Catalogue.

JAMES CYPHER & SONS,
 Exotic Nurseries, CHELTENHAM.

TURF LOAM.

Very Fibrous Yellow Turf Loam

FOR VINE BORDERS, CARMATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid or Delivered

A. B. JOHNSTON,
 New Park, Cranleigh, SURREY.

BATH'S HOME-GROWN BULBS.

BUY YOUR BULBS DIRECT FROM BATH'S BULB FARMS.

We have for years been very large growers of Bulbs, and can supply Tulips, Narcissis, Crocus, etc., in first-class quality, and probably in greater variety than any other firm. Write for catalogue to-day. Awarded GOLD MEDAL for Tulips by Royal Horticultural Society, April, 1917.

POPULAR EARLY FORCING TULIPS.

(These are very scarce).

CRAMOISIE BRILLANT. Dazzling vermilion-scarlet	1/6	10/6
KEIZERSKROON. Brilliant scarlet, edged yellow...	2/9	10/6
LA GRANDEUR. Brilliant scarlet	1/9	12/6
LA REINE. Pure white, flushed pink	2/1	15/-
MOUCHERON. Deep glowing scarlet	1/8	12/6
PRESTIGE LINCOLN. Distinct light violet	2/-	14/-
PRINCE OF AUSTRIA. Superb orange-scarlet	2/3	15/-
PRINCE DE LIGNY. Deep golden yellow	1/9	12/6
PRINCESS HELENE. The finest white tulips for forcing	2/3	15/-
ROSE GRIS DE LIN. White, shaded rose	2/3	16/-
ROSE OF HOLLAND. White, flushed pink	1/6	10/6
THOS. MOORE. Dark terra-cotta	2/-	14/-
WHITE SWAN. Pure white	2/-	14/-
YELLOW PRINCE. Pure off-yellow	2/-	14/-

EARLY DOUBLE TULIPS.

LADY PALMERSTON. Deep rose, flushed white	1/9	12/6
MURILLO. White, flushed pink	2/3	18/-

POPULAR COTTAGE (MAY-FLOWERING) TULIPS.

BOUTON D'OR. Very deep yellow	1/8	10/6
GESMILIA. LUTE. Bright yellow	1/6	10/6
Flowers	1/6	10/6
GOLDEN CROWN. Deep yellow, red edge	1/3	8/-
INGLESBOMB PINK. Pink, shading to buff and white	1/6	10/6
MACROSYLLA. Intense crimson-scarlet	1/1	6/-
PICTOETE. White, edged cerise	1/3	8/6
FINEST MIXED TULIPS, all sections, an extra fine mixture	5/-	

POPULAR DARWIN TULIPS.

AOOLPHE VAN DEN NEEDE. One of the best brilliant scarlets	1/9	12/6
BARONNE DE LA TONNAYE. Deep rose, margined light pink	1/9	12/6
CLARA BUTT. Delicate salmon-rose, the most beautiful scarlet	1/6	10/6
Good strong flowering bulbs for bedding	1/7	7/6
G. DE GOROUSS. Dazzling Turkey red, very early flowering	1/6	10/6
LA PETITE BLONDINE. Lique, shaded blue	1/9	12/6
LOVELINESS. Beautiful satiny-rose	1/9	12/6
MARGARET. Silvery white, interior rose-pink	1/3	9/-
MR. FARGONNEC SANDERS. Rich cochineal-red, white base	2/-	16/-
MRS. POTTER PALMER. Glowing purple-violet	2/3	16/-
PRIDE OF HAARLEM. Rich glossy cerise, early	1/9	12/6
REV. EWBANK. Brilliant yellow and light edged	2/6	17/6
SAT-ON-KING. Dazzling soft scarlet, white base	1/6	10/6
THE SULTAN. Glossy maroon-black	1/9	12/6
WHITE QUEEN. White shading to blush, a grand variety	2/3	16/-
WM. COPLAND (Sweet Lavender) Blush-lilac, the best of all for forcing	2/6	17/6
MIXED DARWINS, from all the best named varieties	1/2	8/-

POPULAR VARIETIES, DAFFODILS (Narcissis).

BARRI CONSPICUOUS. Primrose, orange-cup edged	...	4/6
C. J. BACKHOUSE. Yellow, orange-scarlet cup	1/6	10/6
EMPEROR. Yellow trumpet, top size	1/6	10/6
OO. Good strong flowering bulbs	...	12 8/8
EMPRESS. White perianth, yellow trumpet, top size	...	11 12/6
OO. Good strong flowering bulbs	...	12 9/8
FAIRY QUEEN. Pure white, a lovely variety	1/9	12/6
GOLDEN SPUR. Deep yellow, grand border	1/8	12/6
OO. Flowering bulbs	1/2	4/-
GRANDE. Large white, yellow trumpet	1/7	7/6
HENRY IRVING. Deep yellow trumpet, early forer	1/6	10/6
MRS. LANGTRY. White, cup edged yellow	1/7	7/6
ORATUS. The early forcing Poet-Narcissus	9/6	5/6
OO. Good flowering	7/1	4/-
POETICUS (Dwarfing Eye). The late variety	...	5/3
PRINCEPS. Yellow trumpet and sulphur perianth	10/6	5/-
SIR WALKER. Bright yellow, very large flower	1/6	10/6
OO. Strong flowering bulbs	1/7	7/6
VICTORIA. White with yellow trumpet, extra fine	1/9	12/6
OLD ENGLISH DOUBLE DAFFODIL (Teloneus Plenus)	1/9	12/6
DOUBLE WHITE POETICUS.	7/1	4/6

CROCUS.

Very fine mixed, all colours	...	2/9 5/-
------------------------------	-----	---------

Complete Illustrated Catalogue with Cultural Notes free on application.

R. H. BATH, Ltd. (Dept. A.)
 The Flower Farms, WISBECH, Cambs.

THE

Gardeners' Chronicle

No. 1002.—SATURDAY, SEPTEMBER 8, 1917.

CONTENTS.

Euostoma Russellianum .. 96	Rosary, the—
Furn. crops and stock on the home .. 103	Novelties in climbing .. 95
Food production, on increased—	Roses .. 95
Alderholt, vegetable production at .. 97	Samoa and Tonga Islands, the .. 100
Claremont, food production at .. 98	Liverpool Horticultural .. 103
France, garden notes from—	Local .. 103
A garden village .. 96	Manchester and North of England Orchid .. 103
Fruit crops, remarks on the .. 101	Royal Horticultural .. 103
Galloway garden, notes from a .. 95	Tea plants .. 103
Gibson, Mr. James .. 100	Trials at Wisley .. 103
Grapes without fire-heat .. 103	Veronica lobeloides .. 103
Hops, science of .. 100	Vilmorin, the late .. 103
Notes from a Galloway garden .. 95	Watteville .. 103
Ovalis corymbosa .. 103	Week's work, the—
Panama hat "Palm," the .. 100	Asiatic, the .. 96
Potatoes, degeneration in 190 .. 99	Flower garden, the .. 96
	Fruits under glass .. 96
	Hardy fruit garden, the .. 99
	Kitchen garden, the .. 98
	Orchid houses, the .. 98
	Plants under glass .. 98

ILLUSTRATIONS.

Euostoma Russellianum	97
Euostoma Russellianum var. Ellisi	101
Polygonum polystachyum	58

NOTES FROM A GALLOWAY GARDEN.—X.*

MURMURUS have been heard again the profession of Rambler and Wichuraiana Roses; people complain that Dorothy Perkins is too much with us, that Blush Rambler takes up too much room. For my part, I cannot but feel grateful for the gaiety which these cheap and easy plants have imparted to suburban and cottage gardens. There are, undoubtedly, some inferior varieties that should be struck out of the long list, such as the highly objectionable Crimson Rambler; but there are three with which I would not part except under duress—Léontine Goyale, American Pillar, and Carmine Pillar—and to proscribe Dorothy Perkins and Hiawatha would rob the wayside of many a cascade of clear rose and crimson.

Autumn is now at hand, and one sighs for the profusion of flowering shrubs which gladdened garden and woodland in spring and early summer. I was once asked by the lady of a lordly demesne in the north to take counsel with her gardener about improving the grounds. Seeing that the situation was close to the sea, well sheltered from the worst winds, and that the soil was favourable, it seemed to be the very place for choice species of Rhododendrons. I said so, but was met by the objection "the worst of Rhododendrons is that they will not flower when the family is at home." I am afraid there is no remedy for the sad tactlessness of the genus; but there really is no reason for scarcity of blossom on other shrubs in autumn if some care be taken to provide for it. The following list, though not exhaustive, contains the chief shrubs on which we rely for display from the beginning of August onwards. It is true that in a more southerly latitude than ours, some of these plants are at their best a fortnight or three weeks earlier than in Scotland; but on the other hand there are desirable shrubs like Hibiscus syriacus, Caryopteris Mastacanthus, and Parosela atriplicifolia, which flower too late to be relied on in a northern climate.

* w. Adonhis megacarpus, scarlet and yellow.
w. Absolutus purple, white and pink.
w. Arabis chinensis, white.
w. Budding variegata magnifica, purple.
w. Berberis vulgaris (variegata), crimson.
w. Ceanothus Gloriosae Venouillei, lavender.

* Previous articles appeared in the issues for Jan. 13, Feb. 17, Mar. 10, April 14, April 28, June 2, June 20, July 21, and Aug. 18, 1917.

- Clematis flammula, white.
- Clematis Jackmanii, purple.
- Clematis ligularis and Clematis, white, lavender &c.
- Clematis recta, crimson.
- Cercidion tomentosum, red and white.
- Calceolabelliosus, yellow.
- Canaria terminalis, yellow.
- Comus paniculatus, white.
- Desfontainia spicata, Dimer, scarlet and yellow.
- Eschscholcus scaber, scarlet and yellow.
- Erya vagans, pink and white.
- Erythraea corallifolia, coral-red.
- Europhora paniculata, purple-white.
- Festuca japonica, white.
- Fuchsia globosa, crimson and purple.
- Fuchsia Robertsonii, crimson and purple.
- Hydrangea arborescens, var. grandiflora, white.
- Hydrangea arborescens, var. grandiflora, white.
- Hydrangea paniculata, white.
- Hydrangea Thunbergii, pink and blue.
- Hypericum Hookerianum, yellow.
- Hypericum Meeboldii, yellow.
- Hypericum patulum, yellow.
- Hypericum triflorum, yellow.
- Indigofera Gerardiana, pink.
- Limonium officinale, white.
- Lychnis viscaria, white.
- Lespedeza crotolaria, light purple.
- Lycopersicon, a light yellow and red.
- Lythrum hyssopus, white.
- Malva coccinea, white.
- Malva fimbriata, white.
- Obolus Hispidus, white.
- Polemonis japonicus, scarlet.
- Rosa laetifolia, white and gold.
- Spergulum junceum, yellow.
- Spiraea Atkinsonii, white.
- Spiraea Douglasii, pink.
- Spiraea japonica, rose.
- Veronica japonica, var. cincta, purple-lobelia to white.
- Volubilis coccinea, white.

Plants requiring the support and protection of a wall have not been prefixed. Besides those in the list there is a Spiraea, introduced from China by Mr. Wilson, whoseof I have not yet the name. It is a noble shrub, sending up leading stems to a height of 15 feet, with a long succession of splendid panicles of snowy bloom.

I have carefully excluded from this list all the Knot-woods, though two or three of the large species bear beautiful flowers in autumn. It was inevitable that among the host of new species brought from Asia during the past fifty years there should be many scenes and robbers. It was under an evil star that Polygonum cuspidatum, P. polystachyum and P. sachalinense landed on our shores. Bitterly have some of us paid for our stupidity in admitting them to the borders, picking out choice places for them as for growths gracious and good, and grievously have our backs arched after hours of toil in vain attempts to rid the soil of the many-jointed ones. They are as troublesome in wood and as in the garden, overtopping open spaces with incredible rapidity, and forming or shading priceless young Rhododendrons and other shrubs. P. polystachyum (fig. 34) certainly is a lovely thing when it clothes itself in late September with a tracery of white lace-work, but the price it exacts for the display is exorbitant.

In a former paper I referred to the beauty of spontaneous hybrids between Primulas Bulleyana, polycorollata, and japonica. Some very pretty hybrids appear in the borders from time to time arising from a cross between the yellow-flowered perennial Foxglove, Digitalis ambigua, and the wild biennial Foxglove, D. purpurea. The flowers are in varying shades of apricot and rose. Hitherto I have never succeeded in finding seed on these crosses, although some of them tend to perennial habit, but this year there are some capsule swelling in a promising manner upon one plant.

It is not many years since the Himalayan Roseana purpurea was the only species cultivated in this country, and very much so it valued by those who care for distinct types. Some of the new species obtained by Boss, & Co., are still more desirable. R. caudoides has proved a treasure, and we have raised a good stock of it from seed, whoseof it ripens abundance. The plant flowers in June, and now has almost an exact later counterpart in one sent out by Boss under the name of August Beauty. The colour of the flowers is the same pale sulphur; the plant has the same erect habit and clasping stem-leaves, but it grows some 6 inches taller than the other. A very pleasing contrast is

secured by planting alongside of it Adenophora megalantha, with light blue bells. Roseana capitata is another August-blooming species of great merit, its rich, royal purple rather putting one out of concert with the old R. purpurea, which flowers at the same time. All species have a similar apparatus of levers for bringing down the anthers on the lack of an intrusive bee, thereby securing cross-fertilisation. Also, all species have the peculiarity of not showing above ground until they are ready to flower. Their dwelling place, therefore, should be marked by a substantial label, else the roots are sure to be injured or thrown out in weeding.

Two other late-flowering perennials claim notice in the August border, and are not to be seen in as many gardens as their merit entitles them to be. One is the North American Stenanthium robustum, a liliaceous plant, sending up its long white plumes to a height of 4 feet, commanding the attention of visitors unfamiliar with it. It rejoices in moist soil, being impatient of heat and drought. The other plant is what we used to know as Rudbeckia pinnata, but are now bidden to call Lappachys. It bears citron-yellow blossoms on wiry stems 5 feet high, and has the grace and self-restraint wherein so many of the true Rudbeckias are deficient. The flowers look like a light of yellow butterflies dancing in the breeze. Herbert Marshall, Monroth.

THE ROSARY.

NOVELTIES IN CLIMBING AND PILLAR ROSES.

The commendable example of Mr. Reginald Cory in offering a series of ten-guinea cups, one to be awarded each year, to the best new seedling Climbing Rose will doubtless be the means of stimulating hybridists in the production of novel types.

Perhaps the definition of what is truly a climber has yet to be made, for surely such a Rose as Paul's Lemon Pillar will climb quite as freely as the ordinary amateur would desire, and many considered this Rose well worthy of the honour of a cup.

The raising of new Roses, especially climbers, seems to be work for the amateur. It was an amateur, Dr. Van Fleet, of the Department of Agriculture, Washington, who raised American Pillar, one of the grandest productions of modern times. This variety originated from a cross between R. Wichuraiana and R. setigera, and all who know the latter Rose will readily perceive that it has imparted its thick, leathery foliage to American Pillar. If a cross between two species can give such a result, what may we not expect in the near future? Another excellent variety from Dr. Van Fleet is one named after himself, and obtained from R. Wichuraiana x H.T. Souvenir du Président Carnot. The flowers are a smaller reproduction of the H.T., and it is a most valuable variety, with mildew-proof foliage. Silver Moon was also from the same raiser, and here we have R. sinica (Chowkei Rose) employed as pollen parent upon R. Wichuraiana, the result being a semi-single flower of large size and beautiful, mildew-proof foliage.

Dr. Williams has been successful in raising some very fine climbers, one especially, Emily Gray, having secured for him the Cory Cup. The variety is a glorified Shower of Gold, and we are all anxious to have it in our collections. I believe that it is to be distributed by Messrs. R. R. Cant and Sons.

Emily Gray, if I mistake not, is the result of a cross between Jersey Beauty and the China Tea, Comtesse du Cayla. When we remember that Jersey Beauty originated from a cross between R. Wichuraiana and the Tea Rose Pierre des Jardins, we can understand the fine golden flowers of Emily Gray.

Another Rambler from Dr. Williams is Lucy Williams. In this case Jersey Beauty was

crossed with the H.T. Edward Mowley. Although the latter has imparted its glorious colour, the influence of the seed parent, Jersey Beauty, has deprived it of a perpetual-flowering character.

Another eminent British raiser, the Rev. J. Pemberton, is working upon other lines. He is evidently endeavouring to give us perpetual-flowering pillar Roses, and his productions, such as Danae, Moonlight, Clytemnestra, and Pax are worthy additions to the garden. I surmise that Mr. Pemberton has been working upon the perpetual-flowering variety Trier, using probably Hybrid Teas or Teas as pollen parents. Perhaps Pax may have originated from Trier \times Madame d'Arblay. I consider it well worthy of a Gold Medal, certainly more so than Moonlight. These semi-climbing, perpetual-flowering, shrub-like Roses are to be welcomed, and it would encourage their raising if some enthusiast would offer a cup. *Walter E. Lea, Eastwood, Leigh-on-Sea.*

seen no instance of any attempt to carry out deep tillage; yet the crops are very good.

The spade employed in digging differs from that used in England. It has a bright blade of good steel, about 11 inches in depth and 8 in width, tapering slightly from hilt to base. The blade is built at a slight angle into a stout, straight, long handle, without "crutch" or "eye." As the soil is light, very little foot work is needed, so that the work is quickly done.

As the plots are rather small, few Potatoes are grown. The chief crop is Haricot Beans. The ordinary French Bean as we know it in England is not often grown, and only in a few instances do we find Runner Beans. Broad Beans are not much in favour. Most of the Peas grown are dwarf, the pods being small, though plentiful and well filled. Nearly every plot has one of its four sides edged deeply with Sorrel. Shallots are grown more generally than Onions, and Garlic to a considerable extent. As one would expect, Lettuces are largely grown, being often used as

EUSTOMA RUSSELLIANUM.

THE exhibit of *Eustoma Russellianum* from Mr. C. J. Ellis at the last fortnightly meeting of the Royal Horticultural Society showed how ornamental is this decorative plant when well cultivated. The species is a native of Mexico, and was introduced into this country in 1804, but for some reason the plant never appears to have become very common in gardens, perhaps because it has the reputation of being a difficult subject to cultivate. With ordinary care and attention, however, it is not difficult to obtain good results. In former years the plant was grown under the name of *Lisianthus Russellianus*, and it has also been known in gardens as *L. erythropensis*, a name under which it was shown and obtained an Award of Merit at the Holland House Exhibition in 1906. The flowers of the type are mauve, but a distinct break, with pale pink flowers, has been obtained by



FIG. 34.—*Polygonum polystachyum*: FLOWERS WHITE.
(See p. 95.)

GARDEN NOTES FROM FRANCE.—II.

By a MEMBER OF THE B.E.F.

A GARDEN VILLAGE.

SOMEWHERE in France there is a fairly large village built on a well-organised plan. Every house has a rectangular plot of garden which is fully cultivated. The gardens are near the houses, though not actually attached. Where there is a dividing fence it is of an open character, which, though it does not ensure privacy, is economical, and obstructs neither light nor air, and does not, like a hedge, impoverish the surrounding soil. As a general rule, the gardens run in a straight line between two blocks of houses, so that they may be described as streets of vegetables. The soil is of a light, rich character, and is liberally supplied with natural manure. Ordinary digging only is done; I have

an intercrop with Garlic and Shallots. The Cabbage varieties are overwhelmingly favoured. Carrots form a considerable crop, but Parsnips and Beet are rarely seen. I do not remember seeing one Marrow in the whole village; but Cucumbers for pickling are grown by everyone, the plants being sown and left exceedingly close together. It seems curious to English gardeners to find that the cottagers in the area traversed by the writer do not grow Cabbages for spring use, nor do they grow Brussels Sprouts, Broccoli, autumn Onions, or early Cauliflowers to any extent. The Loek is almost the solitary occupant of the garden during winter. In the summer the ground is completely hidden from view by the closely-grown crops, but in the autumn and winter the garden is almost bare.

The garden frame seems unknown here.

The village must produce an enormous crop of vegetables, and I should like to see the villages in England take pattern from it.

Mr. C. J. Ellis in his nurseries at Weston-super-Mare. This is illustrated in fig. 36. The plants shown at the R.H.S. meeting were about 18 inches high, but specimens have been obtained with a height of more than 3 feet, and a circumference of 7 or 8 feet, carrying upwards of four hundred flowers and buds. A valuable characteristic of the blooms is that they remain a long time on the plant without fading, some having been found to remain in perfect condition for three weeks.

The plant may be successfully treated as a biennial, by raising seedlings one season to flower the next. The seeds, which are very minute, are sown on the surface of the soil, which should be light in texture. They are covered with a sprinkling of silver sand, and the pots placed in a propagating pit, or covered with a sheet of glass. The utmost care is needed in winter in the matter of watering. When the seedlings are large enough to handle, they should be potted

up singly into thumb pots, the compost for this and all subsequent pottings consisting of a mixture of loam, leaf mould, peat, and a sprinkling of sharp sand. Later they should be transferred to fairly large pots, and grown on in a cool, airy greenhouse. The seedlings require very little shade when once established, and should be wintered in the warm end of the greenhouse, but ventilation should be introduced on every possible occasion, and fire heat used very

ON INCREASED FOOD PRODUCTION.

VEGETABLE PRODUCTION AT ALDERSHOT

Much work is being planned by the War Office and energetically carried out by many leading officers, including Sir Archibald Hunter, General

littled gave 12 and 15 tons per acre, and it is the intention to break up much more land during the coming winter. An exhibition of vegetables from this recently cropped land was held on the Royal Flying Corps ground, Aldershot, on the 25th ult. Their Majesties the King and Queen, as well as other members of the Royal Family, visited the show, and were much interested in the fine produce brought together by the soldiers. The arrangements were carried out by Mr. T. H.



FIG. 5. *HIBISCUS BELLEROPHANTUM*. FLOWERS MAJESTY

sparingly. The stove house, with its hot, close atmosphere, would be very detrimental to the well-being of the plants, a little bottom heat in the early spring to assist the cuttings to strike being usually all the artificial warmth required.

The success attained in the production of this beautiful hybrid should encourage cultivators in the endeavour to produce fresh and equally beautiful new colours in this most useful greenhouse plant, which gives a succession of flowers over two or three months.

G. F. Ellison, and Major F. W. Harding, Newiman, Chief Land Agent, Aldershot Command, by way of increasing the food production in and around the district.

In 1916 only about 21 acres were under vegetable cultivation, but now there are over 351 acres. Much of the land that was broken up during the winter of 1916 was practically devoted to hothouse produce, and waste.

The potato crops are excellent for the first year. The varieties which have already been

Croxford, Sykes' Garden, Holly Hill, Black water. A large collection of fruit was sent by His Majesty the King from Windsor (gr. Mr. A. M. Keller). The exhibit contained about 100 dishes, including bunches of Muscat of Alexandria, Madresfield Court, Black Hamburg, and Foster's Seedling Grapes, Peaches, Apricots, Nectarines, Plums, Cherries, and dishes of Apples and Pears.

An exhibit of Potatoes grown on freshly dug pasture land was sent by the Aldershot Com-

mand: the tubers were shapely, clean, and of good size.

The competitive classes were keenly contested, and much fine produce was staged. For a collection of vegetables of eight varieties, shown in baskets, there were no fewer than 55 exhibits, whilst for Onions there were 37 entries, for Carrots 67 entries, for Turnips 56 entries, for Cabbage 56 entries, and equally good entries for Lettuces, Cauliflowers, Vegetable Marrows, Beet, Runner Beans, French Beans, Potatoes, Tomatoes, Cucumbers, and Peas. *E. B.*

FOOD PRODUCTION AT CLAREMONT.

LIKE most large gardens nowadays, that of Claremont, Esher, has readily responded to the call made up on it to supply a proportion of the nation's food. Mr. J. Kelly has been in charge of the Gardens for the past eight years. Claremont, in peace time, was famous for its flower borders, but these gay features have long been displaced, and vegetables are everywhere dominant. The Antirrhinum border has been planted with Potatos Sharpe's Express, Midlothian Early, and Duke of York. The crop is excellent, and is being followed by winter Coleworts. The Potatos grown for succession are Sir John Llewellyn, British Queen, Burnhouse Beauty, and Witch Hill. Cabbage is represented by Harbinger, Flower of Spring, Sutton's All Heart, Sutton's Main Crop, and Winstedstadt Cauliflowers Earliest of All, White Queen, Early London, Dobbie's Excelsior, Early Giant, and Autumn Mammoth are occupying the border illustrated in *Gard. Chron.*, Oct. 14, 1916, p. 182, when it was planted with Pentestemons. Onions are yielding a heavy crop; the autumn-sown had contains Ailsa Craig, Cranston's Excelsior, and Premier, and the spring bed James Keeping, Improved Reading, and Main Crop.

Winter and Spring Broccoli are prominent, and Savoy's Earliest of All and New Year have a large quarter to themselves. The importance of Brussels Sprouts is duly recognised, and the varieties Dwarf Gem, Exhibition and Solidity are grown in liberal quantities.

As to Peas, never have I seen them to be of better promise so late in the season. The earlier sowings embraced Sutton's First Crop, Pilot, and Matchless; followed by Duke of Albany, Sutton's V.C., Matchless, Alderman, Selected, Peerless, Gladstone, and Autocrat.

Mr. Kelly advocates deeply trenched and liberally manured ground for this crop and planting in rows at 6 feet apart, applying a mulch after staking. Spinach is grown between the Peas and cleared before picking begins. Broad, Dwarf, and Runner Beans are extensively grown, chiefly the varieties Best of All and Prize-winner.

Celery is occupying the Sweet Pea ground; Parsley flourishes where Border Carnations were formerly displayed themselves; and Carrots and Beet respectively fill borders that for years were gay with Stocks and other annuals.

The staff with which Mr. Kelly has to manage consists mainly of boys who have recently left school, and one or two elderly men. His foreman was killed at the front early in the second year of the war. *Thomas Smith, Coombe Court Gardens, Kingston.*

DRYING FRUIT AND VEGETABLES.

IN the ordinary house there exist already the means for drying all the common fruits and vegetables. The Food Production Department has published a free leaflet, which may be obtained on application to 72, Victoria Street, S.W. 1, on "Fruit and Vegetable Drying." By means of this leaflet any woman with ordinary kitchen knowledge can dry Apples, Peas, Plums, Damsons, Cherries, Potatoes, Carrots, Parsnips, Turnips, Swedes, Onions, Leeks, Peas and Beans, Mushrooms, Spinach, Parsley, Thyme, Mint, and other herbs.

The Week's Work.

THE KITCHEN GARDEN

By J. DUNN, Foreman, Royal Gardens, Windsor.

SPRING CABBAGE.—The transplanting of this important crop should receive attention as soon as the plants are large enough for shifting, as early planting will ensure Cabbages for use at a time when other green vegetables are scarce. At Frogmore we make an extensive planting of these young Cabbages as early in September as possible. For this purpose the seedlings may be planted closer in the row than those intended for the main crop, which need not be planted for another fortnight.

WINTER SPINACH.—The plants of Winter Spinach should receive careful attention, or they may soon be destroyed by slugs. If this pest is present amongst the plants dust the leaves freely with soot or lime, and stir the soil with the Dutch hoe on frequent occasions to promote a free growth. If further sowings are made, choose a warm border and rich soil.

ONIONS.—Spring-sown Onions should be lifted as soon as their growth is finished or they may commence to make second growth, which would prove detrimental to the keeping qualities of the bulbs. Lift the Onions carefully and place them on a clean, hard surface. They should be turned daily until ready for removal to a well ventilated store-room. The best ripened bulbs should be reserved for late use, while those of second quality should be used during the autumn and early winter.

CELERY.—Continue to blanch Celery as it becomes necessary, selecting a dry day for the work. Examine the plants carefully, and if the roots are dry water them with clear water at least 24 hours before the soil is applied to the stems. Late batches of Celery will be benefited by a liberal dusting of soot during showery weather.

ENDIVE AND LETTUCE.—Continue to plant Batavian Endive in sheltered parts of the garden and in cold pits, where the plants may remain until required for use during the winter. Use rich soil, brought to within 18 inches of the roof glass. Plant the Endives one foot apart each way, and encourage them to grow quickly by stirring the soil on frequent occasions with the Dutch hoe and dusting them lightly with soot. The lights should remain off until cold weather sets in. There is still time to make a small sowing of Endive to produce plants for spring supplies. This crop should be grown in cold pits throughout the winter where protection from sharp frost may be given. Lettuce should also be planted on sheltered borders and in cold pits for use during the winter. A sowing of a suitable hardy variety should be made for succession. Maximus is a good Cabbage Lettuce for this purpose.

MARJORAM.—If seedling plants of Marjoram were raised last spring and planted out during the summer, some part of the crop should be lifted at once and the plants placed in 6-inch pots for use during the winter and spring. They will grow well in a slightly heated pit on a bed of ashes within 18 inches of the roof-glass.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

MASEDEVALLIA.—If a representative collection of *Masdevallias* is grown, some species or hybrids will be in bloom at all seasons. September is the most suitable month for repotting or re-arranging with fresh compost, as the roots are inactive during this period than at any other season. The young roots will quickly grow into the new compost, and become well established before the winter arrives. Healthy specimens which do not need increased roofing space may remain in their present receptacles for another season. If the soil has become sour, it should be picked carefully from between the roots down to the drainage material, and fresh compost substi-

tuted, taking care not to disturb the roots more than is necessary. Large specimens which have lost a number of leaves may be divided, and, the dead portions having been cut away, they may either be potted in small pots for increase of stock, or made up into specimens again. *Masdevallias* of the stronger growing kinds, such as *M. Veitchianum*, *M. ignea*, *M. Landoni*, *M. macrura*, *M. elephantopus*, *M. Mooreana*, and the *M. Harryana* type, require ample roofing space. They are best grown in pots or moderately deep pans. Others, such as *M. Conraultiana*, *M. Cheloni*, and *M. Stella*, should not be allowed so much space. All the above-mentioned species may be grown on the stages. The dwarf-growing kinds, such as *M. Arminii*, *M. muscosa*, *M. Estradae*, and *M. O'Brieniana*, should be placed in shallow pans and suspended from the roof-rafters. *M. platyglossa*, *M. leontoglossa*, and members of the *Chimera* section, which develop their inflorescences downwards, should be grown in teak-wood baskets. Any repotting of the last-mentioned section is best done during February. A suitable compost is equal proportions of *Osmunda-fibre* and *A1 fibre* cut rather short, and half-decayed Oak leaves (the latter rubbed through a half-inch sieve), with chopped Sphagnum-moss and crushed crocks added. The whole should be well mixed together. In potting, keep the base of the plant a little below the rim of the receptacle. Press the compost moderately firmly, but not so hard as to prevent the water from passing through freely, and finish with a layer of chopped Sphagnum-moss over the surface. Do not afford much water until the roots are seen pushing their way into the new compost. Shade the plants for a time from all sunshine, and maintain a moist atmosphere. If a special house is not available, choose the warmest and shadiest part of the *Olanthoglossum* house. *Masdevallias* require plenty of fresh air, but cold draughts are harmful.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHCOLE, Eastwell Park, Kent.

NERINES.—Nerines have been resting in full sun for some months, in a cold frame, and are now throwing up an abundance of flower spikes. The flowers will last longest if the plants are staged in a well ventilated greenhouse. Arrange them with a groundwork of dwarf ferns, to compensate for the absence of foliage; or stage a few light foliage plants with them. *N. Fothergillii* major is still one of the most popular varieties.

GLORIOSA SUPERBA.—As plants of *Gloriosa superba* come out of hibernation, remove the plants from the wires of the flowering house, and train the shoots around Bamboo canes for the remainder of the season. Place them in full sun in a light and airy house in order to ripen them completely. The water supply should be reduced as soon as the leaves show signs of turning yellow, decreasing by degrees till the stems are completely dried up, when it should be entirely withheld. After this the bulbs should be kept perfectly dry and fairly warm during the winter, not allowing the temperature to remain long below 55°.

PLANTS FOR WINTER FLOWERING.—In a general way, soft-wooded plants should not be given stimulants much after this time of the year. Stimulants should be used with great caution as the days get shorter, as it is very easy to defeat the object with which they are usually administered, viz., winter-blooming. Plants that are over-fed in their growing days often fail to give satisfactory results at blooming time. I refer principally to such soft-growing plants as winter flowering Begonias, Zonal Pelargoniums, Cinerarias, Primulas and Calceolarias.

CLEANING PLANT HOUSES.—This time of the year is often the most convenient for cleansing and painting greenhouses, as many plants may now be safely stood out-of-doors for a time. But as painting is practically an impossibility at the present time, an extra good washing should be given. Scrub all wood-work and glass, and lime-wash all brick walls. See that the gravel or spar on the stages is thoroughly washed. Leave the house open for a few days to sweeten, and then thoroughly hose down before arranging fresh plants on the stages.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVERT, Abbots Wood, Godalming, Surrey.

RASPBERRY.—The old fruiting canes of Raspberries should be cut close to the ground. The shoots of the current season will thus receive more light and air to ripen them thoroughly. Raspberries require a change of soil occasionally, and it is a mistake to allow the beds to remain continuously on the same ground. If the raking of a new bed is contemplated a portion only of the old plants should be destroyed, and the replanting spread over several years, so that there may be no shortage of the crop. The ground selected should be well trenched and enriched with materials from an old hot-bed and old soil from the potting shed. These materials are better than fresh manure used at the time of planting. Choose varieties that are known to do well and thrive in the particular district in which the garden is situated. Norwich Wonder, Hornet, Baumforth's Seedling, Superbette, and, for autumn use, Belle de Fontenay, offer a good selection. Supports must be provided. Iron stakes with a strut at either end and wires stretched across are the most durable.

STRAWBERRIES.—Cut away all runners, also decaying or injured foliage from Strawberry plants. Tidy up the beds and see that they are free from weeds, especially those that seed freely. See that the soil around the plants is quite firm, as loose plants will never do well. Males have been a great nuisance here of late, and are often troublesome in Strawberry beds. The animals should be trapped in the usual way. Finish planting if the work is not already completed, and see that all vacant spaces in the rows are made good.

TREES ON WALLS.—Make secure any long branches on wall trees that are loose, or the winds may damage them. Harvest all the fruit on sunny days, and store the surplus in the fruit room. Make an examination to see if any trees are cankered and need replacing with healthy specimens. Send the order for the trees to the nurseryman in good time, and thus get the pick of his stock.

FRUITS UNDER GLASS.

By JAS. HENSON, Head Gardener at Gungahbury House, Aton, W.

PLANTING PEACHES AND NECTARINES.—Early October is the best time to plant Peaches and Nectarines indoors, and where such work is intended to be done this season, preparations should be made now. It is unprofitable to train trees that have become worn out. If fresh trees have to be purchased, place the order with the nurseryman at once, for as the season advances the best trees are sold. I prefer to plant specimens at least four years old, that have been well trained. Some growers prefer trees that possess a central growth; others those with the centre open. My choice is the latter type. For where gross growth develops in the centre of the tree it can more easily be dealt with. Having selected the trees on the spot, note well their present condition. If growth be still active the nurseryman should be requested to have the roots shortened somewhat as a check to the tree's activities. Half standards will be found suitable for planting in the front of the house, whilst for the back wall standard trees with a 4-foot stem are most useful. Select trees with clean, straight stems, and see that the part where stock and scion unite is well balanced.

VARIETIES TO PLANT.—Houses with at least two divisions (three are preferable if a constant succession is desirable) are best for the first early varieties. Duke of York or Duchess of Cornwall may be selected as first early Peaches, with Peregrine for succession, whilst Early Rivers and Lord Napier are suitable varieties of Nectarines. If the house will accommodate six trees, add Early York as an additional Peach and Bryden as a Nectarine. I would plant Peregrine and Early Rivers' Peaches, in the second early house, with Dr. Hogg and Dymond, and Hardywick Seedling and Pine Apple Nectarines. I have not included Cardinal Nectarine simply because the fruits are predisposed to crack on trees planted out, but for pot culture it is the very best early variety that can be grown. For a

later house my choice would be Thomas Rivers, Late Devonian, and Alexandra Peaches, and Pine Apple, Newton, and Victoria Nectarines. Meanwhile, lose no time in preparing the border for the reception of the trees. In some cases it will not be advisable to concrete the bottom of the border, but it is necessary in most soils. It is not essential to employ cement; ground lime will answer equally well for mixing with the ballast. Make the drainage with an easy slope. Not more than half the soil should be placed in the border at first. Let the house be overhauled and any necessary repairs done. It will be well to point the woodwork throughout, and the occasion offers a good opportunity to execute repairs to the hot-water system.

THE FLOWER GARDEN.

By W. J. GUTS, Gardener to Mrs. DEMPSTER, Keele Hall, Staff-ordshire.

SUB-TROPICAL PLANTS.—All-growing plants should be neatly secured to strong stakes before they are damaged by wind. Canna, Kichinos, Canabis, Wigandia, and similar plants require liquid manure with occasional doses of soot-water to give colour to the foliage. If the beds are furnished with dwarf plants, give a light dusting of concentrated fertiliser between the plants. After the soil has been stirred with a hand fork, give the beds a thorough soaking of clear water through a coarse sieve.

PROPAGATING BEDDING PLANTS.—In most gardens there will not be sufficient labour to propagate large numbers of bedding plants, but some attempt should be made to get on a proportion of one variety. Cuttings of Cosmos, Impatiens, and Alternanthera must have the assistance of a little bottom heat. Marguerites, Calceolarias, Verbena, Saxifrage, Tropaeolum, Heliotrope, Lantana, Pentstemon, Gypsophila, Mesembryanthemum, Andros, and Pansies may be rooted in boxes or shallow frames. Insert the cuttings freely, 4 inches apart, in well drained, sandy soil. Directly the frames are filled, water the soil through a fine rose and spray the cuttings in the afternoon during bright weather. Air should be given for an hour or so in the mornings to prevent damping, and the frames lightly shaded from direct sunshine. It is a good plan to place a number of old plants in pots or boxes for stock. These plants will provide cuttings for propagating in the spring, and usually give better results than autumn struck plants. Mats should be in readiness to throw over the lights in frosty weather. After the cuttings are taken, make the beds neat and clean by removing all dead flowers, foliage and weeds. It will be necessary to stir the soil with the flat hoe after the recent heavy rains.

LILIUM. Bolls of Liliun candidum, if in a healthy condition, should not be disturbed. If, however, they show signs of exhaustion, lift them at once and replant the largest in fresh loamy soil 4 inches deep. The best effect is obtained by planting in groups in the herbaceous or mixed borders. Those grown in pots for decorative purposes should now be planted in the borders or reserve beds. Bolls purchased from the nursery quickly deteriorate if they are not planted directly they are received.

PROPAGATING VIOLAS AND PANSIES. In cold, wet districts cuttings of Violas and Pansies need the protection of a frame. Select sturdy shoots from the base of the plants, and insert the cuttings 4 inches apart in sandy soil. Water through a fine rose to settle the soil, and spray the cuttings occasionally during dry weather. Shading from bright sunshine is necessary, but the lights must not be placed in position for several weeks, except in wet weather.

FUCHSIA.—To obtain standard flowering Fuchsias for bedding purposes next year, insert strong cuttings in small pots filled with a sandy compost. The cuttings will quickly form roots if afforded a little bottom heat. Directly they are rooted, pot singly into 3-inch pots and place on shelves near the roof glass. Syringe the plants daily and maintain a temperature from 55° to 60°. Shift into larger pots as the plants require it, using a compost of loam, manure, leaf-mould, sand, and a little wood ash. The plants must be kept growing steadily through the winter.

THE APIARY.

By CALROSA.

FOUL BROOD.—I have received requests from beekeepers for help with regard to this disease in districts where it has hitherto been unknown. The complaint has been known for many years, but it was not until the seventies that the true cause was found—a bacillus—named, in the twenties, Bacillus alvei. As the disease attacks brood generally it is commonly known as "Foul Brood," though it has been alleged that queens and mature bees may suffer from it, too, and for this reason it is also known as "Bee Pest." The disease takes two forms—the serious cases it is known by its strong smell, while in its less serious state it is odourless, the former being difficult, and the latter easy to cure. It is generally first detected on brood. Healthy brood is compact, plump, and pearly white, and in its earliest stages the larva is curled up in the bottom of the cell. As soon as disease attacks a hive the plumpness of the brood disappears and a lengthy and flabby appearance is assumed, with a straightened instead of curled form. The pearly whiteness disappears, giving place to straw-yellow, followed by a deep brown. Then the dead brood begins to decay, eventually drying up and leaving a withered scale adhering to the side of the cell. Healthy cells are covered by perfect raised cappings, but when foul brood sets in the cappings are darker, indented and irregularly perforated. If a match be inserted in the discoloured, perforated, capped cell and then slowly withdrawn, aropy, coffee-coloured, evil-smelling mass will be seen sticking to it in a fine thread when drawn from the cell. This is the trachea, which will not decompose. Very soon the bees become lazy, and seem to lose interest; many are seen fanning at the entrance to get rid of the bad odour, which, in severe cases, can be observed without removing the roof of the hive. Since the queen lays eggs in the cells where the brood dies of the disease, and workers deposit honey and pollen in the same cells, both honey and pollen may be the means of spreading the disease by the nurse bees when feeding larvae. The beekeeper may also spread the contagion by handling healthy bees without properly disinfecting his hands and clothing.

CURE FOR FOUL BROOD.—If measures to combat the disease are taken in the early stage the colony and the whole apiary may be saved. In slight attacks remove the bees from the combs, place them in an empty straw skep, and feed them on syrup, as described below. Burn the combs, quilts, and frames and thoroughly disinfect the hive by scrubbing with boiling water and soap. Afterwards paint every portion of the woodwork with a solution of one part Calvert's No. 5 carbolic acid in two parts water. Place the hive in the sunshine, and when the odour has disappeared it will again be ready for use. After a period of forty-eight hours the bees should be shaken into a clean hive fitted with frames of full sheets of foundation and carefully wired; five or six frames will be sufficient. Feed with medicated syrup for a few days. To prevent the disease from spreading perform the whole operation in the evening. If the colony be headed by a young, prolific queen it should be well. To ensure further success place two split naphthalene balls on the floor board, and renew them occasionally, as the heat of the hive causes the naphthalene to evaporate. After the beekeeper has manipulated a diseased colony all appliances used should be sprayed with a solution of Calvert's No. 5 carbolic acid, using 1 oz. in 12 oz. of water.

FEEDING. Feed with syrup made in the proportion of 10 of sugar to 7 parts of water. Boil for a few minutes, but do not allow the syrup to burn, and add $\frac{1}{4}$ to 1 teaspoonful of soluble phenyle to each quart, pouring the syrup in the phenyle and shaking well to form an emulsion. Increase the amount of phenyle from $\frac{1}{4}$ to 1 teaspoonful gradually as the bees show increased disposition to take it. Phenyle is non-corrosive and non-poisonous, and forms an excellent substitute for carbolic acid for general purposes of disinfection.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY.—Royal Hort. Soc. meeting, in conjunction with the National Dohlla Soc. Floral meeting and National Rose Soc.'s Display of Roses.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 58.2.

ACTUAL TEMPERATURE.—*Gardeners' Chronicle* Office, 41, Wellington Street, Southampton, on 7th September. Time, September 6, 10 a.m. Bar 29.7; temp. 62.6; Weather—Dull.

SALES FOR THE ENSUING WEEK.

TUESDAY.—Winter-flowering Heaths, &c., at Burnt Ash Road Nursery, Lee, by order of Messrs. B. Maller & Sons, at 11 o'clock, by Protheroe & Morris.

WEDNESDAY.—Ferns, Palms, &c., Vans, Piping, &c., at Gensia Road, Upper Edmonton, by order of Messrs. H. B. May & Sons, Ltd., at 11.30 o'clock, by Protheroe & Morris. Home-grown Bulbs, at 67, Cheapside, at 1 o'clock, by Protheroe & Morris.

The Samoan and Tonga Islands.

From the daily papers we learn that these groups of Pacific islands have again been visited by earthquake and hurricane; but no particulars have come to our knowledge. Still, in the light of events since war was declared, it may be useful to give some information, and some particulars of the sources of information, on the vegetation of the islands and cultivation in the islands. Both groups lie within the southern tropics, in extreme western longitudes, in the region of Fiji. Many readers will remember the great disaster of 1889 to shipping in Samoa from a tidal wave, when H.M.S. "Calliope" escaped by steaming out to sea. Taking the Samoan group (the Navigators' Islands) first, Savaii and Upolu were assigned to Germany by agreement in 1900, and the rest of the group to America. Planting by Americans and Europeans had long been practised, and the Germans have rapidly developed the industry since that date. Already in 1904 Dr. F. Wohltmann published an elaborate illustrated report in the *Tropenpflanzer*, entitled "Pflanzung und Siedlung auf Samoa." This report is very thorough, both scientifically and practically, and embraces meteorology, analyses of soils, cultivation, labour, outlay, foundation of experimental gardens, export, and kindred subjects. Previous to the German occupation a London mission had established itself in the islands, and Mr. Hills, the principal, had founded a "Botanic Garden." Dr. Wohltmann devotes some half-a-dozen pages to the description, illustration, and laudation of this garden, concerning which he cannot speak too highly. It was a part of the mission's scheme for educating and employing the natives, and it contained at that date specimens of about 150 useful

kinds of plants of various ages and stages of development. One of the views represents a group of thriving young trees of Hevea. Kew Herbarium possesses very considerable collections of dried material from the Samoan Islands, largely made, about the middle of the last century, by the missionaries Powell and Whitmore. Dr. W. Botting Hemsley commenced compiling an enumeration of the Flowering Plants and Ferns of Samoa about 1894. In 1896 Dr. F. Reinecke published the first part of his *Flora der Samoa-Inseln*, and this contains the Cryptogams—Algae to Filices. This was followed, in 1898, by the *Flowering Plants*, containing descriptions of many previously unknown plants, with half-a-dozen plates of novelties. A rough comparison of the two lists shows that the Kew list contains from 20 to 25 per cent. additional names, including some of importance; but a critical concordance would most likely give a relatively lower result in species. Two references to contributions to the Flora of the Tonga or Friendly Islands (since 1898 under British protection), have appeared in the *Journal of the Linnean Society*, XXX. (1891), pp. 157-217, plates 9-11, by Dr. Hemsley, and XXXV. (1901), pp. 19-65, by J. H. Barkill. Supplementary to the foregoing is J. J. Lister's "Geology of the Tonga Islands" in the *Quarterly Journal of the Geological Society*, XLVII. (1891), pp. 589-617, plate 23.

TRIAL OF PERPETUAL-FLOWERING CARNATIONS.—A trial of Perpetual-flowering Carnations will be conducted at Wisley during the forthcoming season. Growers are asked to send three plants of each variety for trial, to reach the Director not later than the 50th inst.

ACREAGE OF HOPS.—The preliminary statement of the Board of Agriculture with regard to the acreage under Hops in June, 1917, in those counties where Hops are grown, shows that, as usual, the acreage in Kent far exceeds that in any other county, and indeed comprises five-eighths of the total area. There is, however, a marked decrease in the amount of Hops grown in 1917 compared with that of the two preceding years. In 1915 the total area under Hops in Kent was 21,555 acres, and in the whole of England, 34,744. In 1917, this figure had dropped to 10,465 in Kent, and an aggregate of only 16,946 acres altogether.

BI-CENTENARY OF MESSRS. AUSTIN & McASLAN.—In commemoration of the 200th anniversary of the founding of the firm of Messrs. Austin and McAslan, the well-known Glasgow nursery firm, a dinner has been arranged, which will take place in the Trades House, Glassford Street, Glasgow, on Friday, the 28th inst., at 6 p.m.

THE PANAMA HAT "PALM."—*Carludovica palmata*, which, according to Nicholson, is a native of Peru, has recently been introduced into the Philippines, and is now being cultivated there. This plant is the source from which the Panama hat is produced. It appears to be very amenable to cultivation, and is propagated readily by division, so that a large increase in the supply of Panama hats may be looked for in the near future. *Carludovica palmata*, though Palm-like in habit, is not a true Palm, but a member of the order Cyathales, not a few of the members of which are, or used to be, grown as stove plants in this country.

* "Current Notes," by E. J. Webster, in the *Philippine Agricultural Review*, X., 1, 1917.

MR. JAMES GIBSON.—We learn that Mr. James Gibson is taking over all the kitchen gardens and most of the glasshouses at Welbeck on the 27th inst., and conducting them on commercial lines for his own profit. During the fourteen years or so that Mr. Gibson has had charge of these gardens his relations with the Duke and Duchess of Portland have been of the most cordial nature. The changes now taking place have been brought about in Mr. Gibson's own interest, and he enters on his new enterprise with his employer's good wishes and material support.

DEGENERATION IN POTATOS.—The most recent contribution* to the important and vexed question of the running out or degeneration of Potatoes, though it does not throw much light upon the subject, serves to show how essential it is to keep this subject under investigation. In the present investigation the behaviour of tubers from apparently normal plants of several different varieties of Potatoes was followed during several generations. Certain evidence of degeneration was presented by the plants produced from some of these tubers. In other words, the degeneration appeared suddenly in the plants produced from apparently normal tubers. Some of the malformed plants were affected by curl, and produced dwarfish plants bearing few and small tubers. Others were afflicted with mosaic disease, that obscure malady of uncertain origin which destroys Potatoes, Tomatoes, and Tobacco plants. Yet other plants suffered from spindling sprout and leaf roll. Tubers from plants suffering from these diseases produced almost without exception malformed and degenerate plants. So far as they were concerned, the stock had "run out." A striking general confirmation of this rapid deterioration of a stock was to be seen this year at the Royal Horticultural Gardens, Wisley, where a stand of Midlothian Early contained not one normal plant. All were curled and dwarfed and manifestly degenerate. In order to ascertain whether the soil in which the Potatoes were being counted for anything in this astonishing result, the Midlothian Early Potatoes were lifted and tubers of Arran Chief planted in the ground. The Arran Chief Potatoes produced normal plants, whence it is to be inferred that soil conditions could not have been responsible for the failure of Midlothian Early, and that that failure is to be ascribed to something unknown which we call degeneration in the tubers themselves. In the face of facts such as those just recited, and the many others given in detail by Mr. F. C. SHAW, men of science must admit that there are problems of the first order of interest and importance on which they can at present throw no light whatever. It is easy, of course, to suggest that seed should only be planted if it has been derived from the good Potato districts, and it is also easy to advise growers never to put seed on the market from a field in which some plants affected by curl or roll or other of these diseases of degeneracy have already appeared. But it cannot be denied that the position of the problem of degeneration of Potatoes is very unsatisfactory, nor that it is much to be desired, both in the interests of the growers and also of science, that the problem should be submitted to a thorough investigation.

THE LATE PHILIPPE DE VILMORIN.—The *Journal of Heredity*, of America, publishes in its August issue an interesting review of the history of the well-known French seed house of Vilmorin, of which the head partner, Monsieur PHILIPPE DE VILMORIN, passed away at an early age a few weeks ago. It would appear that the business was founded as early as 1727, though not under the name of VILMORIN. It was a little Paris seed store, with the quaint name of "Au coin de la bonne foy," kept by PIERRE GEORGEY, whose daughter married a botanist named

* Observations on some Degenerate Strains of Potatoes, by F. C. Stewart, New York Agric. Exp. Station, Geneva, N.Y.

Pierre d'Andrieux. The daughter of this couple married, in 1774, **Philippe Vétoure-Leveque de Vilmorin**, and thus was founded the business known ever since as that of **Vilmorin, Andrieux et Cie**—one of the most celebrated in the world. The **de Vilmorins** have in every generation been identified with horticultural progress. **Louis de Vilmorin, 1816-60**, became famous by reason of his work in improving the Sugar Beet. Besides revolutionising the sugar industry, he contributed largely to the study of genetics; indeed, his research was almost the only work of practical importance in this direction which was done in France during the nineteenth century. He was succeeded by his son, **Henri**, who died in 1899, leaving his son, **Philippe**, to carry on the work. By the end of the last century the name of **de Vilmorin** had become famous throughout the world, and had attained a scientific and social prestige which it is difficult to over-estimate. Towards the latter part of his life, **Philippe** spent most of his time in genetic research, the active direction of the business being carried on by his brother-in-law, **Comte d'Elieusse**. Another member of the family, **Maurice de Vilmorin**, president of the *Académie d'Agriculture*, has one of the largest collections of trees and shrubs in Europe, and has published several monumental works on the subject. Perhaps one of the greatest services to genetics which **Philippe** was able to render was the organisation of the International Conference on Genetics, held in Paris in 1911. He threw himself into the immense labour involved by this Conference with the utmost enthusiasm, and generously bore a large proportion of the expense. "Science," truly remarks the writer of the article, "can ill afford the loss of a man like **Philippe de Vilmorin**."

WAR ITEMS.—We regret to learn that Second Lieut. **B. HANLEY**, Royal Scots, who before the war was employed by Messrs. **Down and Co.**, Edinburgh, and resided at **Restalrig Gardens**, where his father is a large market gardener, has been killed while leading his men into action. He was mobilised with the Lothians and Border Horse when they broke out, and served with that regiment at the Front. In June last, at the completion of his course in a cadet battalion, he received his commission in the Royal Scots, and returned to the Front last month. He was 25 years of age.

—We regret to learn that Second Lieutenant **MONTAGU H. CHYMAN**, the only son of Mr. **F. H. CHYMAN**, of Rye, was killed in action on August 14. The colonel of the regiment, the 10th Battalion of the Rifle Brigade, wrote of Lieutenant **CHYMAN**: "He was a very brave officer, and I cannot tell you how I feel his loss."

—We also regret to announce the death of Private **WILLIAM DEWAR**, second son of Mr. **A. Dewar**, gardener at Dalkeith. He was killed on August 6 by a shell, which demolished a dug-out and killed six out of seven who were present. The late Private **Dewar** served his apprenticeship at Dalkeith, and after further experience in the gardens at Castlehill, **Carberry Towers**, **Culzean Castle** and **Dundas Castle**, was appointed gardener at **Dunlossit Castle**, **Port Askaig, Islay**, where he had been for four years before joining the Argyll and Sutherland Highlanders.

LOCAL SOCIETIES.—The members of the Derbyshire Gardeners' Association held their tenth annual exhibition on August 11. There were 500 entries, contributed by about forty exhibitors. Besides the competitive exhibits, there were a number of trade groups.

—The seventh annual show of the Hull Garden Village Horticultural Society took place on August 10. The floral exhibits were somewhat below average, but the vegetable were better than usual. The first prize for the best all round garden was awarded to Mr. **W. STOKES**.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See also 'Tables in *Gardeners' Chronicle* for July 28.)

(Continued from p. 91.)

5. ENGLAND, N.W.

WESTMORELAND.—Espalier Apples in a sheltered situation are promising, especially **Lane's Prince Albert**, **Lord Grosvenor**, **Newton Wonder**, **Bismarck**, and **Worcester Pearmain**. **Victoria** and **Karl's** Plums on walls are good. **Père's Marie Louise**, **Glen Monaghan**, and **Doyenné**

severe weather. *Frank J. Clark, Tchody Park Gardens, Cambridge.*

DEVONSHIRE.—Outdoor Cherries are poor, owing to the soil being deficient in lime. Under glass, Cherries carried a heavy crop, and the quality was good. Gooseberries were poor, owing to pheasants stripping the buds in spring. Raspberries and Currants, both **Black and Red**, were heavily cropped, the berries being of first class quality. Some Plum trees carry a heavy crop, but the greater number have no fruits. The soil is deficient in lime, and is of a light nature. *G. H. Shochidyp, Biston Gardens, Bullleigh, Salterton.*

Apples in gardens are for the most part well set with fruit, but somewhat uneven. There



FIG. 50. FLORE OF **STEFANICA VAR. FLUENS**, **EDWARDS**, EARLY PINK. (See p. 90.)

in abundance of Pears on standard, pyramid and wall trees. The setting of Peaches and Nectarines was extraordinarily good, and the fruit is now swelling satisfactorily. The trees are particularly clean. *P. C. M. Vitch, Royal Nurseries, Exeter.*

5. ENGLAND, S.W.
GLoucestershire. Apples are very clean and healthy. All kinds of Nuts seem to be in abundance. Figs on walls are carrying more fruit than usual. *P. C. Walton, Studley Park Gardens, Stroud.*
Prospects for Apples and Pears in the county are good, both as regards table and vintage fruit. Caterpillars did considerable damage to Apple trees in some districts, being generally worse in plantations than in grass orchards. Plums are yielding a big crop, particularly local

GLoucestershire. Apples are very clean and healthy. All kinds of Nuts seem to be in abundance. Figs on walls are carrying more fruit than usual. *P. C. Walton, Studley Park Gardens, Stroud.*
Prospects for Apples and Pears in the county are good, both as regards table and vintage fruit. Caterpillars did considerable damage to Apple trees in some districts, being generally worse in plantations than in grass orchards. Plums are yielding a big crop, particularly local

varieties, such as Blaisdon Red and Pershore Strawberries and other small fruits were over quickly, but they sold well. *G. H. Hollingworth, Sharn Hall, Gloucester.*

Fruit crops in general are above the average. Apples and Pears set freely, and had to be thinned, especially the culinary varieties. Strawberries were an extra good crop. In most seasons the earlier flowers are damaged by frost, but it was not so this year. Givon's Late Proflic is by far the best late variety with me. Nuts are very late. The soil is of a heavy nature, subsoil clay; altitude 400 feet above sea level. *Arthur Chapman, Westnabul, Tetbury.*

— In my own orchard there is only a medium crop of fruit. Caterpillars have been prevalent, and certain trees seem to be attacked more than others. Apples Adams' Pearmain and Dutch Mignonne were nearly stripped. Pears are plentiful. Peaches outside are looking very well and bearing a good crop. *John Bouting, Tortworth Gardens, Fifehead.*

HEREFORDSHIRE.—We have an excellent fruit crop; the trees are clean and healthy, and the fruit should be abundant. Our outside Peaches and Nectarines required very severe thinning, and the foliage has been clean and free from blister. The soil is heavy loam on limestone. *G. Mullins, Eastnor Castle Gardens, Ledbury.*

— Fruit trees in general bloomed splendidly this season, but were attacked by insect pests, owing in a great measure to the trees not being sprayed through shortage of labour. The Apple blossom weevil and the Pear midge, in addition to the caterpillar of the winter moth, considerably reduced what would no doubt have been very heavy crops. Notwithstanding, we have good crops on many of the trees, which are very healthy. Apple trees bearing heavily are Adams' Pearmain, Allington Pippin, James Grieve, Scarlet Nonpareil, Mannington's Pearmain, Eremont Russet, Charles Ross, Rival, and Wealthy Young trees of Cox's Orange Pippin are bearing fair crops of healthy fruit, while the older trees carry only a small crop, and the fruit is inferior. Among culinary Apples the best are Warner's King, Seaton House, Lord Grosvenor, Lord Derby, Hambling's Seedling, Bramley's Seedling, Sandringham, Newton Wonder, Loddington, White Transparent, and Lane's Prince Albert. The best Pears are Emile d'Heest, Magrate, Bonny Hardy, Doxenné du Comice, Durondeau, Pittmaston Duchess, Joséphine de Malines, Nouvelle Fautie, Bourré Diel, Easter Bourré, Charles Ernest, Knight's Monarch, Louise Bonne de Jersey, Huyshe's Victoria, Triomphe de Vienne, and Margaret Marillat. Loganberries were killed down to the ground by the frost last winter. Nuts are the heaviest crop I have ever seen. *Thomas Spencer, Goodrich Court Gardens, Ross.*

Apples have been dropping very freely, probably owing to cold nights and dry weather. Black Currants and Raspberries were average crops, but Gooseberries and Loganberries, under. In my own garden Raspberries were very plentiful, also Red Currants. Black Currants are average; Apples and Pears look rather light; Plums were uneven; the Victoria variety bore very heavy crops. Psylla and caterpillars were in general very prevalent, but there was little aphid attack. *H. E. Darham, Hereford.*

MONMOUTHSHIRE.—Apples blossomed abundantly, but failed to set well, and the blossom weevil was troublesome. In the case of some varieties the crops were further thinned by dropping. Pears are only fair, though some varieties need thinning. The midge was prevalent. Peaches and Apricots carry excellent crops; the trees escaped frosts while in blossom, which is an unusual occurrence here. The soil is cold and heavy. *Thos. Comber, The Hendri Gardens, Monmouth.*

WORCESTERSHIRE.—On the whole, the fruit crops are satisfactory, but hardly justify appear-

ances when the trees were in bloom. Damsons and Damascenes vary in the three orchards here; in one the trees are loaded, and I have been obliged to prop them up; in another some trees have very few fruits on them. The Pershore or Egg Plum is below the average. Proflic is a huge crop, and Magnum Bonum is better than I have ever seen it here. Victorius are light in some places, Blenheim Pippin Apples are very fair, but on the whole Apples are small for the time of year. The soil varies considerably. In some places it consists of good loam, in others of brown, sandy soil, and in others of a stiff loam with marly subsoil at 2 feet. *Thos. Watkins, The Grange Gardens, Chelms.*

— Apples, although fully up to average, are somewhat disappointing, in view of the splendid bloom which opened, and there was no late frost. The bulk of the trees in this locality had taken a season's rest, and the blossom seemed healthy and vigorous. There was a sudden attack of winter moth and other insects in many places, but not enough to account for the partial failure to set. Peaches, Nectarines and Apricots on walls are all clean and good, and the trees have not been troubled with blistered foliage the whole season. Strawberries were indifferent, both in quantity and quality, chiefly owing to the plants being nearly defoliated by the protracted and severe northerly and easterly winds. The soil here is strong loam, resting on marl. *W. Crump, Madresfield Court Gardens, Malvern.*

— Strawberries gave an average crop, and of very good quality. Royal Sovereign is the only variety grown here. Apple and Pear trees flowered profusely, but many of the fruits dropped. Our soil is fairly heavy, resting on sandstone. *Ernest Arvey, Finstall Park Gardens, Bromsgrove.*

4.—MIDLAND COUNTIES

HEREFORDSHIRE.—The fruit crops are generally good in this locality. Apples did not set so freely as was anticipated, and a great many have fallen; nevertheless there is a good average crop, and the trees are clean. All small fruits were plentiful and good. Black Currants included. Strawberries were particularly good, especially Royal Sovereign, Givon's Late Proflic, and British Queen. The soil here is a stiff loam on London clay, and the elevation is 305 feet above sea level. *Edwin Beckett, Aldenham House Gardens, Elstree.*

— Fruit crops generally are good, with the exception of Strawberries, which, on our cold, heavy soil, suffered badly. No doubt the heavy rainfall during the last three months of 1916, followed by continuous snow from March 22 to April 10, and frosts to the end of the latter month, were largely responsible for the comparative failure of this crop. *Thomas Nutting, Childwickbury Gardens, St. Albans.*

WALES.

CARDIGANSHIRE.—All Apple trees flowered freely, but some varieties did not set well. The trees are making excellent growth, and are mostly free from insect pests. The following varieties are fruiting well: Apples; Beauty of Bath, Mr. Gladstone, Lane's Prince Albert, Norfolk Beauty, Cox's Orange Pippin, and Warner's King; Pears; Williams' Bon Chrétien, Doxenné du Comice, Somers du Congrès, and Clapp's Favorite, Plums; Rivers' Early Proflic, Czar, and Proud's Seedling. The Gooseberry caterpillar has been very troublesome, and some of the Plums have been infested with green fly. Our soil is very cold, overlying slaty rock. *W. Phillips, Derry Ormond, Cardiganshire.*

— The Apples and Pears here have yielded a good crop for the third year in succession. The varieties that were poor last year are now very good. Peasecod's Nonesuch, generally a light cropper here, has a heavier crop than last year. We had two very bad attacks of cater-

pillar, first on Gooseberries, and then on Red Currants. The soil here is a good brown loam on a gravel subsoil. *Thomas Hazeldine, Cross wood Park Gardens, Aberystwyth.*

CARNARVONSHIRE.—The fruit crops generally are a good average. Apples flowered profusely, but the crop was not what we anticipated. Caterpillars caused great damage. The heaviest crop of Apples this year with us is Cox's Orange Pippin. Strawberries were much earlier than usual and had a very short season, the heat causing them to ripen very quickly. Plums are not a good crop; although the trees flowered profusely, the blossom failed to set well. The soil is gravelly. *J. S. Higgins, Glynllivron Gardens, Llanwnda.*

DENBIGHSHIRE.—The fruit crops in this district are very good on the whole. Apples are cropping well, except those that fruited heavily last year. Plums are carrying good crops and Damsons are plentiful. Strawberries were good where the plants escaped the frost of last winter. In some instances they were injured past recovery. *J. A. Jones, Chirk Castle Gardens, Ruabon.*

— The long and severe winter kept back the fruit bloom until about three weeks later than usual, so that we had very little frost during the blooming period, which accounts for the heavy crops of most fruits. Strawberries, however, were so badly cut in the winter that they failed to bloom as freely as usual. *J. Martin, Bryn Elyon Gardens, Wrexham.*

GLAMORGANSHIRE.—The fruit crop here, and in the district, is excellent. Apple, Pear, Peach and Nectarine trees are loaded with very fine fruits. All the trees are looking well, and perfectly free from pest of any sort. *C. T. Warrington, Penllynor Gardens, Swansea.*

PEMBROKESHIRE.—The Apples suffered from an attack of caterpillars. There was an abundance of Black and Red Currants; we have a newly planted orchard of about 400 trees, and they almost broke down with the weight of fruit. *T. H. Roberts, Salsbeck Park Gardens, Haverfordwest.*

PAINSHIRE.—The fruit crops in this district promise to be a good average. No late frost occurred to any appreciable extent. The chief trouble has been a plague of caterpillars. Apples, Red Currants and Gooseberries suffering severely. Apples of some varieties are carrying very light crops, including Blenheim Pippin, Bramley's Seedling and King of the Pippins. Pears are a good and heavy crop, promising well. Nuts, like Apples, are variable, Hazels and Filberts being plentiful, whilst Walnuts are very scarce. The soil is a good medium loam, resting on old red sandstone. *J. McCormack, Moorhatch Gardens, Glasbury, Hereford.*

IRELAND.

CO. CAVAN.—The fruit crops here are good, except the Strawberries, which were had on account of the cold spring. *J. J. McCann, Arley Mount Nagant Gardens.*

Down.—There was a profusion of blossom, but there is only an average crop of most fruit—in no case is thinning needed. All small fruits carried crops of remarkable quality. *T. W. Bolas, Mount Stewart Gardens, Newtownards.*

FERMANAGH.—Apples in this district are looking well. There is a heavy crop of early Apples, such as Gladstone, Beauty of Bath, Worcester Pearmain, Early Victoria, and Grenadier. Bramley's Seedling is slightly under the average. Pears are a good average crop. Both Apples and Pears have kept very clear of insects and fungus, and earlier has not done much damage. Gooseberries were a poor crop, and the caterpillars attacked the bushes. Nearly all the fruiting canes of Loganberries were killed by the severe winter. The soil here is a rather light, peaty clay. *J. Moncrieff, Florence Court Gardens, Enniskillen.*

(To be continued.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

VERONICA LOBELIODES.—The shrubby *Veronica* referred to by W. T. on p. 92 is not a species nor a variety of *V. speciosa*. Except in the shape of the leaves and the shortness of the raceme of flowers it does not closely resemble that species. It is a hybrid between *V. elliptica* × *speciosa*, and was raised by Mr. J. A. Henry, of Edinburgh, who first sent specimens of it to Kew on April 26, 1892, and to Messrs. J. Veitch and Sons, Chelsea, about the same time. Since then the plant was introduced to Melbourne, Australia, and thence to New Zealand, in 1865. Mr. T. Kirk, a great authority on the shrubby *Veronicas*, said it had the fascias of a New Zealand species, but did not originate there. The raiser, Mr. Henry, gave the parentage as *V. densata* × *speciosa*, but *V. densata* from the Falkland Islands has been proved to be identical with the New Zealand *V. elliptica* J. F.

TEA PLANTS.—I was much interested in Dr. Hovey's article on the Tea plant (pp. 67, 32) and in Mr. J. R. Jackson's note on p. 92. When at Kew in 1864 I had charge of glasshouse No. 19, which then stood opposite the old museum, and of a lean-to house behind the museum. The former house contained many economic plants, including some Tea plants. The two plants mentioned by Mr. Jackson were trained on the wall by the Duchess of Cambridge's garden. The plants were labelled *Thea Boba* and *Thea viridis*. The latter was much lighter green than the other. In the border in front of the wall were also two bush trees of the same species. I remember them quite well, and my note-book, written in 1864, now before me, reminds me of many other interesting plants in the border. *John Gregory, Croydon.*

OXALIS CORYMBOSA.—This plant has recently appeared as a weed in gardens in Sussex and Surrey. It is rather ornamental, and likely to be cherished on its first appearance, but anyone who encroaches it will bitterly regret it. As one correspondent writes: "It is all over in garden in the herbaceous borders, in masses in the strawberry and Asparagus beds, among the Rose, Potato, and Cabbages; in fact, there is not a square yard where it is not flourishing, and I am getting downhearted, for I see no possible deliverance from it. We work and slave for hours digging it up and burning it, but it sometimes flourishes." This statement is confirmed from a very important garden in Surrey. The most serious feature in the plant is the numerous bulbils at the bases of the leaves which are easily detached, so that being does more harm than good. *Alfred O. Walker.*

GRAPES WITHOUT FIRE-HEAT.—I have this year grown Muscat of Alexandria, Madresfield Court, Lady Hutt and Lady Down's Grapes entirely without fire-heat. I began cutting bunches of Madresfield Court and Muscat at Alexandria on August 6. The temperature during the flowering period often dropped below 50°, but every advantage was taken of the sun's heat, and the houses were closed and the temperature raised to 100° on all possible occasions. The great range of temperature did not seem to harm the vines in the least, and they have remained free from mildew, thrips and red spider. The bunches weigh from 2 to 3 pounds each. The berries of Madresfield Court having started to crack, I have pierced the laterals to check the flow of sap to the bunches, and this has stopped the cracking to a large extent. *R. Hill, Kinloch Castle, Isle of Rhé, by Oban.*

FRUIT CROPS AT MOUNT FELIX, WALTON-ON-THAMES.—We have abundant crops of all kinds of fruit. The gardens contain about 220 Apple trees, in 90 varieties, and 215 are bearing full crops. Three of the others had heavy crops last year, whilst the rest were moved this spring. Both fruit and foliage is clean and healthy, and exceptionally fine. One of 50 Pear trees, which include 40 varieties, is 45 and bearing full crops. Plum trees are laden with fruit. I have two fine bush trees of Primate Plum bearing good crops for the first time. This variety is useful to follow Monarch. Strawberries were a good crop, and we had an abundance of Raspberries, Gooseberries, and Currants. *Wm. Stanbury.*

SOCIETIES.

ROYAL HORTICULTURAL

Trials at Wisley.

The following awards have been made by the Council of the Royal Horticultural Society after trial at Wisley:—

DELPHINIUMS.

Awards of Merit.—Col. Sir Wyndham Murray, Capt. Harry Smeetham, Moorheim, Rozenlust, Kingston Queen, Lady Georgina Legge, Lady Hamrick, Mrs. A. J. Watson, Miss Shirley, Professor Coleman, Belladonna, Grandiflorum, La maritime.

Highly Commended.—Aeroplane, Attraction, Dawn, Dr. Ledwidge, Edwin Beckett, Florence, Galicia, His Excellency, Amos Perry, Corry, Lady Ravensworth, Progression, Lord Curzon, Lovely, Luna, Marchetti, Ma Mie, Mrs. James Keilway, Mrs. T. G. Baker, Novelty, Rev. F. Escobedo, Robert Gray, Star of Devon, Consuela, Violet, Oasis, Hamlet, Lord Lansdowne, Nobilis, Perfection, Sergeant Betanger, Statuaria Belle, *Commended.*—Eize, Miss Britton, Queen Mary, Rt. Hon. A. E. Fellowes.

ESCHES HOLTZIAS

Award of Merit.—Crocæ compacta Mandarin, Mikado.

Highly Commended.—Chrome Queen, Golden West, Orange King.

STOCKS (OUTDOOR).

Award of Merit.—Old Rose, Queen Alexandra, *Highly Commended.*—Almond Blossom, Bama, Canary Yellow, Mammoth Crimson, Princess Alice, Princess Alice Improved, Rich Purple, Saucette de Nice.

ONIONS (AUTUMN SOWNS).

Award of Merit.—Autumn Triumph, Fox-bell, Mammoth Red Tripoli, White Leviathan, Yellow Roan.

Highly Commended.—Ailsa Craig, Covent Garden, Ariston's Excelsior, Giant Globe Rocca, Giant Lemon Rocca, Giant Rocca Tripoli, Red Rubin Tripoli, Tribois, White Italian Tripoli, White Spanish Selected.

Commended.—Ailsa Craig, Rissano Tripoli, Great Zittau, The Sutton Globe White Emperor, White Italian.

GRASS BUTTER SPRING SOWNS.

Award of Merit.—Bowling's Turnip-shaped Globe.

Highly Commended.—Crosby's Egyptian, Selected Globe.

Commended.—Gimson Globe.

LIVERPOOL HORTICULTURAL.

At a meeting on the 7th the next's exhibitions of Cuts and Foliage have been discontinued since 1914, and the Association organised a special food show on the 10th and 11th insts. The schedule comprised 50 classes and some 500 entries were forthcoming. The Society also offered prizes to groups of not fewer than 25 allotments within 12 miles of the Town Hall, and in these classes good crops were made to Victoria Park, Tranmere; Ivy Farm, Alford; and Horthall, Alblerton. Six bronze shilling single-allotments were awarded the 8th and 9th insts. of Merit.

In the Gardeners' Section for 9 varieties of vegetables, K. FRENCH, Esq., of Thornton Heath, and Mr. W. PERRY, of the 1st prize, whilst C. G. GIBBS, Mr. J. WILKINS, Bellinshaw were successful. Mr. PERRY also showed the best 50 dishes of hardy fruits, and the best dried and tinned table fruits. In the classes for Allotment Holdings the best collection of vegetables arranged by an allotment society on a space 12 feet by 7 feet was staged by IVY FARM, Alford, the produce being grown on ground first cultivated in 1917. In a class for vegetables grown on ground cultivated prior to 1917 BURNING PARK, Boleyn, was successful. There were 10 entries in the class for a table of vegetables 6 feet by 1 foot, and this proved the closest competition in the show. Mr. J. WILKINS was adjudged the winner, with excellent specimens; and Mr. J. BOWMAN, Alford.

MESSRS. STUBBS AND SOSS, Bournemouth, showed a most competitive collection of vegetables, and were awarded a Gold Medal. Messrs. MUMFORD, BRIDGES, LTD., Liverpool, were also awarded a Gold Medal. Silver Medals were awarded to

MESSRS. THOMAS DAVIES AND CO., Wavertree, for vegetables; MESSRS. W. ROWLANDS AND CO., Chiddwall Nurseries, for vegetables; MESSRS. KRIS, LTD., Liverpool, for vegetables and fruit; and MESSRS. KER AND SOSS, Crossington, for Tomatos and fruit.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 5.—*Committee present:* R. Ashworth, Esq. (in the chair), Messrs. D. A. Cowan, J. C. Cowan, J. Cypher, E. Evans, A. B. Hamdley, D. McLeod, J. McNab, W. Shackleton, H. Thorp, and H. Arthur (secretary).

AWARDS.

FIRST CLASS CERTIFICATES.

Dendrobium Dearii var. *superba*; *D. Sandera McLeanii* var.; both from Messrs. J. AND A. McBEAN.

AWARDS OF MERIT.

Laelia Cattleya Luanensis Rosa Rossendale (Cattleya × L. leucostachya Walton Grange var.), from R. ASHWORTH, Esq.

Odontoglossum Zulu, from J. J. BOLTON, Esq.

CULTURAL CERTIFICATE.

To Mr. E. ROGERS, for *Phalaenopsis Bimaculata*, some of the spikes having over 40 flowers and buds; to Messrs. J. AND A. McBEAN, for *Dendrobium Dearii*.

GENERAL EXHIBITS.

R. ASHWORTH, Esq., Newchurch (Gr. Mer. Havemport), was awarded a Large Silver Medal, and Messrs. CYPHER AND SOSS, Cheltenham, a Silver Medal, respectively, for groups.

CROPS AND STOCK ON THE HOME FARM.

LATE TURNIPS AND SWEETS.

Owing to the continued wet weather and absence of sun during the past month, there are many backward plots of Turnips and Sweets. The prevalence of Chalk in large quantities, and the difficulty of obtaining labour, has also retarded the growth of the plants. Choose a fine day, and sow 1 cwt. sulphate of ammonia over each acre, which will give a fillip to growth.

WINTER VETCHES.

Vetches sown in September constitute valuable food for sheep during June and July. This crop turns the hummer of a satisfactory crop of Turnips or Rape, and thus prepares the soil for a heavy crop of Oats or Barley the following year.

Any clean stubble, as Wheat, Oats, or Barley, will be a suitable site. Some farmers sow Vetches on stubble infested with Couch grass and other weeds, in the hope that the Vetches will smother the weeds the following year. It is, however, preferable to sow on clean stubble and deal with foul stubbles by summer following. Deeply plough the land, burying all weeds by the aid of the skim coulters. Choose dry weather for harrowing the surface after ploughing previous to sowing the seed, which may be drilled or sown broadcast at the rate of not more than 2 bushels per acre. Once harrowed after sowing is sufficient to bury the seed. Do not make the surface too fine; clods are useful for protecting the plants from wind during the winter; the exposure to frost, air and rain pulverises them, and in April the roller drawn over the plant makes the fine soil firm about the roots. *E. Molloy, Ex.*

HOME-GROWN FARM SEEDS.

Formerly many farmers used to grow the seeds required for their Turnip, Swede, or Mangold crops, and there is much to be said for this practice. When the stock roots are carefully selected and guarded against cross fertilisation, home-grown seed is frequently of better quality than the average commercial sample. Two methods are open to the world-be home seed grower. If only small quantities of seed are needed, they may be obtained by selecting roots at the time of lifting, storing in winter, and planting again in the following spring to grow on for seed. Where a commercial seed crop is required, special

sowings of seed are made during the summer, the seedlings at transplanted in early winter or spring and seed is obtained from plants of which the roots have never developed as bulbs.

The best specimens of Cabbage give the best seed; but often the plants will show no sign of running to seed. In this event they can be assisted by being cut with a knife across the crown. Again, to avoid cross-fertilisation when Swede and Turnip seeds are both to be grown, or more than one variety of either Turnip or Swede is being grown, the beds should be not less than 500 yards apart or cross-fertilisation may occur. If grown in a garden only one variety should be planted; and care should be taken that no stray plants of the Cabbage family are in blossom in the near neighbourhood. Varieties of Mangold also must be isolated, the seed plots being placed preferably in the corners of separate fields at as great a distance from one another as can be arranged.

The most serious danger of cross-fertilisation, especially to Swedes and Turnips, arises when a crop of Rape is in bloom in their neighbourhood. The seed crop of Turnips is ready for harvesting in July, as a rule; that of Swedes in July or early August; that of Cabbages in August, and of Mangold in September.

REPLY.

SUGAR BEET.—In reply to *H. M.*, p. 83. I do not think it is possible to get rid of the earthy taste in the roots of Sugar Beet; it is like that of boiled mangolds. I think it would be detrimental to the juan. If the Beet is boiled from five to seven hours, adding a little water during boiling, so as to cover the roots, the water strained off containing the sugar from the Beet could be used for bottling or stewing fruit without any more sugar. I boiled some Sugar Beet last March and used the syrup for steaming fruit in July with good result. *E. M.*

ANSWERS TO CORRESPONDENTS.

APPLES DISEASED: *Mrs. B.* The fruits are attacked by brown rot, as you suspect. The trees on which there are "mummified" fruits, such as those you sent us, should be thoroughly examined, and all such fruits gathered and destroyed, as they are a source of infection.

Next spring, have all diseased branches and spurs cut back to just behind the discoloration, and spray the trees just after the leaves open with diluted Bordeaux mixture.

APPLES DROPPING: *J. H. J.* and *H. R. B.* The Apples are infested with the Codlin Moth, the grub of which penetrates to the core. Gather and destroy all fallen fruits, and place bins soaked in insecticide round the trunks of the trees.

Next spring, spray with Paris green (half a pound to 120 gallons of water) or arsenate of lead directly the blossoms have dropped.

AVOCADA SEEDS NOT GERMINATING: *J. J. B.* The failure of your seeds of Avocado to germinate is most probably due to the flowers not having been fertilised. The trees are usually dioecious, that is, the male and female flowers are borne on different individuals. If you have no male specimen near your tree there would be but little likelihood of the seeds being fertile. The seeds fall from the tree when ripe, and may be sown at once, but they take a long time to germinate. The seeds retain their vitality for a year or more if kept in a dry, cool place. They should be sown singly in small 60-sized pots and placed in a greenhouse or cold frame. Plunge the pots in ashes so that the soil is kept always moist, and give only sufficient water to keep the soil on the moist side. The seed will germinate quickly in a close propagating pit. Seedlings raised in warmth should be gradually hardened as soon as they commence to grow. They require to be planted out at an early stage, or the roots will become a tangled mass. The dying of the branches is a common occurrence when the trees reach the stage you mention, and is usually due to lack of moisture in the soil.

BEZONIAS DISEASED: *W. J. J.* The Bezonia is apparently attacked by "rust," a condition usually attributed to the action of a

microscopic mite. Dip the plants in, or if too large, thoroughly spray them with Tobacco water.

CELERY DISEASED: *J. C. B.*, *J. T.*, and *Old Subscriber.* The plants are attacked by a fungus, *Septoria petroselinum*. Pull up all diseased plants, and remove diseased leaves from others only slightly attacked, and bury them deeply in the ground. The first signs of disease are small, scattered brown patches. Next season, look out carefully for these symptoms, and spray with weak Bordeaux mixture. You can try the same method this season, but it is probably too late to do much good.

CHRISTMAS SALAD: *E. B.* This salad, which is much the same as Chervil, is best left in the ground and taken up to force as required. Thus treated, the plants start into growth freely, and the salad is of good quality. The plants may be forced in a dark cellar or Mushroom house.

CONIFER DYING: *W. J. H.* The Conifer is *Larix leptolepis* (the Japanese Larch). There is no trace of disease on the specimen sent; the generally stunted appearance of the shoots and leaves point to defective root action, probably the result of drought at the roots.

CUCUMBERS AND MARROWS DISEASED: *Miss P.* The plants are attacked by the disease commonly known as "powdery mildew," or *Erysiphe Cichoracearum*. Pull off and destroy all badly affected leaves, and dust the rest of the foliage as soon as the mildew seems to be appearing with flowers of sulphur. By this means the trouble will shortly be overcome.

CUCUMBERS DYING: There is no fungus on the specimens sent; the trouble may be due to wrong cultural conditions. Have you examined the soil to see if itworm is present?

CUCUMBERS WILTING: *Bols.* There is no disease present on the leaves to cause the plants to wilt; the trouble is probably lower down the stem.

CYPRIPRESS FENESTRIS: *C. T.* The two forms of growth you send are common in the true Cypress, and also in the Junipers. The feathery type with acicular leaves represents the juvenile stage as a rule, and the flattened growth the older form. In some cases the two types of growth represent sexual forms. Your plant is interesting in showing the changes from one form to the other and back again, but it is not uncommon amongst pot-grown Cyresses and Junipers.

GRAPES SPOTTED: *I. C.* We are unable, even after the most careful examination, to find any trace of disease on the berries. The spotting might be the result of scorching by too bright sunshine, or of defective ventilation. If you have been obliged to employ less skilled labour than usual on thinning, the injury might have been done then by carelessness in handling the bunches. In any case, the injury is exterior, and not inherent in the vine.

LEAVES: *J. T.*, *J. E. P.*, and *H. D. G.* The specimens arrived too dried up for it to be possible to determine what was the matter with them.

NAMES OF FRUITS: *E. T.* Bryanston Gage, *M. L. N.* Clapp's Favourite, *B. J. C.* Prime Damson—*J. H.* Beckhamsted, Apple Peach, Plum Black Diamond, *Shipkin*, 1, Golden Noble; 2, Potts' Seedling; 3, Hawthorned; 4, Charles Ross; 5, Josephine de Malines; 6, Magaret; 7, Fox decayed to identify; *M. D. B.* Early Harvest, *H. M. S.*, *Miss Apples*; 2, Emperor Alexander; 7, Cox's Orange Pippin; H. Waltham Abbey Seedling; 12, Hambleton Down; Aves; 15, Allen's Everlasting; 14, Brownlee's Trust; 15, Bramley's Seedling; 16, Egremont Russet; 18, New Hawthorned; 42, Cox's Orange Pippin; 45 and 46, Lane's Prince Albert; 47, Adam's Pearmain; 99, Peasegood's Nonesuch; Pears; 3, Pear decayed; 9, Comte de Lamy; 51, Vicar of Winkfield.

NAMES OF PLANTS: *James Bancs.* *Ulmus montana* (Wych Elm); *J. P. Holme.* 1, *Phila delphus micropyllus*; 2, *Potentilla fruticosa*.—*Rosslyn.* *Picea Spruceana*.—*J. C. B.* 1, *Senecio eucrafolius*; 2, *Chrysanthe-*

num Balsamita of Linnaeus (Cotnamy, syn. *Balsamita vulgaris*, of Willdenow); 5, *Artemisia ludoviciana* var. *gnaphalodes*.—*H. N. G.* *Lonicera japonica* var. *italiana*. *L. flexuosa* is another variety of *L. japonica*.—*Robert Rutoul.* *Ceanothus Avicchinensis*.—*C. C. P.* *Erythrina crista-galli*. *Cockscomb* or *Coral tree*. The plant may be propagated from cuttings. The small, green plant is *Helxine Sclerolii*.—*E. B.* *Hippeastrum ulicum*, more generally known in gardens as *Amaryllis tubca*. After the bulbs have flowered and matured their growth, place them on a shelf in a cool house or heated frame, safe from frost, and withhold water, or give only a little water at long intervals until growth commences again next season. We will give name of Apple next week.

NAMPHIENS: *W. J. H.* The Water Lily leaves have been attacked by water beetles, which have been very prevalent this year. There is no remedy beyond hand-picking, which is a tedious and difficult operation with water plants.

PEACHES AND NECTARINES: *Constant Reader.* The following six varieties of Peaches and Nectarines respectively are good and reliable sorts.—1, If only three of each kind are required the first three should be selected in each case. *Peaches:* *Peregrine*, *Bellegarde*, *Princess of Wales*, *Dymond*, *Royal George*, *Goshawk*. *Nectarines:* *Early Rivers*, *Lord Napier*, *Pine Apple*, *Dryden*, *Humboldt*, *Stanwick* *Elruge*.

PEACHES SPOTTED: *J. T. S.* We have made a thorough examination of the specimens, but can find no trace of any disease or insect pest. The spottings may be caused by some spray material you have used, or the fruits may have been scalded by sunshine on a particularly sunny day. Another possible alternative is that the fruits have been slightly bruised.

PEAR TREE INFESTED: *Constant Reader.* The tree is infested by the Mussel Scale insect, *Mycilaspis pomorum*. Brush the infested parts of the bark with a stiff brush, and afterwards spray with insecticide. Gather all fallen leaves and prunings and burn them.

PHLOX: *Blodow.* A disease known as "stem canker" is a common complaint among seedling Phloxes, and this is probably responsible for the failure of your plants. No cure is known for plants which are attacked, but you can prevent the spread of the disease by removing and burning all diseased specimens, and planting fresh seedlings in soil which is known to be free from disease germs.

PLUMS DISEASED: *L.* The Plums are attacked by Brown Rot; see also reply to *Mrs. B.* (under "Apples"), and p. 94 last issue.

SCABBY POTATOS: *H. S.* When next planting Potatos, immerse the sets for two hours in a solution of one pint of 40 per cent. Formaldehyde in 36 gallons of water. Add acid manures to the soil before planting the tubers, and be sparing of organic manures. Sprinkle flowers of sulphur over the sets immediately after planting. You cannot do anything in the way of remedial measures this season, but the scabby condition of the Potatos will not detract from their flavour or wholeness.

STEPHANOTIS FRUITING: *P. S.* It is not uncommon for the Stephanotis occasionally to produce a fruit, and such an instance was recorded in our pages for Dec. 26, 1895, p. 817. It is not of any value commercially.

TOMATO HOUSE: *M. L.* A suitable width for a lean-to Tomato house against an 8-foot wall would be 9 feet, with a 4-foot-high front wall, but you must be guided by the strength of the wall, and before deciding it would be wise to obtain the opinion of an experienced builder.

WEEDS IN PONDS: *S. F.* Any time is equally good for destroying the weeds in ponds, the sooner the better. The copper sulphate can usually be obtained from horticultural sundriesmen.

Communications Received—*C. R. M.*—*J. W. K.*—*W. C. H. G.*—*H. H. K.* (Thanks for 1s. for R.G. & F. box.—*Eds.*)—*D. H. D.*—*R. L. H.*—*L. S.*—*H. W.*

MARKETS.

COVENT GARDEN, September.

Plants In Pots, &c.: Average Wholesale Prices.

Table listing plants in pots and their prices, including Aralia Sieboldii, Asparagus plumosus, and various ferns.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers and their prices, including Asters, Carnations, Chrysanthemums, and various roses.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage and their prices, including Adiantum, Asparagus plumosus, and Moss.

REMARKS: There is a brisk demand for Chrysanthemums of all shades. Supplies are not so large as last year, and there are not sufficient best quality blooms to supply the demand. Large quantities of blooms are more numerous, but good quality and pink blooms are yet to arrive. Roses are getting scarce, the best blooms very few in sale are mostly 'Sunderland', 'Etoile de Hollande', and 'Etoile de Hollande'. There is a brisk demand for cut foliage, and prices for best blooms are generally higher. The market for cut foliage is getting scarce, and prices are higher. The market for cut foliage is getting scarce, and prices are higher.

Vegetables: Average Wholesale Prices.

Table listing vegetables and their prices, including Artichokes, Beans, Beetroot, Brussels Sprouts, Cabbage, Carrots, Cauliflowers, Cucumbers, Garlic, Greens, Herbs, Horseradish, and Leeks.

Fruit: Average Wholesale Prices.

Table listing fruit and their prices, including Almonds, Apples, Apricots, Cooking Apples, Currants, Damsons, Dates, Figs, Grapes, Guavas, Lemons, Melons, Nectarines, Nuts, Peaches, Pears, Plums, and Tomatoes.

ROSES FOR AUTUMN PLANTING

ORDER EARLY.

Beautiful plants of the best possible cultivation, our selection from the finest sorts including:- The Brilliant Coloured

"MDME. EDOUARD HERRIOT" (Daily Mail Rose.)

12/- per doz. bushes, carriage paid. Catalogue Free on request.

STUART LOW CO., BUSH HILL PARK, MIDDLESEX.

WASP NETTING.

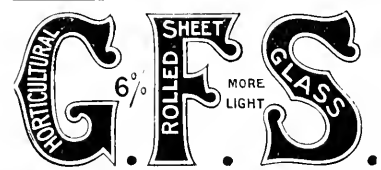
Table listing wasp netting products and prices, including B. Eddy & Sons' Special No. 4 Wasp Netting and Hexagon Wasp Netting.

Supplied by return, by post or passenger train, carriage paid.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches which we shall be pleased to clear at special prices, subject to being unsold.

Particulars on application, BOULTON & PAUL, Ltd., ROSE LANE WORKS, NORWICH.



A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/8 in. (or equal to about 21 oz.) in thickness, can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Advertisement for GENUINE WHITE LEAD PAINT, featuring a can of paint and the text 'BLACKFRIARS BRAND', 'BEST LINED OIL PUTTY', and 'Complete Price List of Paints, Colours, Varnishes, &c., on application.'

GEORGE FARMOLO & SONS, Ltd., 34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C. AND Blackfriars Wharf, Upper Ground Street, S.E. Quote GARDENERS' CHRONICLE.

ROYAL GARDENERS' ORPHAN FUND B. WYNNE, Sec., 19, Bedford Chambers, Covent Garden, London, W.C.

Large advertisement for Clay & Son's fertilizer, featuring the slogan 'Every Gardener Knows That Clay's gets there and makes the Garden gay all the year round' and 'IT IS THE STANDARD FOOD FOR PLANTS.' Includes details about tins and bags.

NOTICE TO HEAD GARDENERS.

Revision forms for the "Gardeners' Chronicle" HORTICULTURAL DIRECTORY have been posted to Head Gardeners in every county in England, Wales, Scotland, and Ireland. In order to facilitate the early publication of the revised edition for 1918, gardeners are asked to return the forms with the necessary corrections **AS SOON AS POSSIBLE**. It is only by the co-operation of all gardeners that the 1918 edition of this invaluable work of reference can be made perfect.

ANY HEAD GARDENER who has **FAILED TO RECEIVE A FORM**, should send for a form to

**THE EDITOR, Horticultural Directory,
41, Wellington St., Strand, London, W.C. 2.**

Name of Employer's Place

Name of Employer

Name of Head Gardener

Post Town

County

Nearest Railway Station

No. of Miles from Station to Residence

ORDER FORM FOR HORTICULTURAL DIRECTORY.

Messrs. GARDENERS' CHRONICLE, LTD., 41, Wellington Street, Strand, W.C. 2

Please send me copy (copies) of the HORTICULTURAL DIRECTORY FOR 1918.

I enclose remittance £ s. d. in payment. (PRICE, 1s. 4d. each, post free.)

(Signed) Name

Address

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 4003

No. 1603. VOL. LXII. {THIRD SERIES} SATURDAY, SEPTEMBER 15, 1917. {Registered as a Newspaper, {PRICE 4d. POST-FREE, 4d.

Subscription—Inland, 19 6; Foreign, 22- per annum. Entered at New York Post Office as second-class matter. Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 105

NOTICE TO SUBSCRIBERS.

The price of the GARDENERS' CHRONICLE being now fourpence, the subscription, including in land postage, for one year is 19s. 6d., for six months 9s. 9d., and for three 4s. 10d. Subscribers are requested to observe these alterations when renewing their subscriptions. In the event of any difficulty being experienced in purchasing copies, readers are invited to notify the publisher.

NOW IS THE TIME TO PLANT.

KELWAY & SON.

The Royal Horticultural Society, LANSINGPOT, SOMERSET, are now looking orders for their Choice Hard, Perenn. Plants, Plant a Colour Border this Autumn, and you will be able to enjoy its beauty for many years without any additional expense or trouble. Send measurements of your Borders. Specimens, Delphiniums, Lobelias, Galanths, and other beautiful flowers, included on their Colour's Name, which provide blooms from early Spring to late Autumn. WRITE NOW to the RETAIL PLANT DEPARTMENT for Reduced Price List.

WATERER'S ALPINES AND HERBACEOUS PLANTS

—New Catalogue now ready.

WATERER'S BRITISH-GROWN BULBS

—New Catalogue now ready.

WATERER'S WARGRAVE ROSES

—Catalogue and Supplementary List of new and choice varieties now ready.

WATERER'S RHODODENDRONS AND CHOICE SHRUBS

—Catalogue free.

WATERER'S VEGETABLE SEEDS

—For PRESENT SOWING. List post free.

All or any of the above Catalogues forwarded post free on receipt of name and address.
JOHN WATERER & SONS, LTD.
The Nurseries, Bagshot, Surrey, and Twickenham, Berks.

S ANDERS

—Orchid Growers, St. Albans.

MACKENZIE AND MONCRIE, Limited

—Home and Heating Engineers, London, Edinburgh and Glasgow. By special Appointment to H.M. the King, London Office, 6, Cannon Road, N.W.

BATH'S HOME-GROWN BULBS

—New illustrated catalogue of the finest Narcissi, Tulips, etc., as supplied to the Royal Family and Gardens, with full cultural directions now ready and will be sent post free on application. (Dept. A), R. H. BATH, LTD., The Floral Farms, Widsch.

BATH'S ROSES and PAEONIES

—New illustrated catalogue containing full cultural notes of the best new and standard varieties, as now ready, and will be sent post free on application. (Dept. A) R. H. BATH, LTD., The Floral Farms, Widsch.

W.M. LEXNAN TUCKER & SONS, LTD.

—Lawnmower Board, South Tottenham, N. 15 Con. rivetlers, Winter Gardens, Vineeries, Peach-houses, Portable Buildings, &c. Catalogues gratis.

PAPER WHITE NARCISSI.

SUTTON & SONS
—Our supply's finest bulbs of PAPER WHITE NARCISSI at 18s. per 100.

SUTTON'S CATALOGUE OF ENGLISH-GROWN BULBS, containing particulars of the most popular of Ball-bells, Narcissi, May flowering, and Tulip flowers, will be sent post free on application.

SUTTON & SONS, The King's Seedsmen, READING.

RIVERS'S STRAWBERRY PLANTS

—In all the leading varieties will be ready in August next for sale at post free on application. **THOMAS RIVERS & SON, The Nurseries, Sawbridge, Waltham, Berks.**

BARR'S BLUE CATALOGUE

—for the Large Tulips, Tulips, and other popular bulbs and flowers, will be sent post free on application. **BARR & SONS, 15, Abchurch Lane, London, E.C. 4.**

BUNYARD'S STRAWBERRIES

—Our new descriptive list is now ready, and will be sent post free on application. **ALPINE STRAWBERRIES** a speciality. **GEO. BUNYARD & CO., LTD., Royal Nurseries, Walsley, Walsley, W. Yorks.**

ROSES, ALPINE'S GOLD MEDAL

ROSEMARY BROS. Our new descriptive price list of the best of the Group Roses is now ready. **ROSEMARY BROS., 4, J. & C. ALLEN, Rose Growers, N. Finch (Opp. Act 50) W. Finch, London, W. C.**

PEEDS' BULBS, PEEDS' SEEDS

PEEDS' BLUE LIST NOW READY—Price 5d. apply for a copy to be posted by return.

JOHN PEED & SON, The King's Seeds

—and Plant Nurseries, WEST NORWOOD.

J. GRAY, LTD.

—Builder of Conservatories, Greenhouses, etc., and Heating Engineers for all sorts of buildings. **7, W. 20, W. 21, W. 22, W. 23, W. 24, W. 25, W. 26, W. 27, W. 28, W. 29, W. 30, W. 31, W. 32, W. 33, W. 34, W. 35, W. 36, W. 37, W. 38, W. 39, W. 40, W. 41, W. 42, W. 43, W. 44, W. 45, W. 46, W. 47, W. 48, W. 49, W. 50, W. 51, W. 52, W. 53, W. 54, W. 55, W. 56, W. 57, W. 58, W. 59, W. 60, W. 61, W. 62, W. 63, W. 64, W. 65, W. 66, W. 67, W. 68, W. 69, W. 70, W. 71, W. 72, W. 73, W. 74, W. 75, W. 76, W. 77, W. 78, W. 79, W. 80, W. 81, W. 82, W. 83, W. 84, W. 85, W. 86, W. 87, W. 88, W. 89, W. 90, W. 91, W. 92, W. 93, W. 94, W. 95, W. 96, W. 97, W. 98, W. 99, W. 100, W. 101, W. 102, W. 103, W. 104, W. 105, W. 106, W. 107, W. 108, W. 109, W. 110, W. 111, W. 112, W. 113, W. 114, W. 115, W. 116, W. 117, W. 118, W. 119, W. 120, W. 121, W. 122, W. 123, W. 124, W. 125, W. 126, W. 127, W. 128, W. 129, W. 130, W. 131, W. 132, W. 133, W. 134, W. 135, W. 136, W. 137, W. 138, W. 139, W. 140, W. 141, W. 142, W. 143, W. 144, W. 145, W. 146, W. 147, W. 148, W. 149, W. 150, W. 151, W. 152, W. 153, W. 154, W. 155, W. 156, W. 157, W. 158, W. 159, W. 160, W. 161, W. 162, W. 163, W. 164, W. 165, W. 166, W. 167, W. 168, W. 169, W. 170, W. 171, W. 172, W. 173, W. 174, W. 175, W. 176, W. 177, W. 178, W. 179, W. 180, W. 181, W. 182, W. 183, W. 184, W. 185, W. 186, W. 187, W. 188, W. 189, W. 190, W. 191, W. 192, W. 193, W. 194, W. 195, W. 196, W. 197, W. 198, W. 199, W. 200, W. 201, W. 202, W. 203, W. 204, W. 205, W. 206, W. 207, W. 208, W. 209, W. 210, W. 211, W. 212, W. 213, W. 214, W. 215, W. 216, W. 217, W. 218, W. 219, W. 220, W. 221, W. 222, W. 223, W. 224, W. 225, W. 226, W. 227, W. 228, W. 229, W. 230, W. 231, W. 232, W. 233, W. 234, W. 235, W. 236, W. 237, W. 238, W. 239, W. 240, W. 241, W. 242, W. 243, W. 244, W. 245, W. 246, W. 247, W. 248, W. 249, W. 250, W. 251, W. 252, W. 253, W. 254, W. 255, W. 256, W. 257, W. 258, W. 259, W. 260, W. 261, W. 262, W. 263, W. 264, W. 265, W. 266, W. 267, W. 268, W. 269, W. 270, W. 271, W. 272, W. 273, W. 274, W. 275, W. 276, W. 277, W. 278, W. 279, W. 280, W. 281, W. 282, W. 283, W. 284, W. 285, W. 286, W. 287, W. 288, W. 289, W. 290, W. 291, W. 292, W. 293, W. 294, W. 295, W. 296, W. 297, W. 298, W. 299, W. 300, W. 301, W. 302, W. 303, W. 304, W. 305, W. 306, W. 307, W. 308, W. 309, W. 310, W. 311, W. 312, W. 313, W. 314, W. 315, W. 316, W. 317, W. 318, W. 319, W. 320, W. 321, W. 322, W. 323, W. 324, W. 325, W. 326, W. 327, W. 328, W. 329, W. 330, W. 331, W. 332, W. 333, W. 334, W. 335, W. 336, W. 337, W. 338, W. 339, W. 340, W. 341, W. 342, W. 343, W. 344, W. 345, W. 346, W. 347, W. 348, W. 349, W. 350, W. 351, W. 352, W. 353, W. 354, W. 355, W. 356, W. 357, W. 358, W. 359, W. 360, W. 361, W. 362, W. 363, W. 364, W. 365, W. 366, W. 367, W. 368, W. 369, W. 370, W. 371, W. 372, W. 373, W. 374, W. 375, W. 376, W. 377, W. 378, W. 379, W. 380, W. 381, W. 382, W. 383, W. 384, W. 385, W. 386, W. 387, W. 388, W. 389, W. 390, W. 391, W. 392, W. 393, W. 394, W. 395, W. 396, W. 397, W. 398, W. 399, W. 400, W. 401, W. 402, W. 403, W. 404, W. 405, W. 406, W. 407, W. 408, W. 409, W. 410, W. 411, W. 412, W. 413, W. 414, W. 415, W. 416, W. 417, W. 418, W. 419, W. 420, W. 421, W. 422, W. 423, W. 424, W. 425, W. 426, W. 427, W. 428, W. 429, W. 430, W. 431, W. 432, W. 433, W. 434, W. 435, W. 436, W. 437, W. 438, W. 439, W. 440, W. 441, W. 442, W. 443, W. 444, W. 445, W. 446, W. 447, W. 448, W. 449, W. 450, W. 451, W. 452, W. 453, W. 454, W. 455, W. 456, W. 457, W. 458, W. 459, W. 460, W. 461, W. 462, W. 463, W. 464, W. 465, W. 466, W. 467, W. 468, W. 469, W. 470, W. 471, W. 472, W. 473, W. 474, W. 475, W. 476, W. 477, W. 478, W. 479, W. 480, W. 481, W. 482, W. 483, W. 484, W. 485, W. 486, W. 487, W. 488, W. 489, W. 490, W. 491, W. 492, W. 493, W. 494, W. 495, W. 496, W. 497, W. 498, W. 499, W. 500, W. 501, W. 502, W. 503, W. 504, W. 505, W. 506, W. 507, W. 508, W. 509, W. 510, W. 511, W. 512, W. 513, W. 514, W. 515, W. 516, W. 517, W. 518, W. 519, W. 520, W. 521, W. 522, W. 523, W. 524, W. 525, W. 526, W. 527, W. 528, W. 529, W. 530, W. 531, W. 532, W. 533, W. 534, W. 535, W. 536, W. 537, W. 538, W. 539, W. 540, W. 541, W. 542, W. 543, W. 544, W. 545, W. 546, W. 547, W. 548, W. 549, W. 550, W. 551, W. 552, W. 553, W. 554, W. 555, W. 556, W. 557, W. 558, W. 559, W. 560, W. 561, W. 562, W. 563, W. 564, W. 565, W. 566, W. 567, W. 568, W. 569, W. 570, W. 571, W. 572, W. 573, W. 574, W. 575, W. 576, W. 577, W. 578, W. 579, W. 580, W. 581, W. 582, W. 583, W. 584, W. 585, W. 586, W. 587, W. 588, W. 589, W. 590, W. 591, W. 592, W. 593, W. 594, W. 595, W. 596, W. 597, W. 598, W. 599, W. 600, W. 601, W. 602, W. 603, W. 604, W. 605, W. 606, W. 607, W. 608, W. 609, W. 610, W. 611, W. 612, W. 613, W. 614, W. 615, W. 616, W. 617, W. 618, W. 619, W. 620, W. 621, W. 622, W. 623, W. 624, W. 625, W. 626, W. 627, W. 628, W. 629, W. 630, W. 631, W. 632, W. 633, W. 634, W. 635, W. 636, W. 637, W. 638, W. 639, W. 640, W. 641, W. 642, W. 643, W. 644, W. 645, W. 646, W. 647, W. 648, W. 649, W. 650, W. 651, W. 652, W. 653, W. 654, W. 655, W. 656, W. 657, W. 658, W. 659, W. 660, W. 661, W. 662, W. 663, W. 664, W. 665, W. 666, W. 667, W. 668, W. 669, W. 670, W. 671, W. 672, W. 673, W. 674, W. 675, W. 676, W. 677, W. 678, W. 679, W. 680, W. 681, W. 682, W. 683, W. 684, W. 685, W. 686, W. 687, W. 688, W. 689, W. 690, W. 691, W. 692, W. 693, W. 694, W. 695, W. 696, W. 697, W. 698, W. 699, W. 700, W. 701, W. 702, W. 703, W. 704, W. 705, W. 706, W. 707, W. 708, W. 709, W. 710, W. 711, W. 712, W. 713, W. 714, W. 715, W. 716, W. 717, W. 718, W. 719, W. 720, W. 721, W. 722, W. 723, W. 724, W. 725, W. 726, W. 727, W. 728, W. 729, W. 730, W. 731, W. 732, W. 733, W. 734, W. 735, W. 736, W. 737, W. 738, W. 739, W. 740, W. 741, W. 742, W. 743, W. 744, W. 745, W. 746, W. 747, W. 748, W. 749, W. 750, W. 751, W. 752, W. 753, W. 754, W. 755, W. 756, W. 757, W. 758, W. 759, W. 760, W. 761, W. 762, W. 763, W. 764, W. 765, W. 766, W. 767, W. 768, W. 769, W. 770, W. 771, W. 772, W. 773, W. 774, W. 775, W. 776, W. 777, W. 778, W. 779, W. 780, W. 781, W. 782, W. 783, W. 784, W. 785, W. 786, W. 787, W. 788, W. 789, W. 790, W. 791, W. 792, W. 793, W. 794, W. 795, W. 796, W. 797, W. 798, W. 799, W. 800, W. 801, W. 802, W. 803, W. 804, W. 805, W. 806, W. 807, W. 808, W. 809, W. 810, W. 811, W. 812, W. 813, W. 814, W. 815, W. 816, W. 817, W. 818, W. 819, W. 820, W. 821, W. 822, W. 823, W. 824, W. 825, W. 826, W. 827, W. 828, W. 829, W. 830, W. 831, W. 832, W. 833, W. 834, W. 835, W. 836, W. 837, W. 838, W. 839, W. 840, W. 841, W. 842, W. 843, W. 844, W. 845, W. 846, W. 847, W. 848, W. 849, W. 850, W. 851, W. 852, W. 853, W. 854, W. 855, W. 856, W. 857, W. 858, W. 859, W. 860, W. 861, W. 862, W. 863, W. 864, W. 865, W. 866, W. 867, W. 868, W. 869, W. 870, W. 871, W. 872, W. 873, W. 874, W. 875, W. 876, W. 877, W. 878, W. 879, W. 880, W. 881, W. 882, W. 883, W. 884, W. 885, W. 886, W. 887, W. 888, W. 889, W. 890, W. 891, W. 892, W. 893, W. 894, W. 895, W. 896, W. 897, W. 898, W. 899, W. 900, W. 901, W. 902, W. 903, W. 904, W. 905, W. 906, W. 907, W. 908, W. 909, W. 910, W. 911, W. 912, W. 913, W. 914, W. 915, W. 916, W. 917, W. 918, W. 919, W. 920, W. 921, W. 922, W. 923, W. 924, W. 925, W. 926, W. 927, W. 928, W. 929, W. 930, W. 931, W. 932, W. 933, W. 934, W. 935, W. 936, W. 937, W. 938, W. 939, W. 940, W. 941, W. 942, W. 943, W. 944, W. 945, W. 946, W. 947, W. 948, W. 949, W. 950, W. 951, W. 952, W. 953, W. 954, W. 955, W. 956, W. 957, W. 958, W. 959, W. 960, W. 961, W. 962, W. 963, W. 964, W. 965, W. 966, W. 967, W. 968, W. 969, W. 970, W. 971, W. 972, W. 973, W. 974, W. 975, W. 976, W. 977, W. 978, W. 979, W. 980, W. 981, W. 982, W. 983, W. 984, W. 985, W. 986, W. 987, W. 988, W. 989, W. 990, W. 991, W. 992, W. 993, W. 994, W. 995, W. 996, W. 997, W. 998, W. 999, W. 1000.**

GISHURST COMPOUND

—Insecticide and fungicide. Over 50 years' reputation highly recommended. **R.H.S.**—Scientifically controlled. Trials at Walsley, 1915. Sold by dealers in Garden Sundries. Wholesale and Retail. **PRICES PATENT CANDLE CO., LTD., RIVERSIDE, LONDON, S.W. 11.**

ALPINES

—Fine collection from Yorkshire and the West. 25s. 6d. per doz. 50 varieties. 45s. 6d. per doz. 100 varieties. **ROSEMARY BROS., 4, J. & C. ALLEN, Rose Growers, N. Finch (Opp. Act 50) W. Finch, London, W. C.**

DAFFODILES and large Trumpet Narcissi

—as Grass, Shrubs, and Wild Gardening, selected, 15s. and 21s. 1200 varieties, 42s. per bushel. **ROSEMARY BROS., 4, J. & C. ALLEN, Rose Growers, N. Finch (Opp. Act 50) W. Finch, London, W. C.**

100,000 LARGE GARDEN FERNS

—at 100, 150, 200, 250, 300, 400, 500, 600, 700, 800, 900, 1000, 1200, 1500, 2000, 2500, 3000, 4000, 5000, 6000, 7000, 8000, 9000, 10000, 12000, 15000, 20000, 25000, 30000, 40000, 50000, 60000, 70000, 80000, 90000, 100000. **ROSEMARY BROS., 4, J. & C. ALLEN, Rose Growers, N. Finch (Opp. Act 50) W. Finch, London, W. C.**

For Advertisement Charges see Sept. 1, page v.

WEBB'S BRITISH-GROWN BULBS.

The finest varieties of Tulips, Narcissi, Ball-bells, Snowdrops, Iris, &c. PRICE LIST post free on application. **WEBB & SONS, LTD., The King's Seedsmen, Stratfordbridge.**

GREENHOUSE PAINTING & GLAZING

—Vitrolite—superior to White Lead Paint. Plastering—superior for parties. Full particulars from **W. CARSON & SONS, Glass Works, Battersea, Agents throughout the country.**

DICKSON'S HORTICULTURAL MANURE

—and other high class Fertilizers; also Dickson's Improved Manure Sprays. Potted exotics free on application to **DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.**

DOBBIE'S Autumn List of Bulbs, Sweet Peas, Roses, Vegetable and Flower Seeds and Plants, post free—**DOBBIE & CO., Royal-Florists, Edinburgh.**

BUNYARD'S FRUIT TREES.

—New Price List now ready, and will be sent free on receipt of post. **GEORGE BUNYARD & CO., LTD., Royal Nurseries, WALSLEY.**

BULBS for SALE

Tritonia crocata, a grand stock, 15s. per 100. Its reticulata, 24s. per 100. See list enclosed. **DICKSON & ROBINSON, The King's Seedsmen, MANCHESTER.**

FOR SALE

about 700 feet Greenhouse Glass, mostly English, 10oz. and 2oz., on Greenhouses 6d. per foot, sizes from 12 x 12 to 36 x 12. **HOWARD BARKER, Linnepied, Surrey.**

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whippet Towed, wears like leather; shoeproof, 7 yards for 17s. 6d. Patterns free. **BRYANFORD WOOLLEN CO., 71, Bradford.**

BANSTEAD or WALTON HEATH

—Is a splendid soil for trees, ornamental names, Carnations, and general use, fresh cut or dried. Particulars of **YOUNG BROS., Betchworth, Surrey.**

ORCHID PEAT

7s. 6d. per sack; Rhododendron Peat, free from bracken, 15s. per yard, 6 to 8 yard treads, bags of 200 lbs. Long, Leaf Mould, sweet scented, in bags and truck loads, bags of 50 lbs. 6s. per 100, special rates, special Bulk Compost for boxes, 50 bags. **J. HANDSCOMBE, The Nurseries, Feltham, Middlesex.**

NICHOLSON'S Dictionary of Garden

—and 12 volumes, 75s. 6d., also Thomson's Garden Assistant, 10s. 6d. and 10s. 6d., 20s. 6d., 30s. 6d., 40s. 6d., 50s. 6d., 60s. 6d., 70s. 6d., 80s. 6d., 90s. 6d., 100s. 6d., 110s. 6d., 120s. 6d., 130s. 6d., 140s. 6d., 150s. 6d., 160s. 6d., 170s. 6d., 180s. 6d., 190s. 6d., 200s. 6d., 210s. 6d., 220s. 6d., 230s. 6d., 240s. 6d., 250s. 6d., 260s. 6d., 270s. 6d., 280s. 6d., 290s. 6d., 300s. 6d., 310s. 6d., 320s. 6d., 330s. 6d., 340s. 6d., 350s. 6d., 360s. 6d., 370s. 6d., 380s. 6d., 390s. 6d., 400s. 6d., 410s. 6d., 420s. 6d., 430s. 6d., 440s. 6d., 450s. 6d., 460s. 6d., 470s. 6d., 480s. 6d., 490s. 6d., 500s. 6d., 510s. 6d., 520s. 6d., 530s. 6d., 540s. 6d., 550s. 6d., 560s. 6d., 570s. 6d., 580s. 6d., 590s. 6d., 600s. 6d., 610s. 6d., 620s. 6d., 630s. 6d., 640s. 6d., 650s. 6d., 660s. 6d., 670s. 6d., 680s. 6d., 690s. 6d., 700s. 6d., 710s. 6d., 720s. 6d., 730s. 6d., 740s. 6d., 750s. 6d., 760s. 6d., 770s. 6d., 780s. 6d., 790s. 6d., 800s. 6d., 810s. 6d., 820s. 6d., 830s. 6d., 840s. 6d., 850s. 6d., 860s. 6d., 870s. 6d., 880s. 6d., 890s. 6d., 900s. 6d., 910s. 6d., 920s. 6d., 930s. 6d., 940s. 6d., 950s. 6d., 960s. 6d., 970s. 6d., 980s. 6d., 990s. 6d., 1000s. 6d., 1010s. 6d., 1020s. 6d., 1030s. 6d., 1040s. 6d., 1050s. 6d., 1060s. 6d., 1070s. 6d., 1080s. 6d., 1090s. 6d., 1100s. 6d., 1110s. 6d., 1120s. 6d., 1130s. 6d., 1140s. 6d., 1150s. 6d., 1160s. 6d., 1170s. 6d., 1180s. 6d., 1190s. 6d., 1200s. 6d., 1210s. 6d., 1220s. 6d., 1230s. 6d., 1240s. 6d., 1250s. 6d., 1260s. 6d., 1270s. 6d., 1280s. 6d.,

SALES BY AUCTION.

IMPORTANT SALE OF ORCHIDS.

A portion of the Globe Collection, Swedenborg, formed by W. Phillips, Esq., which has been carefully selected for the purpose of raising the best hybrids in Cattleyas, Sophias-Cattleyas, Odontoglossums and Odontodias, and the specimens now offered are from some of the choicest forms obtainable. The following are among the principal plants included in the Sale—

Table listing orchid plants for sale, including names like Lachso-Cattleya, Episcaya, Medina, and various hybrid types.

Also choice plants from other Collections and Orchids in flower and bud.

MESSRS PROTHEROE & MORRIS

will sell the above by Auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2, on Friday, October 5th at 1 o'clock.

The catalogue is now being prepared, and may be obtained, when ready, of the Auctioneers, as above.

BULBS.

MESSRS. PROTHEROE & MORRIS are holding sales of Bulbs every Monday, Wednesday, and Friday. Specimens in stamps will ensure a supply of twelve catalogues. ALLIUM BELLIDONIA, 67 and 68, Cheapside, London.

TRADE SALE OF HOME-GROWN BULBS.

Wednesday, September 19th, at 1 o'clock. Sixty tons of all the best quality of 12 to 15 cwt. of various kinds of large consignments of Polyanthus of sorts in stocks as received, early and late flowering Tulips, Peonies, Snowdrops, Anemones, Solifas, Lilium candidum, Anemones, English and Spanish Iris, early flowering Gladioli, Bearded Iris, Lilies, etc. from 100 to 400 cwt. in cases, etc.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2. Catalogue forwarded on application.

THE ESTATE OF THE LATE J. S. CHARLES, Esq. PELSALL, STAFFORDSHIRE.

THE PELSALL HALL ESTATE of 37 Acres, which will be offered for Sale by Auction by

Messrs. WINTERTON & SONS, Solicitors, Walsall, on THURSDAY, October 11th, 1917, at 6 o'clock, will include about 2 1/2

A VALUABLE MARKET GARDEN.

known as RAILWOOD GARDENS, Pelsall, a Wood with a Cottage and GREENHOUSES thereon, about 5 miles from station, containing an area of about 1/2 Acres.

The Gardens are in a high state of Cultivation, and the Three Greenhouses measure (1) 50ft. long by 20ft. wide, (2) 30ft. long by 20ft. wide, (3) 15ft. long by 30ft. wide, and heated by two east-west double boilers, and can be heated separately or jointly worked. The Houses are well built, with extra strong rafters, and are covered with Zinc glass.

Purchase will be required to take to Stockton-Trade, Sheds, Tools, &c., Possession 1st November or earlier by arrangement.

For further particulars, apply to the Auctioneers, Lichfield, and Dunsell Street, Walsall, or Messrs. H. Russell & Son, Solicitors, Lichfield.

KENTON COURT, SUNBURY.

midway between Sunbury and Hampton.

MESSRS. GOWLE & DOVE will Sell by Auction, at the above,

On Wednesday, September 19th, at 1 o'clock (Plants at about 4)

the remaining HOUSEHOLD FURNITURE, 1,334 lbs. WOLSELEY LAMPAELET, 2 Dog-eats, and about 150 DOGS OF ORCHIDS, several from the collection of the late Percival Morgan, comprising Dendrobium, Cattleya, the foregoing Cattleyas, and also several Azaleas, Palms, Ferns, Begonias, Geraniums, and other fine plants, Mowers, Rollers, Ladders, Sprayers, and Garden Tools.

On the two previous days Catalogues on the premises and of the Auctioneers, Sunning-on-Thames, Middlesex.

SURBITON.

The remaining contents of the residence, including

NIGHTINGALE, PHILLIPS & PAGE will Sell by Auction at "Albany House," Sunning-on-Thames, on

On Monday, September 17th, and following day at one o'clock, the high-dress

FURNITURE

and Effects, Garden Implements, Tools, Fire Lights, Chokee Coops, and a large quantity of

GREENHOUSE PLANTS, ORCHIDS, &c.

On view the Friday and Saturday preceding. Catalogues of the Auctioneers, Eagle Chambers, Kingston-on-Thames. Phone 235

BUSINESSES FOR SALE.

PROTHEROE & MORRIS, HORTICULTURAL MARKET GARDEN, and ESTATE AUCTIONEERS AND VALUERS, 67 and 68, Cheapside, London, E.C., and at Lexington, E. Monthly Horticultural Register had on application.

BUSINESS CARD.

R. H. S. EXAM - Correspondence class, preparing gardeners and students, start October, brilliant past records, prospectus - MEDALLIST, Pughle, Lethbridge, Holt, Norfolk.

SPECIAL NOTICES.

MR. R. GREENFIELD begs to remind all friends that, although engaged on National Service work he continues Midland representative to John Peed & Son. Orders this season will be very much appreciated, and may be directed either to the firm at West Newwood, or to Mr. R. GREENFIELD, 61, Radford Road, Leamington Spa.

TENDER.

GRASS SEED

THE Commissioners of His Majesty's Works and Public Buildings are prepared to receive tenders for the supply of Grass Seed to the Royal Parks during the year 1917.

Forms of Tender, Conditions of Contract, and all particulars may be obtained on application to the Principal Clerk, Contracts Branch, of the Administration Office.

The Commissioners do not bind themselves to accept the lowest or any Tender.

Tenders must be delivered before 11 am on the day, the 2nd October, 1917, addressed to THE SECRETARY, H.M. Office of Works, &c., Station Gate, London, S.W. 1, and enclosed in Tender for Grass Seed.

H.M. Office of Works, &c., 20th September, 1917.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS.

Good plants suitable for rock, ash or rock ledge. See other advertisements, catalogues free. SMITH, London Park Nursery, Loughborough Junction, London, S.W.

WANTED, choice Fruit, Flowers, and

Vegetables, best market prices returned; boxes, Air sent. Surplus stock from Gardens accepted. MORLE & CO., 150-156 Finchley Road, N.W. 3.

WANTED, Geranium Stocks, as taken

from beds, Fair Clump, Finchley, and Kewford. Price 10s. and 1,000. T. ABBENELL, Nurseriesman, Hornsey.

PLANTS, &c., FOR SALE.

PRIVATE Owner wishes to dispose of contents of his Greenhouse, comprising some choice Orchids, good variety of House-Flowers, Ferns, and Plants, value about £70. Also some nearly new Robin Hood & Beauty boilers, 2 rapid heating 7500, piping, been in use less than a year, £25. WEBB, 75, Turnmill Street, E.C. 1.

WALLEFLOWERS Transplanted, Valuable, Rully King, Covent Garden, Golden King, 1 Garden Beauty, &c. 500; extra strong 5s. 100. Free any address. MORLE & CO., 150-156, Finchley Road, N.W.

BULBS AND PLANTS.

MORLE & CO. beg to announce that their revised list is now ready, and will be sent to any address on application—150-156, Finchley Road, N.W. 3.

LILIUM longiflorum giganteum for winter flowering. MORLE & CO. offer immense bulbs, 10 and 14 inches round, in splendid condition, at 18s. 12s. and 15s. 6d. Bulb list free. MORLE & CO., 150-156, Finchley Road, N.W.

NARCISSUS.—Paper-white Grandiflora, 18s. White Pearl, 4s. 6d., and double Incomparable, at 4s. per 100. Bulb list free. MORLE & CO., 150-156, Finchley Road, N.W.

MISCELLANEOUS.

OILSKINS THAT DO NOT STICK.

Oilskins that will give you good service and stand hard wear. Oilskins that never fail to keep out the hardest rain or sleet—BEACON OILSKINS. Men's Coats from 10s., Longings from 5s. Non-wasters 1s. 3d. Children's Coats 10s. 6d. up to 2s. Ladies' Smart Oilskins 21s. Held direct with us and save money. Send a postcard today for our Free Booklet of "Weather Comfort" describing money-back guarantee. Send money orders to: BARNHURST, LTD., 55, BEACON BUILDINGS, SOUTH SHIELDS. (3)

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to initials at Post offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

WANTED, HEAD GARDENER for Suburb at School, Unusually, Somerset; negligible for ordinary services; must be well qualified; good wages.—Apply, THE SECRETARY.

GARDENER wanted to take charge four Greenhouses and private Garden; with experience Vine, Rose & Cucumber Gazons, &c.—ERNEST KING, Alcester, Craggs Hill, Essex.

WANTED, HEAD WORKING GARDENER (man kept) thoroughly experienced vegetables, cut flowers, and Herbaceous, small Greenhouses, and super-superior poultry and pig preference to man who has to work with him; house, e-mail, and vegetable pond. Full particulars of experience, wages, &c., also name in family, and copies of testimonials if any, PRESSCOTT, High Road, Wokingham, Surrey.

WANTED, GARDENER (HEAD WORKING) in village, Glass, Kitchen Garden, Herbaceous Borders, Lawn, &c.; help given; live in lodge. Write, stating age and full particulars, J. M. FROST, Upton Lawn, Chester.

WANTED, for Sussex, HEAD WORKING GARDENER, capable of running Horseshoe engine, wife to undertake in winter, good wages, cottage, and coal. MYERS, Ruan-Moor, Cornwall.

WANTED, HEAD WORKING GARDENER (married), no family; abstemious preferred; cottage provided. Apply by letter, stating wages and full particulars, H. R. ISMAN, Esq., Graing, Branch Hill, Hampstead, London.

WANTED, SINGLE-HANDED GARDENER, help given, wages 30s. and cottage.—WILDING, Wexham Place, Stoke Poges, Bucks.

WANTED, Single-handed Place; in charge, used to poultry.—Apply by letter only (no candidates), W. G. BAKER, 10, Constantine Road, Hampstead.

WANTED, Good SINGLE-HANDED GARDENER, inside and out, male or female.—POTTON, Homestead, Rayleigh, Essex.

WANTED, SINGLE-HANDED GARDENER full end of work, Kitchen Garden essential; not much dress, garden boy if possible; must be over 40 in charge, or discharged soldier; preference given to one who could drive a car.—Address, CAPT. HATEFIELD, Hurl-down, Margate.

Gardeners' Chronicle

No. 1063—SATURDAY SEPTEMBER 15 1917.

CONTENTS.

Alpine garden, the—	105
Morisia hypogaea	105
Apples in East Luthian	111
Bull garden, the—	111
Hybrid Liliums	118
Crops, condition of the	118
Eustoma Gaskellianum	111
Farm, crops and stock on the home	114
Fertilisers, legislation regulating the importation of, in South Africa	110
Flora of the Chinese-Tibet borderland	102
Food plants in the Philippines	110
Food production, on increased—	
Baiting Onions	107
Drying Potatoes	107
Japanese Pottery	108
Spinach	108
Vegetable novelties	108
Fruit crops, remarks on	106
Fruit trees—	106
Apple Grenadier	107

ILLUSTRATIONS.

Laelio Cattleya Commander Chief	111
Rosa Moyesi	102
Rosa Moyesi, fruits of	107

FLORA OF THE CHINESE-TIBET BORDERLAND.

MR. GEORGE FORREST, who is again engaged in a plant-collecting expedition in the Far East, sends the following interesting communication to Dr. Keble, Director of the Royal Horticultural Society's Gardens, Wick:

"Tahfé, Yunnan,
"Via Bhamo, Upper Burma
"May 2, 1917.

AFTER a somewhat uninteresting and uninteresting journey, I am at last in Ta-hé, busy preparing for to-day's northward trip. For the first two days out from Lanchow, the weather was very heavy rain and very bad going, ten or twelve days of excessive heat for the time of year, ending in heavy rain the day I got in here. As a result, there has been another heavy fall of snow above 11,000 feet, and I hear the passes to be crossed between here and Anzette, the Lichiang and Boma Shan, are still closed, so there is no particular call for haste. However, I hope to leave here on or about the 10th, as I expect to be able to reach by the Sung Kwei Pass on my way to Lichiang. That portion of the Lanchow-Hachang district is particularly rich, and, though I have traversed it several times, I hope to get some more spoil.

"This, the central portion of the province, is still in a very disturbed state. For the past month the route eastwards to Yunnan has been practically closed to all traffic, owing to the presence of robber bands, disbanded soldiery who are plundering and murdering over a large area. Northwards, somewhat similar conditions obtain, the country being more or less held by the remnant of White Wolf's gang driven southwards. However, I guess I'll scrape through, if by my usual back holds. The Governor of the Province vacates office very shortly, and it is said he has interest in one thing only—the amassing of dollars before he retires. And so it goes on! Yet what a country it might be a good government!"

"So far from the frontier, as I have managed to secure specimens of some 170 species new to my previous collections. Most are trees and shrubs of much interest botanically, though of small value horticulturally. When considering

this, pray bear in mind that I have passed over the route twelve times! Two or three of the finer things were collected on the Shweh-Salwin divide, though I only hunted casually by the wayside, as that portion of the range comes within the scope of the three men whom I dropped at Tu-guch.

"I secured a few seeds of *Dichotomanthes tristaniaecarpa*, a monotypic genus of Rosaceae, only known and local in Yunnan. Unfortunately, the seeds, presumably very some of last season's, fallen, and, though I have little hope of their germinating, I send them to you. I have arranged for a quantity of seed to be collected in the autumn. Professor Balfour holds specimens of the species. The plant is a graceful shrub of 10-20 feet, with light-coloured, silvery foliage, practically evergreen in its habitat, with the general appearance of a Cotoneaster, but much more compact in habit. The flowers are rather uninteresting, but it is good in fruit. Fruits of two species of *Cherry* were also collected on the Salwin Valley, at about 15,000 feet, and the other here, altitude 6,500 feet. Both good and very fine fruiting specimens in collection. I shall forward seeds of both with the above, under separate cover; also seed of a good *Tsuga* or *Pseudotsuga*, collected at 7,000 feet. Quite a good *Caryota* at 5,700 feet.

"The small *Rhododendrons* were met with *R. ramosum* elliptic, Delavayi, and forms of *Fortunii*, so-called. I secured specimens of a form seen in small numbers which I take to be a hybrid between a white form of *Fortunii* and *Delavayi*. It bears the *Fortunii* foliage, though smaller, with large pink blooms, having the blotch of crimson at base seen in *Delavayi*. A shrub of 8-15 feet.

"In the Yangki Valley, two days west of Tai, the hillsides were ablaze with the blooms of *Rhododendron microphyllum* and *R. ciliolobum*. The first named, in my opinion, equals, if it does not even surpass, *R. ramosum* in wealth of bloom. It is said to be in cultivation, and that is probably correct; but in colour of flower it is, I think, it is very variable, and I question if the first forms have been secured. I marked several down, one almost pure white.

"Since our arrival here my men and I have been out once or twice on the range as high as the present snow-line, and have added a few peaches to the list.

"Amongst the first things sought for was *Rhododendron aurum*, and I was fortunate enough to secure a small quantity of last year's seed, which I trust will germinate.

"Portion of the gullies on the eastern flank of the range, a gully so far unexplored, I found three species, possibly four, of *Rhododendrons* new to me. As yet they are not numbered, but I wish to secure a larger number of specimens before including them in the collection. All are excellent subjects for horticultural purposes, two of them specially floriferous, shrubs of 3-6 feet. In three the bloom are of various shades of rose with darker markings; one, the dwarfest of all, has ivory yellow blossoms, flushed faint rose on exterior. A form of *R. sulfurum* was also collected, but much larger foliage than the type.

"The above plants have very much to be set to the name on this range. It would be well worth spending a full year here, if I could arrange to do so. However, I'm for north this season, and I have arranged for four collectors to work the western flank of the range, as well as the head waters of the Red River, and the Gbi Shan, a small range of hills lying to the north-east of the Tai Loo. That region was the scene of much of Père Delavay's labours. I mapped it in 1914, and found it most productive. I intend leaving men behind at Lichiang to work the portions of the Lichiang Range still unexplored, as well as the mountains north and north-west of the Yangtze bend."

ORCHID NOTES AND CLEANINGS.

CATTLEYA DAMARAS

A FLOWER of a new hybrid *Cattleya* named *Damaras*, raised between C. Lord Rothschild (*Dowiana* x *Gaskelliana*) and C. *Artemis* (*Iris* x *Gaskelliana*), is sent by Mr. H. G. Alexander, Orchid grower to Lieut.-Col. Sir Geo. L. Hoford, Westonbirt, Tetbury. The sepals and petals are light rose colour on a silver white ground, the frilled labellum bright purple in front and at the margins of the side lobes, the centre and base orange colour, changing to a lighter tint towards the front. There are many feathered lines of purple at the extreme base, and the narrow margin of the lip is light rose colour. Although C. *Dowiana aurea* enters twice into the composition of this hybrid (once through C. *Iris* (bicolor x *Dowiana aurea*), C. *Gaskelliana* dominates in colour and destroys the yellow of other parents.

LAELIO CATTLEYA ARMADA WESTONBIRT VARIETY.

MR. ALEXANDER also sends a flower of the latest cross between L. C. *luminosa* (L. *tenebrosa* x C. *Dowiana aurea*) and C. *fulvescens* (*Dowiana aurea* x C. *Forbesii*), for the original form of which an Award of Merit was obtained at the Royal Horticultural Society's meeting on September 25, 1913. The present variety has a flower over 7 inches across, of which all the segments are broad and of fine substance. The sepals and petals are light chrome yellow with a slight bronze shade, the lip crimson with a rich bronzy orange disc, and lines extending therefrom to the base. The column is creamy white. The yellow of C. *Dowiana aurea* is well fixed in this hybrid. *Laelia tenebrosa* in L. C. *luminosa*, which is favourable to yellow crosses, helping in that direction.

THE ALPINE GARDEN.

MORISIA HYPOGAEA.

MORISIA HYPOGAEA is a plant in which I have taken much interest, especially as I was among the first in this country to grow it on its reintroduction, after it had been lost. (It was flowered by Mrs. Murray in 1854, and was figured in Sweet's *British Flower Garden*, second series, tab. 190.)

After growing it for some years, it seemed to me almost incredible that it should have gone out of cultivation. Certainly its intrinsic beauties would ensure it a place in any good garden, so that want of charm could not have been the cause of its practical disappearance. It is, I think, to the question of its duration that we have to turn to account for its loss. It has a curiously tantalising habit of disappearing without apparent cause from many gardens, and this after it has proved a great success for a time. I have never been able to satisfy myself as to the cause of this failure. The best plant I ever grew was on the upper part of a low terraced colony facing south-west, and in dry, sandy soil. It was treated in dry weather in summer to occasional thorough soakings of pure water, which the open, porous soil absorbed readily. This plant became about a foot across, and was covered with fine yellow flowers. It had, therefore, to be removed to another position in the same garden, differing little in aspect, and not at all in soil. The removal was effected by soaking the plant well with water, pressing the soil rather firm, lifting the clump with earth attached and replanting at once. It never looked back, and thrived well until about two years after, when it vanished without any apparent cause. Smaller plants have also shared the same fate, and in my present garden, in a lightly colder part of the same county (Kirk-

endbrightshire) I have also lost several plants of *M. hypogaea* after they were apparently doing well.

Many years ago, when visiting the nursery of Messrs. James Backhouse and Son, at York, I saw their stock of *M. hypogaea* in a frame, then under the charge of Mr. W. A. Clark, who was my cicero. They were apparently growing in almost pure sand, and were thriving and spreading satisfactorily. It seems to me, if I may hazard the remark, that the cause of loss may be the decay of the central crowns of the plant before the growths from the sides have become strong enough. *M. hypogaea* increases well by root-cuttings, and is inclined to send up side growths from the roots at a short distance from the plant. I have never seen seeds produced. I have not found that the plant has any preference for lime, but it is quite probable that lime will help it in some soils. The late Mr. Daniel Dewar, when at Kew, recommended a "light, rich, gritty soil." *S. Arnott, Sunningwell, Marlborough.*

Brier, but a little longer. The blooms are cardinal red when first open, but when fully expanded they are dark red, and each bloom measures about 2 inches across.

The plant is perfectly hardy and very free-flowering. It does best when growing in good tuft loam, but will thrive in any well-worked garden soil, provided an open position is chosen where it can enjoy the full sunshine. The Rose is at its best when allowed to grow freely, and much pruning is a disadvantage. It is only necessary to shorten the longest growths sufficiently to keep the bushes of symmetrical shape. The colour of the flowers has been found to vary considerably in some of the seedlings.

The best forms, such as that which gained the R.H.S. Certificate, are propagated by budding.

THE MARKET FRUIT GARDEN.

FRUIT TREES IN GRASS.

Mr. W. J. Farmer, on page 62, confirms the judgment of many observers as to the fruit of

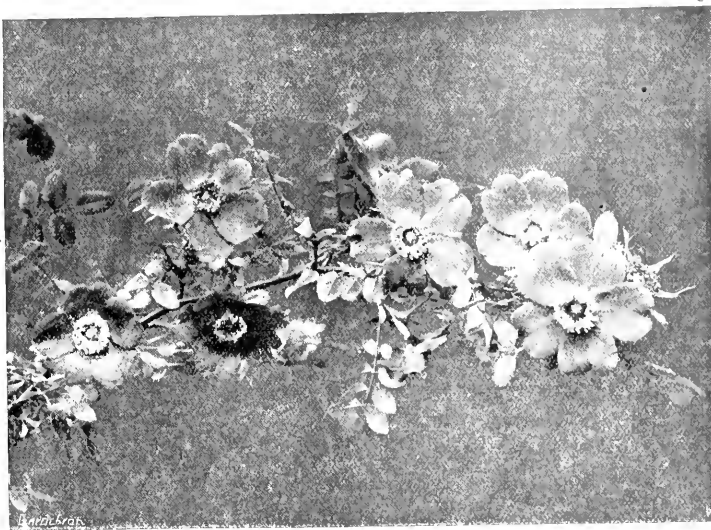


FIG. 37. ROSA MOYESII. FLOWERS BLOOD-RED.

ROSA MOYESII.

Among the several new Roses which have been introduced to our gardens during recent years, the majority of which are from China—none is more beautiful than the Western Chinese species *Rosa moyesii* (fig. 37), which was discovered in the mountains of Szechuan, at elevations of from 7,000 to 9,000 feet above sea-level. The honour of its first discovery belongs to Mr. A. E. Pratt, but Mr. E. H. Wilson also met with it during his earlier expeditions, and he sent seeds to the Coombe Wood Nursery of Messrs. James Veitch and Son, where numerous plants were raised; the species is now fairly well known in this country. This striking new Rose has been exhibited at several of the fortnightly meetings of the Royal Horticultural Society, and the Floral Committee conferred upon it a First-class Certificate on June 20, 1916, when it was shown by Mr. J. Allgrove, who had fine fruiting branches at the National Rose Society's show in the Drill Hall on Tuesday last. The fruits, which are illustrated in fig. 38, are orange-sealed.

The specific name was bestowed in honour of the Rev. J. Moyes, a missionary in China. The plant forms a shrub about 6 to 10 feet high, and has foliage somewhat resembling that of a Sweet

Apple tree in grass being more highly coloured than that of trees of the same variety on arable land. But he does not add that the fruits are usually smaller, which my observations lead me to conclude. As to allowing grass to grow up around young trees, trials at Woburn and elsewhere have proved that nothing is more fatal to the healthy growth of the trees. In various parts of the country I have seen miserably stunted Apple trees that were planted in grass, and left without cultivation of the land around them. The two years of such cultivation mentioned by Mr. Farmer are not nearly enough. Some of my Apple trees were so badly stunted by allowing the part of the orchard containing them to grass itself over when they had been planted ten years, that I had the land dug up and kept under cultivation. This, however, was on poor land. On very good land young trees, say after growing for six years under arable conditions, may flourish after the land has been grassed. This, however, is in spite of the grassing, and probably in the best of soil they would flourish better still if the land were kept under cultivation some years longer. As to the financial aspect of the question, I am disposed to agree with Mr. Farmer in thinking that mature trees pay better in grass than in cultivated land, but I would not say the same in respect of young trees. *Southern Grower.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See also Tables in *Gardeners' Chronicle* for July 28.)
(Concluded from p. 102.)

IRELAND.

MEATH.—We had a very long and severe winter, with north-east and east winds up to the first of May, which crippled growth. Even when the blossoms appeared in May the weather was damp, and there was no sunshine, so that the pollen of most blossom perished. The weather in June was more like April, and the few fruits that did set turned yellow and dropped, so that it is one of the worst fruit seasons known here for many years. The soil is of good quality for fruit growing. *Michael McKeown, Julianstown, Drogheda.*

TYRONE (N.).—Plums are scarce, and during the past few years silver-leaf has caused the death of many trees, particularly of the Victoria variety. Gooseberries were in some instances a complete failure, due in part to the birds taking the buds during the severe weather in April. Apples and Pears carried a tremendous amount of blossom, which apparently set well, but from some obscure cause (possibly imperfect fertilisation) much of the fruit dropped, leaving only fair average crops. The soil is a heavy loam. *Fred. W. Walker, Sixon House Gardens, Sixon Mills.*

CORK.—All fruit trees produced a great profusion of bloom, but as a result of the prolonged drought, and cold nights at the same time, the crops are somewhat irregular. All Apple trees that gave a heavy yield in 1916 are lightly cropped this season. Gooseberries suffered in many places from the severe frost and snow in March and April. Winter moth and sawfly caterpillars were very prevalent, but, generally speaking, insect and fungus pests were not so troublesome as in other years. *J. Deane, 17, St. Patrick's Terrace, Magazine Road, Cork.*

KERRY.—There are satisfactory crops of all kinds of fruit this year. There was a wealth of blossom on fruit trees of all kinds, but the flowers of Pears and Plums opened a month later than usual. *Charles W. Bennett, Muckross Abbey Gardens, Killarney, Co. Kerry.*

KILDARE.—The Apple crop was destroyed by late frost, and Morella Cherries dropped a good deal of fruit. All small fruits, with the exception of Gooseberries, were numerous and good. The soil is a medium loam on limestone. *Wm. Oulive, Straffan House Gardens.*

KILKENNY.—All fruit trees blossomed abundantly, about three weeks later than in normal seasons, so that the flowers escaped the spring frosts. Consequently, nearly all kinds of fruits promise to be plentiful. Some of the cooking varieties of Apples are, however, rather disappointing, as, after flowering splendidly under ideal weather conditions, they failed to set, and from some inexplicable cause whole trusses came away from the trees. It was not caterpillar in our case. Dessert Apples, and especially Cox's Orange Pippin, are excellent, and these bring the Apple crop well up to the average. Insect pests have not been troublesome this season, but mildew has been rather worse than usual on varieties subject to this fungus. Bismarck Apple was the worst sufferer. The soil is a medium loam on limestone. *T. E. Tomlin, Bessborough Gardens, Piltown.*

KING'S COUNTY.—Old orchard Apple trees in most places are bearing heavy crops. The young trees, with few exceptions, are yielding only small crops, owing to the late frosts and the dry weather, which caused the fruits to fall. The Strawberry crop set well, but owing to dry weather the fruits did not all develop, and the crop was quickly over. *E. Clarke, Claremount, Gurry Castle, Banagher.*

LIMERICK.—Apple trees are bearing a small crop this season in comparison to last year. Only about half the usual quantity of fruit-buds developed, and the flowers failed to set well. Pears show an improvement; most trees are carrying a good crop of clean-looking fruit. Plums are also a good crop, but plums are difficult to keep in check, and are doing great damage to the foliage. Early Cherries were a fine crop, but *Mabelle's* were not quite so good, owing to much of the fruit falling. Strawberries were almost killed by the hard winter, and produced only a poor crop. *Henry Xerxes*, *Rockharton*, *Kilmallock*.

QUEEN'S COUNTY.—Apples and Pears are good, although in some parts the codlin moth has been destructive. Aphid has been troublesome on Plum trees. Gooseberries were not quite so plentiful as in former years, but the quality was excellent, and I have seen no signs of the Gooseberry mildew. The soil is a light loam overlying limestone. *G. McGeehan*, *Abbey Leix Gardens*.

WATERFORD.—The fruit crops in this district are well over the average, and of good quality. There was some dropping of fruit in *The Queen* and one or two other varieties of Apples, but an abundance was left. Small fruits were plentiful, and the bushes are wonderfully free from pests. *D. Cronbie*, *Curraghmore Gardens, Portlaoise*.

WICKLOW.—This garden is near to the sea, and very much exposed to the east. During the time when the Apples were in flower, the wind from that quarter was bitterly cold, consequently the Apple crop is a complete failure. *Walter Bailey*, *Glenn Gardens, Veltor*.

CHANNEL ISLANDS

JERSEY.—There seems to be a fair average average, both in crop and quality. A very heavy thunderstorm damaged the Strawberry crop, and the storm was followed by very hot sunshine, which rendered the fruit useless. Plums are better than for several years past. The Jersey soil is not very favourable for Plums; there is a lack of lime in the soil. *Thomas Sherrin*, *Imperial Nursery, St. Maude's Road, St. Heliers*.

FRUIT REGISTER.

APPLE GRENADIER

ANOTHER season's trial with this kitchen variety has proved its title to being the best of all early Apples for market, where abundant space is available. In freedom of growth, even when grafted on any kind of stock, cleanliness of foliage, and even-sized fruit, I do not think the variety has an equal. The fruit is ready to gather in July. So far as I know, the variety is not susceptible to scale, which affects *Fort Grosvenor* in some seasons very much.

APPLE NORFOLK BEAUTY

WHEN I saw the original tree of this Apple growing in the garden at *Gunton Park, Norwich*, I was much impressed with its appearance in every respect, and especially its free growth and abundant crop of large, handsome fruits, which for culinary use in September and October have no superior. Some few persons had a fault in its cropping, but a small crop may be owing to wrong treatment. I find the tree succeeds best when the branches are well thinned to allow the light and air to enter among them. This year every one of my fifty trees is bearing a very large crop of big, even-sized, handsome, clean fruits. The variety succeeds admirably as a standard, and does equally well grafted on any variety of stock. *E. M.*

RASPBERRY NOVEMBER ABUNDANCE.

The earliest fruits of Raspberry November Abundance were ripe on the 22nd July in Mr. Allegro's nursery, Langley, near Slough, where the variety was raised some years ago. One shoot, 3 feet long from the ground level, bore

thirty-seven large fruits, which were of excellent flavour. In order to get the best results the plants should only remain two years before re-planting. The new bed should be made in a fresh position, otherwise the plants become a thicket of shoots and fail to fruit well. The variety is a cross between *Superlative* and *Catwax*, and is worthy of more extended cultivation for its fine fruit and excellent flavour. The shoots should be cut to the ground level in the autumn after fruiting is over. *W. H. Divers*.

ON INCREASED FOOD PRODUCTION.

BOLTING ONIONS.

IN March last I planted some fine autumn sown Onions and fully expected a large proportion of them to bolt. Curiously enough, only one did

second growth. Two tops of leaves appeared, and the original bulb eventually split in half, disclosing two lopsided bulbs, both of which attained a good size. About half of them had ripened sufficiently to be fit for pulling and drying by the end of August, while the remainder were still too vigorous to pull and dry with any prospect of keeping or storing. This second growth has made them later than the spring sown ones. Indeed, they were more fit to pull about the middle of June than at the end of August, but they were unusually small then, though both bulbs are now twice as large as the spring sown ones, or more. This looks like anticipating time by a year. They were planted 9 inches apart in the lines, and early in July spring sown Leeks were planted between them, and have already made good progress. The soil was trenched to its full depth (15 inches) and manured, the gravel beneath being forked up. *J. F.*

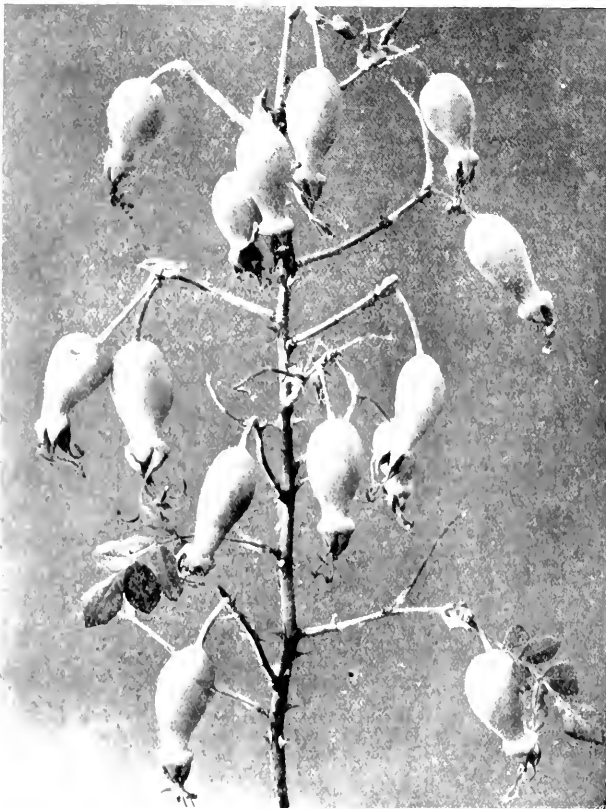


FIG. 35. FRUITS OF ROSE *MOYSE'S COLOUR* ORANGE RED (See p. 109.)

so, and I promptly removed the flower head, and quite a respectable bulb resulted. I expected it to be lopsided, and in this respect agree with Mr. W. H. Divers (page 73) that bulbs so produced are never shapely, though otherwise quite good for kitchen use. The reason why such Onions are lopsided is because they are a lateral and secondary growth from the primary bulb, which shrivels up and decays after nourishing its offspring. A very large percentage of the other bulbs, which did not bolt, gave exactly similar results in a different way. The great drought in May and June ripened off *Shallots* before they reached their proper size. The autumn sown Onions also ripened up or ceased growing. The heavy thunderstorms about the middle of June started them into a vigorous

DRYING PLUMS AND DAMSONS.

The following method of drying Plums and Damsons is published by the Food Production Department of the Board of Agriculture. The Plums and Damsons should be placed thinly on a tray formed of a frame of wooden laths covered with a stretch of wire gauze or canvas for placing in the oven. The heat may then be raised to nearly 200° Fahr., but, if the fruit at this heat becomes soft and puffy, and looks like bursting, the tray should be withdrawn and the fruit allowed to cool off. As drying proceeds the temperature should be gradually lowered to about 140°; otherwise the fruit may char. When they are thoroughly dry the Plums or Damsons should be withdrawn from the oven and left exposed to the air for a few days until (having taken up suf-

ficient moisture from the air) they are of the consistency of Prunes. The best way to store them then is to pack them in clean, dry well-stoppered bottles—these should be used for all preserved fruit or vegetables so far as possible where no thoroughly dry room is available or the district is peculiarly damp. The less light that penetrates to the dried fruit or vegetables the better the colour as a rule. They can also be stored in wax paper-lined boxes. Preserved Plums should be examined from time to time, and if any sign of dampness or mould should appear it must be wiped off with a dry cloth and the fruit put again into the oven for a little while, to get rid of superfluous moisture. Sometimes the sugar in the Plums may appear on the outside as a whitish or pale grey powder, but this is unlikely to be mistaken for mould, as the fruit remains firm if not too damp, and the sugar is dry, whereas the mould is woolly or fluffy.

JAPANESE PRICKLY SPINACH.

It is stated that considerable consignments of Japanese Prickly Spinach seed are being imported, and it would be interesting to know from those who have had experience in growing it whether this variety crops as well in this country as ordinary Prickly Spinach.

VEGETABLE NOVELTIES.

SUGAR PARSLEY.—This is a much-neglected root, in flavour more like Skirret (*Sium Sisarum*) than any other root I am acquainted with; something between the Celeriac and the Parsnip, but without the rank quality of the latter, which to me is almost nauseating. The roots attain a size about that of a moderate Parsnip. I have not seen the plant attacked with Celery fly or other pest, except slugs. My last hope of a big German strain now blossoming (all the 1912 seed having been finished last year, and failure of seed crop then) looks promising for the harvest. The leaves may be used as they shoot from stored roots like ordinary Parsley leaves: the plant seems to resist frost.

SKIRRET I gave up some years ago on account of slug trouble, but now that I know more about controlling this pest I shall again return to its culture.

RAMPION as a root vegetable has given me no success even with the "amelioris" varieties, but it is a pleasant "Spinach" substitute, and young leaves form an addition or variation in the salad bowl. The plant is attractive when in flower.

CHINESE YAM I only started cultivating last year, and so have not sufficient experience to say more about it; for those who can start plants in heat it is worth consideration; a long account is given by Thompson (*Gardener's Assistant*, 1859)—far more practical and interesting than Vilmorin's article.

BURBOS CHERVIL also finds a place with me; I commend it to those who like Chestnuts. Seed should soon be ripe, and as it may not be obtainable I shall be happy to distribute superfluous seed. I may say that I think its culture difficult, and should be glad of hints; generally, I think, it takes about four years to learn the culture of a new vegetable, but seven or eight years have gone and I have not really mastered this one, though this year's crop is not bad.

PURSILANE, too, is useful, and takes but little room. It is best grown in a frame, open mostly, or under a pegged up cloche. A score of plants under a cloche will give a good dish: the plants are cut close to the ground, and may be expected to give three cuttings. It makes a pleasant sub-arid "Spinach"; the fresh leaves may be used as a salad alone or as an addition thereto; lastly, a dozen leaves cast into soup on the table may make a mediocre noisette into one for the gourmet. I grow only the Golden variety, after trying other sorts.

Seed is easily saved, but remember that the capsules still look green when they deliquesce.

CLAYTONE makes a most useful and succulent salad in the early spring from plants grown in a cloche or frame. I collect chance seedlings in the autumn and put them in a frame. It also makes a "Spinach," but boils down to an alarming extent. I have long given up ordinary Spinach in favour of Sea-kale and Spinach Beets (which require a few leaves of garden Sorrel in the cooking), Rampion, Claytone, Purslane, Basella and Broad Bean tops.

CORN SALAD is, perhaps, well known, but only the poorest variety is usually stocked by English seedsmen. *H. E. Durham.*

BULB GARDEN.

HYBRID LILIUMS.

SEVERAL hybrid Liliams have at one time or another been raised, but most of them were soon lost to cultivation. The variety Parkmannii would appear to have remained with us for about twelve years after it was received from America. The plant received the R.H.S. First-class Certificate in 1890, and the last note I have of seeing it in flower was at a meeting in August, 1891. It will be noted that in Mr. Hayward's hybrid (see p. 86) that grand form of *Lilium auratum* known as platyphyllum was the seed parent, whereas Parkmannii was obtained from the reverse cross, the pollen parent being a typical *L. auratum*. It is to be sincerely hoped that the new-comer will hold its own, and in time be generally distributed.

The most valuable garden Lily that we have of hybrid origin is *L. testaceum*, but strange to say the raiser of this Lily and its early history seems to be unknown. It is regarded as a cross between *L. candidum*, the Madonna Lily, and *L. chalcidionum*. Anyhow, it is a splendid Lily, and thrives in gardens. There are several forms of upright flowered Lilies in the production of which *L. cruceum*, *bulbiferum*, *daburicum*, and *elegans* may have played a part, but no record of their parentage seems to have been kept. Under the head of *Burlankii* several hybrids have been received from America showing the influence of *L. Parryii*, *L. pardalinum*, and *L. superbum*, but the absence of any records has destroyed much interest in them. Another American hybrid is Golden Gleam, a cross between the Siberian *L. tenuifolium* and *L. Martagon album*. This comparative new-comer forms a very graceful plant, with prettily recurved, apricot-coloured flowers. The hybrids between *L. Hansonii* and the different forms of *L. Martagon* are interesting, but cannot be regarded as very ornamental. In 1900 a Lily flowering at Kew aroused a good deal of attention. It was the result of a cross made three years previously between such dissimilar species as *L. Henryi* and *L. Brownii Chloraster*. The hybrid was named *L. Kewense*. The creamy-white flowers were very suggestive of a small *L. auratum*, being without the characteristic tube of *L. Brownii*. Like several other hybrid Lilies it soon disappeared from cultivation. *H. T.*

PLANT NOTES.

MONTEBRETIA ROSEA.

Few plants seem to come more slowly into general cultivation than *Montbretia rosea*, and I was agreeably surprised to see a large number of the plants in a Perthshire nursery recently. The variety is quite hardy. The flowers are of a pleasing rose colour, and have not the stiffness of habit which characterises most of the *Montbretias*. This beautiful *Montbretia* may be commended on account of its graceful leaves and flowers, and its value for supplying cut blooms. Mr. J. G. Baker named it *Tritonia rosea*, and states that it is a native of Cape Colony, from Uitenhage northward to Natal. *S. Arrott.*



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

PARSLEY.—Plants of Parsley raised from seed sown during the spring, and from which supplies are expected in winter, should be cut off close to the ground. This will result in fresh growth of a stocky nature, and such growth will stand the winter much better than that which is at present on the plants. Hoe the soil between the rows and give a dressing of soot during showery weather. If seeds were sown in July the plants from that sowing will also be benefited by being cut back, and if cold pits are available a good plantation should be made from these plants with a view to providing a supply of green leaves during inclement weather. The soil for this purpose should be in good condition, and brought up to within 18 inches of the roof-glass. Lift the plants and place them in position with great care, watering the roots afterwards to settle the soil about them. Allow the lights to remain off the pit until severe weather is expected, to ensure hardy growth. By these means an unbroken supply of Parsley should be available throughout the winter.

CAULIFLOWERS.—Make the final sowing of Cauliflower seed in a cold pit; for gardens in the south this sowing will be quite early enough to obtain seedlings for the main batch to be planted out in April. Sow the seeds thinly on a firm bed of soil, which should not be more than 18 inches from the roof-glass. When the seedlings are through the surface, remove the light in order to keep the plants stocky. Shift them into 4-inch pots as soon as they are large enough for transference, and stand the pots on a bed of sifted ashes.

CELERY.—Take advantage of dry weather to cut up Celery as the plants become of sufficient size. Only a few inches of soil should be placed round the stems at one time, and this should be thoroughly broken up before it is placed in position. Tie the stems carefully with some soft material, which should be removed as soon as the soil has been carefully placed in position with the hand. Remove all side shoots and small leaves, and see that there is sufficient moisture at the roots before earthing up.

GREEN CROPS.—Keep the hoe at work amongst growing crops while the weather is favourable, so that by the end of the present month the garden may be quite clear of weeds. Late green crops will be benefited by a sprinkling of concentrated fertiliser during showery weather.

CARROTS.—Late Carrots should be thinned at an early stage to 3 inches apart. Carrots sown in April should be lifted before they become too large and placed in store; those raised from seed sown in June may be allowed to remain in the ground for some time to come. At Frogmore we leave the roots in the ground throughout the winter unless they are likely to become large and rough, but for several years the main sowings have been made in the early days of June, which is the best time for this district.

TURNIPS.—Late Turnips should also be thinned and the ground between the rows stirred frequently with a Dutch hoe. The plants will be benefited by frequent applications of soot and wood ashes.

SPINACH sown a month ago should be ready for thinning to 3 or 4 inches apart, and this work should be accomplished before the plants become spindly through overcropping, as they will stand the winter much better than if left unthinned. Slugs are sometimes troublesome with this crop, and should be kept in check by dusting soot along the rows in the early part of the day, while the dew is present on the foliage. Keep the soil always loose by stirring the surface with the Dutch hoe.

POTATOS.—Lift Potatoes directly they are ready for harvesting, selecting those that are suitable as seed tubers. Store the seed tubers in a

well ventilated shed in full exposure to light and air rather than in a clamp until the spring. Tubers which are required for use should not be exposed to the light for too long, or they will soon turn green.

FRUITS UNDER GLASS.

By JAS. HUSSOX, Head Gardener at Gunnersbury House, Acton, W.

MELONS.—With careful attention and a little fire-heat Melons of excellent flavour may be had during the present month. In August the best-flavoured fruits are often those grown in frames, but in September a house provided with artificial warmth is needed to mature the crop. The night temperature of the glass-house should not fall below 60°, and the atmosphere should be kept drier than hitherto, but should the borders be watered freely, the foliage remains healthy the young shoots should still be pinched back, but if the leaves have deteriorated prematurely through insect attacks a few growths should be encouraged to develop. If the crop is a plantful one some of the fruits should be cut a little in advance of ripening and placed in the fruit-room. In no case is it advisable to leave the fruits on the plants for too long at this season.

VINES IN BEARING.—In vintages where the Grapes are well matured the temperature should be reduced, and the amount of ventilation regulated, with the utmost care. In the case of late houses of Black Hamburgh scarcely any fire-heat is needed, but in damp weather and times of heavy dews a little artificial warmth is required, especially in gardens in lowly-lying situations. Later crops of late-keeping Grapes should have warmth to mature the berries perfectly, for if they are not well finished they will not keep well, or be of such good flavour. Aim at a middle course between using so much warmth as to cause shrivelling, and so little as not to be sufficient to develop the highest flavour. It is well known that some of the best flavoured Grapes are frequently those that are shrivelled, but shrivelling is not desirable.

YOUNG VINES.—Young vines of this season's planting should not be encouraged to develop more growth, but do not keep the vines so cool as to run the risk of an attack of mildew. Ventilate the house freely, but reduce the atmospheric moisture and only use the syringe when the weather is warm and sunny. For the present do not in any way reduce the growth. Watch the condition of the border carefully, for it must not be allowed to get too dry, nor should it, if it does, be watered too freely, or growth will still be prolonged. The thorough ripening of the wood is of the utmost importance. See that young vines in pots are not excessively dry at the roots, for this would cause premature ripening of the canes before the leaves have had time to fulfil their proper functions. If the vines are in the open lot them be fully exposed to sunlight and air.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMY COLMAN, Bart., Gaton Park, Reigate.

SEEDLINGS.—Cattleya, Laelia Cattleya, and Brassia Cattleya seedlings raised from late-sown seed should be far enough advanced in growth for transplanting. It is important that each seedling be planted separately at the earliest possible time. Those pricked off now will have time to make roots before winter. Where space is limited, so that the plants cannot be accommodated singly in very small pots, several may be pricked out together in small pans. The orchid may shallow Orchid pan, without side holes, is the most suitable. Seedlings that have matured their first pseudo-bulb will be sending new roots from the base of the growths. These should be re-potted in larger pots, and given every encouragement to grow as quickly as possible. They will not make much growth in the winter, and do not require so much water at the roots or in the atmosphere as in summer; but they must be kept as active as possible, and not rested until the flowering stage is reached, nor must they be allowed to become pot-bound. A suitable rooting

medium is equal parts Osmunda fibre, A I fibre, and Sphagnum moss cut into short portions, adding some crushed crocks, and mixing the whole together. The materials should not be pressed tightly in the receptacles, as it is important that water should pass away quickly. If a house is especially devoted to seedlings of this type of Orchid, it should be kept a few degrees warmer than the one in which the older plants are grown. Should it be necessary to grow them with the older plants, they should be given the warmest and shadiest part of the house, and near to the roof-glass. Seedling *Cypripediums* should be treated in the same manner as described above. Very young plants should be potted in a mixture of Osmunda fibre, Sphagnum moss, and fibrous loam, from which all the small particles have been removed. Chop all the materials into short portions, and add rather a liberal quantity of crushed crocks. The compost should be made moderately firm. Seedlings of more advanced growth, and those nearing the flowering stage, which have filled their receptacles with roots, should be shifted into larger pots, and given a more substantial compost, consisting of at least one-third its bulk of fibrous loam. After the seedlings are re-potted, they should be placed in a warm, moist atmosphere in a shady position. Water sparingly, only keeping the compost just moist by frequent overhead sprays.

SEEDLING CYMBIDIUMS should be re-potted in a similar compost to that described above for *Cypripediums*. The plants should be kept growing actively at all seasons until they reach the flowering stage. They should occupy a position near the roof-glass in a house with an intermediate temperature.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. BARRY, Abbots W. of Godalming, Surrey.

LOGANBERRIES.—The old fruiting canes should now be cut away from the Loganberry, or Fall fruits of this type. They should be cut clean off at the base with a pair of secateurs, then away and burnt. The young canes should then be tied up loosely, the final tying to be done when the canes are bare.

WASPS.—In spite of the late wet weather, wasps are very troublesome. The best method of extermination is to locate the nests, which are usually found in dry banks, mark the nests in the daytime, and when the majority of the wasps have returned at the close of day, push cotton wool or pieces of old rags steeped in a solution of potassium into the holes.

COBNUITS.—As soon as the Nuts easily separate from the husks, they should be gathered. Dry them very thoroughly by exposure in a cool, dry place, safe from the depredations of rats and mice. Find large pots good to keep them in, as the top can be conveniently covered over. The Nuts should be constantly turned.

MULBERRIES. Mulberries should be gathered as soon as they turn colour, or the birds will eat them. The trees, with their dense foliage, generally harbour a quantity of birds. These fruits are very suitable for boiling.

AUTUMN PLANTING.—The preparation of soil for autumn planting may now be proceeded with as time permits. Large holes for orchard planting can be made. On poor, light soils, use well rotted farmyard manure or bone meal; and for stone fruits plenty of lime. The holes should be not less than 4 feet square. Turn over three good spits and break up the bottom. If home-grown trees are to be planted, the end of the present month will be a good time to commence.

THE FLOWER GARDEN.

By W. J. CRISP, Gardener to Mrs. DUMASZEE, Keele Hall, Staffordshire.

TRANSPLANTING SHRUBS.—The soil is now in capital condition for transplanting shrubs, and if the work is carried out during the next two months, the plants will have time to make new roots before the cold weather sets in. Give over crowded specimens first attention. See that the sites for planting are well drained, and trenched at least 2 feet deep. When lifting a tree or shrub dig well below the roots, and, with a fork,

approach the roots gradually, reducing the ball of soil to a manageable size. When planting the holes must be made larger than the roots actually require, so as to allow ample space to spread them out, and in order that the young roots may have plenty of well worked soil to grow into. Tread the soil firmly when filling in the hole, and place strong supports in position directly the planting is finished. During dry weather liberal waterings and occasional sprays will be necessary. In light soils it is difficult to get much earth to adhere to the roots, especially if they have to be removed a considerable distance. In such cases mats should be tied round the roots before removal.

HERBACEOUS BORDERS.—The usual practice of lifting and replanting herbaceous or mixed borders periodically may have to be curtailed this year, but notes should be taken of the varieties that are crowding the more compact sorts. Directly the plants pass out of flower, these overgrown specimens should be lifted, parted, and replanted without delay. Select strong side pieces or shoots, and in most cases discard the centre portion. If the surface soil is lightly forked and mulched, little more attention will be necessary for another year or two, beyond tying, staking, hoeing, and watering. When replanting, the soil must be well dug, and a liberal dressing of well decayed manure worked in, as it will usually be found that the old plants have exhausted the soil.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHMOOR, Eastwick Park, Kent.

SOUVENIR DE LA MALMAISON CARNATIONS.—If the layers of "Malmaison" Carnations are well rooted and growth active, they should be severed from the parent plant preparatory to potting them. Water the plants freely afterwards, and shade them for a day or two if they show signs of distress through being severed. The compost should consist of two parts good turfy loam to one of flaky leaf soil, with old mortar rubble and sand added. Pot the layers into large 60 sized pots or 5½'s, according to the size of the plants, and afterwards place them in a frame on an ash bottom, and shade them in bright weather. Lightly spray the plants several times daily to keep them fresh. Do not admit too much fresh air in the middle of the day for a time, but increase the amount in the evening. It is important not to over-water the soil; very little moisture is necessary, all the shading is dispensed with. The shading must not be continued for a day longer than is necessary, the object being to assist the plants to become re-established quickly in the new soil. When they have recovered from the check, grow them as hardily as possible. Draw the lights off entirely during bright weather, and never permit a dirty, stagnant atmosphere. In late autumn, when the weather is usually damp and cool, remove the plants to a shelf or stage in a cool house, where they will obtain an abundance of air. In these conditions they will have dry surroundings during the dull winter season, when growth should be practically dormant.

GENERAL REMARKS.—The sunshine is now reduced in power, and shading can be decreased. In the case of stoves and general plant houses, where Palms and Crotons are placed with a general collection of plants, there is often a tendency to shade the whole house indiscriminately. If this has been the custom, the blinds should not be lowered early in the morning, except for a few hours in the middle of the day, and drawn up again sufficiently early to raise the temperature to 60° or 65° by sun heat, when closing them for the night. If the weather is misty or cloudy, blinds should be dispensed with altogether, and the ventilation closely watched. Where permanent shading has been painted on the roof glass, advantage should be taken of a dull and damp day to wash it entirely off. If some especially tender plants must be shaded, arrange them together in one part of the house. At this season of the year, plants must be ripened and the foliage hardened, to enable them to withstand the cold of winter.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publishers.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 56.8.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, September 13, 10 a.m. Bar. 29.9, temp. 60.0. Weather—Dull.

SALES FOR THE ENSUING WEEK.

MONDAY.—Sale of Home-grown Bulbs at 67, Cheapside, at 1 o'clock, by Protheroe & Morris.

WEDNESDAY.

Sale of Home-grown Bulbs (for the trade) at 67, Cheapside, at 1 o'clock, by Protheroe & Morris.

FRIDAY.

Sale of Home-grown Bulbs at 67, Cheapside, at 1 o'clock, by Protheroe & Morris.

Food Plants in the Philippines.

The time is approaching when it may need all the prolificness of the East to supply the world shortage of food. When and if that time arrives, the exuberant production of such regions as Java and the Philippines may be called in to redress the unfavourable balance of production and consumption in European countries. Provided that there be sufficient shipping to carry the food, the East, from its almost infinite resources, should be able to make large contributions to our needs. If, however, the Philippines are to supply their quota, the natural resources of the islands will have to be developed with rapidity. As indicative of the food supplies which it may be possible to derive from these sources, the following account of the Food Plants of the Philippines* is of special interest.

The Philippines, lying between the Pacific Ocean and the China Sea, consist of some 3,141 islands, with an area of 119,512 square miles, and a population of eight million inhabitants. The islands are of volcanic origin, and of broken surface of rugged mountains, with rich, level valleys between. The climate of the archipelago is mild and free from extremes. The mean annual rainfall is 96 inches; in the driest regions 52 inches, and in the wettest 156 inches. In no part of the islands are there regions of real drought, nor are there long rainless periods.

The chief crops are Rice, Abacá, Sugar, Corn (Maize), and Tobacco, but in addition to these staple crops the Philippines are extremely rich in species of economic value. Mr. Webster is sanguine that the

Philippines may become not only self-supporting with respect to food, but also an important centre for export. At present, however, these islands, instead of contributing to the general needs of the world, import foodstuffs in considerable amounts. This condition is deplorable, not only as Mr. Webster observes, from the point of view of the islands themselves, but also for the world in general.

With improved agricultural organisation, Mr. Webster predicts that the Philippines will be able to export more sugar and copra, and also starch, Rice, and fruits of many kinds.

Appended to the paper is a list of truly formidable length of the food plants now cultivated in the Philippines. The chief value, however, of the report so far as we in this country are concerned is to direct our attention to the immense food-producing resources of our own tropical and sub-tropical possessions. Reconstruction is in the air as well as on foot, yet we do not remember having heard that the problem of organising supplies from these possessions has received attention. Nevertheless it is a fact that not so far away in Egypt, for instance—there are produced large quantities of foodstuffs, which, in so far as they arrive in this country, do so by the casual route of private enterprise. We would suggest that the resources of all such countries should be investigated without delay, and in so far as it is found practicable, these resources should be drawn upon, with both energy and judgment, to supplement the supplies of the chief staple foods, the organised introduction of which is already engaging the attention of this country. This is a work which might well be undertaken by the Colonial Office with the assistance of traders, agriculturists, and horticulturists. To give but one example of what might be possible, Egypt produces an enormous Onion crop, available for export. There would appear to be no reason why the Onions from Egypt should come to us in their present bulky form. Dried, they would occupy about one-sixth of the cargo space, and, provided they were not dumped here at a time when home supplies were plentiful, they should find a ready market, and benefit the consumer without disadvantage to the home producer.

LEGISLATION REGULATING THE IMPORTATION AND SALE OF FERTILISERS, FARM FOODS, SEEDS, AND PEST REMEDIES IN SOUTH AFRICA.

An Extraordinary issue of the *Government Gazette* of the Union of South Africa, dated June 25, publishes the text of an Act to regulate the sale of fertilisers, farm foods, seeds, and pest remedies. This Act (No. 21 of 1917), which may be cited as the "Fertilisers, Farm Foods, Seeds, and Pests Remedies Act, 1917," is to come into operation on a date to be fixed by a Proclamation of the Governor-General; it repeals the similarly named Act (No. 20 of 1907) of the Cape of Good Hope, and provides, *inter alia*, that no person may sell as a fertiliser any article which does not contain, in a form or combination available as plant food, nitrogen, or phosphoric oxide, or potash or

lime. Every person who sells any fertiliser or farm food must, at the time of delivery, furnish the purchaser with an invoice stating the quantity sold, the name and/or brand under which the fertiliser or farm food is registered, and also the chemical constituents thereof. That statement in the invoice is to be deemed to be a guarantee that the article is as described therein. The Act further provides for the labelling of packages of agricultural seeds, so as to show the name of the seeds and the percentage of purity and germinating capacity. It is also provided in the Act that no person shall import into the Union any bones for the purpose of manufacturing therein any fertiliser, or import, or have or expose for sale therein any fertiliser manufactured from bones outside the Union, unless he produces a certificate signed in the country of origin by a person designated by the Minister of Agriculture that the bones or fertiliser have been completely sterilised. Provision is also made for the inspection of imported fertilisers, farm foods, seeds, and pest remedies, and for their disposal as directed by the Department of Agriculture, if found to be otherwise than required by this Act. The text of the above-mentioned Act may be consulted by British firms interested at the Department of Commercial Intelligence, 73, Basinghall Street, London, E.C. 2. *The Board of Trade Journal*.

SCARCITY OF FERTILISERS.—In view of the general shortage of artificial fertilisers, it is urged by the Food Production Department that they shall be used for increasing the yield of food crops only, and not in the cultivation of flowers.

CONDITION OF THE CROPS.—The monthly report on the condition of the crops issued by the Board of Agriculture on the 1st inst., states that the corn harvest generally began throughout the country during August, and probably the bulk has been cut, but in most districts comparatively little has been carted. From most parts sprouting of the grain is reported. Owing largely to the high winds having shaken out a good deal of grain, particularly Oats and Barley, the prospective yields are not so good as a month ago, while the quality has also generally been affected. None of the corn crops is up to the average; Barley is generally the best and Oats the poorest. Prospects are worst in the eastern counties. Beans are a very bad crop, but Peas are better, though considerably below the average. Potatoes are everywhere over average, especially in the eastern counties, although not quite up to the promise of a month ago. They have suffered somewhat from rains. Disease appears to be prevalent in the south-west, but apart from that area, although it is mentioned in many other parts of the country, there is generally less than usual, and some districts are reported free from it. Turnips and Swedes are average or rather over throughout the west and south, but much under normal on the eastern side of the country from Essex to Northumberland, so that on the whole prospects are for a crop rather below average. Their disappointing appearance in the east is largely due to the difficulty of obtaining a plant earlier in the summer, and to damage by fly. In some parts of the country the rains during August have improved the crop, but in others it has been too wet for these roots. Summarising the returns, and expressing an average crop by 100, the appearance of the crops on September 1 indicated probable yields which may be expressed by the following percentages:—Wheat, 95; Barley, 97; Oats, 90; Beans, 80; Peas, 91; Potatoes, 104; Turnips and Swedes, 96; Mangolds, 103; Hops, 99.

WAR ITEMS. We regret to learn that Mr. E. E. RISELEY, librarian of the Linnean Society, has been killed in action.

—The fourth free gift sale of the Dumfries and District Horticultural Society for the benefit of war charities, held in St. Mary's Hall, Dumfries, on the 15th ult., realised upwards of £78.

* By P. J. Webster, Horticulturist, Samar Expt. Station, the *Philippine Agricultural Review*, IX., 8, 1916.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

EUSTOMA RUBSELLIANUM.—In the note accompanying the illustration of *Eustoma Russellianum* on page 97, no mention is made of a white-flowered form. At Key, however, some time ago, I noted a variety named *Alba*, in which the blossoms were almost pure white. The date according to my notebook, was July 9, 1913. W. T.

In the note which accompanied a figure of this beautiful plant in your pages last week it is stated that the rose-coloured variety shown by Mr. C. J. Ellis is a hybrid. I saw this plant at the R.H.S. meeting, and questioned Mr. Ellis as to its origin, and I am satisfied that it is nothing other than a colour sport from the type. White sports sometimes occur among a batch of seedlings of this plant. The suggestion was hazarded at the meeting by someone that Mr. Ellis's plant was a hybrid, which led to a careful comparison of it with the type, but no difference could be found either in habit, foliage, or flower except that of colour. It would be worth while to cross the purple, rose, and white forms, in the hope of obtaining greater variety of colour. W. Watson, Kent.

APPLES IN EAST LoTHIAN.—Your correspondent on p. 52 states that the Apple crop in his district of East Lothian is under the average. This is not my experience. The orchard of which I have charge contains about 300 trees, nearly all of pyramid shape, with a few as cordons, and all are worked on the Pear dise stock. The majority of the trees are ten years old, and they include 41 varieties of Apples. It is not intended to grow such a large number of varieties permanently, but the sorts now grown are under trial in order to ascertain what are good and reliable croppers in the particular district. The garden is situated in the western part of the county, and the soil is a light, rich loam, about 2 feet or depth overlying whinstone. For the last year or two, Mr. Astrachan has been the best cropper, and good as this variety has been in the past, it has excelled itself this season. This year the crop is remarkably large, but the fruits are smaller in colouring than usual. The colour is a rich, is superb. This Apple, I believe, has the reputation of being not quite hardy, but that is certainly not my experience in this garden. Du hes of Oldenburg is also a heavy cropper here, the trees being laden with excellent fruits. Other varieties bearing heavy crops are Mr. Gladstone, Lady Sibley, Beauty of Bath, King of the Pippins, Sterling Castle, Claygate Pearmain, Bramley's Seedling, Worcester Pearmain, Bramark, Grayvein, Warner's King, and Irish Peach. Average crops are being yielded by Ribston Pippin, Margil, Bon's Red, Groschener, Hector Macdonald, and New Northdown. Smaller crops below the average have to be credited in the varieties James Grieve, Eldonville Seedling, Potts' Seedling, Lord's Prince Albert, and Scarlet Victoria. I am surprised that the variety James Grieve has always turned out more or less of a failure, but a well-known Scottish pomologist informs me that I have probably a spurious stock. I am informed that there are at least two or three stocks in commerce that are not true. Of recently planted sorts, Roy, W. Wilks, which is now fruiting for the first time, gives every indication of becoming a reliable variety. Cardross Green not a novelty by any means, but new here, is a grand cooking Apple. It somewhat resembles Sterling Castle, and is a most promising cropper. For some reason or other this variety has never become well known, and it must be at least a quarter of a century ago that it received the First class Certificate of the Royal Canadian Horticultural Society. As Cox's Orange Pippin is useless here, I have planted King of the Pippin and St. Edmund's Pippin, both of which are remarkable for fine flavour. I have two high class American dessert varieties under trial as cordons, but they are only maiden trees, planted last year. They are Grimes' Golden Pippin and Winter Banana. Both sorts are already highly promising, especially the former. George M. Taylor.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 11.—The fortnightly meeting on Tuesday last was of more than usual importance, for besides the exhibits staged before the respective R.H.S. Committees, the National Rose Society, and the National Dahlia Society held special floral meetings in conjunction with the R.H.S. Show. The exhibition was favoured by beautiful weather; the wealth of flowers and the numerous visitors reminded those present of the Vin-

sen difficulties seen to hinder the progress which is being made, and although fewer novelties received recognition on this occasion than was the case last autumn, many fine seedlings were forthcoming. The groups of Roses displayed both by nurserymen and by amateurs were beyond praise, not only for the fine development and excellent culture of the flowers themselves, but also for the tasteful manner in which they were staged.

Besides the awards to the Dahlias, the Floral Committee made an Award of Merit to a beautiful Crab, shown by Messrs. J. C. Munn and Sons. The principal groups in the Floral section were composed of Dahlias, ornamental foliage, and



THE ORNAMENTAL DAHLIA, COMMANDEUR, CRAB, AND PEACH, ALL ON YELLOW. THE SEARBY CRAB ON.

(See Article in the October Issue of 1917.)

cent Sparte exhibitions in previous days. All sections of horticulture were represented, but the chief exhibits were Dahlias and Roses. At the last meeting, the new Dahlias submitted for award were judged by a joint committee of the R.H.S. and the National Dahlia Society. A very large number was considered of sufficient merit to be given the joint award. The Dahlia classes, although not so important as in former days, were well represented, and the exhibits, though few, were of a high order of merit. The display revealed the direction in which modern taste seems to be tending, namely, towards the more decorative garden types, such as the Colorette, Paeony flowered, and "Star" sections. With regard to the Roses, not even the pre-

vious pot shrubs and climbers, and Ferns. Mr. J. B. Rivers, showed many beautiful decorative varieties in a general collection of Dahlias, which included Exmouth Glory, at which the flowers were amber and white, tipped with gold; Pierre Ledebur, a handsome mignon flower, with white-tipped florists; Godfrey's Crimson; and Diana, classed as a decorative Paeony variety, with large, bold, wine red blooms. Messrs. Rivers made a very interesting display of berried shrubs and climbers, and a companion group to this, on the opposite side of the entrance, was a collection of autumn foliage and berries staged by Messrs. J. C. Munn and Sons. The ornamental fruited Crabs in this collection formed the chief feature of the group, a prominent place being

given to the new variety, Cheal's Crimson, which received an Award of Merit. The ALDER RIVER NURSERY Co. showed a fine batch of *Lilium speciosum rubrum* as the centre-piece of a general collection, the most interesting of the hardy plants being *Kirengeshoma palmata*, a member of the Saxifragaceae, native of Japan. The flowers are yellow, and just before they open, hang pendulous, suggesting a small yellow *Lapageria*. The texture of the petals is very stout, as in the last-named genus. The foliage is exceedingly handsome; the big lower palmate leaves are stalked, and the upper ones sessile. Messrs. H. B. MAY AND SONS contributed their usual excellent form of Ferns.

Several collections of choice Orchids were staged, and a number of novelties submitted for award, of which two received Awards of Merit.

Several fine groups of fruit were placed for adjudication before the Fruit and Vegetable Committee. Mr. J. C. ALLGROVE showed pot trees of Apples and Pears, and baskets of gathered fruit. The trees were magnificent specimens, and laden with fruits. One of Pear *Triomphe de Venne* bore a crop of twenty fruits, of exhibition size and quality, and the branches of bush trees of Apple Cox's Orange Pippin were weighed down with choice specimens. Perhaps the most remarkable were miniature trees of Apple the Rev. W. Wilks, bearing fruits almost as large as the pots in which the trees were planted.

JOHN A. NIX, Esq., Tilgate, Crawley, exhibited a collection of hothouse fruits comprising some thirty dishes, all of superb quality, and well arranged. The bunches of Grapes were of very fine finish, especially Muscat Hamburg, Madresfield Court, and Gros Maroc Peaches Grosse Mignonne, Thomas Rivers, Prince of Wales, Walburton Admirable; Nectarines Victoria and Humboldt; Plums Jefferson, Belgian Purple, and Coe's Golden Drop; Apples, Pears, and Brown Turkey Figs, were particularly fine. Mr. H. CROSE, Orpington, contributed hardy fruits, of which the most remarkable were the culinary Apples. Mr. E. A. BUNYARD showed bunches of Grapes of the Frontignan type grown in a small, unheated greenhouse. The flavour was excellent, especially of Primaviv Frontignan, Early Saumur, White Frontignan, White Sultana, and Ascot Citronelle.

Floral Committee.

Present: Messrs. H. B. May (chairman), E. H. Jenkins, H. Jones, J. Dickson, E. Dixon, W. P. Thomson, E. F. Hazleton, C. B. Fielder, J. F. McLeod, John Heal, J. T. Bennett Peck, G. Reuthe, E. A. Bowles, S. Morris, W. G. Baker, J. Green, W. A. Cranfield, A. Turner, J. W. Blakey, and W. Howe.

AWARDS OF MERIT.

Crab Cheal's Crimson.—A beautiful form of *Prunus prunifolia* var. *coccinea*. The long branches were crowded with red fruits about the size of Cherries; the stalks were about an inch long. The colour of the fruits is vermilion, with a delicate pinkish bloom. The foliage resembles that of the common Plum. Shown by Messrs. J. CHEAL AND SONS, Crawley, Sussex.

DAHLIAS.

Alma.—A large, pure white, decorative Paeony variety, with florets from 1 inch to 1½ inch broad. The massive blooms, each with a neat golden centre, are held well erect on stout stems. The variety is semi-double, and large without being coarse.

Pendule.—A single, decorative variety of fair size, and distinct in colour. The light green stems are unusually long, bearing the flowers well above the foliage. The colour is old rose and white, the latter occupying the central portion and apex of each segment, while the rich, old rose colour appears at the base and along the sides. Both shown by Messrs. J. BURRELL AND CO.

Dominion.—A Cactus variety of full exhibition size and excellent form. The slender tips of the flowers incurve slightly, but not sufficiently to spoil the shape in the smallest degree. The colour is deep amber—a distinct shade.

Guardian.—A large and solid-looking garden Cactus variety; the blooms are borne on stout

stems and held well erect. The colour is deep, and dark orange-scarlet, with a flush of maroon. Both shown by Messrs. J. STRELDWICK AND SONS.

Unfold.—A decorative variety, the bold blooms of which are about 8 inches across, and of fine, regular form. The broad segments shorten gradually towards the centre, and overlap. The colour is deep, soft orange-salmon.

Sea Horse.—A solidly-built decorative variety, very double, and with long stems. The colour is soft yellow with white tips.

Miss Louis.—A neat Pompon Cactus variety, that appears to be very free in flowering and of great garden value. The modest flowers, borne on wiry stems, are rosy mauve with a suspicion of salmon at the bases of the florets. These three shown by Mr. J. T. WEST.

Joy Belle.—A Collette variety of good size and form. The colour is crimson maroon, with a white, crimson-streaked collar that seems to spread too far and is rather irregular. Shown by Messrs. DOBBIE AND CO.

Moussé Star.—Dainty in pose and colour, this variety has all the finest attributes of its class. The shade of colour is soft mauve, fading almost to white in the centre. Shown by Messrs. J. CHEAL AND SONS.

St. Ewynn.—A large but refined decorative variety, some of the blooms measuring 8 inches in diameter. The flowers have broad florets and are of good shape. The colour is rich pink flushed with salmon. Shown by Mr. CHARLES TURNER.

Royon de Rouge.—A charming decorative variety, about 4 inches in diameter and almost a single. The stems are good, and, as the variety appears to be very free-flowering, it should prove a useful garden Dahlia. The colour is a rich shade of rose-pink, with a bright golden centre from which the golden hue shades out into the pink colouring. Shown by REGINALD COVE, Esq., Duffryn, Cardiff.

Messrs. ALEXANDER DICKSON AND SONS, New-towards, showed a novel Sunflower named *Cactus Star*. The flower bears a striking superficial resemblance to some of the new Star Dahlias, but has a large black disc in the centre. The colour of the ray florets is lemon yellow passing to brighter yellow at the base. The florets are narrow, and have a tendency to reflex, as in some of the Star Dahlias.

GROTES.

The following medals were awarded for collections of fruit:—

Silver Flora Medals to Mr. J. B. RIDING, Chingford, for Dahlias; and Messrs. PIPER'S, for berries and shrubs.

Silver Banksian Medals to the ALDER RIVER NURSERY Co., for Lilies; Messrs. J. CHEAL AND SONS, for ornamental foliage and berries; Messrs. H. B. MAY AND SONS, for Ferns; Mr. G. REUTHE, for hardy plants; and Mr. CHARLES TURNER, Slough, for Dahlias.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Veitch, Messrs. Jas. O'Brien (hon. secretary), William Bolton, Arthur Dye, C. J. Lucas, Gurney Wilson, J. Charlesworth, Walter Cobb, Fred K. Sander, S. W. Flory, J. E. Shill, Stuart Low, R. A. Rolfe, J. Wilson Potter, Frederick J. Hambury and T. Armstrong.

AWARDS OF MERIT.

Laelio-Cattleya Commander-in-Chief (see fig. 39) (*C. Iris* × *L. C. Miss Evelyn Norton*), from Messrs. ARMSTRONG AND BROWN, Orchid-hurst, Tunbridge Wells. A most effective hybrid, remarkable for the strong contrast of colour between the light-coloured petals and very dark lip. The flatly-arranged, and partly overlapping, sepals and petals are clear citron-yellow, the lip claret crimson, with thin, gold-coloured lines from the base to the centre. The column is fleshy and white.

Laelio-Cattleya Bronze King (*L. C. Anacantha* × *L. C. luminosa*), from Messrs. ARMSTRONG AND BROWN. A large and handsome flower in which the *Cattleya Dowiana Rosita* in *L. C. Anacantha* shows prominently. The sepals and

petals, which are 7 inches across, are yellow, lightly tinged and veined with rose on the outer halves. The lip is magenta-crimson with fine gold veining from the base; the front has a narrow, lilac-coloured margin.

OTHER EXHIBITS.

Messrs. CHARLESWORTH AND Co., Haywards Heath, were awarded a Silver Flora Medal for an effective group of hybrid *Cattleyas*, *Laelio-Cattleyas* and *Odontoglossums*, with interesting species. New and specially fine plants were *Cattleya Aeneas* (*Venus* × *Dowiana aurea*), with bright yellow sepals and petals and glowing claret-crimson lip; *C. Adula Vesuvius* (*Hardyana* × *bicolor*), a grand addition to the *C. Iris* section, with large apricot-yellow flowers flushed with rose and deep purplish-crimson lip; and *Laelio-Cattleya luminosa* var. *Rosita*, a noble flower with yellow sepals and petals and large purple lip.

Messrs. ARMSTRONG AND BROWN were awarded a Silver Flora Medal for an interesting group of hybrid *Cattleyas*, including several good white forms, *Laelio-Cattleyas*, and others. The *Odontoglossums* included several finely-blotched seedlings. The best of the *Odontiodas* was *Oda. Sentation* var. *roseum*.

Messrs. SANDERS, St. Albans, were awarded a Silver Banksian Medal for a group, in the centre of which was their new *Cattleya Thebes* var. *Britannica*, with bronzy yellow sepals and petals and dark crimson lip. Others in the group noted were three good *Cattleya Adula*, a very dark *Miltaria Morebiana atro-purpurea*, and the new *Cypripedium Robin Hood* (*bingleyensis* Charltonii × *Gaston Bultel*).

Sir JEREMIAH COLMAN, Bart., Gatton Park (gr. Mr. Collier), showed the new *Laelio-Cattleya Helene* (*L. C. blotchyensis* × *C. Adula*). The plant carried a good spike of flowers, which have bronzy rose sepals and petals and purple lip. The exhibit included three species of *Anguloa*.

Messrs. HASSALL AND Co., Southgate, showed several excellent varieties of their fine strain of *Cattleya Adula*, three good *Brasso-Cattleya Home*, and a good form of *Cattleya Regina*.

Messrs. FLOREY AND BLACK, Slough, showed several novelties, including *Brasso-Cattleya Lotus* (*B. C. Digbyano-Mossiae* × *C. Rex*), with a fine silver-white flower tinged with rosy-lilac, the lip reddish purple at the base and the centre marked with rose colour, and *Laelio-Cattleya Raiah* (*L. C. Ettrick* × *C. Dowiana Rosita*), with flowers of the *C. Octave Doin* class, with crimson white sepals and petals tinged with light purple.

Fruit and Vegetable Committee.

Present: Messrs. A. H. Pearson (in the chair), W. Wilks, A. Imbick, John Hamson, W. H. Divers, P. C. M. Veitch, H. S. Rivers, J. C. Allgrove, E. Beckett, W. Pompart, J. Cheal, and E. A. Bunyard.

GROTES.

The following medals were awarded for collections of fruit:—

Silver-gilt Knight Medals to Mr. J. C. ALLGROVE, Langley, Slough, and Mr. J. A. NIX, Tilgate, Crawley.

Silver Knight Medal to Mr. H. CROSE, Orpington.

COMPETITIVE ROSE CLASSES.

The National Rose Society's Competitive Classes, in conjunction with the B.H.S. meeting last Tuesday, were arranged on rather a different plan from that familiar to the members of the Society, no money prizes being awarded, and no directions given as to how the flowers were to be shown; the prizes awarded consisted of medals and certificates. A fine lot of Roses were collected together, particularly those of the decorative section; but they were sadly crowded in one side of the hall, the centre and opposite side being devoted to other exhibits.

The nurserymen's groups of Roses were undoubtedly the feature of the exhibition, and Silver Medals were awarded to five groups: To Mr. Hicks for a very bright and cheerful collection; to Messrs. A. DICKSON AND SONS, for a group in which Red Letter Day, Margaret Dick-

son, Hamill, and Kent, were conspicuous; to Messrs. FRANK CANT AND CO. for an excellent group, in which Lady Greenall and the single pink, Mrs. J. E. Salmon, were particularly noticeable; to Messrs. B. R. CANT AND SONS, who showed a fine vase of the Lyon Rose; and to Messrs. W. AND J. BROWN, for a group of excellent Roses, over which baskets of leaves were hung at intervals. The blooms shown in this exhibit were very fresh and clean, but the very confined space hardly allowed for the inspection of the group, which doubtless the exhibitor had not noticed when arranging his stand. This particular exhibit showed to much greater advantage from the gallery of the hall.

Bronze Medals were awarded to Mr. F. LITTLE for a group in which a large central arrangement of Mme. E. Herriot looked very well; to the Rev. J. H. PEMBERTON, Mr. G. PRINCE, and Messrs. WM. PAUL AND SON. The group of the last named firm was noticeable for a fine stand of the China Tea Titania, which is of quite a unique colouring of a shade of coppery pink; another of their new Rose, Mermaid, and two lovely groups of Mme. Léon Pain and W. A. Richards.

Certificates of Merit were awarded to Messrs. T. HARRISS AND CO., H. BERRY, GUYERS TURNER, G. W. AND H. BROWN, and D. PINNOR AND SONS, the two last named exhibitors using dispensing boxes of exhibition Roses amongst their flowers. A like award was made to Mr. J. C. ALLIBROVE for a show of Rose hips. In the centre was a complete plant of Rosa Mayasi carrying its large pear-shaped berries (see fig. 50), flanked by R. Fargesii, and R. setipoda, which were scarcely less brilliant; while the front of the stand was filled with vases of R. magosa, R. rubrifolia, and others carrying fruits.

Turning to the amateurs' exhibits, the First Award for a group of Roses fell to Mr. S. W. BURGESS, who received a silver medal, and he may be congratulated on the success of his first entry in the decorative classes. The Rev. F. R. BURNSIDE and Mr. D. H. DAVIES came next with bronze medals. Mr. DAVIES' group was decidedly the most tastefully arranged of the three, though in quality of flowers Messrs. BURGESS and BURNSIDE excelled.

For baskets of Roses Mrs. COLEMAN HALE was awarded the 1st prize, and Miss CHRISTINE HALE the 2nd, the basket of the latter, though less ambitious than the 1st prize exhibit, being very tastefully arranged. In the case of baskets of Roses the judges evidently found a difficulty in deciding between the competitors, and awarded a silver medal to Mrs. COLEMAN HALE, and another to Mrs. OAKLEY FLEMING. Each lady showed two large bouquets, Mrs. C. PEAR having, in the one case a charming arrangement of Malindi, and the other a mixed bowl; while Mrs. FLEMING'S best bowl contained blooms of Irish Edouard, and a silver vase of Mrs. J. E. Salmon.

For 12 exhibition Roses Mr. R. DE V. PRYON was placed 1st and Mr. W. SANDERSON 2nd.

SEEDLING ROSES.

Some twenty six new Roses, some related and attracted, as they always do, considerable notice and discussion among the visitors. The task of judging these new seedling Roses is a thankless and almost impracticable one, for the prizes are asked, not to compare one Rose with another, but to compare each Rose staged with their ideal of what a Rose of the character before them ought to be. It is small wonder that their decisions are frequently unannounced, and often given to Roses which fail to obtain favour in gardens, or that the Society is constantly endeavoring to find more satisfactory methods of doing the work. At one time reliance was placed on collecting a large number of judges. Then the number was reduced to a smaller panel, and at present a system of pointing prevails, which will, in all probability, come up for reconsideration before long.

Mr. EASTEA showed a pretty quintet of new varieties, two of which seem likely to prove of considerable merit, in the decorative section. These were Lania, a beautifully shaped little Rose of bright orange, and Mrs. H. D. GREENE, a variety resembling a pinker Joseph Hill. The latter had previously received a card of recommendation, and some thought might have had a higher award on this occasion. The spray at the top of the stand showed that it possessed beautiful dark bronze foliage. Lania

is decidedly attractive, but suffered somewhat on this occasion from being arranged in a stand with another Rose, Iphigenia; the other two shown by this raiser were the white Polyantha Little Abg, which is evidently very free in flowering, but has been seen before, and Vesta, a single flower of obscure colouring, very sweetly scented. Mr. PEMBERTON showed another of the series raised by him, with which the public is becoming familiar, the novelty being of a soft yellow colouring, called Dyaltrak.

Messrs. S. McGRATH AND SON showed nearly a dozen new varieties, which, regarded as a whole, were remarkable for their fine colouring. Perhaps the two most notable flowers were Miss Willmott, a fine Rose of soft lemon colour with a shade of flesh or pale pink in the centre, and Queen Alexandra, a flower of curious colouring, the petals being bright scarlet with a trace of orange, and the reflexes old gold, reminding one of a brighter-coloured Juliet. Both these Roses had previously obtained the N.R.S. (2nd) Medal. In shape, the variety Miss Willmott is to be preferred, and the softness of the colouring upon one as it was examined; but Queen Alexandra is quite unique in colour, and gained much by being examined from a little distance, where the two rather startlingly distinct shades of colour in the petals bleached together, giving the flower and group a very bright appearance. Its defect lies in its form, the centre being too much rounded by the incurving of the petals; it is a striking Rose, but lacks the fragrance of Juliet.

The variety Mrs. Bedford received a Gold Medal. The flower belongs to the decorative section, and is of a brilliant orange. J. H. DAVISON and J. de ESCOFFET each received Certificates of Merit; the former is a crimson Rose of no great distinction, but the latter is a remarkably deep crimson shaded with purplish black, from which one might surmise that it had Etolle de France among its ascendants. Though not a particularly large flower, the form is good, and it may perhaps attract an exhibition prize.

Among the other Roses shown by this raiser were Emma Wright, a semi single orange flower of the decorative type, which had already won a Certificate of Merit; Mrs. R. F. Felt, a single flower of pale coloured crimson pink with cream centre, resembling Isabel, and Mrs. Hall Inglis, very similar but a little deeper in colour and with an extra row of petals, making it only semi-double. Good H. Wals of Galley, not unlike a bright Savoy from Ami; Canton Clark, light crimson; and Mrs. L. de Rothschild.

Messrs. ALEXANDER DICKSON AND SONS showed several new varieties. Clive Goodaire received a Certificate of Merit. This is a rather thin Rose of a pale cream colour, perhaps a little after the style of G. de la Reine, but pale. We may expect that when it comes to this country it will require to be shown in the bud, as it seems likely to open somewhat quickly. A like award was obtained by Francis Gaunt, a pale orange-buff flower. Alexander Emble is a fine cherry crimson flower, and, though not so valued by the judges, impressed me as the best of the crimson flowers staged among the new Roses. Other flowers staged by these raisers were Charmelle, a pretty orange-pink; Lady Doreen Stewart, a crimson Lady Dickson; and Mrs. Helen Rosenblath, a pale pink flower.

The premier award at this exhibition was the City Cup. This is given to the best autumn-flowering climbing Rose of the year, and was won by Messrs. WM. PAUL'S Mermaid, a hybrid from R. bracteata, and undoubtedly the most distinct new Rose of the year. It is a large single flower with lemon-cream petals set off by its central collection of yellow stamens. The plant recommending the exhibitor showed robust growth and had beautiful dark, shiny foliage.

Mr. BATES showed a little vase of hips of a Rose he states he grows under the name Rosa anglica. Perhaps R. arvensis (Præ) is correct. If it be this Rose it recalls an old controversy between P. de Coubin and Dr. Christ which led to an elaborate dissertation in *Journal de Botanique Helvétique*, in which he examined the numerous forms allied to R. arvensis of the San Gothard and connected it with R. corifolia and R. abdita. *White Rose*.

COMPETITIVE DAHLIA CLASSES.

The competitive classes held by the National Dahlia Society in conjunction with the R.H.S. fortnightly meeting on Tuesday last, took the place of the Society's annual exhibition. Competition was not keen, and practically everyone who showed gained a prize. The quality of the flowers, and especially single and Pompon varieties, was remarkably good.

In the leading open class for Cactus varieties, eighteen bunches of six blooms each, Messrs. J. STREDEWICK AND SON were the only exhibitors, and they were awarded the 1st prize. The outstanding varieties were the new amber-coloured Dominion, Sir Douglas Haig, Miss Stredwick, Harry Crabtree, and F. W. Fellowes. Messrs. STREDEWICK AND SON were also awarded the 1st prize in the class for four dozen Cactus blooms shown on stands.

Mr. S. J. E. PRYOR, The Laburnums, Preston, Hitchin, led in the class for six Cactus blooms of one variety, with W. E. Peters. He was followed by Mr. A. F. TORRELL, The Viney, West End, Southampton, with Buccanear. Messrs. J. CHEAL AND SONS were the only exhibitors of a dozen garden Cactus Dahlias arranged in vases with suitable hardy foliage; they were awarded the 1st prize.

This firm also won the 1st prize for twenty-four single Dahlias, ten flowers of each, with clean, shapely blooms of Miss Roberts, Beacon, Nympha, Leslie Seale, and others. Messrs. CHEAL had no competitors in the class for twelve fancy single Dahlias, ten blooms of each; their variety Leander, Owen Thomas, and Wm. Parrott being of outstanding merit. The same firm excelled in the class for twelve varieties of Colletted Dahlias.

Mr. J. A. JARRETT, 184, Anerley Road, Anerley, was the only exhibitor of (a) six vases of Paenony-flowered Dahlias, and (b) six vases of decorative Dahlias, six blooms of each variety being shown in each case.

In the amateurs' classes, Mr. S. H. COOPER, The Hamlet, Chippenham, led for two dozen show and fancy blooms, with clean specimens, although some flowers were not yet at their best; 2nd, Mr. R. BURGESS, St. Mary Street, Bedford, for twelve show blooms, Mr. C. LUCKIN, Paulborough, Sussex, gained the 1st place, and Mr. JAS. WATTE, Wood Lane, Chippenham, the 2nd. In the class for six show Dahlias, the prize winners, in order of merit, were Mrs. MAY, Hunt Cottage, Dial Post, West Grinstead; Mr. A. P. INOSSON, and Mr. S. T. WHITE, North End, Eastleigh.

Mr. C. LUCKIN led in the class for six vases of garden Cactus Dahlias, the blooms associated with suitable foliage, including grasses. In a similar class for two varieties, six blooms of each, Mr. S. T. WHITE was the only exhibitor, and was awarded 1st prize. Mr. PRYON showed a capital exhibit in the class for nine Cactus varieties, three blooms of each, and secured the 1st prize; 2nd Mr. INOSSON. Mr. LUCKIN secured the premier award for six Cactus Dahlias, three blooms of each. Mr. PRYON had Mr. LUCKIN in the class for a dozen Cactus blooms staged on boards. For six varieties, similarly staged, Mrs. MAY, Mr. S. T. WHITE, and Mr. S. H. COOPER won in the order of their names. In the class for twelve Cactus blooms in four varieties, three blooms of each, Mr. LUCKIN was placed 1st, and Mr. BURGESS, St. Mary Street, Bedford, 2nd.

Mr. H. BROWN, Luton, won the challenge bowl offered for twelve varieties of Pompon Dahlias, six blooms of each, with clean, bright blooms; 2nd Mr. INOSSON. In the class for six Pompon varieties the awards were made to Mr. J. WATTE, Wood Lane, Chippenham; Mr. S. H. COOPER, and Mr. D. B. CROSS, Highgate, in this order. Mr. A. BROWN, Langrave, had Mr. LUCKIN in the class for six blooms each of six varieties of single Dahlias.

Mr. JARRETT had matters almost all his own way in the classes for (a) four vases of decorative Dahlias, (b) six vases of Paenony-flowered varieties, (c) six Collette varieties (six blooms of each), (d) six Collette varieties (three blooms of each). In the three former classes he was the only exhibitor; in the two last named classes Mr. S. T. WHITE was placed 2nd.

CORY CUP.

There were two entries for the Cory Cup, which was offered for the best group of decorative garden Dahlias arranged on a space 25 feet by 5 feet. Hardy foliage and grasses were allowed for decoration. Messrs. GARDNER PAPE AND CO., London Wall, won the Cup, and Messrs. CHALM were second. The former firm had a bright and attractive exhibit, in which almost all sections of the flower were represented.

BRITISH WHOLESALE FLORISTS AND HORTICULTURAL TRADES.

SEPTEMBER 11.—At a joint meeting of members of the British Wholesale Florists' Federation and the Horticultural Trades' Association, held at Essex Hall, Essex Street, Strand, W.C., on Tuesday last, it was decided, in the event of a general imposition of duties on goods imported after the war, that these two trade associations would support the Government in placing duties on imported bulbs, plants, etc., and recommend that such duties should be on the *ad valorem* principle, and that the amount be 25 per cent. Mr. G. W. Leak was chairman. The B.W.F.F. advocated *ad valorem* duties and 25 per cent.; the H.T.A. as represented by those chiefly interested in the distribution and production of bulbs, advocated duties by number, on the American method, and suggested 10s. per 1,000 on Daffodils and Tulips. Mr. R. W. Wallace was the advocate-in-chief of the latter method of collecting duties, but his case for duties by number was rather spoiled by the fact that the H.T.A. subcommittee dealing with trees and shrubs advocated the *ad valorem* method.

CROPS AND STOCK ON THE HOME FARM.

WINTER OATS.

IN the southern counties winter Oats form a profitable crop. In the north they are not so popular, owing to their inability to withstand very severe weather. Even in the south many plots were much damaged last winter and were ploughed up.

In ordinary seasons, however, winter Oats possess distinct advantages over those spring-sown. Owing to their early ripening, they enable a beginning to be made with the harvest at least ten days or a fortnight earlier. Furthermore, winter Oats weigh more per bushel than the Tartarian varieties; and Charlock does not affect the crop, owing to the sowing taking place in the autumn. On many farms Charlock is a terrible pest to spring-sown corn, necessitating much additional labour in cultivation and spraying.

Grey and Black winter Oats are the varieties most usually grown. The former bears the heavier crop, and has stiffer straw. September is the best month to sow the seed, so that the roots may get a firm hold of the soil before winter sets in. Winter Oats may follow a Wheat crop, especially if the latter has left clean stubble. No manure will be required before sowing, but stimulant may be given in the spring if the plant displays signs of weak growth. Deeply plough the stubble once during dry weather, buy some all weeds. Drill, or sow broadcast, four bushels of seed per acre, harrowing once afterwards.

HARVESTING THE CROPS.

The Corn harvest is much retarded this year owing to high winds and rains. The yield may be considerably diminished by "britting," especially in the Oat crop. In many instances, where the corn is laid, weeds and Clover are growing through the straw. Cut all such corn, even if it is wet, but do not tie the sheaves—leave them in crips to be carted loose, as they dry more quickly thus than when bound up.

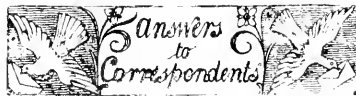
It is wise to make Oat ricks small, say 3 yards wide and 7 yards long if oblong, or 12 feet in diameter if round. In all cases build them with a ventilator in the middle; an ordinary sledion has rack as used for sheaves, will do this leaving an air passage through the rick. It is not wise to thatch Oat ricks too quickly if there is the slightest suspicion of their becoming heated. Wheat and Barley ricks, if built dry and free from weeds, should be thatched at once,

even if showery weather prevails. A little moisture on the top will evaporate before threshing is done. In the case of Wheat required for seed in October, the straw should be delayed, and the corn will be "cold," which depreciates its value for seed. "Cold" Wheat does not germinate so well as that which is thoroughly dry. E. Molyneux.

Obituary.

ROBERT THORBURN ONEY.—We regret to record the death, on the 1st inst., of Mr. Robert Thorburn Oney, senior partner of the firm of Messrs. T. H. Oney and Sons, seed merchants, Dumfries. Mr. Oney served his apprenticeship with his father; after gaining further experience in a London house, he went to New York and Chicago, in each of which cities he remained seven years. Returning to Dumfries on the death of his father twelve years ago, Mr. R. T. Oney, in conjunction with his brother, Mr. Thomas H. Oney, continued and largely developed the business at Dumfries.

JAMES LAING.—We regret to record the death on the 9th inst., at his residence, Harriotfield, Kilsno, of Mr. James Laing, senior partner of the firm of Messrs. Laing and Mather, nurserymen and seedmen, Kilsno, now incorporating Messrs. Stuart and Mein. Mr. Laing gained considerable experience with the firm of Messrs. Little and Ballantyne, Carlisle, and, in conjunction with Mr. R. V. Mather, established the firm of Laing and Mather at Kilsno about thirty-five years ago. Some years afterwards they purchased the long-established business of Messrs. Stuart and Mein, Kilsno, with which their own firm was incorporated. Mr. Laing had a special knowledge of the agricultural seed trade, and his business capacity was recognised by his neighbours, as was testified by his appointment to various public offices. Some years ago he became tenant of the farm of Harriotfield, Kilsno, where he died on the 9th inst., as stated above.



Correspondents are asked to note that in sending Peaches or Nectarines for identification it is necessary to send also a shoot from the tree, bearing leaves, as the glands at the bases of the leaves assist in determining the varieties. It is also a help if it can be stated whether the tree bears large or small blossoms; the difference between the different varieties in this respect is very marked. It should also be noted that the fruits will be embryoed, however well packed, if they are fully ripe when gathered. Two specimens of each variety should be sent.

BOUL ON VINE-GROWING. E. E. D. *Vines and Vine Culture*, by A. E. BRIDON, 5s. 5d., post free from our publishing department.

CIDER. C. R. M. Ordinary Apples of mixed sorts can be used in making cider. They must be thoroughly ripe and sound when used. As they have but little tannin, they require admixture with astringent sorts, known as bitter-sweets; moreover, many are too acid, so that an addition of bland sorts will be needed. Probably there is no single variety of Apple which will make satisfactory cider. Reckoning at one ton per acre yield from trees about 10 to 15 years' growth (according to soil, exposure, etc.), you will need about 1½ acres of standard trees. You do not state whether grass orchard is intended; probably you will not want to wait so long, and inter-planting with bush trees for earlier yield will be the best plan. For bitter-sweets, Médaille d'Or is early to give heavy yields; 1 to 10 would be about the proper proportion for mixing (as must be a fruit). White Norman is another good cropper (blend also 1 to 8). With regard to bland sorts, Morgan's Sweet and Royal Wilding may be mentioned. Plant also some of the Pommes

à deux fins, such as Gondreville, Gros Locard, and Fenouillet Gris, the last of which is obtainable in this country. You can obtain further information by writing to the National Fruit and Cider Institute, Long Ashton, Bristol.

GARDENERS' BENEVOLENT SOCIETY: C. B., *Khar-toun*. United Horticultural Benefit and Provident Society; secretary, Mr. A. C. Hill, 35, Alexandra Road, West Kensington Park, London.

LUCERNE IN ORCHARDS: *Bledloe*. Lucerne is a nitrogen-accumulating crop, and would fertilise an orchard, if cut two or three times in a season, and left on the ground. The crop would smother weeds to a great extent, and save the expense of hoeing and digging. Planting with Lucerne is better than allowing an orchard to become covered with grass.

MARKET GARDEN: J. L. You do not state the nature of the soil you purpose to cultivate for market produce. If it is light in texture deep ploughing or digging would suffice. But if heavy in character it would pay to trench the ground, especially for planting fruit trees. The drainage and rooting medium will be much improved by trenching, and, once done, the benefit accruing would justify the labour expended. Moreover, the crops, especially of Apples, would be much increased. The use of plenty of manure would be an advantage in assisting the trees to grow quickly. If the glasshouses are to be devoted to Tomatoes or Grapes the amount of labour you mention would suffice, but if such subjects as Carnations and Chrysanthemums are to be grown to take the place of Tomatoes in winter additional help might be required at times. The class of vegetables grown would also affect the question of labour. A variety of kinds is the most remunerative, although Potatoes, for example, would be the least expensive to cultivate.

NAMES OF FRUITS: G. W. Nectarines (1), Viollette Hâtive; 2, Harlowe Seedling; 3, Pine Apple; 4, Elmore; J. H. Dutch Godlin.—*Schaffner*. 1, Hawthornick; 2, Winter Quatzen; 3, Primes Bismarck; 4, Wyken Pippin; 5, Beauty of Kent; 6, Pile's Russet; 7, Jargonelle; H. C. P. 1, Chas. Russ; 2, Bramley's Seedling; 3, Cox's Orange Pippin; 4, Sturmer Pippin; 5, Noneseuch; 6, Lane's Prince Albert; 7, Worcester Pearmain; 8, Irish Peach; 9, Lord Suffield; 10, King of the Pippins; H, not recognised.

NAMES OF PLANTS: E. T. 1, Euphorbia, an unnamed, new species, certainly not *E. lactea*; 2, *Samborivivum* Funckii; 3, *S. tetorum*.—*T. J. L.* *Francoa appendiculata*. The species varies in colour, and your plant seems to be the darkest variety.—*G. H.* *G.* *Hibiscus syriacus* (syn. *Althea frutes*).

PLUMS DISEASED: G. W. The Plums are attacked by Brown Rot disease. Some of the fruits are also "gumming," probably as the result of punctures made by some insect. A note on Mr. Wormald's investigations on Brown Rot disease was published in the issue for August 25 last, p. 76.

ROSE SCARLET RAMBLER: L. W. H. This variety was raised by Messrs. W. Paul and Son, Waltham Cross, Hertfordshire.

SEEDLING POTATOES: *Palmas Green*. Raising new varieties of Potatoes from seed, though fascinating work, requires much experience and knowledge. The seedlings often crop surprisingly well in their first year, but unless you have wide experience you will find it difficult to make a useful choice between them. Probably your best plan would be to consult one of the firms which specialise in Potato-raising with the view to getting promising new varieties taken up by the trade. Otherwise you must arrange for tests of promising varieties to be made on soils suitable for Potato-growing.

Communications Received.—C. C. (Thanks for 1d) for R.G.O.F. box Ebs.; A. S.—Q.M.S. Yates—M. H., B.—W. D. & Sons—W. J. & T. A. L.—W. F. H.—E. C.—C. G. R.—R. I. L.—J. A. L.—L. F. J. C.

MARKETS.

COVENT GARDEN, September 12.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday by the kindness of several of the principal salesmen, who are responsible for the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—E.B.S.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing prices for various plants in pots such as Aralia, Asparagus, Aspidistra, Cacti, and Ferns.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing prices for cut flowers and other items like Asters, Arums, Carnations, Chrysanthemums, and Gladioli.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing prices for cut foliage items like Aspidistra, Asparagus, and Canna.

REMARKS.—There is an abundant supply of Aspidistra, including some good rough varieties. The supply of all other leafy plants is abundant, and they are generally ready to sale for them. Muscivora, Dieris, and Phyllis are foremost among the leafy flowers available this week. Forests are getting scarce, and the prices of these plants are rising. Crotalaria are in flower on the whole, of good quality, and the few better quality blooms are soon bought at a high price. Chrysanthemums show little change from last week, but bushy specimens, white varieties are most plentiful, and have a few in price. Coloured double varieties consist of Amaranth, Hovea, Martin, Dorothy, Ashley, and Belle. Spark Canna's double blooms are more plentiful, but white ones are scarcely available for the present, and the red and yellow variety, Sepiamotis is almost over, and Tuberosa are only obtainable in small quantities. Orchids are exceptionally scarce, and many orders have had to be cancelled during the fortnight, the most being those of English Asclepias, which reached the market this week.

Vegetables: Average Wholesale Prices.

Table listing prices for various vegetables like Artichokes, Beans, Beetroot, Brussels, Cauliflowers, Carrots, Cabbages, Cucumbers, Garlic, Greens, Herbs, and Potatoes.

Fruit: Average Wholesale Prices.

Table listing prices for various fruits like Apples, Apricots, Blackberries, Currants, Figs, Grapes, Lemons, Peaches, Pears, Pineapples, and Raspberries.

SITUATIONS WANTED (Continued from page 11)

GARDENER (good Single-handed); Life experience good in good establishments, highly recommended, excellent references. Army discharge, age 31, married (1 child). Please state wages. BUCHER, 41, Westing Road, Walthamstow, Essex.

GARDENER (unmarried) seeks situation; single-handed, age 30 years, two sons, age 16 and 12, years, aged to all outside work—W, 5, Lane Terrace, Cusden Road, Cusden Team.

SITUATION required as THIRD GARDENER, where one or two are kept. Kitchen Garden and Lawns, age 47; single. A HOLLAMBY, 42, Wellfield Road, Streatham, S.W.

FOREMAN (INSIDE), in good establishment, age 42, single, disarmed Army discharge, 10 years' experience, thoroughly practical, good Fruit and Plantman, Propagator, and Decorator, in Italy, entire charge. State wages. FOX, Chiswick Colony Gardens, St. Albans.

LADY GARDENER seeks post as Head, where several are kept, near London preferred, first-class diplomas, good references. F. H., Box 8, 41, Wellington Street, Covent Garden, W.C. 2.

EXPERIENCED WOMAN GARDENER seeks Post as FIRST, under good Foreman, in Glass Pottery, decorative if needed, good references. Please state wages. A. B., Box 6, 41, Wellington Street, Covent Garden, W.C.

WOMAN GARDENER, educated, strong, seeks Post (single-handed) under experienced Working Head. Fruit and Vegetables accustomed to the work. Send full particulars to A. Z., 2, Gonville Place, Chislehurst.

LADY, some experience, college trained, wishes work in Back Garden. G. M., Box 19, 41, Wellington Street, Covent Garden, W.C. 2.

LADY GARDENER, partially trained, requires Post, single-handed, with some supervision, in good Road. MISS L., Riverside, Peshmore, Woking.

LADY GARDENER, some experience, desires to engage and end of September, R. Waterbury Gardens, York.

LADY, with some knowledge of Gardening, wishes Post where good Back Garden, in quiet town, or in country. F. K., Box 22, 41, Wellington Street, Covent Garden, W.C. 2.

LADY, Six Months' Market Garden experience, desires Situation on private Garden (with House) as IMPROVER, 10s. in money, or in kind. MISS N., Lythorne Cottage, Charlton Road, Shepperton, Thames.

SITUATION required (inside work) under good Head Gardener, by young WOMAN, with some practical experience. M. B., Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

TRADE.

MANAGER or FOREMAN, used to conducting system, and in producing everything required for immediate establishment, excellent references. A. LAWRENCE, 15, Watwick Avenue, Paddington.

FOREMAN or MANAGER, small Nurseries, near London, good experience, age 35, single, State wages if suitable. WRIGLEY, R. E., Box 17, 41, Wellington Street, Covent Garden, W.C. 2.

DITCHMAN, age 30, single, who had large charge during the last four years of one of the largest Nurseries connected with Lambeth Park Gardens in H.Bland, some experience in seed growing, seeks position as MANAGER of Nursery of Landscape Business. R. C., Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

WORKING FOREMAN; age 35; 22 years' experience. Building, Gardening, Roses, inside and out, Chemist, Fruit Trees, General Nursery stock, and discharge Army. H. W., Railway Cottage, Morris Street, Hook, Basingsheath, Hants.

FLORISTS, Lady desires to engage and end of September, address, FLORENCE, 36, Solihull Road, Loddipole Lane, Wood Green, N.

LADY BOOK KEEPER and CASHIER seeks situation in good establishment, 10 years' trade experience, excellent references. L. S., Box 25, 41, Wellington Street, Covent Garden, W.C. 2.

THE WEATHER.

THE WEATHER IN SCOTLAND. A. H. B. GARDNER, Glasgow. The weather in Scotland during the last 24 hours has been generally fine, with a few showers of rain, and a light breeze from the west. The temperature has been in the range of 45 to 55 degrees Fahrenheit. The wind has been variable, but generally from the west. The sea has been calm, and the weather has been generally pleasant. The sun has been out for most of the day, and the sky has been clear. The clouds have been light and wispy. The temperature has been in the range of 45 to 55 degrees Fahrenheit. The wind has been variable, but generally from the west. The sea has been calm, and the weather has been generally pleasant. The sun has been out for most of the day, and the sky has been clear. The clouds have been light and wispy.

GARDENING APPOINTMENT.

Mr. T. Waller, of 14, North Street, London, to the Rev. A. HAMMILL, Esq., and his son, Captain H. T. HAMMILL, Army, Brompton Road, Brompton, London, W. Garden to Lord DEBBING, Trooper Park, Newport, Mon. Thanks for 30, 1st of 1917, &c. (Eng.)

CATALOGUES RECEIVED.

F. GIBSON, Hertsford, Essex, Delphiniums. G. W. WINTER, The Nurseries, Chislehurst, Herts, and a list of Apple plants. CHURCH, A. & Co., Fruit Trees. SPURWAY & Co., 15, South St., Andros Street, Elmbridge, Wiltshire, and pots.

NOTICE TO SEEDSMEN, NURSERYMEN, MARKET GARDENERS, FRUIT-GROWERS, HORTICULTURAL BUILDERS, BOILER MAKERS, COAL MERCHANTS, AND SUNDRIESMEN.

Revision forms for the "Gardeners' Chronicle" HORTICULTURAL DIRECTORY have been posted to all the above whose names are already in the Directory. In order to facilitate the early publication of the revised edition for 1918, it is requested that the forms, with the necessary corrections, be returned AS SOON AS POSSIBLE. It is only by the co-operation of all interested in Horticulture that the new edition of this invaluable work of reference can be made perfect.

Anyone in the above categories who has failed to receive a form should send for one to

THE EDITOR, Horticultural Directory,
41, Wellington St., Strand, London, W.C. 2.

Name
Trade and Speciality
Address in Full

ORDER FORM FOR ADVERTISEMENT.

Please insert my Advertisement, as copy herewith, in the HORTICULTURAL DIRECTORY FOR 1918, in the space named below :

(Strike out all lines not required).

Back Cover	price	£5 5 0
Inside Front or Back Cover	„	4 4 0
Whole page, facing matter	„	3 3 0
Whole page, ordinary position	„	2 2 0
Half page	„	1 10 0
Quarter page	„	1 0 0

(Signed) Name

Address

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 4004

No. 1604. VOL. LXII. {THIRD SERIES} SATURDAY, SEPTEMBER 22, 1917. {Registered as a Newspaper. PRICE 4d. POST-FREE, 4d.

SUBSCRIPTION—Inland, 19 6; Foreign, 22- per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 115

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note the paper of the "Gardener's Chronicle" is made up on Wednesday evening each week. All advertisements intended for insertion the same week MUST reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

NOW IS THE TIME TO PLANT

KELWAY & SON, The Royal Horticulturalists, LANGPORT, SOMERSET, are now looking orders for their Choice Hardy Perennials, Plants & Colour Border this Autumn, and you will be able to enjoy its beauty for many years with no additional expense or trouble. Send measurements of your Borders. Perennials, Delphiniums, Tulips, Gladioli, and other beautiful flowers, included in their 160-page catalogue, which is provided free from early Spring to late Autumn. WRITE NOW to the RETAIL PLANT DEPARTMENT for Reduced Price List.

GISHURST COMPOUND has over half a century's reputation for its effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Greenfly, and Brown Fly, and is sold in boxes at 1s., 3s., and 5s., by Dealers in Garden Sundries. Wholesale: **THE PATENT CANDLE CO., LTD.**, Barbican, London, S.W. 1.

RIVERS'S STRAWBERRY PLANTS in all the leading varieties, will be ready from August onwards. Price List sent free on application. **THOMAS RIVERS & SON**, The Nurseries, Sawbridgeworth, Herts.

J. GRAY, LTD., Builders of Conservatories, Greenhouses, etc., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wires 201. Western, London. Telephone no. 201, Western.

FEDDS BULBS. BELLS SEEDS. FEEDS' BULB LIST NOW READY. Please apply for a copy to be posted by return.

JOHN PEEL & SON, The King's Seeds men and Nurserymen, WEST NORWOOD.

BAER'S BULB CATALOGUE for the best Dutch bulbs in the world, for pots, in boxes, and for outdoor use. Send for application. **BAER & SONS**, 12 and 14, King Street, Covent Garden, London, W.C. 2.

BUNYARD'S STRAWBERRIES. Our new descriptive list is now ready, and will be sent on receipt of card. **ALFRED BUNYARD'S** a speciality. **GEORGE BUNYARD & CO., LTD.**, Royal Nurseries, Maidstone.

ROSES—ALEX.'S GOLD MEDAL. **NORWICH ROSES**—our new descriptive price list, with hints on how to grow Rose, is ready. Price free. Write today. **A. J. & C. ALLEN** Rose Growers, Norwich (for over 50 years).

WANTED, open ground plants of Strawberries, Queen of the South, President, Waterloo, and Britton Queen, etc., and supplies with price. **S. BIDE & SONS, LTD.**, Kilsney Nursery, Bordon.

PAPER-WHITE NARCISSI

SUTTON & SONS supply finest bulbs of

PAPER-WHITE NARCISSI at 18s. per 100

SUTTON'S CATALOGUE OF ENGLISH GARDEN BULBS containing particulars of the most popular Dutch, Narcissus, Tulips, Gladioli, and Double and Single Hyacinths, sent free on application.

SUTTON & SONS, The King's Seeds men, READING.

W.M. DUNCAN TUCKER & SONS, LTD., Laneside Road, South Tottenham, N. 15 (near Victoria Works, Whitechapel, E. 1). Specialties: Paeonies, Double and Single Gladioli, etc. Catalogues gratis.

BUNYARD'S FRUIT TREES are the best and most reliable for planting in the garden. **GEORGE BUNYARD & CO., LTD.**, Royal Nurseries, MAIDSTONE.

BATH'S ROSES and PAEONIES New and improved catalogues containing the cultural notes for the new and the old varieties is now ready, and will be sent post free on application. **DEPT. AT R. H. BATH, LTD.**, The Floral Farms, Wiltshire.

DOBBIE'S Autumn List of Bulbs, Sweet Peas, and Roses is now ready, and will be sent post free on application. **DOBBIE & CO.**, Royal Nurseries, London, S.W. 1.

BATH'S HOME-GROWN BULBS New and improved catalogue of the fine Narcissus, Tulips, etc., as supplied to the Royal Parks and gardens, with full cultural hints, is now ready, and will be sent post free on application. **DEPT. AT R. H. BATH, LTD.**, The Floral Farms, Wiltshire.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also Peat, are in application to **DICKSON'S**, Royal Seed Warehouse and Nurseries, Chester.

GREENHOUSE PAINTING and GLAZING in Vitrolite, superior to White Lead Paint. Fastest, strongest, purty. Full particulars from **W. GIBSON & SONS**, Grove Works, Barbican. Agents throughout the country.

100,000 LARGE GARDEN FERNS 26, 40, 45, 60, 80, 100, 120, 150, 200, 250, 300, 400, 500, 600, 800, 1,000, 1,200, 1,500, 2,000, 2,500, 3,000, 4,000, 5,000, 6,000, 8,000, 10,000, 12,000, 15,000, 20,000, 25,000, 30,000, 40,000, 50,000, 60,000, 80,000, 100,000. **J. E. SMITH**, London Fern Nurseries, Longbridge Road, London, S.W.

DAFFODILES and large Trumpet Narcissus for Grass, Strawberries, and Wild Gardening, at 18s. and 24s. 1,200, as single, 12s. per bushel (200s. 3s. 6d. per bushel, 500s. 6s. 6d.). **J. HANSEN & CO.**, Ferns, 1, Litham Nurseries, Middlesex.

WANTED, Geranium Stocks, as taken from 1860s, Paul Campy, Judo, and Kew Gardens, 10 and 1,000. **P. CHENNELL**, Southampton, Portsmouth.

LITHUM longiflorum giganteum for winter forcing. **MORLE & CO.** offer many bulbs, 10 and 12 inches round, in splendid condition, at 10s., 12s., and 15s. each. Bulbs list free. **MORLE & CO.**, 150, 170, Emory Road, S.W.

For Advertisement Charges see Sept. 1, page v.

WEBBS' BRITISH-GROWN BULBS. The finest varieties of Tulips, Narcissus, Daffodils, Snowdrops, etc. **PRICE LIST** post free on application. **WEBB & SONS, LTD.**, The King's Seeds men, Tottenham.

WATERER'S ALPINES AND HERBACEOUS PLANTS—New Catalogue now ready.

WATERER'S BRITISH-GROWN BULBS—New Catalogue now ready.

WATERER'S WARGRAVE ROSES. Catalogue and Supplementary List of new and choice varieties now ready.

WATERER'S RHODODENDRONS AND CHOICE SHRUBS—Catalogue free.

WATERER'S VEGETABLE SEEDS for PRESENT SOWING.—List post free.

All or any of the above Catalogues forwarded post free on receipt of name and address.

JOHN WATERER, SONS & CRISP, LIMITED. The Nurseries, Bagshot, Surrey, and Twyford, Berks.

JOHN McKERCHAR'S BRITISH-GROWN BULBS. Tulips, Narcissus, etc. Invaluable Lists of Bulbs and Lilies. Prices on application. **10, 12, 14, King's Road, Upper Holloway, London, N. 19.**

DELON. Finest varieties in cultivation. List on receipt of **J. J. JOHNS**, Royal Nurseries, London, S.W. 15.

SPORTSMEN. Farmers, Horsemen, try our splendid Yorkshire Whippoor Tweed; wears like leather, Shagwheat, 7 yards for 17s. 6d.—**PATTERNS FREE.** **BRADFORD WOOLLEN CO., LTD.**, Bradford.

BANSTEAD or WALTON HEATH LOAM. A splendid soil for Vines, Chrysanthemums, Carnations, and general use. Fresh cut or rotted. Particulars of **WALTON BROS.**, Betchworth, Surrey.

RHODODENDRAL 7s. 6d. per sack; Rhododendron, B. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. **J. HANSEN & CO.**, The Nurseries, Feltham, Middlesex.

FOR SALE, excellent Turf Loam for Garden purposes, East, Glendon and Richdon Street, W.R. For further particulars apply **C. R. KNOLLYS**, Ladbroke Grove, Brompton House, Kettering.

SPRING CABBAGE. **Mom's No. 1**—Standard, the earliest center. The most marvellous in the world, heading early in existence, ready for cutting in March, under favourable, 100 for 1s. 6d.—**MISS HENRY**, 4, Broad Road, Burton-on-Trent.

FERNS: FERNS! Tree Ferns, Climbing Ferns, British Ferns, Stone and Greenhouse Ferns, Birds Garden Ferns, Adiantums, etc. **J. E. SMITH**, London. Price 50s. per bushel. **Loughborough Junction, London, S.W.**

NARCISSUS. Paper-white Grandiflora, at 18s. per 100, 12s. 6d., and double Trumpet, 100s. 3s. 6d. per bushel list free. **MORLE & CO.**, 150, 170, Emory Road, S.W.

SANDERS. Orchid Growers, St. Albans.

SALES BY AUCTION.

BULBS.

MESSRS. PROTHEROE & MORRIS are holding Sales of Bulbs every Monday, Wednesday, and Friday. Sixpence in stamps will ensure a supply of twelve catalogues.—AUCTION ROOMS, 67 and 68, Cheap side, London.

HOME-GROWN BULBS. GREAT TRADE SALE.

Wednesday Next, September 26th, at 1 o'clock. Upwards of 2,000,000 Bulbs to offer, specially lotted for the Trade. Including 1,000,000 Narcissus, in all the best-known varieties for forcing or planting out; 500,000 Polyanthus Narcissus of sorts, in sacks as received; 250,000 Early Darwin (many of which will force) and 1,000,000 Tulips; a number of Scandolius, Freesia, Sallies, Anemones, Acornites, English and Spanish Iris, early-flowering Gladioli, Bearded Iris, 21 cases Lilium longiflorum (retailed), &c., &c.

MESSRS. PROTHEROE & MORRIS will sell the above by Auction at their Central Sale Rooms, 67 and 68, Cheap-side, London, E.C. 2. Catalogues forwarded on application.

SUNNINGDALE NURSERIES, WINDLESHAM, SURREY.

FOURTY-THIRD ANNUAL SALE OF NURSERY STOCK, comprising an extra fine lot of Rhododendrons, in best named varieties for colour, also including, Fuchsia, Hamayan and other Rhododendrons, Kalmus, Azaleas, Portugal and other Lantols Ornamental, Evergreen, and Flowering Shrubs and Trees, a fine collection of Hardy Herbs, and other stock.

MESSRS. PROTHEROE & MORRIS will sell by Auction at the above Nurseries (Sunningdale Station) on Tuesday and Wednesday, October 2nd and 3rd, at 12 o'clock.

May be viewed at the Nurseries and at the Auctioneers, 6, Cheap-side, London, E.C. 2.

FRIDAY, OCTOBER 5th.

IMPORTANT SALE OF ORCHIDS.

A portion of the Globe Collection, Sevenoaks, formed by C. J. Phillips, Esq., which has been carefully selected for the purpose of raising the best hybrids in Cattleyas, Sophro-Cattleyas, Odontoglossum and Odontiodora, and the hybrids now offered are from some of the choicest forms obtainable. The following are amongst the principal plants included in the Sale:—

- Laelio - Cattleya, Walter Giff, A.M.
Cattleya Mrs. Myra
Cattleya - Laeoch - Cattleya
Cattleya Dusseldorffii Lind.
Vazire Raphael alba
Baik, A.M.
Almata
Ishana Mrs. E. Ash
Cattleya alba, Glebe variety
Trianae Mrs. De B
Crawley, F.C.C.
Suzanne Hyatt-Crom
Odontoglossum Fro Skin
neri alba, A.M.
Ceres
crispum Solim
Lindley
Luciani
Lady Jane
Woolfenden, F.C.C.
Aurora
Theodora, F.C.C.
Hall King Edward
Vill. F.C.C.
grande aureum Putnam
Pescatorei albo
Odontiodora Wilson, The
President, A.M.
Euterpe
Madeline, A.M.
Cymbidium hybrids, &c.

Also choice plants from other Collections and Orchids in flower and bud.

MESSRS. PROTHEROE & MORRIS will sell the above by Auction at their Central Sale Rooms, 67 and 68, Cheap-side, London, E.C. 2, on Friday, October 5th at 1 o'clock.

Catalogues may now be obtained of the Auctioneers, as above.

THE ESTATE OF THE LATE J. S. CHARLES, Esq. PELSALL, STAFFORDSHIRE.

THE PELSALL HALL ESTATE of 247 Acres, which will be offered for Sale by Auction by

Messrs. WINTERTON & SONS at the Stock Hotel, Walsall, on TUESDAY, October 2nd, 1917, at 6 o'clock, will include (Lot 45)

A VALUABLE MARKET GARDEN.

known as "RAHSWOOD GARDENS," Pelsall, a Wood with a Cottage and GREENHOUSES thereon, about 5 minutes from station, containing an area of about 7 Acres.

The Gardens are in a high state of Cultivation, and the Three Greenhouses measure (1) 88ft. long by 26ft. wide, (2) 60ft. long by 28ft. wide, (3) 28ft. long by 40ft. wide, heated by two cast-iron saddle heaters, which can be separately or jointly worked. The Houses are well built, with extra strong rafters, and are covered with 21oz. glass.

Purchaser will be required to take to Stock-in-Trade, Shovels, Tools, &c. Possession 1st November or earlier by arrangement.

For further particulars, apply to the Auctioneers, Lichfield, and Darwell Street, Walsall, or Messrs. H. Russell & Son, Solicitors, Lichfield.

BUSINESS WANTED.

WANTED, to rent, Nursery, suitable for Tomato Growing, with land and dwelling house preferred; an acre or so.—S., Box 4, 41, Wellington Street, Covent Garden, W.C. 2.

BUSINESS FOR SALE.

A UNIQUE OPPORTUNITY.

Owing to the continued ill-health of Mr. CHARLES H. BUCK, the well known Mail Order Nursery Business, BUCKS OF IPSWICH is FOR SALE by Private Treaty. Considerable success has attended efforts. The business... has considerable reputation... bold enterprise brought the firm to this... remarkable progress. The firm has steadily won its way to an important position. Goodwill... should yield handsome returns in the hands of a capable and methodical man. If the purchaser continues on the same lines the amount necessary to acquire the goodwill should prove a good investment.

BUCKS, Tresco Nurseries, IPSWICH.

BUSINESS CARD.

R. H. S. EXAM. — Correspondence class, preparing Gardeners and students, start October; brilliant past records; prospectus — MESTALLIST, Pightle, Letheringsett, Holt, Norfolk.

SPECIAL NOTICES.

MR. R. GREENFIELD begs to remind all friends that, although engaged on National Service he continues Midland representative to John Peed work he continues will be very much appreciated, and may be directed either to the firm at West Norwood, or to Mr. R. GREENFIELD, 61, Radford Road, Leamington Spa.

PLANTS, &c., WANTED.

WANTED, Geranium Cuttings or old plants, single pink bedding and freeland, and Violet, mainly of lavender. KEMP, 232, Buxton Road, Birmingham.

WANTED, 1,000 Large ASPIDISTRAS, old plants, suitable for stock, cash or exchange. See other advertisements; catalogues free. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, choice Fruit, Flowers, and Vegetables; best market prices returned; boxes, &c. sent. Surplus stock from Gardens accepted.—MORLE & CO., 150/156, Finchley Road, N.W. 3.

WANTED, Cuttings of Penstemon Geo. Home, Mrs. Sulphur, and Daydream. Price, &c. F. Winter Priority Garden, York.

PLANTS, &c., FOR SALE.

ORCHIDS FOR SALE.

owing to death. All good plants, purchased from James Copler & Sons, Chesham, Spring, 1917.

Lot £50, or separate.

A very good sacrifice 12 Laelia in pots, good, 5 Cymbidiums; 4 Laelia purpurata, good; 12 Cattleyas, in good variety; 4 Vanda, good; 12 chrys. Dendrobiums; 3 doz. extra good Cymbidiums, in variety; 2 Epidendrum; 12 good Cypripediums, in variety; 12 Odontoglossum. Apply, T. WHITWORTH, 604 Lodge, Bristol Road, Northfield, near Birmingham.

MISCELLANEOUS.

THEY NEVER FAIL TO KEEP YOU DRY.

If you write today for the "Beacon Booklet," you are on the way to weather comfort. It shows many different styles in BEACON OILSKINS, and it will show you the coat that you want. Children's Coats 10s. 6d., Upweys, Men's from 10s. 6d., Ladies' Smart Oilskins, 21s. Long Leggings from 3s. Sew-westers from 1s. 9d. They always keep out the wet. Send post today for our Free Booklet of "Weather Comfort," describing money-back guarantee—Send now—before you forget!—BARBURY'S, LTD., 66, BEACON BUILDINGS, SOUTH SHIELDS.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

PRIVATE.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION

FOR IRELAND. INSTRUCTORS IN RURAL SCIENCE (including SCHOOL GARDENING).

THE Department of Agriculture and Technical Instruction for Ireland are prepared to consider the qualifications of persons desiring recognition as Instructors in Rural Science (including School Gardening) to special training classes for teachers. There are, during the present session, several vacancies for such Instructors, who will be required to conduct classes in selected centres under the direction of local Committees of Technical Instruction.

The salaries offered will be at the rate of £150 to £150 per annum, according to qualifications and experience, together with travelling and maintenance allowances.

Candidates must have had some training in science, and possess a practical knowledge of Gardening, and preferably should have had experience in teaching.

Forms of application, which should be returned not later than 30th September, can be obtained from the Secretary, Department of Agriculture and Technical Instruction, Upper Merrion Street, Dublin.

WANTED. — Can any gentleman recommend experienced HEAD GARDENER, expert in all branches; good organizer and worker; to take charge of Glass, Kitchen, and Flower Gardens; 12 acres in all; five Under Gardeners kept? Apply, SIR ARTHUR CROSS FIELD, 41, West Hill, Highbury, N.

WANTED, HEAD WORKING GARDENER (two kept) thoroughly experienced vegetable, outdoor Fruits, and Herbaceous, small Greenhouse and supervision of poultry and pigs; preference to man with son to work with him; house, coal, and vegetables found. Particulars on experience, wages, age, also number in family and copies of testimonials (if any), PLESCOTT, Highlands, Wokingham, Surrey.

WANTED, GARDENER (HEAD WORKER), must have excellent character in every respect from last situation; also be either over military or ineligible for Army.—Apply first by letter to SECRETARY, Bear Bank, Knutsford.

WANTED, HEAD WORKING GARDENER of three; MR SIMPSON, Pefton Grove, Waterhampton.

WANTED, GARDENER (HEAD WORKER), also capable of being GARDENER, melon or dis-charged soldiers; Head Man preferred married occasional work in house for wife, cottage, coal, and electric light supplied.—RUSSELL REID, The Hemlock, East Grimstead.

WANTED, HEAD WORKING GARDENER (Surrey, 15 miles from London); must be good worker; wages 25s. and cottage; state experience and age; no family; youth also kept. H. Box 10, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, UPPER GARDENER, of two, for small, compact Garden on Bristol Channel; must be over age or ineligible and single.—Write to H. F. Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, good SINGLE-HANDED GARDENER, chiefly Lawns and Kitchen Garden, live in house. Apply, genuine experience, age, &c., W. B. BAXTER, Staplees Manor, Nantwich, Cheshire.

WANTED, a good SINGLE-HANDED GARDENER, with good knowledge of Roses, by October 6th, ages 25s. per week and cottage.—Write, stating full particulars, to CAPTAIN A. L. F. COOK, The Ostrars, Iwer, Bucks.

WANTED, SINGLE-HANDED GARDENER (ineligible); boy kept and occasional help given. Gardens 2 acres; wages 20s.; excellent cottage, small Veterinary and Conservatory. Apply, M. H. HUBBLE, Esq., Walton House, near Chesham, Berks.

WANTED, GARDENER (SINGLE-HANDED), help given. Reply, stating wages and all particulars, MRS. STUART, St. Margaret's House, near Maiden, Kent.

WANTED, GARDENER (SINGLE-HANDED) for place in Liverpool; good wages.—Apply, in first instance, giving reference, to COWAN & CO., Glasgow Nurseries, Liverpool.

WANTED, GARDENER (SINGLE-HANDED), 20 1/2 years experience; no cottage. R. EVERETT, 25, Casarino, Baines.

WANTED, good SINGLE-HANDED GARDENER; discharged soldier preferred; must be thoroughly trustworthy and capable of being left in charge, as employer's family's absence.—MRS. CARTWRIGHT, Washington, Barbary.

THOROUGHLY experienced **GARDENER** wanted for situation near Horsham; three Under Gardeners kept; live-in; wages 30s.—Write, giving particulars of experience, age, number in family, &c., to V. A. C. o King & Chasmore, Land Agents, Horsham, Sussex.

GARDENER—Wanted, experienced **Man** for Vegetable growing, ineligible for Service; age say about 45 to 48; wages 30s per week and good modern cottage if married; must have first-class character. Apply: **HEAD GARDENER**, Garsdon Manor, near Wotton, Herts.

EXPERIENCED GARDENER required; Assistant-grover in State wages and qualifications.—Apply, **J. M. JAMES**, Beckington, Bath.

WANTED, GARDENER (ineligible); **Hot-house and Outside work**, Lawns, and Vegetables; to live in.—REV. G. BAKER, Huntley Rectory, Gloucestershire.

WANTED, GARDENER (ineligible); good all-round man, able to take duty and help with the care of AORs. State wages, married or single.—**BURGHES**, Green Hill, Aberystwyth.

WANTED, KITCHEN GARDENER, with a fair knowledge of Wall Fruit; 20s and lodging.—Apply, **J. JONES**, Wells Park Gardens, Frome, Somerset.

WANTED, for Outside work, two experienced **GARDENERS** (ineligible); to live together in **Bothly**.—Apply, stating particulars, to **ESTATE MANAGER**, Slougham Place, Hatfield Chase, Sussex.

WANTED, for Inside work, Fruit and Plants, two **GARDENERS** (first and second), if married (cottage for first, if single, lodgings). State wages to **J. CHILD**, Porters Park, Stevenage, Herts.

WANTED, practical **SECOND GARDENER** (single), experienced inside and outside. Full particulars of age, wages, &c., to **HEAD GARDENER**, Cherry Hillen Hall, Cambridge.

WANTED, good **SECOND GARDENER**; mostly Outside; cottage provided. Also good strong Lad for Garden. Full particulars, Oaklands, 115, denborough Kent.

WANTED, a FOREMAN GARDENER, to take charge of Pleasure Grounds, Rosebery and Rose Garden a specialty; good wages to provide for cottage and coal supplied. Apply, **HEAD GARDENER**, Selsey Hall, Reding Millon Lane, South Northamptonshire.

WANTED, experienced FOREMAN, for the Houses, ex-Servicé or ineligible, wages 50s per week. **Bothly**, age, **C. MOORE**, Wargrave Manor Gardens, Wargrave, Berks.

INSIDE FOREMAN wanted for a first class establishment near London; attractive wages offered and **Bothly**; an excellent opening for an experienced or discharged man.—Apply, in the first place, to **JOHN FEED & SON**, The King's Crossmen, West Norwood, S.E.

WANTED, FOREMAN, for Inside, S.E.; of good experience; wages 50s. **Bothly**, &c.; also active **LAD**, for Houses; wages 17s. **Bothly**; Sunday duty extra. **J. HOWARD**, Bowham Village Gardens, Newbury.

WANTED, JOURNEYMAN, for Inside, ex-Servicé or ineligible, also **IMPROVER** Wages 28s. and 20s., with **Bothly** and vegetables; duty paid 6s. to **F. FOSTER**, Grimsithorpe Castle Gardens, Bourne, Lincs.

WANTED, JOURNEYMAN and **IMPROVER** (ineligible) some experience, good **Bothly**, milk, and vegetables; duty and overtime paid. Apply, stating wages required and experience, to **H. TRINCE**, The Gardens, Polson Lane, Dorking.

WANTED, JOURNEYMAN (ineligible); for Houses; wages 28s. per week, **Bothly** and vegetables; duty every third Sunday. **C. EARL**, South Hill Gardens, Tonbridge, Kent.

WANTED, two JOURNEYMEN or **IMPROVERS**, for Inside and Out; good wages to suitable men. **Bothly** and vegetables, 12 weeks Saturday overtime. Apply, **C. H. WHEELER**, Smeaton Gardens, Masham, Ripon.

WANTED, immediately, good **MAN**, to take charge of Fruit and Plant Houses, ineligible or discharged; good wages to suitable man. Apply, with testimonials and particulars, to **A. HARWOOD**, Cabot Park Gardens, Reading.

WANTED, MAN for Houses; ineligible or discharged soldier; good wages, with **Bothly**, milk, and vegetables.—Apply, with all particulars, **W. D. GREEN**, Millers' Gardens, Peterborough.

WANTED, two MEN, with some experience for Fruit and Plant Houses; able to take duty; **Bothly**; duty paid extra. State wages, with references, **T. NUTTING**, Chaldyebury, St. Albans.

LADY GARDENER (SINGLE-HANDED) required, Vegetables, Garden boy kept; room provided.—**BISTROW**, Broad Oak, Sutton-at-Hone, Kent.

WANTED, LADY GARDENER; must understand Greenhouse work and have had good practical all-round experience. Apply, **MRS. LILLEY**, Rockland House, Clifton-on-Sea.

WANTED, at once, LADY GARDENER (Head of House), trained, strong, practical, experienced in all vegetable, Herbaceous, work, and outdoor Fruit, one man and boy under. Address, stating salary and all particulars, **MRS. BRANDON**, Red House, Church Crookham, Feer, Hants.

WANTED, one more LADY GARDENER (Head of House), fully trained and experienced in private work for large S. Houses, and other work; own cottage; weekly rights; 40s. salary; duty experience.—**MRS. N. PAUL**, Plant, Henley-on-Thames.

WANTED, GARDENERS (2). Women; must have experience in all garden and lodge for suitable applicants.—Apply, "Lyonic," Neshigh Hill, Chesham, Bucks.

EXPERIENCED LADY GARDENERS required.—Apply, to **WILLS & SEGAR**, Royal Exeter Nursery, One-Row Crescent, South Kensington.

WANTED, two young WOMEN for Plant and Fruit Houses; must have some experience; comfortable furnished cottage and attention.—State particulars to **JOHN POLDBORE**, Manor Gardens, Little Portchester, Hartford.

WANTED, an experienced FOREWOMAN, age 50 to 55, over young women on Pressure Grounds; live-in; comfortably furnished cottage with wages.—Please state experience and wages expected. Apply, **W. CORB**, Duffell Gardens, Cardiff.

WANTED, JOURNEYMAN WOMAN GARDENER for 2 1/2-acre house, age 35-40; ex-Servicé; cottage and overtime. Apply, **THE CLAYTON**, Clifton Place Gardens, S.W.3.

WANTED, IMPROVER or discharged soldier for the House; state experience and wages, with **Bothly**, &c.; alternate days.—**D. ROBERTS**, Preston Gardens, Brighton.

WANTED, strong young man for Inside, 2 1/2-acre house, with 2 1/2-acre pond.—Particulars to **W. PHILLIPS**, Bosgrove Gardens, Arlesey.

WANTED, strong LAD, for Garden Work. Apply, **GARDENER**, St. Sofia's House, London, Southampton.

WANTED, strong LAD for Kitchen Gardener, age 20-25, per week, **Bothly**, milk, wages, &c.; 42 hours per week. Apply, **J. SHENMAN**, 11, St. John's, London.

TRADE.

HERBACEOUS PROPAGATOR and other **LEATHER** (single), Apply, stating wages expected, to **BARR & SONS**, Nurseries, Taplow.

WANTED, GROWER of Roses and other plants; must have 10 years' experience and be **IRISH**. Apply, **BARR & SONS**, Rose Gardens, Taplow.

PALM GROWER thoroughly experienced in all kinds of plants; 2 1/2-acre garden. Write for particulars, **S. L. NEW**, Oxford Street, W.C.

CLIMBER GROWER wanted; able to look after the work under Foreman. Please state experience and wages required to **G. W. SELL**, Old Bill, Bognor, Hants.

WANTED, MUSHROOM GROWER; in charge of the business; wages required to **A. L. GILL**, Westgate Street, Covent Garden, W.C.2.

WANTED, one a Climber and Tomato Nursery; an experienced **Man** is **FOREMAN**—Apply, stating wages and particulars, stating age, experience and all particulars, to **B. T. A.**, 64, Crossroad Street, Waltham Cross.

WANTED, WORKING FOREMAN, for 1 1/2-acre house, with 2 1/2-acre garden. Apply, stating wages, to **G. W. SELL**, Old Bill, Bognor, Hants.

WANTED, FOREMAN GROWER, well experienced in Climbers and Tomatoes, for Essex Nurseries, in connection with **November**, **DAVON**, Epping, Essex.

GOOD JOBBING GARDENERS wanted; 2 1/2-acre house, good wages, 1 week Saturday. Mrs. **WILLS & SEGAR**, Royal Exeter Nursery, Doulton, Gloucestershire, London.

WANTED, a MAN, with some knowledge of the Shrubs, Roses, &c., in small Nursery, near London; state experience and wages. **Box 18**, Hill End, London, S.W.2. Covent Garden, W.C.

WANTED, a MAN, used to Rock Building and planting; good wages; 2 1/2-acre house; to be in **HINDS' BRONS**, LTD., Warwick.

WANTED, SEED FOREMAN, with 10 years' experience in all kinds of seeds. Apply, to **BARR & SONS** (Private), 12 and 17, King Street, Covent Garden, W.C.2.

SEED TRADE—Wanted, **SHOPMAN**, for counter work in General Retail, Grain & Seed Trade. Apply, with references, giving age and particulars of experience, salary required, &c., **ROBERT VETCH & SON**, Exeter.

SEED ASSISTANTS wanted.—All particular and wages apply to **BARRON & HUBSON**, 8 and 9, Whitehorse, 17, 19, and 21, Robert Street, Chesham, Manchester.

SEED HAND wanted in Wholesale Seed Warehouse West of England; Particulars, stating wages required, age, and experience, &c. Discharged soldier preferred if not incapacitated. **SEEDS**, Box 24, 41, Wellington Street, Covent Garden, W.C.2.

WANTED, BULB WAREHOUSE ASSISTANT, well-versed with **Bills** and accounts; to put up up only 8. Apply by letter, **BARR & SONS** (Private), 12 and 17, King Street, Covent Garden, W.C.2.

WANTED, experienced WAREHOUSEMAN for wholesale London seed warehouse.—Apply, **WATKINS & SIMPSON**, LTD., 27, 28, 29, Drury Lane, Covent Garden, London, W.C.2.

WANTED, experienced Man, accustomed to packing Fruit Trees, Roses, &c., Particulars as to age, experience, and wages required to **KING'S ACRE NURSERIES**, LTD., Bedford.

PACKER and WAREHOUSEMAN wanted.—Apply, stating wages and references, to **BARR & SONS**, Nurseries, Taplow.

WANTED, INVOICE CLERK (WIDOW); either sex, with Horticultural experience. Apply, stating full particulars, to **R. WALLACE & CO.**, LTD., Coleridge.

WANTED, an experienced LADY FLORIST, to take charge of good class shop; state wages required and references.—**W. H. SHARPE**, 41, High Street, Hythe, Kent.

FLORIST wanted, with good knowledge of trade, making up, &c.; able to do own buying in market. Please apply, stating wages required and previous experience, to **JOHN FEED & SON**, The Nurseries, West Norwood, S.E.27.

WANTED, young LADY FLORIST; good make-up; knowledge of Seed Trade an advantage. Apply, stating experience and wages required, to **EDWARDS & CO.**, Florists and Seedsmen, Kettering.

WANTED, young LADY as HEAD ASSISTANT for plant shop; well up in floral work, with a knowledge of seeds preferred. State wages required, with references, to **HENRY PITT**, Nurseryman, Aberystwyth, Mon.

SITUATIONS WANTED.
Twenty-six words for 1/8, and 6d. for each succeeding eight words or less.

PRIVATE.

HEAD GARDENER and BAILIFF, age 40, advertiser seeks an appointment where a few miles' competent and trustworthy man is required. 16 years in charge of a gentleman's estate, highest recommendation as to character and ability.—**G. H. BOX**, 141, Wellington Street, Covent Garden, W.C.2.

HEAD or GARDENER BAILIFF, where several are kept, 7 years' good character; 2 years Royal Gardens, Kent, age 40, discharged. **HENDERSON**, The Gardens, Bowman House, Clifton, Bristol.

HEAD GARDENER requires a permanent situation in good establishment, thoroughly experienced inside and out, ineligible. Please write particulars to **S. J. HILL**, The Lodge, Overdale Manor, Rugby.

HEAD GARDENER; highly efficient in every branch of Horticulture and Estate Management; separate or combined, at **Hearty G. ARBELY**, High Street, Widdington, Oxon, via Wallingford.

A Lady highly recommends good all-round **HEAD GARDENER**, where several others are kept, age 41, has plus 10 years as Head. State wages. **S. H. BOX**, 141, Wellington Street, Covent Garden, W.C.2.

GARDENER (HEAD); life experience in Gardening and Forestry in good establishments, with large staffs. Please state wages. **T. A.**, Box 7, 41, Wellington Street, Covent Garden, W.C.2.

HEAD WORKING GARDENER offers his services as fully as gentleman requiring a thoroughly efficient and energetic man; life experience in the management and requirements of a large establishment; personal reference. **CLIMBERT**, Somershill Gardens, Tonbridge.

GARDENER (HEAD WORKING) seeks situation, four under in last place; versed in Landscape Gardening, married (no family); over military age. **BIRNHAM**, Stockton (Overland St. Mary, Wilts).

GARDENER (HEAD WORKING), where two or three are kept, experienced Inside and Out; good references. Apply, stating wages, &c., **A. HENLEY**, Forley Wood, Whitehoak, Surrey.

SITUATIONS WANTED continued on page v

"Bull's"
THE FOOD FOR PLANTS

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
Special Pottery for all descriptions of Garden Plants and Ferns.
RICHARD SANKEY & SON, LTD.
Bulwell Potteries, NOTTINGHAM.

SALE OF SURPLUS STOCK.
We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being unsold.
Particulars on application.
BOULTON & PAUL, Ltd., ROSE LANE WORKS NORWICH.

FLOWERING BULBS.
A large and comprehensive Stock of
Choice Home Grown Bulbs
Descriptive Catalogue Free.

DICKSONS (Limited)
Bulb Growers and Merchants,
CHESTER.

BLACK CURRANT BUD MITE.
Are your bushes free of this incurable pest? If not Plant "SEABROOK'S BLACK" Currant, the only proved mite resister.
This variety has also every other good quality, being the heaviest cropper and stoutest grower, producing large, firm berries.
Young Bushes 6/- and 8/- per dozen.
W. SEABROOK & SONS,
Fruit Tree & Rose Nurseries, CHELMSFORD.

ROSES FOR AUTUMN PLANTING
ORDER EARLY.
Beautiful plants of the best possible cultivation, our selection from the finest sorts including:-
The Brilliant Coloured
"MDME. EDOUARD HERRIOT"
(Daily Mail Rose.)
12/- per doz. bushes, carriage paid.
Catalogue Free on request.
STUART LOW CO., BUSH HILL PARK, MIDDLESEX.

Write for this **FREE BOOKLET** and avoid all drainage troubles with pot plants. It explains also the porosity, root-roomness, and cleanliness of **CRET** LOTS, of importance to all gardeners.
FREE SAMPLE CRET pot also on request. Write to-day.
PETER BAILEY & SONS Ltd.
2 Heaton Mersey Pottery, near Manchester.




LAXTON'S STRAWBERRIES, including the grand new var. - Laxtoleia (fine Main Crop). Pots, 30 - 100; open, 20/- 100. King George. 20/- pots; 8/- open. Royal Sovereign & Standard Sorts, 20/- pots; 8/- open.
LAXTON BROS., BEDFORD.

FRUIT IN THE GARDEN.

Root up useless shade trees and unproductive Shrubs, and replace with Fruit in these times, when food is all important.
Specially grown trees of
APPLES, PEARS, PLUMS, of fine quality for the Walls, Edging or Vegetable and Flower Borders. Many of fruiting size. Also
FINE STANDARD TREES
A grand lot of Peaches, Nectarines and Cherries for the House and Garden Walls, also
BUSH FRUIT TREES.
Catalogue free on request and special quotations given on hearing exact requirements.

STUART LOW CO., BUSH HILL PARK, MIDDLESEX.

G 6% SHEET ROLLED GLASS
HORTICULTURAL MORE LIGHT

A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is only 1/4 in. (or equal to stout 21 oz.) in thickness. Can be supplied to buyers' sizes, at favourable prices, delivered free and sound to the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of
GENUINE WHITE LEAD PAINT.
"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tin- and 1 cwt. wide-neck cans.
AND
BEST LINSEED OIL PUTTY.
Complete Price List of
Paints, Colours, Varnishes, &c., on application.



GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C. 4
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.

ORCHIDS,
Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

BATH'S HOME-GROWN BULBS.
BUY YOUR BULBS DIRECT FROM BATH'S BULB FARMS.

We have for years been very large growers of Bulbs, and can supply Tulips, Narcissi, Crocus, etc., in first-class quality, and probably in greater variety than any other firm. Write for catalogue to-day. Awarded GOLD MEDAL for Tulips by Royal Horticultural Society, April, 1917.

'POPULAR EARLY FORCING TULIPS.
(These are very scarce).

	Doz.	100
CRAMDISSE BRILLANT. Dazzling vermillion-scarlet	16	10 6
KEIZERSKROON. Brilliant scarlet, edged yellow...	23	16 -
LA GRANOEUR. Brilliant scarlet	19	12 6
LA REINE. Pure white, flushed pink	21	16 -
MOUCHERON. Deep glowing scarlet	19	12 6
PRESIDENT LINCOLN. Distinct light violet	19	14 -
PRINCE OF AUSTRIA. Superb orange-scarlet	23	15 -
PRINCE OF LIGNY. Deep golden yellow	19	12 6
PRINCESS HELENE. The finest white tulips for forcing	23	16 -
ROSE GRIS DE LIN. White, shaded rose	23	16 -
ROSE OF HOLLAND. White, flushed pink	16	10 6
THOS. MOORE. Dark vermillion	2	14 -
WHITE SWAN. Pure white	2	14 -
YELLOW PRINCE. Pure-oft yellow	2	14 -

EARLY DOUBLE TULIPS.

LADY PALMERSTON. Deep rose, flushed white	19	12 6
MURILLO. White, flushed pink	19	16 -

POPULAR COTTAGE (MAY-FLOWERING) TULIPS.

BOUTON D'OR. Very deep yellow	16	10 6
GESRANIUM LUTEA. Rich yellow, egg shaped flowers	16	10 -
GOLDEN CROWN. Deep yellow, red edge	13	8 -
INGLESOMBE PINK. Pink, shading to buff and white	15	10 6
MACROSPILA. Intense crimson-scarlet	1	6 -
PICTOET. White, edged crimson	13	8 6
FINEST MIXED TULIPS all sections, an extra fine mixture	5	-

POPULAR DARWIN TULIPS.

ADOLPHE VAN DEN HEUDE. One of the best brilliant scarlet	19	12 6
BARONNE DE LA TONNAYE. Deep rose, margined light pink	19	12 6
CLARA BUTT. Delicate salmon-rose, the most beautiful of all Darwin. Top size	18	10 6
G. DE STONG. Dazzling bulbs for bedding	1	7 6
G. D. GORODUS. Flowering Turkey red, very early blooming	16	10 6
LA PETITE BONGHINE. Lilac, shaded blue	16	10 6
LOVELESS. Beautiful satiny-rose	19	12 -
MARGARET. Silvery white, interior rose-pink	13	9 -
MR. FARNCOMBE SANDERS. Rich cochineal-red, double base	2	15 -
MRS. POTTER PALMER. Glowing purple-violet	23	16 -
PRIOR OF HAARLEM. Rich glossy cerise, early	19	12 -
REV. EWANK. Heliotrope and lilac, light edge	26	17 6
SALMON KING. Brilliant soft scarlet, white base	16	10 6
THE SULTAN. Glossy purple-black	19	12 -
WHITE QUEEN. White shading to blush, a grand flower	23	16 -
WM. COPLAND (Sweet Livender) Blush-lilac, the best of all for forcing	26	17 6
MIXED DARWINS, from all the best named varieties	12	8 -

POPULAR VARIETIES, DAFFODILS (Narcissi).

BARRII CONSPICUOUS. Primrose, orange cup edged scarlet	4	6
C. J. BACKHOUSE. Yellow, orange-scarlet cup	16	10 6
EMPEROR. Yellow trumpet, top size	16	10 6
O. G. Good strong flowering bulbs	12	8 6
IMPRESS. White petalium, yellow trumpet. Top size	110	12 6
DO. Good strong flowering bulbs	1	8 -
FAIRY QUEEN. Pure white, a lovely variety	16	12 6
GOLDEN SPUR. Deep yellow, grand force	18	12 6
OD. Flowering bulbs	12	8 -
ORANGE. Pure white, yellow trumpet	16	10 6
HENRY IRVING. Deep yellow trumpet, early forer	16	10 6
MRS. LANGTRY. White, cup edged yellow	1	7 -
ORNAIUS. The early forcing Post-Narcissus	91	6 6
OD. Good flowering	71	4 -
POETICUS (Pheasant Eye). The late variety	71	3 -
PRINCEPS. Yellow trumpet and sulphur petalium	101	5 -
SIR WATKIN. Bright yellow, very large flower	16	10 6
OD. Good flowering	12	7 6
VICTORIA. White with yellow trumpet, extra fine	19	12 6
OLD ENGLISH DOUBLE DAFFODIL (Telemanus Ploms)	19	12 6
DOUBLE WHITE POETICUS	71	4 6

CROCUS.

Very fine mixed, all colours	50	10 6
	29	5 -

Complete Illustrated Catalogue with Cultural Notes free on application.
R. H. BATH, Ltd. (Dept. A.)
The Flower Farms, WISBECH, Cambs.

THE

Gardeners' Chronicle

No. 1604—SATURDAY, SEPTEMBER 22, 1917.

CONTENTS.

Australasia—	Orchid notes and clean-
Reminiscences of Rol-	ings (contd.)—
ison a Nursery .. 116	Onchodas 115
Bordeaux inkture versus	Orchid sales 115
lime sulphur for Potato	Phacelodes from Queens-
spraying 121	land 121
Balls, home-grown .. 122	Potatoes, degeneration in
Canada, export of nur-	122; spraying 122
very stock to .. 121	Rosa Moyesi 122
Cory Cup for Bichias, the	Rose season, the .. 121
Farm, crops and stock	Roses, novelties in
on the home 124	climbing 122
Food production, on io-	Slugs, control of .. 122
gressed—	Societies—
Cabbages, recuperative	Identford Allotment
powers of .. 118	Glasgow and West of
Finger and toe in	Scotland Hort. .. 122
Thrips 118	Manchester and North
Potato disease .. 115	of England Orchid .. 122
Potato yields 117	Royal Horticultural .. 122
Priar Park, visit of the	Scottish Horticultural .. 122
King and Queen to .. 121	Southern Food Pro-
Grass-growing in New	duction 122
Zealand 121	United Hort. Benefit
Hardy flower border—	Woodford Hort. .. 123
Phlox tri-verticillata .. 116	Tortworth Court, trees at
Lilium salsoloides var.	Tylenchus or eel-worm
naum 116	infection 122
Market fruit garden, the	War items 121
Nerine and Queen to .. 117	Week's work, the—
Obituary—	Flower garden, the .. 119
Phillips, John 125	Fruits under glass .. 119
Simpson, John A. .. 125	Hardy fruit garden, the
Orchid notes and clean-	Kitchen garden, the .. 118
ings—	Orchid houses, the .. 119
Brasso-Cattleya Cather-	Plants under glass .. 119
ine 115	

ILLUSTRATIONS.

Lilium salsoloides var. naum 116
Nerine Bowdiana 117
Nerine flexuosa var. alba 118
Pear affected with web-blossom .. 124
Phillips, John, portrait of the late .. 125

TREES AT TORTWORTH COURT.

ON the occasion of a recent visit to Tortworth Court, Gloucestershire, I was glad to find that little damage was done during the late severe winter to the numerous rare trees there. It is always a source of pleasure to me to see there, in a flourishing condition, many trees which I have introduced during the last fifteen years, but which will not thrive at Colebourne. However often I go to Tortworth, I always find something new, and learn something about trees which I did not know before, and the care with which the trees are planted, staked, pruned, and attended to for years after planting makes the place a model to arboriculturists. The lowest temperature recorded during the last winter, according to Mr. Banting, the head gardener, was 7°, and neither the heavy snow, which did so much damage at Colebourne in March, 1916, nor the gales, seem to have seriously injured the trees. One of the newly planted species which has come through successfully, and which may now be looked upon as hardy in the warmer parts of England, is the Giant Cypress of Formosa, *Cupressus formosensis*, which shows a remarkable peculiarity in the swellings at the base of the branches, which I did not notice in its native country. My own plant at Colebourne was killed by frost (32°), and the new (?) species of Alder which grows with the Cypress in Formosa, and is probably the largest and finest Alder in the world, shared the same fate. A plant of *Cupressus sempervirens*

raised from seed sent to me from Cyprus, which has the most narrowly fastigate habit of any that I have seen, is flourishing just outside the kitchen garden at Tortworth, while at Colebourne it has been killed, together with older plants of the same species which I raised from seeds gathered in the English cemetery at Rome. A *Cryptomeria*, raised by me from seed sent from the Akita forest in North Japan, which is illustrated on plate 38 of *The Trees of Great Britain and Ireland*, is thriving remarkably, and convinces me that in the west of England, on suitable soils with good shelter, this may prove a valuable forest tree, as I had already suggested on page 140 of our work, after seeing it mixed with Larch and Corsican Pine in a plantation at Tany-jwleh in Merionethshire. I must add that the Japanese system of raising this tree from cuttings has proved as successful at Colebourne as it is in Japan. The large tree of *Fagus obliqua*, which was raised from the seed that I collected in Chile in 1902, is now over 25 feet high, and is producing seed freely. It may therefore be looked on as a safe tree to plant in the south and west of England, where the soil is suitable. Tortworth is one of the few places in England where the American White Ash grows well, and Mr. Banting assures me that it is dioecious; but a tall, well-shaped tree of *Fraxinus pubescens* has many striking branches, this may be due to its being in too dry a situation.

I saw here for the first time a group of three trees of *Zelkova acuminata*, the Keaki tree of Japan, which are perhaps the finest in England. They grow in a grass field outside the park on the road to the Example Farm, and are 30.40 feet high, with boles 5 feet 10 inches to 6 feet 2 inches in girth, dividing at 8.9 feet into many spreading branches. One of these trees was bearing plenty of seed, which, though now unripe, looked as if it would mature before winter. The North American Beech, a rare tree in England, was also bearing nutlets in which the seed seemed mature, and *Juniperus excedas*, also a very rare tree, had berries which I have not seen before. In 1906 I saw on the Isola Bella in Lago Maggiore what I believe to be the finest Camphor tree in Europe, which was planted in 1820. When I saw this tree it was about 75 feet high by 13 feet 8 inches in girth. From its seeds I raised two or three plants, one of which I gave to Lord Ducie without much hope of its proving hardy. It was cut to the ground last winter, but is now throwing up from the root strong shoots which are already three feet high. In 1911 I saw a Camphor tree—the only one I know of in England—about 30 feet high, at Pen-jerick, in Cornwall, and shall be glad to know if this has survived the winter, or if the tree exists anywhere else in England or the south of Ireland. *Aesculus indica* has borne fertile fruit at Tortworth, but it seems a slow grower, and not so happy here as it was at Barton, near Bury St. Edmunds, though I am now told that that fine tree has been cut down. Wilson's

Chinese Paulownia, which until it flowers I suppose we must call *P. tomentosa*, is growing with great vigour at Tortworth, and has been quite un hurt by the winter at Colebourne, where it is now over 29 feet high by 3 feet in girth at only eight years from seed.

Among the numerous rare Oaks is one which Prof. Sargent thought one of the finest trees at Tortworth. This is *Quercus serrata* of Thunberg, a Japanese species also found in China and the eastern Himalayas. It is now 38 feet by 2 feet 2 inches. *Quercus libani* is growing fast and produces acorns freely, but *Q. conferta*, though it is a very fine and healthy tree, produces few or none. *Q. Aegilops*, the Valonia Oak, which I raised from acorns sent from Patras in 1909, though hardy, seems a very slow grower. *Quercus grosseserrata*, from North Japan, is not very thriving, as it has been planted in a rather exposed situation, but when moved to a moister and more shaded soil it will, I hope, recover.

Juglans cinerea, the North American Butternut, is bearing fruit, but does not seem able to make a fine tree in England, as is also the case with *Ulmus racemosa*, the Canadian Rock Elm. *H. J. Elms, Colebourne, Gloucestershire.*

ORCHID NOTES AND CLEANINGS.

BRASSO-CATTLEYA CATHERINE.

A FLOWER of this new hybrid, raised between *Brassavola Dobyana* and *Cattleya Mrs. Myra Peeters* (*Gaskelliana alba* × *Warneri alba*) is sent by Mr. J. E. Shill, gardener at The Dell, Englefield Green, where it is now flowering for the first time. The flower is silvery white, with a slight tinge and veining of pale rose on the petals and lip. The disc of the lip is greenish primrose, and there are light purple markings at the base. The front is finely fringed and tinged with pale rose colour.

ORCHID SALES.

THE first of the autumn Orchid sales will be held at Messrs. Protheroe & Morris' Sale Rooms on Friday, October 5. The catalogue will contain a varied and choice selection of hybrids, and some rare forms of *Odontoglossum crispum* from the collection of C. J. Phillips, Esq., and other raisers. During the war the importations from abroad have been stopped, but efforts of the hybridists have rendered the trade independent of outside supplies, the accumulation of hybrids in the country being equal to the requirements of the present and near future.

ONCHODAS

IN their groups of Orchids exhibited at the R.H.S. meetings Messrs. Charlesworth and Co. usually include their elegant hybrids of *Oncidium* and *Coeloboda*, which, while not so showy as the *Cattleyas* and *Laelio-Cattleyas*, always attract attention. The showiest is the large, dark scarlet *Oncidioda Cooksoniae*, raised between *Oncidium macranthum* and *Coeloboda Noezliana*; and the most graceful the profusely flowering *Oncidioda Charlesworthii* (*O. incurvum* × *C. Noezliana*), with pretty light mauve-colored flowers. At the meeting on September 11 a fine example of *Oncidioda Cybele* (*O. sarcodes* × *C. Noezliana*) was shown with an elegant spike of flowers larger than those of *O. sarcodes*, but with similar, though denser, markings. The ground colour is light yellow, the blotching Indian red. *Oncidiodas* are very easy to cultivate, and most floriferous.

LINUM SALSOLOIDES VAR. NANUM.

The dwarf variety of *Linum salsoioides* illustrated in fig. 40 is rarely met with in gardens, selected forms of the typical plant often doing duty for it. It is quite prostrate in habit, clinging closely to the stones, and producing a profusion of its charming white and purple striped flowers in the spring. Planted between pieces of rock in a sunny position, it will make a tuft some 18 inches in diameter. During the past winter the plant at Kew was killed, and the species suffered a like fate, although they had both been in the same position for several years. They are somewhat difficult to propagate by means of cuttings, although with care they may be increased in this way if cuttings are taken as soon as the young growths are long enough to handle. Seeds do not ripen on the dwarf variety, and even if they did it is very doubtful if the seedlings would come true. W. I. (See also *Gard. Chron.*, July 19, 1913, fig. 22)

out of the question to use the finished chemical products. Santonin itself is very sparingly soluble in water (less than 500.00 in hot). It is obtained from the flower-buds of *Artemisia maritima*, and possibly other species of the genus; not being volatile, it is not suitable for soil fumigation, except by its accompanying volatile oils, and would be effective only as a contact poison when using a decoction of the crude drug. Thymol and menthol offer the advantage of volatility, so that they might be of service as fumigants. Menthol is obtained from the fresh plants of *Mentha arvensis* and *M. piperita*, at first in solution of the volatile oils; thymol similarly from *Thymus vulgaris*, *Monarda punctata*, and *Carum copticum* (Squire's Companion). With the exception of the last-named there is no difficulty in growing these plants, but there would be objection to growing them on the ground and digging them in, especially in the case of the Mint, for it would not easily be eradicated. It would be neces-

AUSTRALASIA.

A NEW ZEALANDER'S REMINISCENCES OF MESSRS. ROLLISON'S NURSERY.

WHEN one leaves the Old Country, and removes to a most distant part of the earth, the pleasure derived from perusing the publications from home connected with one's trade or profession is wonderful. The notes which appeared in the *Gardeners' Chronicle* about the old-time catalogues, and the references to Rollison's old nursery, revived in my mind a flood of memories, for I worked in that nursery in 1872 and again in 1875.

At Mr. Gardner's request I will give what details of the staff my memory still retains. In 1869-70 I worked for Mr. Liversage, florist and landscape gardener, 'Selhurst, Croydon, who rented the triangular piece of ground enclosed by the railways from the L. B. & S.C. Railway Company, and engaged a man named Dan Bryant, from Rollison's nursery, as propagator. Bryant was incensed at the low wages I was getting, and told me to hold on during the winter, and he would get me into Rollison's nursery in the spring. Instead, however, he introduced me to R. Neal and Sons' Nursery, Wandsworth Common, where I stayed till autumn, afterwards removing into the Springfield grounds at Rollison's nursery, under Mr. Dane—or Kane. Later I was transferred to the hardwood department under glass, where I attracted the notice of Mr. W. Buckley, the manager.

In the following spring I was sent to Battle, Sussex, to take charge of the glass in Mr. B. W. Knight's nursery. After eighteen months I returned to Rollison's nursery, and assisted to decorate Victoria Station on the occasion of the return of the Prince of Wales—afterwards King Edward VII.—to London, to take part in a Thanksgiving Service at St. Paul's for his recovery from a severe illness. Shortly afterwards I was sent as foreman to Mr. H. Burnham, gardener to J. S. Walker, Esq., Hunsdon, Bury, Hertfordshire.

The following are the names of a few of the principal men I remember: Mr. William Rollison and his sons George and Tom; Mr. W. Buckley, manager, and expert in aquatic plants; Mr. Van der Mersch, a Belgian, clerk; Mr. Skelton, stove foreman; Mr. Easton, hardwood foreman; Mr. Dane (or Kane), outdoor foreman; Mr. Gould, expert budder and grafter; Mr. Tom Gardner, head packer; Mr. Garvie, packer; Mr. F. Chettleburgh, carpenter; and the night fireman, known as "The General."

I have pleasant memories of the packing shed. I volunteered to assist during busy seasons, as I could make overtime, and the lessons I learned in packing from the "Great Tom," as Mr. Garvie called him, have been of great service to me since. F. Fuller, *New Zealand*.

HARDY FLOWER BORDER.

PHLOX IRIS VERSICOLOR.

SOME of the older variegated-leaved Phloxes are of weak constitution and difficult to retain in severe winters, but within the past few years new varieties of better constitution have been raised. One named *Iris versicolor* has variegated leaves, and is of vigorous growth. The flowers are violet-blue with a deeper centre, and the foliage is beautifully variegated with silver and green. S. Arnott.

FORESTRY.

STUDENT FORESTERS IN SCOTLAND.

IN many of the Scottish forests, students from the various colleges are spending their vacation in tree-felling. The work done has been pronounced satisfactory, and the students themselves have derived much physical benefit from the open-air life.



FIG. 40.—LINUM SALSOLOIDES VAR. NANUM. FLOWERS WHITE, WITH PURPLE VEINING

TYLENCHUS OR EEL-WORM INFECTION: A SUGGESTION.

IN *The Gardeners' Chronicle* for May 26, 1917, p. 217, Mr. J. K. Ramsbottom sums up the modes of remedy and prevention of eel-worm infection in the four categories: 1. Rotation; 2. Treatment of infected ground; 3. Treatment of bulbs; 4. Trap or crop curing.

With regard to treatment of ground, on the lines of active attack rather than the passive method of aiding the growth of the plants by manure, there are some possibilities beyond the use of the chemicals (formaldehyde, toluol, carbon bisulphide, and naphthaline) which are mentioned. In the treatment of man for ascariid parasites, santonin for ascariid, and thymol or menthol for ankylostoma seem to be the most approved agents for directly affecting the worms, and the question arises whether substances of this nature may not be worthy of trial in the case of eel-worm. I believe my garden is free from infection, and so cannot try experiments. Except for pot trial, it would be, of course,

say to harvest and dry them before use. This would add considerably to the expense of treating large areas, even provided that a good result were obtained on the worms, and no bad effect on the plants to be cultivated. It is therefore desirable to find some annual plant which will give the desired products and not be liable to the disadvantage of the readily-rooting perennials. The genus *Satureia* appears to be a possible source, though I have no analytical reference of their constituents; the scent of the plants is suggestive. *S. montana* is an easily rooted perennial, and therefore out of count; on the contrary, *S. hortensis* is an annual which forms fine little bushes when well spaced out. My suggestion, then, would be to crop the latter plant and dig it in about blossoming time; this would hardly amount to following for a season, so far as concerns Daffodils, for they are dormant during the cropping of the Savory. Thymol is an active antiseptic, and has considerable bactericidal power at a dilution of 100/00, so that it may be anticipated that a good many of the soil bacteria would perish in the process. H. E. Durham.

NERINES.

NERINES are among the most striking of all the autumn bulbous flowers that require the protection of a greenhouse. They are all natives of South Africa, and consist of about a dozen species, with some well-marked varieties. Beside these there are numerous garden forms, of which more than a couple of dozen have been given Awards of Merit by the Royal Horticultural Society within the past two decades. It will, however, be a long time before some of them are in general cultivation, as the bulbs are slow of increase. The true species may be divided into two groups; firstly, those in which the segments of the flower are regularly disposed, or nearly so; secondly, those in which there is a marked space between the two divisions. While these last are very ornamental they are in beauty surpassed by the more regular flowers, one of which, *Nerine curvifolia* Fothergillii, is generally known as *Nerine Fothergillii*. The production of flowers of this type has been the aim of most raisers, hence the majority of new varieties are of regular shape. The flowers of *Fothergillii* are of a deep scarlet colour, while in *Nerine corusca*, which is by some authorities regarded as a variety of *Nerine sarniensis*, they are vermilion-scarlet. The beauty of this tone is enhanced by the concavations which over-spread the entire bloom, and thus, when viewed from different standpoints, present the appearance of dew. All the forms of *N. corusca* are not of equal merit, and to the best form—the varietal name of major has been applied. *Nerine sarniensis* (the Guernsey Lily), the blossoms of which are of a carmine-rose tint was formerly sent over in considerable numbers from Guernsey. Formerly, the bulbs were lifted just as the flower-stems made their appearance potted and placed in the greenhouse for the blossoms to develop without check. Of late, however, this practice appears to have been discontinued. *N. Boydii* (see fig. 41) is a comparatively new species with large flowers of rose-pink colour with a darker stripe down the centre of each segment. Of this there is a variety with bluish-coloured blossoms. In some, the divisions of the flower are extensively crisped, notably in the pink flowered *N. flexuosa* and its pure white variety *alba*, as well as the distinct *N. undulata*, or *crispa*, as it is often called. This species has grass-like leaves, and will often flower comparatively late in the season. The pale pink segments are exceedingly narrow. From the fact that the original species are all natives of South Africa it will be understood that they do not require very much warmth, indeed, freedom from frost is all that is necessary for their successful culture. They all very much resent being disturbed at the roots, and re-potting should not be done before it is absolutely necessary. For this reason the compost employed should be of a lasting nature, and consist mainly of loam and sand. Should the loam be of a very heavy consistency a little leaf-mould may be mixed with it. The leaf-mould should be sterilised before use. Different opinions prevail as to the best time to repot the plants. I prefer to do the work as soon as the flowers are over. An essential point to bear in mind in connection with the culture of *Nerines* is that they make their growth throughout the winter and spring. At that time they should be grown in a light position in the greenhouse and regularly supplied with water. When the plants are dormant the pots should be exposed fully to the sun, and water should be withheld in order that the bulbs may ripen. Towards the end of August or in September the flower-spikes develop, after which the soil should be kept moist. Sometimes the narrow-leaved sorts will show leaves before the flowers, in which case they may be watered. B 7

ON INCREASED FOOD PRODUCTION.

POTATO YIELDS.

THE following results of part of a Potato growing competition arranged by the local horticultural society for cottagers and allotment-holders may be of interest to growers generally. In one class prizes were offered for "the heaviest crop of sound tubers obtained from 1 lb. of seed cut into twelve sets." The variety selected was Great Scot, and the seed was carefully weighed by the secretary of the society and myself, put into bags and handed to the competitors early in spring. Where the growers gave their sets every chance, the variety yielded

works out at nearly 40 lbs. per twelve sets, clearly proving that the variety deserves all that was claimed for it by your correspondent in the issue for April 14, 1917, p. 152. When we judged the early variety class in July we found Midlothian Early and Sharpe's Express to be favourite varieties. Growers, however, state that the former sort since then has become badly diseased. The 1st prize was won with a local variety called Short Top. Perhaps a touch of sentiment has induced me to still grow a few Myatt's Ashleaf, but it has done so badly the past year or two that it is waste of ground to grow it any longer. *Colonist*, in the spring, gave a splendid crop in frames; First Crop was good both under glass and in an early border,

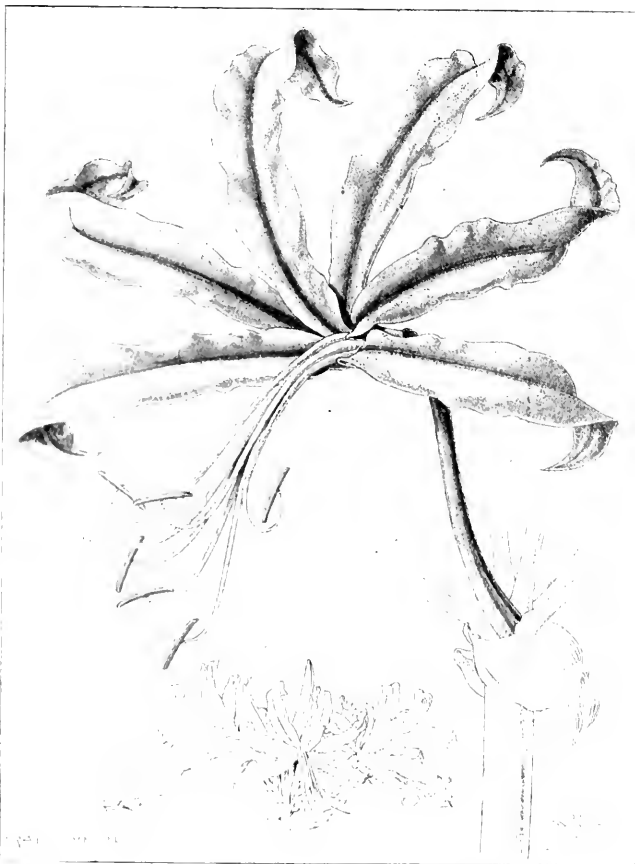


FIG. 41. NERINE BOYDII. COLOUR OF FLOWERS PALE ROSE.

very heavily. The crop was lifted and judged on August 29. The winner of the 1st prize, Mr. G. Powell, had 104 lbs. of sound tubers, and 5 lbs. small with just a trace of disease; the twelve heaviest tubers weighed 151 lbs., the largest one 1 lb. 9 oz.; the winner of the 2nd prize had 55 lbs. of sound tubers and 1 lb. of small Potatoes; the third, 51 lb. of sound and 1 lb. of small tubers. As the day was wet some allowance must be made for the damp soil adhering to the tubers, but, even then, the results are remarkable, and I shall be interested to know if the 1st prize result has been equalled this season in similar competitions. The total weight grown by the twenty-nine cottagers who competed in this class is 1,107 lbs. of sound tubers, 444 lbs. of small and diseased ones, which

but Sharpe's Express, for cooking qualities, is still hard to beat. The wet weather is having a serious effect on the Potato crop; the rainfall for August in these gardens was 7.10 inches. The varieties Up-to-Date, Factor, and King Edward, seem to become yearly less resistant to disease. Arran Chief is not promising a heavy crop locally, though, as the haulm is still quite green, if the weather improves, the crop will benefit accordingly. The unsettled weather in July interfered with spraying so much that it hardly had a fair chance; sufficient spraying, however, was done to demonstrate its value, except on Potato-sick ground. In a fruit district like this crops suffer a good deal from the shade and drip of fruit trees, which are a feature of cottage gardens in

Worcestershire, and for a long time I have questioned the wisdom of planting so many fruit trees in gardens to the detriment of other crops. Would it not be better to grow fewer trees in the vegetable quarters in private establishments, and give the fruit trees a place to themselves, especially those grown as bushes and pyramids? *James J. Graham, Howell Gardens, Redditch.*

POTATO DISEASE PREVENTED BY DEEP PLANTING.

As a practical gardener my experience is that if Potatoes are planted deeply late blight disease does not affect them. It has only occurred when the Potatoes have been planted shallow. It has been stated that if seed tubers planted near the surface are afterwards covered by soil no disease will hurt them, but it is much better to plant deeply and prevent disease. That, at any rate, has been my experience. *A. Newson.*

RECUPERATIVE POWER OF CABBAGES.

Being impressed with the value of every leaf to any plant of the Cabbage tribe, I lifted and

a second period of hot, dry weather, about the third week of June, the land was manured, ploughed, and rolled firm. Large plants of Cabbages (9 to 12 inches long) were planted, and during the day leaves and stems lay flat on the ground. All but the youngest leaves turned yellow and withered away, yet in the course of a few weeks there was a splendid field of Cabbages, showing the wonderful capacity of Cabbages to recover from this rough treatment. No doubt the plants would have been much larger if they had been prevented from flagging by the private gardener's method. Nevertheless, they were of large size, covering the ground, and commencing to heart by September 15. *J. E.*

FINGER-AND-TOE IN TURNIPS.

This pest spreads rapidly if measures are not promptly taken to suppress it. Finger and toe is also known as Club Root. It is spread from the first point of attack in various ways; it may be borne in soil that sticks to the plough, to wheels of carts or other agricultural implements, or to the feet of workers, horses or sheep.



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor

LETTUCE.—Another sowing of hardy Lettuce may be made on a sheltered border with a view to obtain heads in spring. The border on which the sowing is made should face south and be well raised at the back. Brown Cos, Stanstead Park, and Maximum are suitable varieties. The plants should be ready for transplanting in early spring in a sheltered position, or if cold frames are available, good results may be obtained by growing them in frames in rich soil, placed to within 15 inches of the roof-glass.

FRENCH BEANS.—The latest plants of French Beans in the open should be afforded protection from early frosts by a covering of light material, to be drawn over them without touching the foliage, as often as required. Wires may be strained over the border at a distance of 2 feet from the plants to carry the protective covering.

FRENCH BEANS IN POTS.—If Beans were sown in pots a month ago, they will now be ready for top-dressing. Good, rich soil should be used, pressed firm on the surface. A few twigs should be placed round the plants, to keep them in an upright position. Water freely with weak liquid manure, and keep the plants fully exposed to the light. No fire-heat will be necessary until the weather becomes cold, but the house should be closed in the afternoon. Ventilation may still be freely given during sunny days. Another sowing should be made in 7-inch pots at intervals of 8 or 10 days during the autumn, in order to maintain an unbroken supply of pods.

LEEKS.—The soil between the rows of Leeks should be broken lightly with a hoe, and a liberal supply of manure-water given, especially on light soils. Leeks respond well to liberal feeding during the autumn.

CUCUMBERS.—Plants from which Cucumbers are expected in November and December should now be making rapid progress, and will require very careful treatment in order to promote stocky, short-jointed growth, capable of carrying a crop during the winter. Stop the shoots frequently, and tie them regularly over the trellis, leaving sufficient space between them to admit light to all parts of the house. Remove rough leaves as it becomes necessary, to make room for young growth; decaying foliage is almost certain to become infested with red spider. Overcrowding should be prevented by frequent attention to stopping and tying; if neglected for a few days it becomes necessary to remove large quantities of foliage at one time, which causes a check to the plants. Top-dressing is important during the autumn and winter, and by frequently applying a small quantity of fresh soil to the roots they are kept in a healthy condition. Avoid strong heat, and ventilate with great care. Maintain a moist atmosphere by frequently damping the floor and walls of the house; the foliage may be lightly syringed twice daily during sunny weather. Another planting should be made as soon as possible to produce a supply in January and February. These plants must be grown in a moderate temperature, exposed fully to the light.

TOMATOES.—All unnecessary foliage should be removed from Tomato plants in the open so that the fruits may receive the full benefit of the sun. Remove the fruits as they begin to colour, and place them in a dry vinery until they are ready for use. Plants which are ripening their fruits indoors should be allowed plenty of ventilation and a good supply of manure water. Do not trim the plants too severely; it is necessary to allow a little more freedom of growth at this season in order to encourage root action.



FIG. 42. —NERINE FLEXUOSA VAR. ALBA.
(See p. 117)

transplanted Cabbages, Caul flowers, and Brussels Sprouts, with a trowel, during the great heat and drought of June. This was done during the evening and each plant watered in only once. Practically, not a leaf withered, and there was very little flagging. If this care and time can be given the Cabbage tribe in transplanting, I consider the operator's far better repaid to do it in dry, rather than wet, weather, because the plants grow away immediately without failure, whereas in dull, wet weather there are many failures owing to slugs, especially in heavy or rich soils, and blanks may have to be filled up several times. Bearing these things in mind, I was interested in the remarks of Mr. James A. Paice, in the issue for July 21, p. 24, also Mr. E. Beckett's remarks on p. 68. In contradiction to this case I may mention an observation I made on a market garden in an district where the large numbers and severity of slugs make it impossible to transplant with a trowel. A crop of Lettuces had just been cut. During

Finger-and-toe can be checked by the application of lime, preferably common burnt limestone, applied at the rate of from two to four tons per acre six months (or preferably eighteen months) before the Turnip crop is sown. The lime should be slaked, and either spread by a manure distributor or shovelled direct from carts on to the fields. Forms of lime other than burnt limestone may be used; but if gas lime be dressed the land must not be sown or planted for some months. Chalk has also a preventive influence, but is not so effective as lime.

Bad drainage is a contributory cause of finger-and-toe; so is the neglected growth of Charlock and other cruciferous weeds; and acid manures in wet climates seem to encourage the pest, whereas basic slag, bone meal and precipitated phosphate have an opposite tendency. All whose crops suffer from finger-and-toe are advised to obtain free Leaflet No. 77 from the Secretary of the Board of Agriculture, 3, St. James's Square, S.W. 1.

FRUITS UNDER GLASS.

By JAS. HUDSON, Head Gardener at Gunnersbury House, Acton, W.

FIGS IN POTS.—The pot trees of Negro Largo Figs should be yielding a good supply of fruits. For some weeks past we have been gathering from pot plants, and I do not think there is any other Fig at this season to equal this variety. The fruits are of the highest quality; they keep well, and have a fine appearance. Very rarely indeed do we get a cracked fruit of this Fig. Close the houses whilst there is still plenty of sunshine to raise the temperature to 85° or even 90°. Do not, however, damp down after mid-day. Look closely to the watering early in the day. Keep the night temperature at least as high as 65° when banking up the fires. If the plants suffer a check through low temperatures some leaves may fall and the late fruits be delayed in ripening.

THE RE-POTTING OF FRUIT TREES.—Fruit trees in pots intended for first early forcing should be repotted or top-dressed as early in October as possible. The loam used should be from a stack that has stood at least six months, calcareous, tough and fibrous. If it seems retentive or close, some sandy grit should be added. Two-thirds of the compost should be loam, and the rest made up of well-decomposed manure and mortar rubble. Turn the compost over three or four times, taking the precaution to cover it in case of heavy rains.

NEW STOCK.—If the trees are planted, it will not be advisable to disturb them for at least another fortnight. If not planted, continue to pay close attention to watering. If it is desired to add to the stock of trees, they can conveniently be moved. They should be well established trees, grown in pots from the beginning; such trees will answer better than trees from the outside quarters. Those in 9 to 10 inch pots will be the best to choose, as they are easy to move.

POT TREES IN BEARING. Fruits can be left upon Plum trees in pots until they are required, and the flavour is enhanced thereby. Late Nectarines also hang well, but very late Peaches are disposed to become woolly if left upon the trees too long. As soon as these trees are all cleared of their crops, stand them out side, in full sunshine. If not planted, see that they are secured against damage by winds, and do not let them suffer from want of water at the roots.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Garton Park, Reigate.

TROPICAL ORCHIDS. Owing to the damp, unsteady weather during September and the greater part of August, the growth of most tropical Orchids is softer in texture than usual. Every effort should therefore be made to induce the thorough ripening of the growths and pseudo-bulbs of the inmates of the East Indian, Cattleya, and Mexican houses.

SHADING AND WATERING. It is impossible to give precise directions at this season on the subject of shading. There should in any case be a gradual reduction to harden the foliage, and little shade will be necessary after the first two weeks of October. If, in addition to blinds, shading has been provided by roofing the glass, it should be washed off at once, first stopping the pipes leading into the tanks, so as to prevent sediment from passing into the rain-water. The permanent blinds should be allowed to remain in position, as shading will still be necessary during bright sunshine, but they must be used with discretion; the plants should be exposed to all the sunlight possible without causing damage by scorching. The amount of moisture in the atmosphere must be regulated with extra care until fire-heat is more extensively employed. The cooler houses will require damping the least, as there is less evaporation in these structures. In the warmer divisions sufficient atmospheric moisture must be promoted to counteract the effects of fire-heat,

The East Indian, Cattleya, and Mexican house will require to be damped morning and afternoon, while the cool houses, in which very little fire-heat is employed, should be damped only in the mornings, except on bright days, when the paths and stages should be sprinkled again in the afternoon. Watering must be carried out with due regard to the weather, the conditions of the plants, and the compost used. Plants with pseudo-bulbs nearly completed should receive a gradually diminishing supply, but water must not be withheld to such an extent as to cause shrivelling. As the nights become colder it will be necessary to provide extra fire-heat; on warm days the ventilators should be opened sufficiently to prevent scorching, but retaining as much sun heat as practicable.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVELY, Abbots Wood, Godalming, Surrey.

GATHERING FRUITS.—Continue to gather the fruits as they become fit. Several varieties both of Apples and Pears will now be ready. Among Pears, Marguerite Marillat, Souvenir du Congrès, Beurre d'Amalins, and the later fruits of Williams' Bon Chrétien, will require watching, as the fruits do not all ripen at once. The fruits on walls should be carefully lifted to the horizontal if they are ripe they will readily part from the stem, and should be gathered. Early ripening Apples should be treated in the same manner. James Grieve requires very careful handling or it will show bruises. When the fruit is gathered, take it to the fruit room and store it carefully, arranging for plenty of ventilation.

PEACHES AND NECTARINES.—Late fruits of Princess of Wales, Sea Eagle, and Victoria should be kept in full light, away from the leaves. If the weather is wet or stormy, a few lights placed over them will assist in ripening the fruits. Place a strong rope or wire across the lights to keep them in position, and make them safe against winds.

PLANTING FRUIT TREES.—If a piece of ground has been selected for planting it should be trenched, and if young trees are to be planted in the place of worn-out specimens, or to replace worthless varieties, the old soil should as far as possible be cleared away and replaced by new. Use at least one third of new loam and add to it old hot-bed refuse, or the burnt earth and ashes from the garden bonfire. After the old trees are rooted out, trench the soil to the depth of 2 feet 6 inches or 3 feet, after which fill in with the new soil and material as described. In preparing the ground for Peaches, Nectarines, and all stone fruit, mortar rubble should be incorporated. It is not a good plan to use much manure at the time of planting, unless the ground is very poor, and then the manure must be in a well-rotted condition. Apple and Pear trees grafted on dwarfing stocks are the best for small gardens. All fruit trees should be ordered and planted as early as possible.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHCOLE, Eastwell Park, Kent.

RAISING CYCLAMENS FROM SEED. If plants of Cyclamen are required to bloom early in the season the seed, if not already inserted, should be sown at the earliest opportunity. Fill seed pans or seed boxes to within half an inch of the top with porous soil. Give the soil a thorough watering, and leave the pans for a time to drain thoroughly. Sow the seeds thinly, and cover them lightly with fine soil, pressing in the seed with a flat piece of wood. Place the seed pans in a house or frame, where a minimum temperature of 55° to 60° is maintained. Shade the seed pans from sunshine; the best plan is to lay sheets of paper, or moss, over the pans until the seeds germinate. Be careful to keep the soil always moist, but do not make it sodden by over-watering.

SCHIZANTHUS.—Sow seeds of Schizanthus now to obtain plants for flowering next

spring. Sow thinly in pans or boxes, and keep the pans well shaded until the seed germinates. Gradually accustom the seedlings to full light, and grow them in cool conditions. Prick the seedlings out into 60-sized pots when sufficiently large to handle. *S. Wislizenensis* is excellent for flowering in pots, and hybrids in various shades are procurable. The same applies to *S. retusus*, of which seed is offered in great variety, from pure white and yellow to rosy pink. Schizanthuses are excellent plants for the amateur grower, as they are kept quite cool from the seedling to the flowering stage. They are valuable for cutting, as well as for decorative use in the conservatory.

HUMEA ELEGANS.—Seeds of *Humea elegans* should be sown now, to provide a succession of decorative plants. Young plants grown on from seed sown earlier in the season will now be growing freely, and should be potted on as required. Pot firmly, using a compost of three parts turf to loam to one each of leaf-soil and manure from a spent Mushroom-bed, adding a 6-inch potful of soot to a barrowful of the compost. Be careful not to bury the stem lower than it was in the previous pot. *Humeas* resent over-watering more quickly than most plants, often collapsing altogether if the roots are allowed to become too moist. They thrive best in a cool frame, standing on ashes, and require very little water during the winter. Fertilize liberally at intervals to keep the plants free from aphids.

THE FLOWER GARDEN.

By W. J. GUNN, Gardener to Mrs. DEMPSTER, Keele Hall, Staffordshire.

PROPAGATING STRUBS.—Many varieties of strubs may be propagated at the present time, if frame accommodation is limited, and spare lights are available, a temporary frame may be erected in a partially shaded position. The frame should be about 2 feet deep; place a thick layer of fine ashes in the bottom, and fill up the space with a sandy compost to within 12 inches of the glass. The bed should be made quite flat, and the half-timpened shoots (with a heel for preference) inserted very firmly. After watering the cuttings through a fine rose to settle the soil, tilt the lights a little for a few hours to dry the foliage. The frames must be kept quite close, only admitting sufficient air to dry the moisture after the usual sprayings on fine days. Apply a light shading during very bright weather, and gradually admit air directly root action commences.

HARDY FUCHSIAS. Hardy Fuchsias are now at their best. They thrive in light, sandy soil, but they are not exacting in this respect. In cold districts a little protection is necessary during winter, such as long litter or bracken placed round the base of the plants. To increase the stock, cuttings should be inserted at once in a cold frame, using a sandy compost. Protection is necessary for the young plants in frosty weather. The following is a selection of the best species and varieties: *condita*, *Ericaumont*, *Mme. Cornclison*, *gracilis* Thompsonii, and *soziniana* microphylla.

HELIANTHUS. The perennial Sunflowers are useful for decorative purposes. The flowers of the variety Miss Melish last a considerable time in water. The variety Miss Willmott is also very fine, the deep golden-yellow flowers and nearly black centre showing up well in the herbaceous borders. The small double yellow flowering variety Solid Four is very free in flowering, and useful for cutting. The best results are obtained from this variety when it is grown in rich soil. If the faded flowers are continually removed a succession can be obtained from the side-shoots. Keep the plants neatly staked and tied to prevent damage by wind.

EREMURUS. Plants of *Eremurus* should not be lifted unless the young shoots are over-crowded. In such cases the plants must be lifted, pulled apart, and replanted at once in a rich, porous loam. Well-decayed manure or leaf-mould mixed with the soil is beneficial.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — Our correspondents to avoid obtruse delay in obtaining answers to their communications should state as much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Special Notice to Correspondents. — The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPTEMBER 25—

Royal Horticultural Soc. Coms. meet and special Vegetable Classes.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 55.2.

ACTUAL TEMPERATURE—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, September 20, 10 a.m. Bar, 29.5; temp, 60.5; Weather, Fine.

SALES FOR THE ENSUING WEEK.

MONDAY AND FRIDAY—

Narcissus, Tulips, Anemones, &c., at 67 and 68, Chesapeake, by Protheroe & Morris, at 1 o'clock.

WEDNESDAY

Trade Sale of Home-grown Bulbs at 67 and 68, Chesapeake, by Protheroe & Morris, at 1 o'clock.

The Rose season of 1917 has been an extraordinary one. The winter was severe and prolonged.

The Rose Season.

Only in May did the weather suddenly alter to something like summer. June, however, was fine and warm, and Roses, though very late in starting into growth, developed vigorously, and, contrary to expectations, their flowering season began decidedly earlier than in most years. The blooms, when they appeared, seemed both finer and cleaner than usual, notwithstanding the fact that most growers were obliged to restrict, or even dispense with, the usual spring dressing of manure. Even the shows followed the usual character of the year. There was no metropolitan summer show of the National Rose Society, and very few exhibitions in the provinces. The National Rose Society managed, however, to get together a very fair autumn exhibition on September 11, as well as a display of seedlings at the Royal Horticultural Society's meeting on July 17.

The severity of the winter caused many Rose-growers to fear for the safety of their plants, more especially of those which had been transplanted, or newly purchased. In the North and Midlands many losses occurred, the most serious, because the most noticeable, being among the rambling Roses having a preponderance of Tea blood, such as Francois Juranville and Joseph

Lamy. Some at least of these had most of their top growth affected, and in some cases they were cut to the ground level, though we believe few were killed outright. In the London district and southwards no serious casualties resulted.

"White Rose" tells us that in his garden, a few miles from London, only some of the tips of the ramblers were affected by the frost, with the exception of a pillar specimen of Silver Moon, which flowered poorly, and has since died. Another pillar of Ards Rover, though not so badly affected, failed to make any new growth from the branches, but is throwing up good new growth from the base. Among garden Roses other than climbers, the chief sufferers have been standards, and those, for the most part, plants which were previously not in the best of health. With these exceptions, even the standards came through the ordeal of the severe winter fairly well, and the only plants previously in good condition which have been injured are a few standards of the variety Madame Hoste, all upwards of ten years old.

Among the dwarf Roses, it is only in cases where there was some disease in the previous summer that any serious disaster has occurred. Thus a bed of Mme. Abel Chatenay that had suffered from black spot, and another of Dr Campbell Hall that had been affected with rust in the summer of 1916, have both done so badly that they will require to be replaced; but otherwise there is little to complain of.

It is most cheering to find that the variety Mme. E. Herriot has proved so hardy. We had felt doubts as to the hardiness of M. Pernet Ducher's new varieties, and feared that a very cold winter might clear them out of our gardens. These doubts have proved quite groundless in the case of Mme. E. Herriot, for not even the tips of the shoots were touched, and Louise Catherine Breslau seems equally satisfactory. Rayon d'Or had all the last year's wood destroyed, but shot up well from the old wood, and is now none the worse. Arthur R. Goodwin was rather cut by the cold, but most of the plants are recovering fairly well; none was actually destroyed, but a few have failed to grow as well as could be wished, and may have to be replaced this autumn.

Pruning was certainly difficult this year, and although it was carried out by cutting back rather harder than usual, there were many instances in which later in the summer shoots which had grown to some extent died back, indicating that a piece of frosted wood had been overlooked.

The warm weather of May and June brought on the young growths with great rapidity, and the early blooms of most of the H.T.'s and Teas were exceptionally good. This illustrates an observation of the late Mr. Mawley, that, provided June is fine, the weather during the rest of the year is of comparatively little importance to the summer blossoming of Roses. An exception to this satisfactory state of things was the colour of the crimson H.T.'s, which, save in the

cases of Mrs. Edward Powell and Red Letter Day, was extremely poor, and the old Hybrid Perpetuals were the only kinds which gave crimson flowers of any tolerable colour. Richmond, General McArthur, Liberty, Dora Van Tets, and even Avoca, were all more or less affected by the hot sun, and came with that unsatisfactory tinge of bluish-pink in the crimson which we are accustomed to associate with the August flowers. Few rosarians in hot countries have a good word to say for Richmond, which in a normal year is so charming in its first and again in its autumnal flowering. To compensate partly for this, there were lovely flowers of Victor Hugo, Horace Vernet, and Hugh Dickson, and twice in the year, early July and again in September, the garden gave us beautiful flowers of Edward Bohane. This is undoubtedly a fine Rose, but it is to be hoped that older plants will prove more free in flowering than young ones. National Emblem has given good crimson flowers, but the habit is too spreading to display them to advantage. Augustus Hartmann has, on the whole, done well as a bedding Rose; the colour is bright and attractive, an important point in a bedding Rose; the plants are generally in flower through the season, and are vigorous growers. Some of the plants of this variety succumbed to the severe winter, causing unfortunate gaps in the bed. A bed of Edith Part, however, planted at the same time, showed no gaps. This is a bicolor Rose of rose colour on the face and creamy flesh on the reverse of the petals, which are characteristically crimped at the edges. It is free and continuous in flowering, but in its first year has produced too many poorly formed flowers to be altogether satisfactory, while its growth has not been quite vigorous enough for a bedding Rose. It will be allowed to remain for another year to amend its ways. If it does not, it will have to make way for a better variety.

Ophelia is altogether charming, and one of the most free in flowering in the garden. The growth is good, the flowers are carried well on their stalks, and nearly all the blossoms are well shaped.

Mrs. W. E. Vanderbilt has proved satisfactory. The colouring is pinkish-apricot, resembling a flower of Lady Mary Ward, but the growth is more vigorous, and seems up to the present to be less subject to disease. The blooms are rather larger, but not so prettily shaped as those of Lady Mary Ward, which is so lovely a Rose, when at its best, that we cannot help regretting that it is not more vigorous and disease-resisting.

The flowering season of the Wichuraiana and Multiflora Roses in 1917 may be characterised as good while it lasted, but it was rather short. The heavy rains and storms of August scattered the petals of all the early flowering climbers and much injured the blossoms of the later varieties. It proved an unfavourable season for the sweet-scented Evangeline, which may be classed among the later climbers, usually scenting the garden in July and August.

THE MARKET FRUIT GARDEN.

A WET SUMMER.

IN all but two divisions of the United Kingdom the rainfall of the three summer months, as recorded by the Meteorological Office, was considerably over average, the exceptions being North and West Scotland. In the south-east, my own division, the total was 11.65 inches, or a small fraction over 5 inches above average, the greatest excess shown for any division. Only in S.W. England and South Ireland were the totals greater, and in them the excess over average was much less. At my own station the total was 11.88 inches, nearly half of which, or 5.66 inches, was for August, when rain was measurable on 20 days. The effect of such a wet month, in which urgent work in fruit picking was going on, was deplorable. Hoeing was out of the question, even when other work did not prevent it, as the land was continuously in very wet condition. Consequently, weeds grew unchecked in orchards, which were in a worse condition in this connection than they had ever been before. As for the effects of the two violent gales of August, reference has been made to them previously. The sequel is a great quantity of Apples rotting and shrivelling in every place of shelter in which they could be stored. This refers not only to the Apples tucked up off the ground, but also to a large proportion of the gathered fruit, for the quick despatch of which not a quarter enough of empties were procurable. Moreover, the markets were so glutted with windfalls that prices fell to a very low level. The wet weather of the latter part of August, as well as the gales, caused a great loss in Plums also, and the markets for that fruit too were overdone with supplies, much of which consisted of over-ripe and partly rotten fruit. Altogether, the early part of the tree fruit season has been one of the most worry-
ing times that growers have known.

A SPOT DISEASE OF APPLES.

In the annual report of the Research Station at Long Ashton, Bristol, for 1916, recently received, Mr. G. T. Spinks, returns to this subject, first noticed in the report for 1914. The spots appear around the "lentil-like" structures which occur in the skin of Apples. At first they are so minute that they can be seen only with the aid of a lens; but the spots grow, sometimes before the fruit is gathered, but more commonly after it has been stored, until they become quite large in some cases, and even meet each other. Incubations with cultures of seven different fungi have caused the formation of spots, a result so curious that it seems to indicate that the original cause of the rotting was a minute puncture by an insect, followed by the introduction of one of many fungi which cause rotting. The summing up of the information acquired at present is as follows:—The fungus enters the Apple through a "lentil" some time before the first sign of a spot appears, but the actual time of entry is not known. It may be after the Apple is gathered or before, or even when the "lentil" is first formed. The fungus for a time makes very little growth, and only produces a noticeable spot when the Apple has reached a suitable state of ripeness. The spot then grows rapidly. In November and December Apples, as a rule, can only be infested through injuries, and not through uninjured "lentils."

As in some previous recent seasons, I have found a good deal of this rot spotting among a few varieties of Apples. In packing a remarkably fine lot of Worcester Pearmain, many hundreds, if not some thousands, of Apples, including some of the finest, have had to be thrown out as unmarketable. In a large proportion of instances there was only one rot spot on an Apple, but even biggers who will buy the smallest of dessert Apples readily

shall be clearly stated on each ear, box, bale, or other container, which shall also bear a declaration of the nature of the contents. All shipments made in accordance with these regulations will be entirely at the risk of the shippers or consignees. Under Regulation 7, the importation of all Currants and Gooseberry plants, and European Potatoes, is prohibited. The importation of all nursery stock, including trees, shrubs, plants, vines, grafts, scions, cuttings or buds through the mails, is prohibited, except greenhouse-grown florists' stock, cut flowers, herbaceous perennials and bedding plants, which will be admitted provided that a certified declaration of the contents is attached to such parcels.

CORY CUP FOR DAHLIAS AT R.H.S. SHOW.—We are informed by the Royal Horticultural Society that at the meeting of the Society held on September 11 the judges placed Messrs. CARTER PAGE & Co. first in the Dahlia Competition for the Cory Cup. Messrs. CARTER PAGE & Co. having, however, won the cup in 1916, and the same winner being only eligible to compete in three years, the cup was awarded to Messrs. J. CHEAL & SONS, and a special award of a Silver gilt Flora Medal was granted by the Council to Messrs. CARTER PAGE & Co.

WAR ITEMS—Captain CHARLES DIGOY, of the 14th Regiment of French Infantry, who, we are informed, has been killed in the war, lived for a time in England, working in Kew Gardens. He died up as a sergeant on the outbreak of war, was wounded several times, and mentioned five times in Army Orders. Although only 27 years of age Captain Digooy had been awarded the Cross of St. Anne of Russia, besides being a member of the Legion of Honour.

—M. ALFRED NOMBLOT, secretary of the National Horticultural Society of France, who has been at the front since the beginning of the war and has been wounded, has recently been promoted to the rank of lieutenant colonel.

—M. LOUIS PISCOTET, son of M. PISCOTET GUYENON, of Tours, after being incapacitated for service in the infantry, joined the Air Service, and has recently been mentioned in Army Orders for bravery in face of enemy aviators.

BORDEAUX MIXTURE VERSUS LIME SULPHUR FOR POTATOES. The latest comparative tests* of Bordeaux mixture and lime sulphur for Potato spraying show the marked superiority of the former specific. Whereas Bordeaux mixture gave an increased yield as compared with the control plot of 63.6 bushels of marketable tubers per acre, lime sulphur resulted in a decreased crop of 25.3 bushels.

NEW ZEALAND GRAPE INDUSTRY.—It appears from a report by the United States Consul General at Auckland that Grapes are not grown very successfully in the open in New Zealand, since the climate is too moist and cool to allow the fruit fully to mature. There are about 390 acres of vineyards under cultivation, located in the most favourable spots of the Dominion, where limited quantities of middle-quality Grapes have been grown; but the Grape is not considered a very profitable crop. During the year 1915 there were 89,800 gallons of wine manufactured in New Zealand. The vineyard Grapes retail at from 4d. to 6d. per lb. Some excellent table Grapes are grown in the Dominion, but in vine houses instead of in the open air. There are about 800 of these vine houses, and all seem to be doing a thriving business, especially in the South Island, where practically no Grapes are grown in the open. Grapes grown under glass retail in New Zealand for 1s. 6d. to 2s. per lb., and find a ready market.

PUBLICATIONS RECEIVED. *Pig Keeping in War Time*, by C. J. Davies. (London: Geo. Newnes, Ltd.) Price 7d. net.—*The Effect of One Plant on Another*, by Spencer Pickering. (Reprint from *Annals of Botany*, April, 1917.)

* Bull. No. 428, New York Agric. Exp. Station, Geneva, N.Y.

The last half of the Rose season has, in fact, been a good test for Roses that will stand rain in the garden. Mrs. Edward Powell and Mrs. E. G. Hill have come through the test better than most. Madame Ravary and Red Letter Day have also done well, so have Mr. Pemberton's Moonlight and Mrs. Herbert Stevens, while Mme. Léon Pain, though slightly affected by wet, recovers so quickly and flowers so freely that it may almost be classed with "rain-proof" Roses.

Alexander Hill Gray is still the best bedding Tea of recent introduction, though Lady Plymouth is a first-rate variety in fine weather. A pretty little Rose somewhere between the Teas and the Chinas, called Rosomane Narcisse Thomas, may almost be added to this class. It has admirable foliage, and is a vigorous grower. The flowers are small, of a pleasing pinkish apricot colour.

ROYAL VISITORS AT FRIAR PARK. Their Majesties the KING and QUEEN have recently visited Friar Park, the beautiful estate of Sir FRANK and Lady CRISP at Henley-on-Thames, making a tour of the grounds, in which they were much interested.

DAHLIA "REV. JOHN HAMLET."—Mr. REGINALD CORY writes us as follows in regard to this charming new Dahlia: "You record in your last issue that an Award of Merit has been awarded to my Dahlia Rayon la Rouge, which, indeed, was the case, and which happened through the labels of the two varieties I sent up getting changed. The name of the one which received the award is the Rev. John Hamlet. I spoke to the officials of the Royal Horticultural Society on the matter, which was thereupon adjusted, and the variety Rev. John Hamlet has been duly entered in the books as having received the Award of Merit."

PARIS CHRYSANTHEMUM SHOW.—The National Horticultural Society of France will hold an exhibition of Chrysanthemums on November 8 next.

CANNED PINEAPPLES FROM QUEENSLAND.—According to a Queensland journal a shipment of 10,000 cases of canned Pineapples has been despatched to this country from Queensland. This is the second large shipment during recent weeks, and it was despatched from the various canneries in and around Brisbane. The canned fruit is for the use of troops in England and on the Western Front. The cases were subjected to a careful and close investigation by the officers of the Queensland Department of Agriculture, and the fruit found to be of excellent quality. Thousands of acres are available in Queensland for the culture of Pineapples, and a big trade in them should be built up after the war.

EXPORT OF NURSERY STOCK TO CANADA.—A number of the Regulations under the Canadian Destructive Insect and Pest Act have been recently amended and some of the changes will affect English nurserymen exporting trees and plants to Canada. Regulation 4 requires that a declaration of the nature of the contents of shipments of nursery stock subject to fumigation or inspection shall be attached to the container. Nursery stock subject to fumigation or inspection shall not be included in cars, boxes, bales, or other containers with plants that are exempt from fumigation or inspection, but shall be shipped in separate containers. The port by which it is intended that nursery stock subject to fumigation or inspection shall enter Canada

enough at very low prices, do not care to take rot-spotted fruit. In some cases the rot spot is found in the eye of the Apple, but much less commonly than in some other part of the fruit. It seems to me that the disease named "eye rot," first noticed extensively in Worcester Pearmain, particularly two years ago, is the same as the rot spotting of other parts of an Apple. In some cases there are rot spots in the eyes and on one of the sides of the same fruits, and no difference in the appearance of the spots is noticeable. In the Long Ashton Report for 1914, Professor Baker suggested that the fungus causing rot spots obtained entry through cork spots in the skins of Apples, and such cork spots are likely to be found in or close to the eyes as in other parts of the fruits. No preventive or remedy for this wasteful malady has been even suggested hitherto. *Southern Grower*.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

NOVELTIES IN CLIMBING AND PILLAR ROSES (see p. 95).—I note that Mr. Easlea is not yet satisfied as to what is truly a climbing Rose. In the same way the terms "bush Rose" and "pillar Rose" are somewhat confusing. As no definite rule exists, I conclude that it is a matter of personal opinion. In the case of climbers, I trust that varieties which run up 12 feet high and in a few years bear only a few blossoms on the top of the support will not be included. The Wehrhahn section yields the best of climbing Roses, varieties that produce growth in such a manner that the support is clothed from the base to summit with foliage and blossoms. The Rev. J. H. Pemberton describes Madame Alfred Carrière as a bush. Here it grows as a climber, and it covers a wall 20 feet high. After several years' trial I find Dr. J. Van Fleet one of the best of climbers. It flowers here profusely in clusters of soft, pink, shapely blossoms. *E. Molyneux, Swanmore Farm, Bishops Cleeve*.

ROSA MOYESSII. Instead of propagating the best forms of this beautiful Chinese Rose by budding, as suggested on p. 106, I would suggest layering. With banded specimens a watch has always to be kept for suckers, and while their removal is comparatively easy in varieties that are pruned each season, suckers are not so easy to detect or remove in free, natural grown bushes of the Rose species. *J. O.*

CONTROL OF SLUGS. In your last issue Dr. Durham, writing on p. 103, in respect of slugs, states: "Now that I know more about controlling this pest," I should be grateful if he would impart this knowledge through the medium of your pages, and probably there are others who would rejoice to hear of any successful method of dealing with slugs. I caught 5,000 in my garden this spring by hand, or rather with an iron spoon, and dropped them into a small tin containing some paraffin. I have tried various soil fumigants, but I confess that up to now the slugs have the upper hand. *A. H. Pearson.*

DEGENERATION IN POTATOS. (see p. 100). I am a doubting Thomas regarding this. I see no reason why, given good treatment, a Potato should not go on for ever. I have had the pleasure recently of accompanying Mr. John Small, of the Board of Agriculture, in a visit to the Lothians and Dumfriess, and we had many opportunities of comparing notes. Mr. Small told me that in his work in Lancashire he had this season come across some fields of Potatoes which behaved very badly at the start. He made as full an inquiry as possible, and came to the conclusion that this arose from the seed tubers having been badly kept. In fact, he came to the conclusion that the sets had been chilled, i.e., had been so nearly frozen as possible without being actually frozen. He asked me if I had any similar experience. I said yes. This spring the

shovest tubers to start were some pedigree seedlings which ought to have been the strongest of all. I found the boxes containing them had been kept all through the winter in a store, next to an outside north wall, where they would several times be on the verge of freezing. Thus our experiences seemed to tally. At Dumfriess town on our tour we met Mr. McAlister, of Potato fame, and together drove out to Finghall, to see Sir Matthew Wallace, who grows over 200 acres of Early Potatoes for seed. In the course of conversation Sir Matthew told us he had been puzzled this last spring by the behaviour of some of his fields of Potatoes. The plants in these fields began to grow very badly, and I looked for a few weeks as though the crop would be a failure but they ultimately picked up. He made a searching inquiry, and found that the "seed" they were planted with had been stored in a building which was the least secure from frost of any of his buildings, and he had come to the conclusion that the "seed" had been "chilled." This was rather remarkable confirmation from so great an authority. I think the Witley authorities ought to make a searching inquiry into the conditions under which the tubers of Malsham Early were stored; and may I appeal to others to give growers, through your columns, the benefit of their observations if they have had similar experiences? *W. Cuthbertson, Duddington.*

BULBS.—The prohibition of the importation of bulbs during the war has caused growers at home to give more attention to their cultivation. The development of the Narcissus is now cultivated, in its endless variety of form and tint, should encourage those taking up the cultivation of other classes of bulbs. Home-grown bulbs of this class are better than imported ones, and are said to force with greater certainty. So great is the quantity now in this country that the best decorative varieties are sometimes offered in bags of 500 and 1,000, and find ready purchasers. Tulips are now also grown well in the British Isles. Cottage and Darwin Tulips are the kinds principally grown. The early forcing varieties have yet to be successfully handled in quantity by English growers. The British Tulips so far fall mainly in the appearance of the bulb, but the rougher skin does not interfere with the production of good flowers. The Hyacinth seems to be the most difficult subject for home cultivation. Some large dealers declare that we shall never approach the Dutch product either in quality or price. It is probably a question of finding the right soil, situation, and method, rather than of climate conditions. Gladioli can be grown well in the British Isles and Channel Islands, and there seems to be no reason why they should not be produced at home in sufficient quantities. The question of after-the-war trade is needing much attention, and it should not be difficult to provide for an extensive development of the British bulb trade. *James O'Brien, Harrow-on-the-Hill.*

POTATO SPRAYING. Much useful information might be gathered if growers would give the results of spraying Potatoes this year. In this neighbourhood no benefit is apparent. The local society sprayed many of the allotments, yet the disease spread rapidly through the plants, both sprayed and unsprayed. In private gardens where there were not unsprayed Potatoes, the effect was the same. One grower I know sprayed his crop three times, yet his Potatoes were as badly affected with disease as others. I sprayed twice, making the wash from fresh materials, and doing the work myself. I also washed my seed Potatoes with clear water, then sprouted them, and sprayed them with Bordeaux mixture after sprouting and before planting. Yet it all seems to have been in vain. The only green haulm I have at this date, August 30, is on a vast row of Supreme, whilst the foliage of Potatoes had generally withered. Both varieties had precisely similar treatment, and were fresh "seed" bought from the same source. This strengthens the belief that relief from the deadly blight is more likely to be found in resistant varieties than in chemical washes. *William J. Harford, Ashurst Lodge Gardens, Sunninghill.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

SEPTEMBER 11.—*Present:* Mr. E. A. Bowles, M.A. (in the chair), Messrs. W. Hales, W. Fawcett, G. Baker, E. J. Allard and F. J. Chittenden (hon. sec.).

Tachycarpus acedius fruiting.—Mr. Cory sent from his garden at Duffryn a fruiting shoot of this hardy Palm.

Rust on Black Currant.—Mrs. Shaw sent from Kentschurch Court, Hereford, foliage of Red and Black Currants bearing the teliospores of the rust fungus *Cronartium ribicola*. This fungus is very prevalent this year and does great damage to young plants of the five-leaved Pines, and especially to *Pinus Strobus*.

SCOTTISH HORTICULTURAL.

SEPTEMBER 4.—The monthly meeting of the Scottish Horticultural Association was held on the 4th inst.; Mr. Phillips, the president, occupied the chair.

A paper by Mr. Charles Webster, Gordon Castle Gardens, Forchabers, on "Hardy Fruits," was read by the secretary. Mr. Webster said that there was no reason why we should not be self-supporting in some of our home-grown fruits, especially Apples. Although our uncertain climate might militate against the production of the fine colour of the imported fruit, culinary Apples could be grown superior to those which were imported. The larger part of the paper dealt with details of cultivation.

The exhibits were: Collection of Apples, Plums and Apricots, from Mr. WEBSTER (awarded a Silver Medal); collection of Apples, Plums and Pears, from Mr. R. STRAWARD, Panshanger Gardens, Hereford (awarded a Cultural Certificate); Tomatoes, from Miss BURTON, New Saughton Hall, Polton (awarded a Cultural Certificate); collection of Dahlias, from Messrs. DOBBIE AND CO.; seedling Single Chrysanthemum, from Mr. A. Innes, Dean Cemetery, Edinburgh. A Certificate of Merit was awarded to a new Peach, Lord Desborough, exhibited by Mr. STRAWARD; a First class Certificate to dwarf Collette Dablia Lona; and Certificate of Merit to Collette Dablia Mountaineer and Gaillardia, exhibited by Messrs. LEITCH AND CO.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

SEPTEMBER 5, 6.—The annual show of the Glasgow and West of Scotland Horticultural Association was held in the St. Andrew's Halls, Glasgow. The number of entries was almost as large as last year, when a sum of £750 was then raised in aid of the Red Cross funds. A similar sale took place this year, and it is hoped that the profits will exceed those of 1916. The quality of the exhibits was fully equal to that of any previous year, and the displays of fruit and vegetables—grown for the most part by amateurs—were of the highest excellence.

FRUIT.—For a collection of 12 dishes of fruit the 1st Prize was awarded to the Rt. Hon. A. J. BALFOUR, M.P., Whittinghame, East Lothian (gr. Mr. Geo. Anderson), for superbly grown produce. 2nd, ERNEST BEWLEY, Esq., Rathgar, Co. Dublin (gr. Mr. D. McIntosh). The Thomson Challenge Trophy for eight bunches of Grapes was won by WM. MCKAY, Esq., Acoig, Rothaysay (gr. Mr. David Holliday), who was successful last year. JOHN G. THOMSON, Esq., Norwood Alloa (gr. Mr. James Small) and Lord ERINSMORE were the other successful winners, in the order named. Mr. MCKAY was also placed first for the best exhibit of four bunches of Grapes. ERNEST BEWLEY, Esq., exhibited the best collections of Apples and Pears.

VEGETABLES. In the principal class for vegetables the Earl of HOWE, K.T., Bothwell Castle, Bothwell (gr. Mr. W. P. Bell), was placed 1st.

followed by Mr. JOSEPH DEVOY, Stranraer. The entries in the vegetable classes were unusually numerous, and so even was the produce that the judges experienced considerable difficulty in placing their awards. The Earl of Howe and Mr. JOSEPH DEVOY were the principal winners in the other classes. There were numerous classes for pot plants and cut flowers.

The following awards were made to honorary exhibits: *Gold Medals*—Messrs. AUSTIN AND McCASLAN, Messrs. BLACKMORE AND LANGDON, Messrs. SUTTON AND SONS, Mr. WM. LEIGHTON, Messrs. STORRIE AND STORRIE. *Silver Medal*—Mr. JOHN FORBES. A First-class Certificate was awarded to Mr. JOHN SMELLIE for a seedling Sweet Pea named Private Jack Smellie. It is an improved form of Rosabelle.

WOODFORD HORTICULTURAL.

August 25.—On Thursday, August 25, the Woodford Horticultural Society held their forty-fifth annual exhibition. There were numerous exhibits, and the show was attended by many visitors. As in the case of most shows this year, prominence was given to exhibits of vegetables, but there were also horticultural groups, including a fine display of Roses (not for competition) sent by Messrs. CHAPLIN BROS., Waltham Cross.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 6. *Committee present:* Rev. J. Crombholme (in the chair), Messrs. D. A. Cowan, J. C. Cowan, J. Cypher, P. Foster, A. R. Handley, J. Howes, A. Keeling, D. McLeod, F. K. Sander, W. Shackleton, H. Thorp, and H. Arthur (secretary).

AWARDS.

FIRST-CLASS CERTIFICATES.

Cattleya Veana, var. *Princess Mary*, a large, well-formed flower of good colour and with a brightly coloured lip; from W. R. LEE, Esq.

AWARDS OF MERIT.

Cattleya Prince John, var. *Dorothy Sharp* (*Hardyana* var. \times *aurea*), and *C. Thiba*, var. *Rev. J. Crombholme* (*Adula* \times *aurea*), from Messrs. SANDER AND SONS.

C. Nihil, var. *Reine de Saba*, from R. ASH WORTH, Esq.

The *Odontoglossum* exhibited at the last meeting by J. J. Bolton, Esq., and which received an Award of Merit, should read *Vaha*, and not *Zulu*, as was stated in the report.

CULTURAL CERTIFICATES.

A First-class Cultural Certificate was awarded to Mr. E. ROGERS, for three plants of *Panda coccinea*, each carrying two spikes of well-coloured flowers, and to Mr. C. BRANCH, for *Odontoglossum crispum Etna*, carrying three spikes; *Cattleya Harrisoni alba*, with seven large flowers; and *C. Veana*, var. *Princess Mary*.

A Second-class Cultural Certificate was awarded to Mr. DAVENPORT, for *Bulbophyllum barbigerrum* and *Mastocallis muscosa*.

VEGETABLE SHOW AT SOUTHEAD.

SEPTEMBER 14, 15.—An exhibition was held in the High School, Southend, on the 14th and 15th inst., under the auspices of the local Food Production Society. The show was a magnificent demonstration of the success of local efforts to increase food production in and round this well-known seaside resort. By far the greater number of exhibits staged in the classes consisted of vegetables from the allotment gardens of Southend and its suburbs, and the display was an exceptionally good one, showing the result of skilful cultivation. There were several domestic classes, for bread, pies, wartime cakes, non-intoxicating beverages, rabbits, etc. The exhibits of vegetables filled the greater part of the spare in the large School Hall and two other rooms, as well as the lobby of the building. The moving spirit of the show

was Mr. G. E. Tinley, and the excellence of the arrangements was due to him. During the afternoon of the opening day, Mr. W. H. DIVERS gave a lecture on Food Production, and a lady representative of the Food Production Department gave demonstrations on fruit bottling during the two days. The vegetables were first-rate, and there was an absence of the coarseness which so often characterises the produce at local shows. Owing to the liberality of tradesmen and others the prizes were sufficient to attract keen competition. Many famous exhibitors would be proud to have grown some of the Potatoes staged. One dish of King Edward was especially fine in size, form and colour. Beet, Parsnips, Carrots, Tomatos and Marrows were splendid, but Onions were a little below the average of exhibition quality, while, owing to the plague of caterpillars in the neighbourhood, Cabbages, Savoys, and other greens were sparingly shown.

VEGETABLE SHOW AT BRENTFORD.

SEPTEMBER 15.—A somewhat unique exhibition was held in the Rothschild Schools, Brentford, on Saturday, the 15th inst., when the members of the Brentford Allotment Association held their first show of vegetables. A schedule of

the late Sergt. F. J. King, Lance-Corporal W. J. Eagle, Privates W. L. Crook, F. Hills, C. Bowden, H. R. Castle and A. V. Waldoek, and the sum of £265 9s. 3d. was passed for payment to their respective nominees. The sick pay for the month was £45 lbs. 11d. (ordinary). The special general meeting respecting the proposed Juvenile section will be held in the R.A.S. Hall on October 8.

Obituary.

JOHN PHILLIPS.—We learn with regret that Mr. John Phillips, nurseryman, Granton Road, Nin-series, Edinburgh, died on the 14th inst., after an illness of only five days' duration. Mr. Phillips was born in 1853 at Ross Priory, on the side of Loch Lemond, Dumfriesshire, where his father was head gardener, and it was there that he commenced his gardening career. After a time he moved southwards, and for a time he served under the late Mr. Barron at Chiswick, and while in the London district he had charge of the laying-out of the grounds at the White Lodge, the residence of the late Duke of Teck. He afterwards spent some time in Birmingham, and, returning northwards, was given charge of the glass department of the late firm of Ireland and Thomson, at Edinburgh. About thirty years ago he took over from this firm the glass-houses and adjoining ground at Granton Road, formerly part of the area occupied by the Lawson Seed and Nursery Company, Ltd., and there he carried on an extensive market nursery business. Mr. Phillips took much interest in the affairs of two horticultural societies which have their head quarters in Edinburgh the Royal Caledonian Horticultural Society and the Scottish Horticultural Association, in both of which he held office as a councillor. In January of this year he was, with unanimous approval, elected president of the Scottish Horticultural Association, and it may be mentioned that during the forty years of its existence this is the first occasion on which a president of the Association has died whilst in office. Deceased was also a member of the Royal Scottish Arboricultural Society, the Nursery Trades' Association, and the Edinburgh Market Gardeners' Association. He was a frequent visitor to the Ghent and other exhibitions, and he was one of the party of the Nursery Trades Association which visited Germany on the eve of the outbreak of war. To the objects of the Association of which he was president, he was a liberal contributor, and to those of a charitable kind he rarely resisted an appeal. Mr. Phillips left a widow, three sons, all of whom are serving in the Army, and one daughter. His second son, Mr. Malcolm Phillips, is following the business of his father. The funeral took place at Comely Bank Cemetery, Edinburgh, and was attended by office-bearers and members of the horticultural societies, and other horticultural friends.



THE LATE MR. JOHN PHILLIPS, PRESIDENT OF THE SCOTTISH HORTICULTURAL ASSOCIATION.

thirty-five classes was arranged, and in not one of the classes was a prize offered. The lack of encouragement in this direction did not, however, deter the members from staging their best produce, with the result that a capital exhibition of food material, chiefly from war-time gardens, was provided. This interesting and educational exhibition was due to the initiative of Mr. CHAS. H. CURTIS, who recently became the chairman of the Association, and his enthusiasm inspired the rest of the members to exhibit without the incentive of prizes. The show was judged by Mr. Bates, of Syon House Gardens, and Mr. Pooley, formerly of Syon. Onions, Potatoes, Beet, Carrots, Runner Beans, Marrows for table use and Marrows for winter use, were shown in first-rate style.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

SEPTEMBER 20.—At the meeting on this date three members were elected. Two members were allowed to withdraw interest amounting to £5 14s. 6d., and two members were allowed to withdraw from their deposit sums amounting to £3 9s. 5d. The Army forms were received of

JOHN A. SIMPSON. We regret to announce the death, from heart failure, on the 10th inst., of Mr. John Alexander Simpson, for thirty years in the service of Messrs. Dobbin and Co., Edinburgh. He was an apprentice when the firm was at Robbessay, and became the manager of the seed department at a comparatively early age. Deceased was in his 44th year.

TRADE NOTE.

Mr. C. H. Beck, nurseryman, Ipswich, Suffolk, is retiring from business owing to failing health.

GARDENING APPOINTMENT.

Mr. T. Hunter, for 5 years Gardener to C. C. W. Simpson, Esq., Langmuir, Broughton, Glasgow, to A. E. Tixer, Esq., Minto, Edinburgh, Liverpool.

CROPS AND STOCK ON THE HOME FARM.

PREPARING FOR WHEAT.

DIRECTLY the harvest is finished, next season's crops have to be prepared for. The best preparation for Wheat by way of a previous crop is Clover, not mixed with Italian Rye Grass or Bents, but pure. If the Clover crop was not eaten off by sheep, a good dressing of farmyard manure at the rate of 20 tons per acre should be applied.

Sheep-fed Rape, or Rape and Turnips, will prepare the way for excellent Wheat, perhaps of higher quality than that from a Clover ley. In this case added manure is not necessary, especially when cake is fed to the sheep. Mustard growing at least 2 feet high, ploughed in and firmly pressed, is another of the best of Wheat preparations, and an easy method to adopt where sheep are not kept, and where manure is scarce. Some feed off the Mustard to sheep, but it is not generally considered good food for sheep.

Potatoes provide another excellent preparation for Wheat, mainly owing to the manure left in the soil after the cultivation necessary for that crop.

Wheat also successfully follows Tares, Peas, and Beans.

Mangolds are perhaps the least desirable of crops to be followed by Wheat, owing to the greedy nature of the Mangold, and to the lateness of the removal of the crop, which sometimes delays the sowing of the Wheat until the middle or even the end of November.

Rotation grass leys are good; newly broken up pastures, too, are used with success, although wireworms are sometimes troublesome. Farmyard manure should be freely employed, or its equivalent in artificial manures.

Of all details in the cultivation of Wheat, none is more important than early sowing. From the third week in September until the end of October is the proper period to sow.

Push on as fast as possible all details for getting the seed-bed ready. Wheat sown later than the time above mentioned lies too long inert in the ground, owing to the cold conditions, especially if there is much rain. *E. Molyneux.*

FARMING SCHOLARSHIPS FOR WOMEN.

The Food Production Department is offering 15 Scholarships, tenable at South Eastern Agricultural College, Wye, Kent, for a combined practical and theoretical course in farming of about 22 weeks' duration. The Scholarships will cover the cost of maintenance and tuition. Preference will be given to candidates over 21 years of age who will be suitable for the positions of forewomen, under-bailiffs, and instructresses. Only women who have had considerable practical experience on the land and will undertake agricultural work for the duration of the war will be eligible. The course will commence early in October.

ANSWERS TO CORRESPONDENTS.

BECCOLI ROOTS CURLED: *W. E. P.* The trouble is probably due to injury by an insect at the root, which has set up a condition similar to that of galling. In the winter, dress the ground well with slaked lime, and do not plant Brassicas on it for at least a year.

BUTTERFLY: *J. E.* This is the small Tortoise-shell Butterfly, *Vanessa urticae*, one of the commonest in this country. The perfect insect appears in June, and often lives through the winter. With the exception of the common white butterfly, it is the only one which penetrates into the heart of London.

CATTLE DAMAGING AN ALLOTMENT: *W. J. C.* The owner of the cattle is liable to pay for the damage done to your crops. The cattle were trespassers, and the fact that they were able to stray upon the allotment shows negligence on the part of their owner in not keeping them under proper control or properly fenced in. If you have not already informed him that the damage has been done you should do so at once. As soon as the value of the damaged crops has been ascertained an application should be made to the owner of the cattle for payment of the amount, accompanied by an intimation that unless such

payment is made legal proceedings will be taken. With reference to your enquiry for a society for you to join, you should apply to the Secretary, War Agricultural Committee, Hertford, for further information.

CELERIAC: *H. E. D.* The first week in March is the best time to sow Celeriac, and if it suffers no check when young it should not prematurely run to flower. Liberal treatment should be given from the time the young seedlings appear. Though the plant is fairly hardy it is not improved by being left in the ground after severe weather sets in.

CLASSIFICATION OF FRUITS: *W. J.* Apples and Pears are termed hard fruits; soft fruits include Raspberries, strawberries, Currants and such like, whilst stone fruits—in relation to jam-making—are Cherries, Plums, Damsons, Bullaces and Apricots.

CLUB ROOT: *J. M. C.* See article on "Finger-and-Toe" on p. 118.

NAMES OF FRUITS: *J. M.* You send more than six fruits for naming, which is contrary to our rules. No. 7, Scarlet Pearmain; 8, not fully grown; 9, Scarlet Golden Pippin; 10, not fully grown; 11, Cellini; 12 and 13, Malster; 14, Grenadier. The Plums were crushed; they should not be packed with hard fruits like Apples and Pears.—*W. B. and S.* 30/1. Pitmain Duchesse; 3, Cox's Orange Pippin; 8, 17 and 6, too small, do not recognise; 7, Allington Pippin; 10, Doyenné du Bouschou; 9, Williams' Bon Chrétien; 20, Warner's



FIG. 43. PEAR AFFECTED WITH SCAB DISEASE.

King; 29, Tower of Glamis.—*E. W.* No. 1, Mabbott's Pearmain; 2, Deau's Codlin; 3, Scarlet Nonpareil; 4, Small's Admirable; 5, English Codlin; 6, Belle de Pontoise; 7, Northern Dumpling; 8, Golden Pippin.—*F. G. Mackereth.* No. 16, Pears Williams' Bon Chrétien; 14, Beurré Rance.—*W. E. J. Leicester.* Red fruit, Red Astrachan; green fruit, Duchess of Oldenburg.—*J. H. H.* 1, Sandringham; 2, Round Winter Nonesch; 3, James Grieve; 4, King of the Pippins; 5, Bess Pool.

NAMES OF PLANTS: *A. G.* The Purple-podded Bean.—*H. G. P.* 1, Polygonum japonicum; 2, *Veronica salicifolia*; 3, *Escallonia rubra*; 4, *Peruetia mucronata*; 5, *Sibcormia herbacea*; 6, *Sedum album*; 7, *Mesembryanthemum mutabile*.

OAKS MOSS-GROWN: *W. J. H.* It is probable that the raising of the ground to such a considerable extent on one side of the Oaks has led to the condition you describe, partly because the roots are now covered to so great a depth, and partly because the shut in position prevents the air from circulating round the stems of the trees and drying the moisture resulting from rain and dew. It would be well if you were to dig away the bank for a distance of a few

feet round the roots of the Oaks, and endeavour to manage so that the moisture descending the sloping bank passes into the stream a little distance away from the roots, instead of, as at present, being discharged directly on to them. This will both enable a little more air to circulate, and also do away with the excess of moisture at the roots.

OVA ON CURRANTS: *S. G. B.* These are the ova of one of the Lace Wing Flies (*Chrysopa*, sp.). The larvae, known as "aphis lions," do much good by devouring aphides and scale insects.

PEARS AND APPLES DISEASED: *W. H. P.* Both the Pears and Apples are badly affected by Scab disease (see fig. 43). The first symptom of the fungus is to be found in small, roundish, dark-coloured spots on the upper surface of the leaves; the disease develops on the leaves and stems, and attacks the fruits, with the results you have observed. Cut away all diseased shoots just below the point of the previous year's growth, and also older branches, if they also show signs of being affected. Gather all diseased fruits and carefully burn them, together with the shoots you have removed, as the fungus spreads very rapidly. This work should be done during the winter; then, in the spring, just when the leaf-buds begin to swell, but before they expand, spray the trees with full strength Bordeaux mixture. Spray again with half-strength Bordeaux mixture after the leaves have opened, and once again if there are signs of disease on the leaves. Keep a keen watch for the brown spots, and cut off and burn any shoots on which the leaves are thus disfigured.

POND WEED IN LILY POOL: *W. F. H.* Drain the pond, if possible, and rake out all the weed which can be got at without injuring the Water Lilies. If you cut the weed frequently, and drag out as much as possible, it can be kept down. You can, however, use copper sulphate at the rate of 1 lb. to 100,000 gallons of water without fear of injuring the Lilies, but do not break it into lumps smaller than a marble, and be careful to cut out all the weed possible before using it.

PRESERVING EDIBLE PODDED PEAS: *J. N. C.* The pods of these Peas may be salted down in the same manner as Runner Beans; the pods should not be too old when they are gathered, or they will be tough.

PRESERVING WALNUTS: *A. G.* Dig holes in the open ground, and sink Seakale pots up to the rims. Place a piece of slate at the bottom, to prevent worms getting into the pots. Fill the pots with Walnuts, and put on the lids. Another method is to keep the Walnuts in tubs or boxes buried in white sand.

RABBITS AND FRUIT TREES: *Miss A.* The most effective, safest, and least expensive method of preventing rabbits eating the bark of your fruit trees is to thrust into the ground, a few inches away from the stem, quite close together, short, twiggy Pea-stakes 1 foot high. Quickset hedge-trimmings would also do if the shoots were stiff enough. The twigs prevent the rabbits from getting near to the stem, and if they are occasionally sprinkled with cold tar it will do much to prevent the rabbits approaching the trees.

VEGETABLES UNDER GLASS: *H. W.* The most profitable vegetables for growing in cool houses during the winter and very early spring are as follows. Cauliflowers. These should be sown immediately. Suitable varieties are Early Forcing, Magnum Bonum, and Walcheren, coming into use in this order. Lettuce, both Cos and Cabbage, are useful; Superb White Cos, All-the-Year-Round, and Tom Thumb are suitable varieties. Sow at intervals of a fortnight during the next six weeks. Parsley is often scarce during the winter, and finds a ready market; seedling plants should be pricked out where they are to remain by the end of the present month.

MARKETS.

COVENT GARDEN, September 19.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots and their prices, including Aralia Sieboldii, Asparagus plumosus, and various ferns.

REMARKS. Erica gracilis and E. hybrid are being offered at reduced prices. Good quality plants are being sold in pots, 90s., and thimblepots. Chrysanthemums in pots are better in colour, but Asters in 80s. and boxes are at their best. Linnam longiflorum and L. laetum rubrum are also on sale.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers and their prices, including Asters, Arums, Chrysanthemums, and Gladiolus.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage and their prices, including Adiantum, Asparagus, and various ferns.

blooms on the market are Mme. Abel Chateaux, Melody, Liberty, Sultanet, and Ophele. Asters and Carnations are fairly plentiful. There is only a limited supply of Fibrous, Stephanotis, and Lily-of-the-Valley. Phyllostachys is arriving in first-class condition. Several varieties of Medionema Russos are on the market, including the large blue variety, Astré Anellus King George, which is selling well. Violets are arriving in excellent condition, but there is not much demand at present.

Vegetables: Average Wholesale Prices.

Table listing vegetables and their prices, including Artichokes, Beans, Carrots, and various leafy greens.

Fruit: Average Wholesale Prices.

Table listing fruit and their prices, including Apples, Grapes, Lemons, and various berries.

REMARKS. Apples, Pines, Pears, Damsons, Blackberries and Nuts are all plentiful. The market is well supplied with Peaches, and with Grapes of all varieties. Walnuts and Chestnuts are available in increasing quantities. English Tomatoes are not quite so plentiful, but Dutch and Channel Islands varieties are plentiful. Melons are almost in supply. All varieties of outdoor vegetables are plentiful. E. H. B., Covent Garden Market, September 19, 1917.

THE FLOWER-GROWER'S GUIDE.

This superb book should be on the shelves of everyone who loves flowers and cultivates them. Not only is it a complete guide to the making of a perfect flower garden, but it is a work of art without which no garden library is complete. It is in three volumes, beautifully bound, each volume containing full-colour illustrations, many of them exquisite reproductions in colour from Mr. Hamilton's paintings. Such a book makes winter evenings delightful.

Price £3 3s., postage 1s. 6d. Send for it.

THE LIBRARIAN, 41, Wellington Street, London, W.C. 2.

TURF LOAM.

Very Fibrous Yellow Turf Loam For VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc. Quotations Carriage Paid or Delivered.

A. B. JOHNSTON, New Park, Cranleigh, SURREY.

SITUATIONS WANTED (Continued from page 11.)

GARDENER (HEAD WORKING); thorough practical life experience all branches stock, farm, etc., will poultry if required; highest testimonials; age 50-51 G. K. H. Chapman End, Ware, Herts.

GARDENER seeks situation (Head of two or good SINGLE-HANDED); life experience all branches; age 23; married (three children); Army discharge; used to living in lodges.-O. BROWN, Ross Villas, Chesham Valley, Uxbridge, Kent.

GARDENER (SINGLE-HANDED); single; intelligible; used to poultry. Apply by letter (no circulars), W. G. BAKER, 10, Constantine Road, Hampstead, N.W.

JOURNEYMAN (24) seeks situation as FOREMAN or SECOND; inside or inside and out; general experience; discharged when suited; Surrey or Sussex preferred; state wages. For refs. and particulars apply A. ISTEED, c/o Mrs. Hawkins, St. Jude's Road, Englefield Green, Surrey.

WOMAN GARDENER, educated, strong, seeks Post (single-handed) under experienced Working Head; Fruit and Vegetables; accustomed to d.g. etc.-Send full particulars to A. Z. 2, Genville Place, Cambridge.

LADY GARDENER would like to work with another in Private or Market Garden; two years' experience; knowledge of poultry; good references. MORTON, Nisbata Park, Naisbata, Somerset.

LADY requires situation (under good, practical Head); 14 months' inside experience.-B. Manor Gardens, Little Berkhamstead, Hertford, Herts.

TRADE.

MANAGER, Market or Retail Nursery; life experience, inside and out; Cucumbers, Tomatoes, Chrysanthemums, Plant, Cuttings, Fruit, Vegetables, Salads, Floral Work; married; age 35; abster; not eligible; 17 years' good references as manager.-State wages and particulars, M., Box 8, 41, Wellington Street, Covent Garden, W.C. 2.

MANAGER or FOREMAN seeks re-engagement; life experience; good references; competent to take entire charge; also engaged middle of October. A. H., Box 9, 41, Wellington Street, Covent Garden, W.C. 2.

MANAGER or FOREMAN; over 30 years' experience; Market work; preference near large provincial town. Please state wages. "FERNS," Box 41, Wellington Street, Covent Garden, W.C. 2.

A KNOWLEDGE of Garden and Farm Work, Hedges, and Wires, over 20 years' experience, R.H.S. diploma, open as Representative for Ireland with a good house (wholesale preferred), previous experience in travelling. "MYOSOTIS," Box 12, 41, Wellington Street, Covent Garden, W.C. 2.

SEED TRADE. Responsible position required by advertiser as MANAGER, TRAVELLER, or WHOLESALE AGENT. Particulars, &c., on application. A. H., Box 23, 41, Wellington Street, Covent Garden, W.C. 2.

GENTLEMAN (50) desires WORKING MANAGEMENT, Gardens, Farmery, Small Estate, Food Production, improving, extending Fruit Plantations, Mushrooms, Tomatoes, Hedges; management dairy herd; pig; profitable conversion waste products; correspondence, accounts. Please address offers to B., Box 27, 41, Wellington Street, Covent Garden, W.C. 2.

DUTCHMAN, age 30, single, who had charge during the last four years of one of the largest Nurseries combined with Landscape Gardening in Holland; some experience in West. Greatly seeks situation as MANAGER of Nursery or Landscape Business. B. C., Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

FLORIST. As MANAGERESS or FIRST HAND, in high-class business; 7 years' reference.-C. R., 19, Burlington Terrace, Belle Vue, Bradford.

FLORIST. Lady desires re-engagement; 14 years' experience; Designs, Wreaths, Bouquets, Plants, sundries, able to take charge. Refs. Letters, MISS F., 29, Somerville Road, Brixton, London.

Advertisement for 'Gardener Gets there' featuring 'CLAY'S FERTILIZER' and 'STANDARD FOOD FOR PLANTS'. Includes text: 'EVERY GARDENER KNOWS THAT' and 'SOLD EVERYWHERE IN TINS at 6d. a tin, and in BRANDED & SEALED BAGS: 7 lbs. 2s. 6d., 14 lbs. 4s. 6d., 28 lbs. 8s. 6d., 56 lbs. 12s. 6d., 112 lbs. 20s. Or direct from the Works and Agents in the United Kingdom for Cash with Order (except Ed. TINS). CLAY & SON, Manure Mills & Bone Crushers, STRATFORD, LONDON, E.'

NOTICE TO HEAD GARDENERS.

Revision forms for the "Gardeners' Chronicle" HORTICULTURAL DIRECTORY have been posted to Head Gardeners in every county in England, Wales, Scotland, and Ireland. In order to facilitate the early publication of the revised edition for 1918, gardeners are asked to return the forms with the necessary corrections **AS SOON AS POSSIBLE**. It is only by the co-operation of all gardeners that the 1918 edition of this invaluable work of reference can be made perfect.

ANY HEAD GARDENER who has **FAILED TO RECEIVE A FORM**, should send for a form to

**THE EDITOR, Horticultural Directory,
41, Wellington St., Strand, London, W.C. 2.**

Name of Employer's Place
Name of Employer
Name of Head Gardener
Post Town
County
Nearest Railway Station
No. of Miles from Station to Residence

ORDER FORM FOR HORTICULTURAL DIRECTORY.

Messrs. GARDENERS' CHRONICLE, LTD., 41, Wellington Street, Strand, W.C. 2.

Please send me copy (copies) of the HORTICULTURAL DIRECTORY FOR 1918.

I enclose remittance £ s. d. in payment. (PRICE, 1s. 4d. each, post free.)

(Signed) Name.....

Address

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 4005

No. 1605 VOL. LXII. (THIRD SERIES) SATURDAY, SEPTEMBER 29, 1917. {Registered as a Newspaper.} PRICE 4d. {POST-FREE, 4d.

SUBSCRIPTION—Inland, 19 6; Foreign, 22- per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2.

Telegraphic Address—"Gardchron, Rand, London."

Telephone—Gerrard 1543.

For CONTENTS see page 125.

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

NOW IS THE TIME TO PLANT.

KELWAY & SON,
The Royal Horticulturists,
LANGPORT, SOMERSET.
are now booking orders for their Choice Hardy Perennial Plants of Colour B under this Autumn, and you will be able to enjoy its beauty for many years with a very additional expense or trouble.
Send measurements of your borders.
Paeonies, Delphiniums, Hibiscus, Galliarthas, and other beautiful flowers, included in their Colour B Homes, which provide blooms from early Spring to late Autumn.
WRITE NOW to the RETAIL PLANT DEPARTMENT for Reduced Price List.

PHILOX.—Finest varieties in cultivation.
Send for list. H. J. JONES, Ryecroft Nurseries, Lewisham, S.E. 12.

GREENHOUSE PAINTING & GLAZING.
"Vitrolite," superior to White Lead Paint, "Plastine" superdries putty. Full particulars from W. CARSON & SONS, Glass Works, Battersea, Agents throughout the country.

W. M. DUNCAN TUCKER & SONS
LTD., Lawrence Road, South Tottenham, N. 25
Conservatories, Winter Gardens, Nurseries, Paphos, Portable Buildings, &c. Catalogues gratis.

DICKSON'S HORTICULTURAL
MANURE and other high-class Fertilisers, also Dickson's Improved Mushroom Spawn. Free circulars free on application to DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.

BUNYARD'S FRUIT TREES
New Fruit List now ready, and will be sent free by return of post.
GEORGE BUNYARD & CO., LTD.,
Royal Nurseries, WADDSTONE.

DOBBIE'S Autumn List of Bulbs, Sweet Peas, Roses, Carnations, Scabious, and Vegetable Plants, &c. post free. DOBBIE & CO., Royal Flower, Edinburgh.

BATH'S ROSES and PAEONIES. Now illustrated catalogue, containing full cultural notes of the best, new and standard varieties, is now ready, and will be sent post free on application. (Dept. A) R. H. BATH, LTD., The Floral Farm, Wisbech.

BATH'S HOME-GROWN BULBS. New illustrated catalogue of the finest Narcissi, Tulips, &c., as supplied in the Royal Parks and Gardens, with full cultural directions, is now ready, and will be sent post free on application. (Dept. A) R. H. BATH, LTD., The Floral Farm, Wisbech.

SANDERS, Orchid Growers,
St. Albans.

PAPER-WHITE NARCISSI.

SUTTON & SONS
can supply finest bulbs of
PAPER-WHITE NARCISSI
at 15s. per 100.

SUTTON'S CATALOGUE OF ENGLISH
GROWN BULBS, containing full particulars of the most popular Double, Narcissi, May-Blooming and Darwin Tulips, &c., &c., sent post free on application.

SUTTON & SONS, The King's Seedsmen,
READING.

ROSES—ALLEN'S GOLD MEDAL
ANDERSON ROSES, our new descriptive price with list, a How to Grow Roses, now ready.
Write today. A. J. & C. ALLEN, Rose Growers, N.wich (for over 50 years).

GISHURST COMPOUND. This wonderful Fertiliser, of over 50 years' reputation, highly successful in all soils, is carefully controlled. Trials at W.C. 1913-15, S.W. 11, dealers in Garden Sundries, W.C. 1. **PRIDES PATENT CANDLE CO., LTD.,** Battersea, London, S.W. 11.

RIVERS'S STRAWBERRY PLANTS in all the leading varieties, will be ready from August onwards. Price list post free on application. **TOMAS RIVERS & SON, The Nurseries, Sawbridge** with Horis.

BUNYARD'S STRAWBERRIES
Our new descriptive list is now ready, and will be sent on receipt of card.
ALPINE STRAWBERRIES a speciality.
GEO. BUNYARD & CO., LTD., Royal Nurseries, Waddstone.

PEED'S BULB LIST NOW READY.
Please apply for a copy to be posted by return.

JOHN PEED & SON, The King's Seeds
man and Nurserman, WEST NORWOOD.

BARR'S BULB CATALOGUE for the year 1917, 4, 10 p., &c., for pots or bowls and 10 p., &c., sent free on application. **BARR & SONS,** 1, and 17, King Street, Covent Garden, London, W.C. 2.

HOBBS, LIMITED, Norfolk Nurseries,
BERHAM, send for Rose Catalogue, post free.

WATERER'S ALPINES AND HER
BACIOUS PLANTS—New Catalogue now ready.

WATERER'S BRITISH GROWN
BULBS—New Catalogue now ready.

WATERER'S WARGRAVE ROSES
Catalogue and Supplementary List of new and choice varieties now ready.

WATERER'S RHODODENDRONS AND
CHOICE SHRUBS—Catalogue free.

WATERER'S VEGETABLE SEEDS
for PRESENT SOWING—List post free.

All or any of the above Catalogues forwarded post free on receipt of name and address.
JOHN WATERER, SONS & CRISP, LIMITED,
The Nurseries, Bagshot, Surrey, and Twyford, Berks.

For Advertisement Charges see page iv.

WEBBS' BRITISH-GROWN BULBS.
The finest varieties of Tulips, Narcissi, Daffodils, Snowdrops, Iris, &c.—PRICE LIST post free on application.—**WEBB & SONS, LTD.,** The King's Seedsmen, Stourbridge.

J. GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wire, 201, Western, London, Telephone: 201, Western.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whippet (Weed), wears the leather, shockproof, 7 yards for 7s. 6d. Patterns free. **BRADFORD WOOLLEN CO., 71, Bradford.**

BANSTEAD or WALTON DEATH
LOAM—A splendid soil for Vines, Chrysantheums, Carnations, and general use; fresh cut or rotted. Particulars of **YOUNG BROS.,** Betchworth, Surrey.

ORCHID PEAT, 7s. 6d. per sack; Rhododendron Peat, free from bracken, 15s. per yard, 5 to 10 yard trucks, bags 250, 400, 600, 800, 1000, silver sand, in bags and truck loads; bags of **C.N. Fibre,** 6 for 10s., special rates; special Bulb Compost for bowls, 5s. bag. **J. HANDSOMME, The Nurseries, Felton, Middlesex.**

FOR SALE, excellent Turf Loam for Gardening purposes, for Garden and Rushton Station, M.R. For further particulars apply C. R. KNOX'S, Estate Offices, Boughton House, Kettering.

ALPINES. Fine collection from Yorkshire—100 bulbs, 12 in 6 varieties, 6s. doz.; 50 varieties, 45s. 100. Wallflowers, stout seedlings, Blood Red, Valcan, Golden King, 7s. 100, transplanted, extra strong, 6s. 100. Canterbury Bells, white, blue, rose, strong, 6s. 100. Hollyhock, 9 distinct colours, 2s. doz. Packaged and ready for use with order. **BROADHEADS, Wood Dale Nurseries, Thame, Oxford.**

FERNS—FERNS—Tree Ferns, Climbing Ferns, Basket Ferns, Show and Greenhouse Ferns, Hardy Garden Ferns, catalogues free. **J. E. SMITH, The Fern Nursery, Loughborough Junction, London, S.W.**

DAFFODILS and large Trumpet Narcissi—List for Grass, Shrubberies, and Wild Gardening, including 15s. and 25s. 1,000; as doz., 12s. per hundred (2,500), 3s. 6d. per sack (500 bulbs)—**J. HANDSOMME, FERN'S, Fulham Nurseries, Middlesex.**

SPRING CABBAGE, Men's No. 1.—stands the severest winter. The most marvellous and earliest heading variety in existence, ready for cutting in March, weather favourable, 100 for 1s. 6d. **MISS HENRY, Belvedere Road, Brompton-Trent.**

100,000 LARGE GARDEN FERNS, 20s. 100. Palms, Begonias, Crotons, Dracontis, Roses, Etc., Greenhouse Lilies, Hadringtons, &c., catalogue free of **J. E. SMITH, The Fern Nursery, Loughborough Junction, London, S.W.**

WANTED, GERANIUM STOOLS, as taken from beds, Paul Crampel, Jacoby double white, & other lights of Malines, Cannabron, &c., price per 100 to W. F. HEATH, The Lodge, Kewden House, Edinburgh, Kent.

WANTED, offers of PAUL CRAMPEL Geranium stools, one season plants **WILLIAM DAY, Florist, Croydon, Surrey.**

"Bull's"

THE FOOD FOR PLANTS



✓ SLUGS
SLUGS

"SANITAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (Gross, London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.

Limehouse, London, E.

Awarded Medal at Royal Horticultural Exhibition, 1911.

ROSES FOR AUTUMN PLANTING

ORDER EARLY.

Beautiful plants of the best possible cultivation, our selection from the finest sorts including:—
The Brilliant Coloured

"MDME. EDOUARD HERRIOT"
(Daily Mail Rose.)

12/- per doz. bushes, carriage paid.

Catalogue Free on request.

STUART LOW CO., BUSH HILL PARK, MIDDLESEX.

THOMSON'S
CELEBRATED
MANURES

PERFECT PLANT FOODS
UNRIVALLED FOR
ALL GARDEN CROPS.

SOLD BY ALL SEEDSMEN
OR FROM SOLE MAKERS.

WM THOMSON & SONS, Ld.
CLOVENFORDS, N.B.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being unsold.

Particulars on application.

BOULTON & PAUL, Ltd., ROSE LANE WORKS, NORWICH.

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.

Large quantity of each size, required and have carriage paid collection ("Carriage" frequently amounts to half value of goods) and write for Price List, free.

Write for "List" of all descriptions. Bulb Boxes and Fern Pots from 2d. each.

RICHARD SANKEY & SON, LTD.
Dulwell Pottery, NOTTINGHAM.



LAXTON'S STRAWBERRIES, including the grand new var. :-
Laxtonia (floe Main Crop).
Pots, 30 - 100 ; open, 20 - 100.
King George.
20 - pots ; 6 - open.
Royal Sovereign & Standard Series.
20 - pots ; 6 - open.
LAXTON BROS., BEDFORD.

IMPORTANT: Please write for a Catalogue, allow us to send to those who apply.
LAXTON BROTHERS, BEDFORD.



A menace to our Food.

THE "nibbling" of the millions of Rats and Mice means in the aggregate a huge food wastage. It is a patriotic duty to kill them.

"LIVERPOOL" VIRUS EXTERMINATES RATS AND MICE

Safe and sure. Harmless to human beings and domestic animals. No risk of an unhealthy disfigureable smut for the pests come out of their holes to die.

In tins prepared with bait; for Rats 2 G & 6 - for Mice 1 G. Of all Chemists. Full particulars from **EVANS, SON, LEICHER & WEBB LIMITED, 56, Hanover St., Liverpool.**

BLACK CURRANT BUD MITE.

Are your bushes free of this incurable pest? If not Plant **"SEABROOK'S BLACK"** Currant, the only proved mite resister.

This variety has also every other good quality, being the heaviest cropper and stoutest grower, producing large, firm berries.

Young Bushes 6 and 8/- per dozen.
W. SEABROOK & SONS,
Fruit Tree & Rose Nurseries, CHELMSFORD.

FLOWERING BULBS.

A large and comprehensive Stock of

Choice Home Grown Bulbs

Descriptive Catalogue Free.

DICKSONS (Limited)
Bulb Growers and Merchants,
CHESTER.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE and GREENHOUSE PLANTS of ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

Write for this FREE BOOKLET and avoid all drainage troubles



with pot plants. It explains also the porosity, root-roominess, and cleanliness of CRET POTS, of importance to all gardeners. FREE SAMPLE CRET pot also on request. Write to-day.
PETER BAILEY & SONS Ltd
2 Heaton Mersey Pottery, near Manchester.

FRUIT IN THE GARDEN.

Root up useless shade trees and unproductive Shrubs, and replace with Fruit in these times, when food is all important.

Specially grown trees of

APPLES, PEARS, PLUMS, of fine quality for the Walls, Edging or Vegetable and Flower Borders. Many of fruiting size. Also

FINE STANDARD TREES

A grand lot of Peaches, Nectarines and Cherries for the House and Garden Walls, also

BUSH FRUIT TREES.

Catalogue free on request and special quotations given on hearing exact requirements.

STUART LOW CO., BUSH HILL PARK, MIDDLESEX.

ROYAL GARDENERS' ORPHAN FUND

B. WYNNE, Sec.,

19, Bedford Chambers, Covent Garden, London, W.C.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than **WEDNESDAY, 5 p.m.**

Ordinary Positions	per page	10 10	0
Facing matter and Back Page	"	12 12	0
Half and quarter pages, column and half column spaces, pro rata.			

4 line space not exceeding 20 words	per line	3	0
Per inch, single column	"	7	0
Per inch, across 2 columns	"	14	0
Per inch, across 3 columns	"	1	1 0

Front page (no display allowed) 1/- per line space [Headline counted as two lines]

For discounts apply to address below.

SITUATIONS WANTED.

26 words 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM	per annum	19 6
ABROAD	"	22 - "

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telegrams: "GARDCHRON, RAND, LONDON."
Telephone: 1543 GERRARD.

THE

Gardeners' Chronicle

No 1065—SATURDAY, SEPTEMBER 29, 1917.

CONTENTS.

Arisaema, hardy	147	Galloway garden, notes from a	125
Bauis, blue, stipules of .. .	131	Market fruit garden, the .. .	126
Buddle, Mr. J. K. .. .	132	Orchid notes and gleanings	128
Colours of flowers, the .. .	130	Brasso-Cattleya Virginia	126
Dahlia, origin of the .. .	132	Laeli-Cattleya Opal .. .	126
Pom-pom	132	Palm-plant for Swansea .. .	131
Earwig, the	132	Potatoes, deteriorated .. .	132
Eustomas	132	Ruhleben Horticultural Society	131
Farm, crops and stock on the home	134	Seeds for allotment holders	131
Fool production, on increased	134	Societies—	
Bracken	128	Royal Horticultural .. .	132
Onion crop, the	128	Solihull-gardeners, letters from	137
Potatoes, degeneration of	128	War items	131
Potatoes, yield from 1 lb. of	128	Week's work, the	131
Radish	128	Flower garden, the .. .	129
Beans, pre	128	Fruits under glass	129
.. .. .	128	Hardy fruit garden, the .. .	129
Fruit notes—		Kitchen garden, the .. .	129
Damonias, baked	128	Plants under glass	129
Fruit growers and military service	128		

ILLUSTRATIONS.

Arisaema consanguineum .. .	127
Arisaema Wanchinnum .. .	127
Buddle, portrait of Mr. J. K. .. .	132
Ceery, the paper method of blanching .. .	131
Euryphia cordifolia	129
Potato, remarkable yield of a .. .	134

NOTES FROM A GALLOWAY GARDEN.—XI.*

THE war has caused horticulture to take such a utilitarian turn that one almost feels it frivolous to gossip about merely ornamental plants. With the flower-beds in front of Buckingham Palace devoted to the cultivation of Potatoes, an apology seems due from anybody who occupies a column with anything less momentous than the treatment of French Beans or the vicissitudes of the Onion crop. However, such matter is too high for me; and being unable to attain into it, I can but meander through the September borders.

They are very gay just now, and their gaiety is enhanced by Red Admiral butterflies in such flights as I never saw before. The chief attraction for them lies in the purple tassels of *Buddleia variabilis*, the late-flowering variety magnificent. Be the shrub in the near borders or far off in the woodland rides, these splendid insects find it out and revel on its sweets. The type is out of flower before they get on the wing, and it is a puzzle to know how they passed these autumn days before the late-flowering variety was first raised in the "himitses." The gardener may regard the presence of these butterflies with equanimity, for their caterpillars, like those of their kinsman the Peacock butterflies, feed exclusively on Nettles.

Several years ago a plant arrived here under the name of *Aconitum volubile*, appropriate enough, for it is a vigorous climber; but in the *Kew Hand-List* that name appears as a synonym of *A. meibotium*. In the *Kew list* of new plants for 1908 it is entered as *A. volubile latisetum*, but in the list for 1909 it is stated that the correct name is *A. Vilmorinii*. It is a decided acquisition, climbing to a height of 10 feet and producing clusters of flowers in autumn varying in colour from dark

to light blue. The stems are herbaceous; it is perfectly hardy, and ripens plenty of seed. It possesses one peculiarity: It is well known that the great majority of climbing plants (as distinguished from those which climb by tendrils, sensitive petioles or rootlets) turn away from the sun, that is, from left to right as you view them. Of such are *Convolvulus*, *Wistaria*, *Berberidopsis*, *Stephanotis* and *Aristolochia*. The Hop, the *Lapageria*, and a few others turn with the sun, from right to left. In all these cases, the plant never varies from the hereditary habit. *Aconitum Vilmorinii* is one of the very few climbers that twine both ways. I have to-day examined one of several plants that all show the same indifference to direction. It has risen to the height of 8 feet on climbing *Caroline Testout Rose*, and, as that is the full height of its support, it cannot get any higher, and is just coming into profuse bloom. The first two turns of the main stem are against the sun, from right to left; the next five are from left to right, then follows a straight internode, after which come two turns from right to left, and the spiral finishes with one turn from left to right.

Turning up Darwin's *Climbing Plants*, I find he paid considerable attention to this matter, and found only three plants to behave in this abnormal manner:

"*Solanum dulcamara* revolves and twines in two directions; this plant, however, is a most feeble twiner. *Loasa aurantiaca* offers a much more curious case. I raised seventeen plants; of these, eight revolved in opposition to the sun and ascended from left to right, five followed the sun and ascended from right to left, and four revolved and twined first in one direction, and then reversed their course. . . . Another plant in the same family, *Scyphanthus elegans*, habitually twines in the same manner. I raised many plants of it, and the stems all took one turn, or occasionally two or even three turns, in one direction, and then, ascending for a short space straight, reversed their course and took one or two turns in an opposite direction. The reversal of the curvature occurred at any point in the stem, even in the middle of an internode. Had I not seen this case, I should have thought its occurrence most improbable." (*Climbing Plants*, p. 31.)

Both the plants observed by Darwin belonged to the order Loasaceæ; it is interesting to find a member of the Ranunculaceæ behaving in the same manner.

Judging from the generality of gardens, the merit of late-flowering species of *Wolfsbane* or *Aconite* for autumn display has not been fully recognised. A japonicum, 6 feet high, with deep blue flowers on branching sprays, passes with August; but its place may be taken by the Chinese *A. Wilsonii*, whereof the blue has a purplish tinge, and the North American *A. Fischeri*, bright light blue, contrasting admirably with the gold of *Hypericum Hookerianum*.

A problem in the effect of latitude on vegetation presents itself. *Euryphia*

cordifolia (see fig. 14) is a beautiful object here just now (September 21), sheathed with chalk white blossoms, each with a dense ring of terra-cotta anthers. It is in exactly the same stage to-day that I saw one in at Abbotsbury on August 26—just four weeks ago. Similarly, *Clerodendron trichotomum* was in full bloom at Abbotsbury, whereas here it opened its first fragrant flowers on September 15. In normal seasons we are content to lag far behind southerly latitudes in the production of flowers and fruit; but this has been an abnormal summer. We in Scotland have enjoyed warmth and sunshine while Midland and Southern England has been drenched with cold rains; yet vegetation has complied with the floral calendar of the respective countries rather than with the climate.

Talking of *Euryphia cordifolia*, it flowers too late with us to ripen seed, so we have had recourse to cuttings for propagating it. Those we set some years ago behaved in a singular manner. They remained green as when put in, but it was not till the third year that they struck, after which they grew vigorously.

I have read somewhere that it is unusual for *Anemone japonica* to set seed in this country. We have, however, raised some fine varieties from seed ripened here, some of which are equal to, though varying in colour from, Queen Charlotte, finest of pinks, and Honorine-Louise, most perfect of whites.

No autumnal flower is more greatly to be prized than the Swiss Wood Gentian, *G. asclepiadea*, not only for its beauty and profusion, but for its long succession of bloom, one plant taking up the running as another fades. It begins to flower in July, and some clumps have deferred their display till mid-September. It sows itself freely in the woodland; indeed, that is the best place for it, rabbits leaving it severely alone. Seedlings vary a good deal in colour, from deep, pure blue to pure white. Those with a purplish tinge, though very pretty, we extirpate, and the best of all are clear sky blue.

In a note on *Morisia hypogaea* on p. 105 Mr. Arnott remarks that he has never seen seeds produced. Neither have I seen them; the plant is of such crouching habit and such dense leafage that I have never examined the fructification; nevertheless, we have convincing evidence that seeds are produced and ripened. A thriving plant of *Morisia*, now measuring 9 inches across, has grown for seven or eight years on a flat border near the top of a retaining wall. It has for a neighbour a carpet of *Raoulia australis*, in the midst of which seedlings of *Morisia* have appeared. Unluckily, the first of these paid the penalty of its resemblance to a seedling of the common Groundsel; but we know better now. *Morisia* is one of the brightest and earliest of Alpines, and we have found it to do best when the ground about it is spread with old mortar, which, if it does not contribute to its nourishment, is more comfortable as a couch than the cold soil. Herbert Maxwell, Mourville.

* Previous articles appeared in the issues for Jan. 15, Feb. 17, Mar. 10, April 11, April 26, June 2, June 30, July 21, Aug. 18, and Sept. 8, 1917.

ORCHID NOTES AND CLEANINGS.

LÆLIO CATTLEYA OPAL.

From the gardens of Sir Alex. Butler, Bart., Bloombill, Stratton, Mr. C. Keich sends the first flower of a new cross between *Cattleya Caduceus* (granulosa) × Gaskelham and *Lælio Cattleya Wellsiana* (*Cattleya Trianae* × *Laelia purpurata*), taken, it is said, from a very small plant. The flower, in size and form, resembles *Cattleya Percivaliana*, and little trace of the *C. granulosa* ancestor appears. The flower is salmon-pink with a bronze shade and slight tinge of rose; the lip purple in front and veined with yellow at the base.

THE MARKET FRUIT GARDEN.

CULTIVATION OF LUCERNE ORCHARDS.

SOME objections to my plan of sowing Lucerne in mature Apple orchards after bottom fruit has been grubbed up, appear to me to call for attention. The first is that Lucerne, as a deep-rooting plant, will draw water from the soil, and thus lead to the injury of the trees in dry seasons. As to this, it is true that Lucerne will absorb water from the subsoil, but this is desirable where the subsoil is one to hold water. It seems to me that the crop will draw water from the subsoil, where it is in superfluous quantity, store it, and keep the surface soil

the worst the orchard will have been fertilised by the growth of a nitrogen-accumulating crop for a season or two, and this will prove beneficial, even if the land has to be dug, or allowed to grass itself over. It is suggested that ordinary or wild White Clover would be preferable to Lucerne, but the former is not perennial, and the seed of the latter is extremely expensive, while neither is a weed-smothering crop, as Lucerne is to a great extent. Further, it is urged that, if Lucerne is grown, the cut crops should be taken off the land and used as food for live stock. This, however, would be impracticable, unless the stuff were all carried off by hand, as there is no room between trees with



FIG. 44. *EUCRYPHIA CORDIFOLIA*.

(See Sir Herbert Maxwell's "Notes from a Galloway Garden," p. 125.)

BRASSO CATTLEYA VIRGINIA

MR. JAS. SMITH, Orchid grower to the Duke of Marlborough, Blenheim, Woodstock, sends a large and handsome flower of a cross raised at Blenheim between B. C. Madame Chas. Maron and a seedling *Laelio Cattleya* recorded as having a very dark lip, a character which does not appear in the hybrid. The flower, which is 7 inches across, is clear silver-white tinged with light mauve at the edges of the petals and front of the fringed labellum, which has a chrome-yellow disc. It is desirable to introduce deeper shades of colour into the *Brasso-Cattleyas*. In crosses between *Cattleya Dowlana* and varieties in which rose and purple predominate it is known that colour vanishes with the cross made one way and is intensified by the reverse cross.

most in summer after the crop has been cut and left to rot on the ground as a mulch. Although all my orchards are more or less completely drained, trees suffer from excessive moisture in wet seasons, particularly in connection with attacks of fungous diseases, and I greatly prefer drought to flood, if we must have one extreme or the other. The second objection is that if the cut crop is left to rot on the ground it will be probably found that a fungous disease, such as *Botrytis cinerea*, will attack it and spread to the living plants, killing them. Whether or not there is any risk of such results experience alone can determine, but, seeing that a Lucerne crop grown for cutting when green for horses must always leave a little on the ground to rot, and no such results have been noticed by me or reported, so far as I have seen, the danger does not strike me as serious. At

overhanging branches for loaded carts or wagons. Besides, the fertilising effect to be obtained by growing the crops, and leaving them on the land, would be mainly lost. It is to be admitted that the plan is only an experiment, which, so far as I know, has never been tried before. My critic says that Lucerne is commonly grown in orchards in the United States, but this, I believe, is an error. I have read much about "cover crops," and the "sod and mulch" system in American publications, but have never seen Lucerne mentioned. Cover crops are grown to be ploughed up annually, and there would be no use in growing a perennial like Lucerne, which, moreover, does not produce enough for the first cut in the year of sowing to suit the plan; while the "sod and mulch" system is that of allowing an orchard to run down to grass and cutting the crop to use as a mulch around the widely separated trees.

other materials grown outside being sometimes added. At present the chief difficulty in my Lucerne orchards is that the crop gets trampled down by workers engaged in spraying or picking fruit off the trees or off the ground. Wind falls are preserved from injury by falling on to the crop of Lucerne, but are more difficult to find than where they fall on to cultivated ground. The crop of the first season had to be cut a first time just as it was about to blossom, for the benefit of the plants. Next year this necessity will not arise, and each cutting can be arranged so as to prevent, as far as possible, the objectionable circumstances just mentioned. The expense of cutting the first crop by hand and spreading it was only a little less than having all the ground would have been. That expense, however, has been about halved by using a one-horse mower, without the swather, between the rows of trees where there is room for it. *Southern Grower*.

HARDY ARISAEMAS.

I do not think it is generally known to lovers of rare and curious plants that several species of the genus *Arisaema* from the Himalayas are perfectly hardy in England if planted in a shaded bed of vegetable soil deep enough to prevent the large, fleshy tubers from being frozen in winter. Many of them have been introduced in the last 50 years by Mr. Gamme and myself, but they do not seem to remain healthy under pot culture for long.

I have now in cultivation the following: *A. speciosum* (Bot. Mag., t. 5964), a very beautiful plant with large spathe striped with purple and a long filiform tail to the spathe. This is one of the commonest and most ornamental in the forests around Darjeeling, but I have not yet proved it to be hardy. It has, however, ripened seed in a cold, shady frame this season. *A. galathea* (Bot. Mag., t. 6457). I have lost my plants of this species. It is a handsome and curious species well worth growing. *A. tortuosum*, Schott (Bot. Mag., t. 5951) as *A. curvatum*, Kunth. Though not so beautiful as some others, this species is curious, and so hardy that it has ripened its seeds under a north wall and seedlings have come up naturally. *A. flavum*, Schott (Bot. Mag., t. 7700). A species more curious than beautiful, introduced from Hazara, N.W. Himalayas, by Mr. Duthie to Kew, where it flowered in 1899. It also grows in the Trans-Indus Curran valley at 7,000 feet. Sir Joseph Hooker said that he could see no difference whatever between Indian specimens and the plant discovered by Forskal in Arabia in 1763, though it has been found in no intermediate locality. The plant has proved perfectly hardy at Colchester. *A. nepentholoides*, Mart. (Bot. Mag., t. 6446), *A. affine*, Hook. (Bot. Mag., t. 6474), and *A. Griffithii* (Bot. Mag., t. 6491), were all introduced by me more than thirty years ago, and I believe will prove hardy, as they come from high elevations in Sikkim and most of the plants of that region do not start into growth here until all risk of summer frosts is past. All of them have large and beautiful leaves and flowers.

A. Walliichmanii, Hook., of which I send a photograph (fig. 35), was collected by me in Sikkim four years ago. I believe the plant will prove hardy, though I have not yet established it.

A. consanguineum, Schott (fig. 46), which is now in flower, was described from the Himalayas, but was introduced from China recently. I think by Wilson. Both the flower and foliage are very ornamental, as may be seen in the illustration, and the plant seems as hardy as any of its congenere. *A. conicum*, Schott (Bot. Mag., t. 5914), has flowered in my garden for several years and has never been injured by cold.

I have also another species, collected by Forrest, with foliage quite distinct, but I have not yet flowered it.

It must be remembered that these plants are



FIG. 35. ARISAEMA WALLIICHMANII.

grown in the forests in a deep bed of soil, and need planting in cool, damp places. H. H. Curson, C. S. Bours.



FIG. 36. ARISAEMA CONSAQUINEUM.

PUBLICATIONS RECEIVED.—*The Quince Borer and its Control*. By F. W. Pettew, B.A. (Union of South Africa, Department of Agriculture, Pretoria, Government Printing and Stationery Office.) Bulletin No. 2 of 1917. *Coccidiosis of the Fowl*. By H. H. Curson, M.R.C.V.S., Bulletin No. 3 of 1917. Address as above.

LETTERS FROM SOLDIER-GARDENERS.

GARDENING IN NORTHERN EGYPT.

In the public gardens and open spaces of Northern Egypt, very few ornamental foliage plants, such as *Codiaeum* and *Dracaena*, are to be seen, although fine shrubs of *Acalypha musaica*, *A. marginata*, and *A. rubra* are well established. *A. musaica* is used as a hedge, forming a partition between one part of a garden and the other. The specimen observed had dropped a few of its bottom leaves, but it was in an excellent setting, against the white, painted façade of a private residence, which effectively showed off the colour of the foliage. *Strobilanthes Dyerianus* did not look very striking, except the coloured terminal growth, which is attractive. *Hibiscus* is well suited to the Egyptian climate; the shrubs abound nearly everywhere, planted as single specimens, or grouped with other trees. They appear to do equally well in the shade or in full sun; one has large scarlet flowers which find a magnificent setting among the wealth of dark green, glossy leaves. *Hibiscus grandiflorus* was at its best in August, unfolding its beautiful white flowers early in the morning. These have the peculiarity of changing to rose colour during the day. The leaves of this variety are much larger than those of its congener, but it does not so readily form a symmetrical tree or shrub. *Lantana* are numerous. *L. delicatissima* is sometimes planted in beds and kept at a uniform height by clipping, sometimes allowed to grow naturally. In one place, planted at the base of a low building, it served the useful purpose of masking the structure. *Cestrum elegans*, and a species darker in colour which I took to be *C. Newallii*, were growing in association with *Lantana* and *Hibiscus*. They formed a screen in front of the masonry of a roadside wall which helps to enclose the Zoological Gardens at Giza, each species trying to rival the other in a struggle for supremacy, and both yielding a wealth of flower. *Duranta Plumieri* makes a formidable thorny hedge. I was disappointed at not seeing it in flower. In the Palace Gardens of Bulak Darwan, the plants were studded with buds on the current season's growth early in December. F. Gamble, formerly at Calbury House Gardens, Totton, Hants.

GARDENING IN "EDEN."

I am working in the Agricultural Department, Sheikh Sand, Basra, where we have a large vegetable farm of 50 acres, and at present we are very busy indeed. We hope to be able to grow a lot of vegetables for the troops, as they are very scarce indeed here. It is interesting work laying out the garden. Everything has to be grown by the irrigation system, which I find very different from the English style. Before coming to this place I was in charge of a small garden for supplies. They wanted a gardener, and mine happened to be the only name sent in, so that was my first attempt at gardening in this part. The garden at first sight would have disheartened almost anyone, being then a mass of weeds and bushes, and I was handicapped by not knowing much about growing vegetables by irrigation, but I learnt much from the Arab cultivators. We managed to make a success out of that small garden; it was 1½ acre, and I believe we grew the first Cabbages and Cauliflowers in this country. They were quite good, many weighing 5 lbs. each. During the months of January and February only, we supplied 20,000 lbs. of vegetables, and I hope we shall have greater success with the larger garden we have at present. So far we have supplied daily about 200 lbs. of produce to the hospitals, &c. Our crops are the following: Cabbage, Cauliflower, Lettuce, Spinach, Kale, Beans, and Peas, and all are doing well. The Peas are first favourites. I have never seen in England healthier looking crops. The soil is very rich.

and similar to the soil at Tongswood; very heavy, and there is not a stone to be found in it, so it requires a lot of cultivating.

The hot weather crops, which consist of the following kinds—Melons, Marrows, Cucumbers, Bhesi, Brujals (?), and Tomatos—promise to be very fine later. We simply sow the seed in a channel at certain distances and give water when required. It is not necessary to stop the plants, nor to do many of the things which we find usual in England. No doubt, with special cultivation, better specimens could be obtained, but this extra trouble seems unnecessary, as it is not difficult to get Melon fruits weighing 7 to 10 lbs. each. The Sugar Melon (Melon Battikh?) is the best I have seen. The acreage of the crops here is: Melons 8 acres, Marrows 5, Tomatos 5, Brujals 5, Bhesi 2, and Cucumbers 3 acres. I find this work very interesting indeed, and it will no doubt seem strange to start again in the English style. *Sergeant Edward Aldridge, formerly at Tongswood Gardens, Hawkhurst, Kent.*

ON INCREASED FOOD PRODUCTION.

THE ONION CROP.

In many parts of the country I hear poor accounts of this important vegetable, and many beds which have come under my own observation are distinctly poor where they have not failed altogether. This is much to be regretted, as we are not likely to get importations this year as in the past, and already prices are unusually high. We place far too much faith in merely doing as our grandfathers did—sowing the seed in the open and more or less trusting to luck. We have much to learn from our Continental friends in the art of taking a little more trouble in relation to many of our vegetable and fruit crops, but in no case is it more necessary than in the cultivation of Onions. The seed should be sown in early spring in boxes, raised in cold frames and planted out immediately the young plants are large enough; work which can very well be done by boys or women. Fortunately no cold will harm the plants. This crop may be grown on the same spot for a number of years. If well planted one may rest assured of a heavy yield of early ripened bulbs which will keep much better than later ones, and transplanted Onions are seldom injured by the Onion fly. This method is by no means a new one, but, having proved its advantage over the system of sowing in the open, I strongly advocate the practice for general use. *E. Beckett, Aldenham House Gardens, Elstree.*

DEGENERATION OF POTATOS.

(See also p. 132.)

MR. CUTBERTSON says, on p. 122, "I am a doubting Thomas regarding this." My experience leads me to the same conclusion. I have this year grown some Snowdrop Potatos from sets, the stock of which has been grown by me continuously for thirty-three years, and it still crops and grows as vigorously as it did when I first had it. During this time it has had one change of soil, viz., from oolite limestone, where it grew for the first ten years, to a soil overlying lias clay, but no difference could be seen in the crop, although the quality was not so good on the clay soil, which is not surprising. I have also a form of the old Ashleaf called Empress Eugénie which I have had for the same length of time; this almost disappeared four years since, owing to severe and successive attacks of the "curl" disease; it has since recovered from that disease by selection and liberal manuring each season. The chief point with early varieties is to select the seed sets before they get overripe, green them, and store them carefully; late varieties are not so liable

to suffer from overripeness, but they must be given careful storage if they are to retain their vitality and vigour. *W. H. Divers, Westdown, Hook, near Sudbton.*

—MR. CUTBERTSON'S conclusions (see p. 122) are probably correct. Seed Potato tubers are likely to be weakened by storage in too low a temperature, but there is another aspect of the subject which may be worthy of consideration. Seed tubers which have failed to start into growth after planting may have become heated in the clamp to such an extent that the eyes have been killed. Owing to the shortage of labour all growers cannot start their seed tubers into growth in shallow trays. Secondary eyes are often made, but these would not have the same vigour as those of the first formation. Over-heating in clamps may be guarded against by the insertion of agricultural drain-pipes as ventilating shafts, these being partly closed in severe weather by being filled with straw. When Potatos are growing in a wild state in their native habitats do they reproduce themselves more readily from tubers than from the seeds found in the berries? A small point, such as this, might be worth studying. But the degeneration of Potatos cannot be wondered at if the distribution of seed tubers is undertaken by District Councils, greengrocers and others having little technical knowledge of the profession in which they are allowed to dabble with indiscriminate. *Frank James, Miteham.*

PRESERVING RUNNER BEANS.

SCARLET RUNNERS may be preserved for winter use. To preserve by salting, pick the Beans when dry, or dry them before a fire. Clean with a dry cloth, and put them raw into a stone jar or wooden barrel—a layer of vegetables and a layer of salt $\frac{3}{4}$ inch thick alternately until the vessel is full. Cover with a cloth resting on the vegetables, and on the cloth place a piece of board or a plate, weighted so as to press down the Beans. After a few days the vegetables will have settled, and the vessel must be tilted up again. Every week it must be cleaned by lifting the cloth and removing the scum which will rise to the top. Keep in a cellar or other cool place.

BRACKEN

It should be borne in mind by persons having access to quantities of Bracken that the potash yield of Bracken ash may be considerable, and that in view of the present scarcity of fertilisers this source of supply is well worth attention. The best time for cutting Bracken for burning is from mid-July to the end of October. The ash from green Bracken is more valuable than from the old and withered plant. Potash from Bracken ash is very soluble and should not be exposed to rain. The ashes should be collected and kept dry until required for use. They can be mixed with superphosphate before distribution, and may be applied with the above at the rate of 3 cwt. per acre to bare land; they should not be applied to growing crops. Potash is a valuable fertiliser for Potato land, especially for light loams and gravels and sandy soils.

242 LBS. OF POTATOS FROM 1 LB. OF SEED.

LAST April the Lower Hardres Association offered prizes for "the most Potatos grown from 1 lb. of seed."

The rector distributed to each of the 24 competitors 1 lb. of small Potatos generally used for seed.

At the end of April I arranged mine in a shallow tray—one layer only; placed the tray on a stage in a greenhouse and syringed the tubers two or three times daily till sprouted. I took off these sprouts, leaving a small heel of the tuber, say $\frac{1}{2}$ inch cub., adhering to each; these I placed in trays containing $\frac{1}{2}$ inch of light soil, until well rooted; thence each plant was moved into a 3 inch pot full of light soil.

In due course the plants were hardened off and planted in the open in a row 15 inches apart. I applied manure moderately, hoeing and earthing as usual, and sprayed them three times with Bordeaux mixture.

They were planted on May 1 and lifted on August 29, the tubers weighing 242 lbs. The crop was free from disease.

Weight.	No. of Roots.	Six Heaviest.
1st Prize ... 242 lbs.	... 80	... 4 lbs. 14 ozs.
2nd Prize ... 126 lbs.	... 48	... 3 lbs. 12 ozs.
3rd Prize ... 57 lbs.	... 17	... 5 lbs. 4 ozs.

E. S. Pigg, Lower Hardres, Kent.

FRUIT NOTES.

FRUIT GROWERS AND MILITARY SERVICE.

CONSTERNATION was caused recently in the big fruit-growing districts by the statement that, although an arrangement had been entered into under which no man engaged whole-time on a farm or on agricultural work could be posted for service with the Colours, except with the consent of the County Agricultural Executive Committee, this arrangement did not include men employed on a market garden for the production of flowers or fruit.

The matter was brought to the notice of the Food Production Department, and the War Office was approached at once. As a result an explanatory instruction has been issued to the local military authorities to the effect that the intention of the War Office was only to exclude from the arrangement mentioned above any men engaged in the production of luxury fruit, such as Grapes, Peaches, etc. Ordinary fruit-growers' fears should be set at rest by the knowledge that the Army Council recognises the importance of the common home-grown fruits and the jams made therefrom not only for soldiers but for the civilian population as well.

It should be clearly understood now by all concerned that the War Office realises that a man whole-time employed on a large holding in the production of fruit for jam is doing work that warrants his being protected by his County Agricultural Executive Committee from service with the Colours. Similarly, a man engaged in producing from a market garden vegetables and other crops of an amount and character to constitute "national importance" will not be taken out of the arrangement simply because a portion of the garden is devoted to jam fruit or because part of the holding is an orchard.

BAKED DAMSONS.

BAKING Damsons to preserve them is a very old West Country practice, and should be made a great deal more use of in these times where there is a plentiful supply of fruits. As I have seen them preserved, the Damsons were put in earthenware jars and small pans—chiefly the latter, because they take more fruit. Stone-made receptacles would likewise do, I was told. No sugar is used. Enough room is left at the top of the pan to take a plate in an inverted position, resting on the fruit just below the rim of the pan. Put in the oven, bake slowly until cooked, and then run some mutton fat around the edge of the plate to effect a seal. The use of the plate is obvious—it saves a great deal of fat. If desired—to prevent risk of burning—a dash of water can be put with the fruit, scarcely enough to cover the bottom of the receptacle, but no water is needed if baking be slowly done. My parents, from whom I learned the method, do not use water. Of course, if jars are used, covering with plates is out of the question, and sealing must be done with fat alone in the usual way. *C. Turner.*

The Week's Work.

THE KITCHEN GARDEN

By J. DUNN, Foreman, Royal Gardens, Windsor

LETTUCE.—Young Lettuce plants may still be planted on a warm border with a view to obtaining early spring supplies. The ground between the rows of earlier plantings should be frequently stirred with a Dutch hoe, and careful attention given to the destruction of slugs. A very light dusting of hot lime is the best remedy for this pest. All available cold pits should be filled with young Lettuce plants as quickly as possible; the soil for this purpose should be light and rich, and brought up to within 18 inches of the roof glass.

TURNIPS.—Dust the crop of late sown Turnips with soot, and hoe the ground between the drills, as often as possible. Turnips which are likely to become overgrown should be lifted at once and placed behind a north wall, where protection from heavy rains can be supplied. These roots may be kept in good condition for some time if lifted before they are too old.

MUSHROOMS. Attend carefully to the watering of Mushroom beds in bearing. Examine the beds frequently, and if the material is found to be too dry, water the surface with rain water through a fine rose. A light covering of clean straw will serve to retain the moisture in the soil and reduce the necessity for frequent watering, which is sometimes the means of destroying many of the young Mushrooms. If the atmosphere of the house is kept cool and moist, and currents of cold air prevented from reaching the beds, very little watering should be necessary. But it must also be remembered that a dry atmosphere is very detrimental to this crop. In order to maintain an unbroken supply of Mushrooms, prepare materials for the making of new beds. If horse droppings are scarce, fallen tree leaves may be mixed with the dung to increase the bulk by one third. The dung and leaves should be thoroughly mixed together and allowed to remain for two or three days before turning them, which should be done several times.

POTATOS. The whole of the Potato crop should be lifted as soon as possible, and where it is intended to save tubers for seed next season, these should be selected and placed on one side at the time of lifting the crop. The sets should be laid singly on shelves or trays and placed in a well-ventilated structure, where they may remain until frost is imminent. If the ware tubers are quite dry when they are dug and free from disease they may be stored in a store at once; otherwise they should be placed under cover and the light excluded from them until they can be examined critically in order to remove all affected tubers before they are arranged in the store for the winter. It is a good practice to spread the tubers with lime at this stage; they must be kept in perfect darkness.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHOTE, Eastwell Park, Kent.

VIOLETS IN FRAMES.—Preparations for lifting and transplanting Violets to frames for the winter should now be made. If the plants have been given thoroughly good cultivation from the time of planting out of doors in the spring, and the runners kept pinched back, the strong crowns will be already throwing up blooms, and if lifted carefully the plants will quickly recover from the disturbance, and start flowering. Choose a frame in a sheltered position, facing due south if possible; one that has been utilised for growing Melons during the summer will suit admirably, if on a hot bed so much the better, as the gentle heat still remaining in the material will stimulate root action. Supposing such a frame is selected, some leaf-mould and sand should be thoroughly mixed with the loam, and some crushed charcoal if this is at hand. Bring the soil up to a level 9 to 12 inches from the glass. If the weather is dry when lifting is contemplated, the plants should

be given a thorough watering on the previous day. When lifting, be careful to preserve the balls of soil, and get them planted again as quickly as possible, as the plants soon flag. As space under glass in winter is always valuable, the plants should be put in fairly closely—that is, so that the outside leaves just touch each other. A few of the older leaves are almost sure to decay, and this will give a little extra space round each plant. Work the soil nicely round the roots, keeping the crowns well above the surface soil. When the planting is finished, water the plants, and if the weather is hot and bright, the lights should be put on, and the plants shaded for a day or two. Remove the lights again as soon as the sun sets to give the plants the benefit of the night dews, and in a few days the shading may be entirely dispensed with, and the lights drawn off altogether for the present. Light showers are beneficial, but if cold weather with a heavy rainfall is experienced for several days, as is often the case at this season, the lights should be used and ample ventilation given. The chief requirements are abundance of fresh air, with all the sunshine and light possible. The plants will not remain healthy in anything approaching a close and stuffy atmosphere.

THE FLOWER GARDEN.

By W. J. CRISE, Gardener to Mrs. DEMPSTER, Keele Hall, Staffordshire.

LAVENDER.—To increase the stock of Lavender, Rosemary, or Thyme, insert cuttings at once in sandy soil under hand lights, or boxes or in shallow frames. Short, well-pruned shoots of the young growths, taken off with a back-saw, are the best. Wire the cutting through a fine rose to settle the soil, and keep the frame close. The old plants may be trimmed with shears, cutting off all dead flowers, stalks, and straggling shoots. This is a good time to prune below the present season's growth.

PLANTING BORDER CARNATIONS. By this time the great majority of Carnations should be well rooted. The soil will continue to keep up for several weeks, and if the layers are true, planted at once the young plants will become established before cold weather sets in. Autumn planting is much the best method, except in cold, retentive soils. Select a position for the beds well exposed to the sun and air. If the soil is of a light nature, apply a heavy dressing of decayed manure, leaf-mould and cow-slash, and trench the ground to a reasonable depth. Where heavy, retentive soil has to be dealt with, leaf-mould, sand, manure, &c., or any old peatling soil may be mixed with the staple, and the beds or borders well drained and raised above the ordinary level. Beds made about a foot wide to take six rows will be found most suitable, as they are more convenient for staking, feeding and layering. Plant firmly and deep enough to cover the lowest part of leaves. A distance of 12 inches should be allowed between the plants and the same space between the rows. Examine the beds after frost, and press the soil to the plants that have been loosened. It is advisable to lay a reserve stock to replace failures. Place a number of plants in frames, boxes, or singly in 3-inch pots, using a compost of loam, leaf-mould and sand. Keep the frame closed and shaded for a few days, then continue freely, imitating outside cultivation as much as possible except in dry weather.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Rev. ALBERT J. DAVIES, All Saints' Church, Glediford, Hereford.

INSECT PESTS.—Trees infested with American blight should be thoroughly cleaned after the fruit has been gathered. Rub an insecticide on the parts infested, using a rather stiff brush for the purpose. If the trees are large, apply a very strong mixture of paraffin and soap with the garden pump, and renew the operation every few days. If the bark is infested with Oyster Scale insects, remove them with a scrubbing brush dipped in a mixture of equal parts of soap and warm water. This pest spreads rapidly, so remedial measures should be applied as soon as it is detected. The Pear scum appears at this season on Pears and Cherries,

and does much damage to the foliage. Dust the leaves with tobacco-powder and afterwards syringe with insecticide. If Pears are still flowering use tobacco-powder only.

THE STORING OF FRUIT.—Carefully attend to the work of storing fruits as they become ready for gathering. They are now ripening in large numbers, and unless great care is exercised some of them may be ruined altogether owing to the pressure of work. In the case of Apples and Pears, trays are useful for small lots, as they can be stood on top of each other; a label with the name and date when gathered, and probable date of being ready for consumption, will be useful, as so many inexperienced hands are now employed in gardens. In storing the fruits it will be convenient if those now coming into use are placed in positions easy of access. The latest ripening varieties can be put on the top and bottom stages. Do not stock any specked or bruised or very small fruits. Soft Pears should be placed over a thin layer of wood wool, and each fruit should be lifted out of the basket by hand and carefully placed in position. I am speaking now of selected fruits, which will be used for dessert, and none but those should be given a place in the premier fruit room, and on no account should any other matter than fruit be stored in this room, which should be kept scrupulously clean and sweet. Do not gather all the fruits from one tree at the same time unless they are perfectly ripe, because some will continue to ripen and improve after others have been removed, and the variety will be available for use over a longer period. The dropping of fruits is a great evil, and it will probably be found that they are discarded or infested with grubs. The later varieties of both Apples and Pears will continue to increase in size and colour for some weeks to come. From a west wall protected with nets I have gathered good fruits of Glou. Moreau, Josephine de Malines, Passe Crassane, and New Plus Meuris, in November, and after bad frosts have been on them.

FRUITS UNDER GLASS.

By JAS. HENSON, Head Gardener at Ginnensbury House, Ason, W.

THE PRUNING OF PEACHES AND NECTARINES. In Peach houses, where early, or moderately early forcing is carried out, it will be advisable to give attention to this work early in October. It is best to prune whilst some of the leaves are still upon the trees, for their presence will give an idea of the amount of thinning which is necessary. In some soils and districts the leaves are somewhat larger than in other instances. I have had my attention drawn afresh to this fact just recently. Overcrowding is most undesirable. Some Peaches are notoriously bad croppers, such, for instance, as the American varieties, Anson's June and Waterloo, therefore do not thin these out too freely. Make a point of pruning short, stocky wood and any short, spiky growths. These growths often in early houses will set more fruit than can be got from long shoots. It is not essential to proceed at present with cleansing operations, or with tying in the growths, by cutting forward with the pruning room will be found for plants that have for a time to be stored in cold houses, such, for instance, as Chrysanthemums. Do not, however, let any plants be stood directly upon the soil; pieces of plate, tiles or bricks should be placed under these temporary occupants of the house. Watch the borders as to moisture, and if the soil is at all dry give one good watering. Keep the houses well ventilated at all times, and even if plants are in them do not sacrifice the interests of the permanent trees for the sake of such plants.

EARLY VINERIES.—Pruning may now be commenced in the vineries. First proceed by cutting away all sub-lateral and the ends of the shoots that have not ripened. This will admit more light and air. Leave the ripened wood and all large leaf growth until the leaves drop of themselves. See that the indoor borders are not permitted to become too dry. In neither Peach houses, vineries, or other fruit house allow any warmth in the pipes that will be detrimental to the permanent occupants.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they could kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction in articles, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any notices which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens of plants, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last 53 years at Greenwich, 53.7.

ACTUAL TEMPERATURE.—
GARDENERS' COMPASS OFFICE, 41, Wellington Street, Covent Garden, London, Thursday, September 27, 10 a.m. Bar, 29.6; temp. 60.0. Weather bright sun-shine.

SALES FOR THE ENSUING WEEK.

MONDAY.—
10000 Bunches at 67 and 74, Chespole, at 1 o'clock, by PROTHROE & MORRIS.
TUESDAY and WEDNESDAY.—
Sole of a portion of the Globe Collection and other Orchids, at 67 and 74, Chespole, at 1 o'clock, by PROTHROE & MORRIS.
WEDNESDAY.—
Tenth Sale of Bulbs at 67 and 74, Chespole, at 1 o'clock, by PROTHROE & MORRIS.

The Colours of Flowers.

It is interesting to notice how rapidly recent work has cleared up the uncertainties that have so long existed concerning the nature of the beautiful red, purple and blue flower and plant pigments—the anthocyanins—that contribute so much to the splendour of Nature's summer dress. Much has been done to capture these secrets of the plant world, and a considerable amount of matter of interest to horticulturists has been collected.

In the first place, the relationship that exists between the two chief series of sap pigments—i. the yellow sap pigments (flavones); and ii., the red, purple and blue pigments (anthocyanins)—has been satisfactorily settled, and the colouring matters of the latter series have actually been prepared artificially from those of the former. It is now known that the change from yellow to red, purple or blue, is caused by the addition of hydrogen to the molecule of the yellow sap pigments (flavones). Curiously enough, this quite reverses the ideas previously held concerning the relationship that exists between these two series of pigments. Thus science has succeeded—as the yellow sap colours had

been previously prepared artificially—in producing these beautiful products of Nature in the laboratory; but there remain many important points yet to be learned concerning the manner in which these pigments are produced in the living plant. Like so many of the methods whereby the more complex of natural products have been artificially prepared, the method used for producing these colours in the laboratory is both long and wasteful, and contrasts greatly with the apparent ease with which the Pansy (*Viola tricolor*) produces up to 25 per cent. of its dry weight of the purple colour which, in some varieties, gives it its almost black appearance.

It has long been known that among the yellow and white flowers, more than one yellow sap pigment may be found in one and the same flower, e.g., the Wallflower, hence, the question naturally arises, is this equally true for the red, purple and blue sap pigments, or does each plant, or kind of plant, produce but one of these colouring matters? At first it looked very much as though "one flower one pigment" were to hold good, but as the investigation of these flowers progressed it was first found that one kind of flower could produce different pigments of this kind; thus the blue, deep purple Cornflowers contain the same colouring matter (the colour differing on account of different conditions of cell sap)—cyanin—whilst the rose-coloured Cornflower (the flowers investigated were stray ones of this colour which appeared in a large field of deep purple ones sown for the investigation) contains the pigment that occurs in the scarlet *Pelargonium zonale*, viz. pelargonin. Following upon this it has been discovered that whilst the scarlet *Pelargonium zonale* contains only the colouring matter, pelargonin, the violet-red varieties of *Pelargonium* contain both cyanin, the Cornflower pigment (the larger portion of the total colour in the flower), and pelargonin (smaller portion); i.e., one flower contains two of these pigments. Later work has brought to light further instances of the same kind. In view of this it can no longer be assumed that one kind of flower can only produce a particular red, purple or blue pigment, or, indeed, that of necessity there is but one of these pigments in any one flower. These discoveries naturally make the problems connected with the crossing of such species liable to much greater complication than would have been the case had the relationship of plant to colouring matter produced been less variable.

The investigations have shown that these pigments all exist in the plant attached to sugars, and, indeed, in nearly all cases the whole of the pigment present is in this form of combination; a few very interesting exceptions have, however, been found, of which particularly the Graue may be cited. In general, some small percentage of the colouring matter present in Black Graues (North Italian or hot-house grown) is at present unattached to sugars, and, indeed, in one case it was observed that as much as 12 per cent. of the total colour was in this condition.

When these compounds of the pigments and sugars are boiled with acid, they yield the true colouring matter, and the sugar with which it was in combination. The true sugar-free pigments of the *Pelargonium zonale* (Meteor), of the Cornflower, and of the *Delphinium Consolida* (purple), have been given the respective names Pelargonidin, Cyanidin, and Delphinidin, and it is interesting to note that thus far these three compounds form the basis of all the different red, purple and blue flower colours examined (some 20 in number), and are very widely distributed in nature. The differences in the natural pigments are due to the way in which these three are attached to the sugars, to the kind of sugar, or to the addition of chemical groups, other than sugars, to them. It may be hoped that other fundamentally different anthocyan pigments will be found, and there is some reason to believe that further investigation of certain kinds of Poppy will give realisation to these hopes.

When the question of the colours of flowers in general comes to be considered, there appear to be four chief causes of variation, viz., (i.) presence of different red, purple or blue pigments (anthocyanins); (ii.) presence of various yellow pigments (sap or plastid); (iii.) the reaction of the cell-sap (acid, alkaline, or neutral); (iv.) variation in the amount of each pigment that is present in the flower; and a few instances of the effect of each of these factors may not be without interest.

Although the effect of the last of these is often very obvious—thus the bright red and the deep red garden Roses contain the same colouring matter, cyanin, but in different amounts—it is not always an easy matter to judge the effect of variations in quantity of pigment in flowers, particularly in cases where sap conditions are different; thus, whilst the fine deep blue Cornflower contains only some 0.7 per cent. of colouring matter, cyanin, the deep purple-red flowers contain about 14 per cent. of the same pigment, and Cornflowers of a deep violet-blue colour showed on examination a cyanin content about 3.6 per cent.

In respect of (i.) above, it is a very interesting fact that whilst such cases as the Dahlia—of which the deep brown-red sorts contain cyanin, the scarlet-red kinds pelargonin—show how marked is the contrast of colour which the change from one of these pigments to another may cause, evidence has been collected which shows that in suitable circumstances the colours produced by the different colouring matters of this series may be so very nearly alike that no casual observer can differentiate between them.

The presence of yellow pigments when alone give rise to yellow or white flowers; in combination with reds, purples or blues, to scarlet, orange-red, salmon, orange, and green colours; it should be noted, however, that it is almost entirely the plastids—carotin, &c.—that are the active principles in giving rise to the yellow portion of these effects, the yellow

sap pigments being but very feebly coloured unless they are present as alkali salts. An instance of this may be given in the case of the deep yellow *Viola*; in a case examined it was found that the petals contained no less than 25 per cent. of their dry weight, of yellow sap pigment (Rutin), and only 0.6 per cent. of yellow plastid (carrotin), yet, despite this it was the plastid pigment to which the flower owed its colour, for after complete extraction of the sap pigment the petals were still orange-yellow, differing but very little from their original shade.

This brings us to the consideration of the effect of condition of cell sap, which is of great importance in view of the fact that all the sap pigments are more or less sharp indicators (i.e., substances which change colour when their solution changes from acid to alkali, or vice versa), but on account of the fact, already mentioned, that in most cases the yellow effects in flowers are due to plastid colours—which are not changed by change in cell sap—and that the sap yellows are but pale, and become colourless if slightly acid, the effect of change in acidity of the sap is by far more striking in the red, purple, and blue flowers. The scarlet of the *Polygonium zonale* (Meteor) results from the presence in the sap of plant acids, in the violet flowers of the Larkspur the sap is almost neutral, whereas the blue of the Cornflower is due to the potash salt of the colouring matter cyanin—this same pigment, cyanin, being responsible in acid cell sap for the red of the *Rosa gallica*. In general these colouring matters are red in the presence of acids, violet when neutral, and purple or blue when present as alkali salts.

Instances such as the above could be multiplied, but sufficient has been said to show the bearing that recent work in this field has upon horticultural and botanical problems.

SEEDS FOR ALLOTMENT HOLDERS.—The Food Department has issued the following table, giving the approximate quantities of each kind of seed sufficient for the purposes of the average allotment holder:—

Kind.	To sow up to about.	Quant. of seed.
Best, long, say 2 rows	100 ft.	1 oz.
Globe, say 2 rows	100 ft.	1 oz.
Spinach, say 2 rows	100 ft.	1 oz.
Bean, dwarf (double row)	50 ft.	1 pint.
Broad (double row)	50 ft.	1 pint.
Runner (double row)	50 ft.	1 pint.
Cabbage, &c.	—	1 oz.
For spring use (say 125 plants)	—	1 oz.
For autumn use (say 125 plants)	—	1 oz.
Savoy (say 125 plants)	—	1 oz.
Broccoli—	—	—
Early variety (say 50 plants)	—	1 oz.
Late variety (say 50 plants)	—	1 oz.
Sprouting (say 125 plants)	—	1 oz.
Brussels Sprouts (say 125 plants)	—	1 oz.
Cauliflowers—	—	—
Early variety (say 50 plants)	—	1 oz.
Late variety (say 50 plants)	—	1 oz.
Kale—	—	—
Curled (say 125 plants)	—	1 oz.
Flat (say 100 plants)	—	1 oz.
Carrot—	—	—
Long	75 ft.	1 oz.
Intermediate	75 ft.	1 oz.
Celery (say 100 plants)	—	1 oz.
Leek	90 ft.	1 oz.
Lettuce—	—	—
Cabbage	60 ft.	1 oz.
Onion	60 ft.	1 oz.
For spring or autumn sowing, for harvesting	120 ft.	1 oz.
For pulling green or pickling	45 ft.	1 oz.
Parsnip	75 ft.	1 oz.

Peas—		
Dwarf (double row)	40 ft.	1 pint.
Taller (double row)	40 ft.	1 pint.
Spinach	120 ft.	1 oz.

RULHLEN HORTICULTURAL SOCIETY.—An interesting report on Ruhlleben Camp Horticultural Society has been received through the Dutch Legation at Berlin. The Society was inaugurated on September 25, 1916. A committee was formed and permission was obtained to use a piece of waste land containing 10 rods, which was formed into a nursery. Public gardens were formed in various parts of the camp, and were planted with bulbs. The subscription was fixed at 1 mark, and by August 4, 1917, the membership was 921. All the woodwork of the frame-lights and greenhouse were made in the carpenter's shop by interned workmen, the glazing and construction being carried out by members of the society. Annuals were sown in large quantities and pricked out for transplanting to the gardens, besides about 20,000 Lettuces, Cabbages, and Cauliflowers, 1,500 Celery plants, 150

August 20, 1917, the total expenditure, including rent, amounted to M5,700.80; less refund from flower garden account, as per August 13, M81.45; Making the net total M5,119.35; and the total income from May 29 to August 20 amounted to M4,613.95, showing a balance to be cleared amounting to M500.40.

SUPPLIES OF BASIC SLAG.—The production of basic slag at the present time is being affected by the production of steel for munition purposes, and the supply of high grade slag is much less than formerly. As no export is now allowed, however, the quantity available for home consumption is larger, though still below the demand. Growers should obtain their supplies from the manure merchants, dealers, or co-operative societies from whom they usually purchase. They are recommended to place their orders at once, and to take the earliest possible delivery. The Food Production Department has come to an arrangement with makers in regard to the maximum prices to be charged by them, and the prices given below indicate the rate at



FIG. 47.—BARE-ROOTED CELERY AT ALDENHAM HOUSE, ESSEX.

Showing Mr. Burt's use of paper mulch for early and mid season crops.

(Photograph by R. A. Maltby.)

Marrows and 650 Tomato plants for outdoor cultivation. In addition to the spring flowers and bulbs, 20,000 plants were supplied for the barracks and public gardens. A flower and vegetable show was held on August 3 and 4, at which about 2,000 plants were staged. Through the kindness of the Ruhlleben officials the society has been able to procure a small quantity of stable manure, and the frames are utilised for the cultivation of Melons and Cucumbers. The committee has obtained permission from the military authorities to rent half of the inner part of the racing track for a vegetable garden, the rent being M100 per month. Digging operations were commenced on March 29, and were carried out under the supervision of a permanent paid staff of twelve men. About 250 men were employed. The soil was covered with rough grass, and was very sandy, streaked in places with a sandy loam. As soon as digging was finished, lime and artificial manures were hoed in, and sowing operations commenced. Arrangements are being made to procure seeds and manure, and as soon as the crops are off the ground digging operations will be recommenced, thus ensuring the prospects of still better crops next year. Up to

which growers should be able to purchase basic slag, excluding cost of delivery: For lots of 1 ton and over, 5s. per ton; for lots of 1 ton, but less than 4 tons, 10s. per ton; for lots of 2 cwt., but less than 1 ton, 1s. per cwt.; for lots of 1 cwt., but less than 2 cwt., 2s. per cwt.; for lots of 23 lb., but less than 1 cwt., 3s. per cwt.

PALM COURT FOR SWANSEA.—Swansea Corporation Park Committee has accepted an offer of Baroness CHRISTINA (Madame PATTI) to present the Corporation with the Palm Court at Craig-y-Neu, erected with heating apparatus, at a cost of £5,500. Madame PATTI's gift will form the nucleus of a winter garden, and it will be erected in the Victoria Park. The superintendent of Swansea public parks is Mr. D. BUSS, an old Kew man.

WAR ITEM.—Private JOHN BROADLEY, who was wounded in the right arm and chest by shrapnel on August 27, and is in hospital in France, was formerly a gardener at the People's Park, Skirbeck Quarter, of which his brother, Mr. T. BROADLEY, is head gardener.

Mr. J. K. BUDGE.—Among prominent representatives of Dutch horticulture well known to many in our own country is Mr. J. K. BUDGE, Curator of the Botanic Garden, Utrecht, who has just completed 25 years' service in that capacity. Mr. BUDGE first entered the Botanic Garden at Groningen in 1896. From there in 1898 he came to London, and was grower in the nurseries of Messrs. REVELS and SON, of Acton, cultivating Ferns and Poinsettias. Thence he proceeded to LAIRD'S Nursery at Edinburgh, where among other plants he grew Calceolarias, Cordinines, Orchids, and Aralias, and was the winner of several first prizes and a gold medal for groups. At the same time he was an evening student at the Heriot-Watt College, under Professor PATRICK GEDDES. Leaving this country, Mr. BUDGE became "Chef de culture" to Messrs. ANT. ROOZEN and SON, of Overveen, near Haarlem. The Botanic Garden at Utrecht is the most interesting establishment, and during the years of Mr. BUDGE'S service it has conspicuously reflected the care of its curator. In 1912 Mr. BUDGE was President of one of the sections of the International Exhibition at Chelsea. He has been a member of the Juries at Ghent, Petrograd, Mannheim, Hamburg and Amsterdam, and has been an official expert under the Phylloxera Convention. He is editor of the *Gardeners' Chronicle*, of Holland (*Ozei Tanteen*), and is head of a school for young gardeners. Those who have met Mr. BUDGE will remember his keen interest and energy in all that pertains to horticulture.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE ORIGIN OF THE POMPON DAHLIA.—A year ago I gave in these columns an account of my investigations, which proved that the Pompon Dahlia could not have been raised from Dahlia coccinea by Hartweg of Karlsruhe in 1808, as stated by certain writers. An eminent horticulturist in a neutral country shortly afterwards wrote to me confirming my contention that this section of the Dahlia was raised in Germany about the middle of the 19th century. His communication contained particulars of some researches he had made in German periodical horticultural literature, which he promised he would at a convenient opportunity still further extend, from many causes, but no doubt directly or indirectly connected with the war, he has not yet been able to attend to. In the meantime, I think it is important to place on record the information he has given to me, that his researches show most conclusively that the first Pompon Dahlia was raised by the well-known Dahlia specialist, J. Seckmann, of Kostritz, and distributed by him in 1851. The dwarf plants were then known as Liliputians, and the first coloured figure of them appeared in *Gartenflora* for 1852. C. Harman Payne.

THE EARWIG.—In the issue for September 1 your article dealing with this garden pest finishes with a reference to the old flowerpot trap method of capture. Admittedly good as this trap is, I think an old hollow stem of the Broad Bean is equally effective. Certainly the Bean stems are less unsightly and more easily managed. I use lengths of 6 to 8 inches, placing them among the lowest branches of bush fruit trees, or the pots of Chrysanthemums, on the ground under Dahlias, and among the grass tufts of lawn if necessary. The insect can be destroyed by tapping the ends of the Bean lengths on a vessel containing a little water with a dash of paraffin. Incidentally, the most up-to-date method (i.e., varnish method) is to use spent gun cartridges instead of flowerpots. I saw a quantity of cartridges so used in a large garden in Hertfordshire in 1915. C. T., *Amphill Park Gardens*.

EUSTOMA.—The almost pure white variety of Eustoma which W. T. mentions on p. 111, flowered at Kew in 1915, and must be identical with the one that flowered here in 1912. I did not consider it a good white, and marked it all over, but it has the same maroon

zone as the rose coloured form *Ellisii*. I did not intend to increase the stock of this except for crossing. It would be interesting to know whether the one flowered at Kew has a maroon zone in the centre. The beautiful colouring in the rose form is maintained as long as the flowers last, and it matters little whether it is a hybrid or a sport. One thing is almost certain, that I shall get double or semi-double flowers on the blue or maroon *Bussellianum*, as on two plants I have already got almost a double ring of petals, and the seed pods are divided, quite distinct from all the others. The rose coloured form is fixed, as all have come true from this batch except two small plants not yet in bud. C. J. Ellis, *Weston Super Mare*.

DETERIORATION OF POTATOS (see also p. 120).—The following history of the Midlothian Early Potatos at Wisley will answer Mr. Cuthbertson's inquiry in your issue of September 22. The seed tubers formed part of the crop raised in 1916 from seed purchased in Scotland. In 1916 the growth was excellent, clean, and vigorous, and the yield a very satisfactory one, 28 lbs. of "seed" giving 599 lbs. The seed tubers were selected when the crop was lifted, greened on the ground, put into boxes,

and were partially frozen on the journey; two or three tubers had to be replaced on this account, yet they grew away well, as the following notes, made on June 30, show:—Height, 24 inches; spread of haulm, 40 inches, in full flower. The yield was fairly good, 56 lbs. from twenty tubers, when lifted on August 3. The failure was apparently due to the seed tubers being affected by what is sometimes known as the "won't grow disease." The cause of this trouble is uncertain. It is, however, a trouble by no means confined to this variety, but quite general in Potatos grown in the south east of England (although not often so marked as in the present instance), and because of it the Scotch and Irish trade in seed Potatos flourishes exceedingly. It does not necessarily mean deterioration of a variety, but it does mean deterioration of a stock, as many know to their cost. F. J. Chittenden.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 25.—The fortnightly meeting held in the Drill Hall, Westminster, on Tuesday last, was the occasion of a special exhibition of vegetables. There were classes for collections and for single dishes, and the response was fairly good. A large and praiseworthy exhibit of vegetables was staged by Mr. E. R. JAMES, University College Gardens, Reading, for which a Gold Medal was awarded. Messrs. SUTTON and SON showed a comprehensive exhibit of Pumpkins, Gourds and Marrows. A noteworthy exhibit of Potatos was staged by Messrs. DOBBIE and Co., for which a Gold Medal was awarded. There were also several collections of hardy fruits, the most important being that of the Marquis of Ripon. The dried vegetables shown by the ALLIANCE VEGETABLE CO., LTD., included every variety that can be dehydrated, and formed an interesting demonstration of the art of drying. On the whole, the exhibition was more concerned with food produce than with flowers.

The exhibits before the Floral Committee were mainly Roses and Dahlias. The National Dahlia Society again adjudicated on Dahlia varieties, and many new varieties were submitted for award. Eleven received the Award of Merit of the R.H.S. and the First-class Certificate of the National Dahlia Society. The Floral Committee also conferred Awards of Merit on *Comstockia Willmottianum* and a new variety of *Michaelmas Daisy*.

Several groups of Orchids were staged, and the Orchid Committee granted two Awards of Merit to Novelties.

Floral Committee.

President: Messrs. H. B. May (chairman), R. C. Notcutt, S. Morris, W. J. Bean, G. Harrow, G. Reuther, John Green, J. T. Bennett-Poë, H. J. Jones, R. Hooper Pearson, W. Howe, J. Jennings, E. F. Hazleton, C. E. Pearson, F. Price Roberts, W. P. Thomson, John Heul, A. Tunner, E. H. Jenkins, J. Hudson, W. B. Cranfield, J. W. Barr, E. A. Bowles, H. Cowley, J. F. McLeod, J. Dickson, W. Cuthbertson, and Thos. Stevenson.

AWARDS OF MERIT.

Aster Joan Vaughan.—This new variety of *Michaelmas Daisy* belongs to the *Novi Belgii* section. The flowers are double, and coloured pale mauve; the individual blooms are 1½ to 2 inches across. The plant is said to grow 6 feet high, and to have very rigid stems, needing little support. Shown by Messrs. BAKER'S, LTD.

Ceratostigma Willmottianum.—This plant, which was shown by Miss E. WILLMOTT, Warley Place, Great Warley, closely resembles the well-known species *C. plumbaginoides*, commonly known in gardens as *Plumbago* *Larpetata*. This plant is figured in *Gard. Chron.*, Nov. 6, 1847, under the name of "Lady Larpet's Leadwort," soon after it had been shown at one of the Horticultural Society's meetings. The flowers of *C. Willmottianum* are of a rather paler blue than those of *C. plumbaginoides*, the anthers are very little exerted, and the leaves are hairy



MR. J. K. BUDGE, FOR 25 YEARS CURATOR OF THE UTRECHT BOTANIC GARDEN.

(See p. 131.)

and stored in a shed until December. They were then stood on end in sprouting trays and put into a glasshouse, where the minimum temperature was 40° F. They sprouted well and appeared in every way satisfactory when they were planted on April 4. They never grew well, and the weak, yellowish shoots contrasted in a remarkable fashion with the strong growth of nearly all the varieties (about 100) grown at Wisley this season. On lifting some in early June to see whether any pest had been at work upon them, it was found that in no case had the seed tuber decayed; it was, whether it had been planted intact or cut before planting, as solid to the feel as on the day it was put into the ground. It may be noted that the soil temperature at one foot from the surface on the day planting was done was 57.6° F., and it gradually rose thereafter. Other Potatos planted at the same time in similar conditions grew away well. In contrast with this, in one of the experimental plantings this year twenty well-sprouted tubers of Midlothian Early grown in Scotland, near Edinburgh, in 1916, were planted. They reached Wisley during the very

on both surfaces as well as on the margin. Furthermore, the buds are protected by leathery scales. Both species are hardy and easy to propagate; Miss Willmott, who has grown *C. Willmottianum* at Great Warley, states that it has grown into a shrub 5 feet high. The flowering time is particularly long, lasting from July to December, and the blossoms are produced in great profusion. The colour of the flowers is plumbeous to blue, with rosy-red corolla tubes; the leaves are green and hairy, with reddish margins, and the stems are also reddish. Shown by Miss E. WILLMOTT.

DAHLIAS.

Dahlia Transport.—A decorative variety of large size, but lacking in refinement. The creamy-yellow colour of the florets changes to a pale blush at maturity.

Snow Cloud.—A pure white Colerette Dahlia of medium size with very long quills. This and the foregoing were shown by Messrs. J. STREB- WICK AND SONS.

Mrs. Edward Moss.—A soft-pink coloured, Paeony-flowered variety of great value for garden and house decoration.

Sincerity.—A handsome Paeony-flowered Dahlia. The vivid crimson colour of the florets is enhanced by a golden centre.

Mark.—A scarlet Paeony-flowered variety of unusual substance. Like the last variety, it is well worthy of a place in any collection of this decorative type.

Cambria.—An exceedingly large, well-formed decorative bloom of soft-pink colouring which passes to nearly white at the tips, and the centre undeveloped florets are also almost white.

Planet.—A compactly formed Colerette Dahlia of velvety-maroon colouring. The quills are straw-coloured, with streaks of maroon. These five varieties were shown by Messrs. J. BURRELL AND SONS.

Fire King.—A somewhat star-shaped Coler- ette Dahlia. The scarlet florets are lightly tipped with golden yellow, and the quills are yellow streaked with scarlet. Shown by Mr. C. TURNER.

Autocrat.—A Colerette variety of almost sim- ilar colouring to the last, but a rounder, fuller bloom, though equally valuable for garden decora- tion.

Mrs. J. A. Jarrett.—A dull crimson Colerette variety, the florets tipped with mauve. The quills are flushed with purple. Both were shown by Mr. J. A. JARRETT.

Blush Star.—Another of the well-known star type of Dahlia, which is so valuable for decora- tive purposes. This variety is rather larger than the others, and is of a bright bluish colour. Shown by Messrs. J. CHURCH AND SONS.

The following medals were awarded to col- lectors:—

Silver Flora Medal to Messrs. F. CANN and Co., for Roses; and Messrs. H. B. MAY and Sons, for Ferns; *Silver Banksian Medal* to Messrs. B. R. CANN and Sons, for Roses; Messrs. J. CHURCH and Sons, for Dahlias; and autumn-tinted foliage; Messrs. ALAN DICKSON and Sons, for Roses; Mr. E. J. HINES, for Roses; Messrs. PIERCE'S, for bulbs; and ornamental shrubs; and Mr. J. B. BROWN, for Dahlias. *Bronze Flora Medal* to Messrs. ALLWOOD BROS., for Carnations; the Rev. J. H. PEMBERTON, for Roses; and Mr. J. C. ATTWOOD, for ROSA MOSSII. *Bronze Banksian Medal* to Messrs. W. WELLS, Junr., for hardy flowers.

Orchid Committee.

Present: Sir Jerningham Colman, Bart. (in the chair), Sir Harry J. Veitch, Messrs. Jas. O'Brien (hon. secretary), J. Wilson Potter, Arthur Day, William Bolton, Walter Cobb, Fred. K. Sander, Frederick J. Hanbury, E. R. Ashton, T. Ann- strong, R. A. Rolfe, J. E. Shill, H. G. Alex- ander and J. Charlesworth.

AWARDS OF MERIT.

Cattleya Iris Orchid-hybrid variety (Anaba) × *Doriana aurea*, from Messrs. ARMSTRONG and BROWN, Orchid-hybrid, Tunbridge Wells. A hand- some variety, and the tenth of this favourite cross to receive an award from the Orchid Com- mittee. The small plant bore a large and well- formed flower, the sepals and petals of which

were pale yellow tinged with a purplish bronze shade. The broad front lobe of the lip is deep rosy mauve, with a freckling of yellow at the base.

Brassia Cattleya Bene. The Birds (B.C. Mm., Chas. Maron × *C. Downiana aurea*), from Messrs. HASSALL and Co., Southgate. A large and deli- cately tinted flower, of a clear peach-blossom shade, with a deeper rose tint on the lip, the sides of which bear oblong yellow patches on a white ground, distinctly reminiscent of *Cattleya Warszewiczii*, which, with *Brassavola Digbyana*, produced B.C. Mm., Chas. Maron.

GENERAL EXHIBITS.

Messrs. ARMSTRONG and BROWN were awarded a Silver Flora Medal for a group of *Laelia Cattleyas* and other Orchids. The *Laelia Cattleyas* included fine white forms, the best of which was *C. Lady Veitch*. A fine pure white, home raised *Laelia primula alba* was also shown, and novelties included *Laelia-Cattleya Maupeda Saturata* (C. Lord Rothschild × L.C. Geo. Woodham), a finely-coloured flower, the chief feature of which was the distinct yellow blotches on the lip;

McNabiana (M. Bleuma × O. Edwards), bore a tall, many-flowered spike of rosy-mauve flowers.

Messrs. FLORY and BLAYK, Slough, showed a fine form of their *Laelia Cattleya Soulangue* (L.C. Lestre × C. Downiana aurea); the rose coloured flower has a broad, rusky purple lip.

Fruit and Vegetable Committee.

Present: Messrs. A. H. Peatson, vice chair- man, W. Pope, H. Markham, A. R. Allan, F. Jordan, J. C. Allgrove, J. Harrison, W. Bates, Owen Thomas, W. Poupert, W. Wilks, E. A. Bunyard, A. Bullock, and A. W. Metcalfe.

A Gold Medal was awarded to the UNIVERSITY COLLEGE, READING, for a collection of vegetables, representative of most kinds in season. All the produce was of the best quality, but the most notable sorts were New Red Inter- mediate and Scarlet Intermediate Carrots, Parsnips, Cucumbers, Late Queen Peas, Eclipse Tomatoes, Black Beet, Prizetaker Leeks, and Cranston's Excelsior, Exhibition, and Ailsa Craig Onions.

Messrs DOBBIE and Co. showed fifty baskets

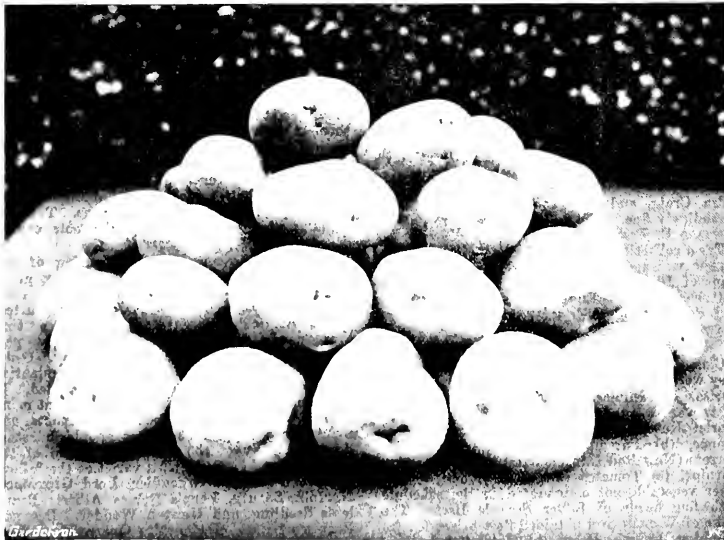


FIG. 46.—A BUDGET OF ONE BUSH OF WINDSOR CASTLE POTATO, CULTIVATED BY MR. EDWIN WOODMAN, SILWARD TO W. H. MYERS, ESQ., SWANMORE PARK, BISHOP'S WALTHAM. (The tubers numbered 497, 498, and their weight was 1 lb. 10.)

Odontoglossum W. E. Bissel (perispium Mossiae × *Mossii*), a large, bluish-white variety, with closely arranged purple blotches; and O. S. T. Wright, two-thirds of the inner parts of the segments of which were reddish violet, the margins and tips white.

Messrs. CHARLESWORTH and Co., Haywards Heath, were awarded a Silver Flora Medal for a group of showy hybrids; novelties included *Brassia Cattleya Solrano* (B. C. Mrs. J. Leeman × *C. tridesensis*), with primrose-coloured sepals and petals, and neatly formed fringed labellum with greenish-yellow disc; and *Cattleya Sirius* (Germania × *Tranee*), a great im- provement on *C. Germania grandulosa* (Hardyana), the flower being large, bright rose in colour, with ruby purple front to the lip, the shape of which indicates *C. grandulosa* but with more ample proportions.

Messrs. HASSALL and Co., Southgate, were awarded a Silver Flora Medal for a group of hybrids raised at Southgate. They had a fine *Cattleya Sabil*, several forms of *Brassia Cattleya Bene*, fine varieties of *Cattleya Regina*, good *Laelia Cattleya Romanica*, and L. C. Rhombus.

Messrs. SANDERS, St. Albans, were awarded a Silver Banksian Medal for a group in which the coming season of the *Cypripedium* was well de- monstrated by an excellent selection. *Odontonia*

of Potatoes, all of first-rate quality, staged on a ground of black velvet, with trails of Saxifax for decoration. Favorite, Prolific, Majestic, Witch Hill, Express, The Provost, Admiral, and King Edward, were represented by excellent speci- mens. At the back were seedling Potatoes, many of them of great promise. (Gold Medal.)

Messrs. SUTTON and Sons showed Marrows, Gourds and Pumpkins, for which a Silver Knightian Medal was awarded. The largest specimen was Sutton's Mammoth Pumpkin, and Long Green, Long White, and Long Yellow were the largest of the Marrows. Olmo and Hubbard Squashes (the former yellow and the latter deep olive-green) were also of large size, with a pointed apex.

Messrs. DICKSON and ROBINSON showed thirty tubers of their Premier Onions, many weighing 3½ lbs. each. They showed also some fine bulbs of the Royal Keeper variety, of a flatter shape.

The Marquis of EROSS, Coombe Wood, King- don Hill (22, Mr. Smith), showed a fine exhibit of handy fruits, for which a Silver Knightian Medal was awarded. Mr. J. C. ALLGROVE, Langley, Slough, showed boxes of Plum Cook's Golden Drop, Golden Transparent, and President, for which he obtained a Silver Banksian Medal. Mr. H. Cross, Ovington, also obtained a Silver Banksian Medal for Apples and Pears.

COMPETITIVE VEGETABLE CLASSES.

The most important class was for a collection of 12 kinds, distinct, to be selected from a published list. **W. H. MYERS, Esq.**, Swanmore Park, Hants (gr. Mr. G. Ellwood), won the 1st prize and the Sutton Challenge Cup. His best specimens were Carrot New Red Intermediate, Ailsa Craig Onion, and Best of All Tomato. The 2nd prize was won by **Mr. T. JONES**, Bryn Penylan, Raabon, 3rd, Duke of Wellington, Strathfield-saye House, Mortimer, Berkshire (gr. Mr. E. Matthews).

ESTACE PALMER, Esq., Sherfield on Lockdon, Basingstoke (gr. H. E. Wallis), won the 1st prize in the class for 9 kinds, his exhibit including fine specimens of Champion Horn Carrot, Best of All Tomato, Superlative Potato, and Gladstone Pea; 2nd, **Hon. Mrs. H. GREVILLE**, Polesden Lacey, Dorking (gr. Mr. H. Prince).

In Class 3, for 6 kinds, the 1st prize was awarded to **Miss E. BRADSHAW**, Steeple Aston, Oxon (gr. Mr. R. Wadhams), with a good exhibit including Ailsa Craig Onion, Best of All Tomato, and New Red Intermediate Carrot. The 2nd prize was won by **G. THORN, Esq.**, Welhamborough, Ashford, Kent.

J. B. FORTESCUE, Esq., Droppore, Maidenhead (gr. Mr. C. Page), was placed 1st in the class for a collection of 12 varieties of Potatoes. The 2nd prize was awarded to **Mrs. A. SMART**, Lansdowne, Abergole, Denbighshire (gr. Mr. R. Rogers). In Class 5, for 6 varieties of Potatoes, there were three competitors, **G. THORN, Esq.**, Willesborough, Kent (gr. Mr. Hood), and **W. H. MYERS, Esq.**, were awarded the 1st and 2nd prizes respectively. **Mr. MYERS** gained the 1st prize in Class 6, for a collection of Onions, White Italian, Blood Red, Ailsa Craig, and Brown Globe varieties being exceedingly fine. The 2nd prize was awarded to **ESTACE E. PALMER, Esq.**

For a collection of salads, 6 distinct kinds, **Mr. MYERS** was again successful, showing fine specimens of Ideal Cucumber, All the Year Round Lettuce, Batavian Endive, Perfection Tomatoes, and Superb Pink Celery; 2nd, **Miss E. BRADSHAW**.

SINGLE DISH CLASSES.

Classes 3 to 38 were all for single dishes, and they were, on the whole, well contested, and some meritorious exhibits were shown. **Miss E. BRADSHAW** was awarded the 1st prize in classes for (a) Scarlet Runner Beans, with the Variety Prize-winner, (b) Parsnip (Tender and True), (c) Carrots (New Red Intermediate), (d) Purple Top Turnips, (e) Tomatos (Perfection), and of any other vegetable not enumerated in the schedule with fine heads of Silver Snake Beet. The Duke of Wellington obtained first prizes for (a) Climbing French Bean, (b) Peas (Gladstone), and (c) Curled Kale. **Mrs. JENNER** was placed 1st among ten competitors for Globe Beet, and for Onions with splendid bulbs of Premier variety. **Sir MOSTYN TURPIN**, Bodfords, Havering, Romford (gr. Mr. A. J. Barrett), gained the 1st prize for Long Beet with good roots of Sutton's Black variety. **Mr. TOM JONES**, Bryn Penylan, Raabon, was successful in a number of classes, gaining 1st prizes for (a) Brussels Spouts (Exhibition), (b) Cauliflowers (Autumn Mammoth), (c) White Celery (Giant White), (d) Red Celery (Aldeham Pink), (e) Leeks (International), (f) Vegetable Marrows, (g) Stump-rooted Carrots (Mod.), (h) White Turnips (Mod.), (i) Yellow-fleshed Turnips, and (j) Yellow Tomatos.

Lady GOWER, Panshanger, Hertford (gr. Mr. R. Staward), showed the best three plants of Brussels Spouts with the variety Silver-on. The Hon. **Mrs. R. GREVILLE** obtained the first place among seven competitors for Cabbage with Wheeler's Imperial. **Mr. ESTACE PALMER** obtained the 1st prize in the class for Savours with the variety Perfection, and he showed the best Cucumbers with the variety Delicacy. **Mr. W. H. MYERS** was awarded the 1st prizes for Celestine and for coloured Potatoes (King Edward). **Mr. G. THORN** was awarded the 1st prize in the class for white Potatoes, with the variety Excelsior.

The Champion Challenge Cup, which was offered to the winner of the greatest number of 1st prize points throughout the exhibition (the winner in Class 1 excluded), was awarded to **Miss E. BRADSHAW**.

CROPS AND STOCK ON THE HOME FARM.

POULTRY IN THE ORCHARD.

ANOTHER season's experience has given further proof of the value of poultry in the orchard, whether the ground is under grass or cultivated. In my case the poultry run over the orchard all the year round. The trees show a marked improvement in appearance, especially in the colour of the leaves. In a Nut orchard, which was run over for several years by turkeys and ducks, the crops of Lord Grosvenor Apples planted among the Nut bushes gave this year an unusually heavy crop of huge, highly coloured fruits. The trees have not had manure in any other form since they were planted six years ago.

Apart from the manurial value of poultry, they aid considerably in keeping the trees free from Winter Moth caterpillars, especially when the surface is cultivated. They destroy many moths and caterpillars as they fall off the trees in June and July.

PRUNING ORCHARD TREES.

A STANDARD trained Apple tree thirty years old should give full crops of fruit from the tips of the branches to the centre of the tree, and should have a diameter of 30 to 40 feet. All branches should be trained on the cordon principle. Trees properly managed from the beginning do not require very much pruning to keep them in a thriving condition. Directly the fruit is gathered remove useless branches, cutting away all weakling growths to admit air, sunshine and light to the centre of the tree. Before the leaves fall a better idea can be obtained of the space required for the main branches. The final pruning of the current season's shoots can be done later.

Make arrangements for the planting of new orchards or for renovating old ones by grafting improved varieties upon them. Trees under thirty years old can be grafted, and will make larger trees in less time than newly planted ones. The early part of April is the season for grafting. Order the trees early to ensure good results by planting in October, before the soil becomes chilled. In a commercial orchard it is unwise to plant many varieties. Ascertain the local requirements, and plant accordingly. The trees should be standards, in view of the future utilisation of the grass for cattle. Of kitchen varieties the following are desirable: Grenadier, Lord Grosvenor, Norfolk Beauty, Lane's Prince Albert, Bramley's Seedling, and Newton Wonder. Dessert: Beauty of Bath, Devonshire Quarrendon, Worcester Pearmain, James Grieve, Allington Pippin, Blenheim Pippin, and Cox's Orange Pippin. They are placed in their order of ripening. The stations should be deeply trenched where the subsoil is stiff and of an impervious nature, to ensure good drainage. An inert, close subsoil is a cause of canker, Lichen infested wood, and silver leaf disease. *B. Molinaria*.

ANSWERS TO CORRESPONDENTS.

BOX EDGING: Constant Reader. The best time to plant Box edging is in February or March, provided the weather is favourable. Care should be taken that the plants do not suffer from drought afterwards, frequent waterings being necessary in dry weather. If a few plants are put in an odd corner at the same time they will be useful for filling gaps that may occur in the hedge during the first year of planting.

COOKING KOHL RABI: W. G. D. The common method is to peel the roots, cut them into four parts, and boil them for twenty minutes or half an hour, according to their age. A better method is to select the roots of the size of a cricket ball, boil them first, and then peel them. When cut into quarters or slices, the boiling in that condition washes out most of the flavour from the roots. We have never known any injury caused by eating Kohl Rabi cooked in the manner described.

NAMES OF FRUITS.—In the naming of fruits, we desire to oblige our correspondents as far as we can, but the task would become too costly and too time-consuming were there no restrictions. Correspondents should observe the rule that NOT MORE THAN SIX VARIETIES be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. The fruits should be just approaching ripeness, and they should be properly numbered, and carefully packed in strong boxes; cardboard is often smashed in the post. A leaf or shoot of each variety is helpful, and in the case of Plums, Peaches and Nectarines, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. By neglecting these precautions, correspondents add greatly to our labour and run the risk of increased delay and incorrect determination. We do not undertake to send answers through the post, or to return fruits. Fruits and flowering plants must not be sent in the same box. Delay in any case is unavoidable.

D. Mather and Co., Emperor Alexander.—*G. C. Ltd.*, 1, Marie Louise; 2 and 3, over Ripae; 4, General Todleben; 5, Pitt-naston Duchess; 6, Emile d'Heest.—**W. H. Reimete du Canada**.—*P. B. Waddy*, 1, Flower of Kent; 2, Afriston; 3, Annie Elizabeth.—*Chersmann*, Bielo Borodavka.—*G. R. I.*, Cellini; 2, Lane's Prince Albert.—**H. D.**, 1, The Queen; 2, Cellini; 3, King of the Pippins.—*J. P. C.*, 5, Deans' Codlin; 5, Scarlet Nonpareil; 6, Margil; 10, Cox's Orange Pippin; 11, Ribston Pippin; 13, King of the Pippins; 14, Lemon Pippin; 4, Fearn's Pippin; 4, Ribston Pippin.—*J. P. M.* 1 and 2, Williams' Bon Chrétien; 3, Hayshe's Victoria; 4, Durondeau; round bronze Pear, comte de Lamy; green Pear, Beurré Diel; 7, Apple Northern Greening; 8, Winter Greening.—*C. B.*, Sheep's Nose.—*D. H. D.*, 1, Not recognised; 2, too small to recognise; 3, Beauty of Bath; 4, decayed; 5, King of the Pippins; 6, Hanwell Soring; 7, Irish Peach.—*Essex*.—1, Dumelow's Seedling (syn. Wellington); 2, Ribston Pippin; 3, decayed; 4, Duke of Devonshire; 5, Afriston; 6, Scarlet Golden Pippin.—*W. D. and S.*, 1, Harvey's Wiltshire Defiance; 2, Granger's Pearmain; 3, Beurré d'Amaluis.—*J. S.*, Pear Williams' Bon Chrétien (the fruits will not keep long after they are gathered.—*J. W. M.*, 1, Lane's Prince Albert; 2, Dumelow's Seedling (syn. Wellington); 3, Cackle Pippin; 4, Hollandbury; 5, Sturmer Pippin; 6, Tower of Gammis; 8, not recognised; 3, Cox's Orange Pippin; 10, Woodcock.—*I. P. B.*, 1, Apple Hoary Morning (late September); 3, Lord Suffield; 4, Pear Catillac (October); 5, Apple Dumelow's Seedling (syn. Wellington); 6, Apple Gascoyne's Scarlet (late September or October); 7, Apple Warner's King (late September); 8, Apple Worcester Pearmain (early September); 9, Sturmer Pippin (late October or November); 10, Pear, decayed; 11, Apple Cox's Orange Pippin (late September); 2 and 12, Apple Lane's Prince Albert (late September).

NAMES OF PLANTS. Correspondents not answered in this issue are requested to be so good as to consult the following number:—*Miss L.*, Ceropogon Woodii.

SCALE INSECTS ON PEACH TREES: Constant Reader, Wilton. Scrub the main branches when the plants are defoliated with soft soap and paraffin, taking care to dislodge the scales. Afterwards deal with the smaller branches. This method takes more time than syringing, but a thorough scrubbing will remove the scale entirely. Give the woodwork of the house a thorough cleansing after the trees have been dealt with.

TOMATOS ATTACKED: P. H. The fly is the "White Fly," or Aleyrodes. Fumigate the house in which the plants are growing with a nicotine vaporising compound. Full directions for use are issued with the compound, which you can purchase from any horticultural sundriesman. Keep the Tomato house well ventilated.

Communications Received.—*C. M. L.*, *L. J. L.*, *A. L. W.*, *W. C.*, *W. S.*, *B. J. T.*, *E. H. M.*, *L. L.*, *T. W. B.*, *W. G. C.*, *G. A.*, *C. H. W.*, *E. M. L.*, *Enquiry*—*A. W. G.*, *J. K.*, *A. K.*, *J. T. M.*, *O. R.*, *M.*, *M.*, *H. V.*, *F. W.*, *E. D.*, *Ridger*—*H. W. D.*—*Gamer T. Oliver*—*A. J. C.*—*Arthur W. S.*

MARKETS.

COVENT GARDEN, September 26.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eds.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing prices for various plants in pots, including Aralia Sieboldii, Asparagus plumosus, and others. Columns include plant name, quantity, and price.

REMARKS: There is only a moderate supply of plants. Small Ericas are improving in quality. Kalmia are the latest addition in this department.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing prices for cut flowers and other items, including Asters, Carnations, and Chrysanthemums. Columns include item name, quantity, and price.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing prices for cut foliage and other items, including Adiantum Maiden Hair Fern, Asparagus, and others. Columns include item name, quantity, and price.

REMARKS: The quotations and supplies are similar to those in our last week's issue. There are gradually clearing, although some fine blooms of the following sorts are available: Mme. A. Chabouat, Melody, Molly, Shamrock, Cranford, Doll Love, Liberty, Sunburst, and Wellington. Violets are more plentiful. A few bunches of double Marigolds are arriving, but they come thick the effect of the mild weather. White Asters are finishing. A few boxes of double White Stocks are still being received in excellent condition. Some very fine spikes of Nemesis are also received, which are effective for decorative purposes. There are only very limited supplies of French blooms, but a few good Cupressidiums are being

Vegetables: Average Wholesale Prices.

Table listing prices for various vegetables, including Artichokes, Beans, Beetroot, Brussels Sprouts, and others. Columns include vegetable name, quantity, and price.

Fruit: Average Wholesale Prices.

Table listing prices for various fruits, including Almonds, Apples, Apricots, and others. Columns include fruit name, quantity, and price.

REMARKS: The market is well supplied with Apples, but the supply is not so good as last week. The bulk of the supply is still in the hands of the growers, and the market is not so well supplied as last week. The supply of Apples is not so good as last week. The bulk of the supply is still in the hands of the growers, and the market is not so well supplied as last week. The supply of Apples is not so good as last week. The bulk of the supply is still in the hands of the growers, and the market is not so well supplied as last week.

DEBATING SOCIETIES.

BATH GARDENERS'. The meeting of the society, held in the Forester, Hill on the 10th inst., was devoted to a discussion on the subject of 'The English Garden'. The meeting was presided over by Mr. F. Purcell, Chairman of the society. A number of papers were read, and the subject was discussed in a most interesting manner. The meeting was held in the Forester, Hill on the 10th inst., was devoted to a discussion on the subject of 'The English Garden'.

GARDENING APPOINTMENT

Mr. J. Irvine, 11, York Park Gardens, Epsom, Surrey, is a Gardener at Bradley Gardens, Guildford, and wishes to be put on the list for Gardening at the Benedictine Institution, Exeter.

CATALOGUES RECEIVED.

CHARLES TURNER, Royal Nurseries, Slough, Bucks. D. C. PERREN, 6, Waterloo Street, Glasgow. JAMES McKEOWN, 7, Finch Road, Upper Belvoir, Huddersfield, Bucks. JAMES CARTER & Co., Roydon Park, London. Bucks.

SCHEDULE RECEIVED.

National Chrysanthemum Society. Exhibition to be held in the London Scottish Drill Hall, Backingham Gate, Westminster, on Tuesday, November 6, 1917.

SITUATIONS WANTED. (Continued from page 11.)

GARDENER (HEAD WORKING); thoroughly experienced, married, good references. (Exempt from military service), and useful, possess some wages. GARDENER, 13, London Road, E. 1st, Greenwich. GARDENER (HEAD WORKING), where one can come and go, a rough experience of all kinds. Inside and outside, plants, &c. (see family), good references. See also J. W. STILES, 101, Leighton, Finsbury, W. 1st, West Ham, Kent. POST under Head Gardener, Yorkshire, (preferred W. L. E. J. 31, Wellington Street, Covent Garden, W. C. 2.) SITUATION required for Kitchen Gardener and Pleasure Grounds, 125, 127, 129, well known, mixed A. H. 4, 3, 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th, 101st, 102nd, 103rd, 104th, 105th, 106th, 107th, 108th, 109th, 110th, 111th, 112th, 113th, 114th, 115th, 116th, 117th, 118th, 119th, 120th, 121st, 122nd, 123rd, 124th, 125th, 126th, 127th, 128th, 129th, 130th, 131st, 132nd, 133rd, 134th, 135th, 136th, 137th, 138th, 139th, 140th, 141st, 142nd, 143rd, 144th, 145th, 146th, 147th, 148th, 149th, 150th, 151st, 152nd, 153rd, 154th, 155th, 156th, 157th, 158th, 159th, 160th, 161st, 162nd, 163rd, 164th, 165th, 166th, 167th, 168th, 169th, 170th, 171st, 172nd, 173rd, 174th, 175th, 176th, 177th, 178th, 179th, 180th, 181st, 182nd, 183rd, 184th, 185th, 186th, 187th, 188th, 189th, 190th, 191st, 192nd, 193rd, 194th, 195th, 196th, 197th, 198th, 199th, 200th, 201st, 202nd, 203rd, 204th, 205th, 206th, 207th, 208th, 209th, 210th, 211st, 212th, 213th, 214th, 215th, 216th, 217th, 218th, 219th, 220th, 221st, 222nd, 223rd, 224th, 225th, 226th, 227th, 228th, 229th, 230th, 231st, 232nd, 233rd, 234th, 235th, 236th, 237th, 238th, 239th, 240th, 241st, 242nd, 243rd, 244th, 245th, 246th, 247th, 248th, 249th, 250th, 251st, 252nd, 253rd, 254th, 255th, 256th, 257th, 258th, 259th, 260th, 261st, 262nd, 263rd, 264th, 265th, 266th, 267th, 268th, 269th, 270th, 271st, 272nd, 273rd, 274th, 275th, 276th, 277th, 278th, 279th, 280th, 281st, 282nd, 283rd, 284th, 285th, 286th, 287th, 288th, 289th, 290th, 291st, 292nd, 293rd, 294th, 295th, 296th, 297th, 298th, 299th, 300th, 301st, 302nd, 303rd, 304th, 305th, 306th, 307th, 308th, 309th, 310th, 311st, 312nd, 313th, 314th, 315th, 316th, 317th, 318th, 319th, 320th, 321st, 322nd, 323rd, 324th, 325th, 326th, 327th, 328th, 329th, 330th, 331st, 332nd, 333rd, 334th, 335th, 336th, 337th, 338th, 339th, 340th, 341st, 342nd, 343rd, 344th, 345th, 346th, 347th, 348th, 349th, 350th, 351st, 352nd, 353rd, 354th, 355th, 356th, 357th, 358th, 359th, 360th, 361st, 362nd, 363rd, 364th, 365th, 366th, 367th, 368th, 369th, 370th, 371st, 372nd, 373rd, 374th, 375th, 376th, 377th, 378th, 379th, 380th, 381st, 382nd, 383rd, 384th, 385th, 386th, 387th, 388th, 389th, 390th, 391st, 392nd, 393rd, 394th, 395th, 396th, 397th, 398th, 399th, 400th, 401st, 402nd, 403rd, 404th, 405th, 406th, 407th, 408th, 409th, 410th, 411st, 412nd, 413th, 414th, 415th, 416th, 417th, 418th, 419th, 420th, 421st, 422nd, 423rd, 424th, 425th, 426th, 427th, 428th, 429th, 430th, 431st, 432nd, 433rd, 434th, 435th, 436th, 437th, 438th, 439th, 440th, 441st, 442nd, 443rd, 444th, 445th, 446th, 447th, 448th, 449th, 450th, 451st, 452nd, 453rd, 454th, 455th, 456th, 457th, 458th, 459th, 460th, 461st, 462nd, 463rd, 464th, 465th, 466th, 467th, 468th, 469th, 470th, 471st, 472nd, 473rd, 474th, 475th, 476th, 477th, 478th, 479th, 480th, 481st, 482nd, 483rd, 484th, 485th, 486th, 487th, 488th, 489th, 490th, 491st, 492nd, 493rd, 494th, 495th, 496th, 497th, 498th, 499th, 500th, 501st, 502nd, 503rd, 504th, 505th, 506th, 507th, 508th, 509th, 510th, 511st, 512nd, 513th, 514th, 515th, 516th, 517th, 518th, 519th, 520th, 521st, 522nd, 523rd, 524th, 525th, 526th, 527th, 528th, 529th, 530th, 531st, 532nd, 533rd, 534th, 535th, 536th, 537th, 538th, 539th, 540th, 541st, 542nd, 543rd, 544th, 545th, 546th, 547th, 548th, 549th, 550th, 551st, 552nd, 553rd, 554th, 555th, 556th, 557th, 558th, 559th, 560th, 561st, 562nd, 563rd, 564th, 565th, 566th, 567th, 568th, 569th, 570th, 571st, 572nd, 573rd, 574th, 575th, 576th, 577th, 578th, 579th, 580th, 581st, 582nd, 583rd, 584th, 585th, 586th, 587th, 588th, 589th, 590th, 591st, 592nd, 593rd, 594th, 595th, 596th, 597th, 598th, 599th, 600th, 601st, 602nd, 603rd, 604th, 605th, 606th, 607th, 608th, 609th, 610th, 611st, 612nd, 613th, 614th, 615th, 616th, 617th, 618th, 619th, 620th, 621st, 622nd, 623rd, 624th, 625th, 626th, 627th, 628th, 629th, 630th, 631st, 632nd, 633rd, 634th, 635th, 636th, 637th, 638th, 639th, 640th, 641st, 642nd, 643rd, 644th, 645th, 646th, 647th, 648th, 649th, 650th, 651st, 652nd, 653rd, 654th, 655th, 656th, 657th, 658th, 659th, 660th, 661st, 662nd, 663rd, 664th, 665th, 666th, 667th, 668th, 669th, 670th, 671st, 672nd, 673rd, 674th, 675th, 676th, 677th, 678th, 679th, 680th, 681st, 682nd, 683rd, 684th, 685th, 686th, 687th, 688th, 689th, 690th, 691st, 692nd, 693rd, 694th, 695th, 696th, 697th, 698th, 699th, 700th, 701st, 702nd, 703rd, 704th, 705th, 706th, 707th, 708th, 709th, 710th, 711st, 712nd, 713th, 714th, 715th, 716th, 717th, 718th, 719th, 720th, 721st, 722nd, 723rd, 724th, 725th, 726th, 727th, 728th, 729th, 730th, 731st, 732nd, 733rd, 734th, 735th, 736th, 737th, 738th, 739th, 740th, 741st, 742nd, 743rd, 744th, 745th, 746th, 747th, 748th, 749th, 750th, 751st, 752nd, 753rd, 754th, 755th, 756th, 757th, 758th, 759th, 760th, 761st, 762nd, 763rd, 764th, 765th, 766th, 767th, 768th, 769th, 770th, 771st, 772nd, 773rd, 774th, 775th, 776th, 777th, 778th, 779th, 780th, 781st, 782nd, 783rd, 784th, 785th, 786th, 787th, 788th, 789th, 790th, 791st, 792nd, 793rd, 794th, 795th, 796th, 797th, 798th, 799th, 800th, 801st, 802nd, 803rd, 804th, 805th, 806th, 807th, 808th, 809th, 810th, 811st, 812nd, 813th, 814th, 815th, 816th, 817th, 818th, 819th, 820th, 821st, 822nd, 823rd, 824th, 825th, 826th, 827th, 828th, 829th, 830th, 831st, 832nd, 833rd, 834th, 835th, 836th, 837th, 838th, 839th, 840th, 841st, 842nd, 843rd, 844th, 845th, 846th, 847th, 848th, 849th, 850th, 851st, 852nd, 853rd, 854th, 855th, 856th, 857th, 858th, 859th, 860th, 861st, 862nd, 863rd, 864th, 865th, 866th, 867th, 868th, 869th, 870th, 871st, 872nd, 873rd, 874th, 875th, 876th, 877th, 878th, 879th, 880th, 881st, 882nd, 883rd, 884th, 885th, 886th, 887th, 888th, 889th, 890th, 891st, 892nd, 893rd, 894th, 895th, 896th, 897th, 898th, 899th, 900th, 901st, 902nd, 903rd, 904th, 905th, 906th, 907th, 908th, 909th, 910th, 911st, 912nd, 913th, 914th, 915th, 916th, 917th, 918th, 919th, 920th, 921st, 922nd, 923rd, 924th, 925th, 926th, 927th, 928th, 929th, 930th, 931st, 932nd, 933rd, 934th, 935th, 936th, 937th, 938th, 939th, 940th, 941st, 942nd, 943rd, 944th, 945th, 946th, 947th, 948th, 949th, 950th, 951st, 952nd, 953rd, 954th, 955th, 956th, 957th, 958th, 959th, 960th, 961st, 962nd, 963rd, 964th, 965th, 966th, 967th, 968th, 969th, 970th, 971st, 972nd, 973rd, 974th, 975th, 976th, 977th, 978th, 979th, 980th, 981st, 982nd, 983rd, 984th, 985th, 986th, 987th, 988th, 989th, 990th, 991st, 992nd, 993rd, 994th, 995th, 996th, 997th, 998th, 999th, 1000th.

By Special Appointment to  His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

NOTICE TO SEEDSMEN, NURSERYMEN, MARKET GARDENERS, FRUIT-GROWERS, HORTICULTURAL BUILDERS, BOILER MAKERS, COAL MERCHANTS, AND SUNDRIESMEN.

Revision forms for the "Gardeners' Chronicle" HORTICULTURAL DIRECTORY have been posted to all the above whose names are already in the Directory. In order to facilitate the early publication of the revised edition for 1918, it is requested that the forms, with the necessary corrections, be returned **AS SOON AS POSSIBLE**. It is only by the co-operation of all interested in Horticulture that the new edition of this invaluable work of reference can be made perfect.

Anyone in the above categories who has failed to receive a form should send for one to

THE EDITOR, Horticultural Directory,
41, Wellington St., Strand, London, W.C. 2.

SALES BY AUCTION.

BULBS.

MESSRS. PROTHEROE & MORRIS are holding Sales of Bulbs every Monday, Wednesday, and Friday. Sixpence in stamps will ensure a supply of weekly catalogues. Catalogues sent to AUCTOR ROOMS, 67 and 68, Cheapside, London.

HOME-GROWN BULBS. GREAT TRADE SALE.

Wednesday Next, October 10th, at 1 o'clock.

Cypriots of 2,000,000 Bulbs, including Narcissus, in all the best-known varieties for forcing or planting out. Early, Darwin (many of which will force) and Mrs. Polyanthus Narcissus of sorts, in sacks as received. Early, Darwin (many of which will force) and Mrs. Polyanthus Tulips; many thousands of Snowdrops, Freesias, Scillas, Anemones, Aconites, English and Spanish Iris, early-growing Gladioli, Bearded Iris.

MESSRS. PROTHEROE & MORRIS will sell the above by Auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2. Catalogues forwarded on application.

DUTCH BULBS.

TO BE SOLD BY PUBLIC AUCTION, by order and for account of the Marshal of the Admiralty, by

MESSRS. PROTHEROE & MORRIS at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2.

On Wednesday, October 17th, at 3 o'clock. 5 buns Vegetables, ex ss. "Buddijk," per "Hetsy Anna," 10 baskets Plants, ex ss. "James Dickson,"

202 CASES & BASKETS DUTCH BULBS, ex ss. "Old Wijk" Comprising Bionnias, Tulip, Narcissus in variety, &c. The goods will be sold subject to Government restrictions as to export. Indulgent particulars in catalogue, to be obtained of the Auctioneers, as above.

THE WOOD LANE NURSERY, ISLEWORTH, MIDDLESEX.

Charitable Sale of the whole of the extensive stock of Mr. L. R. Russell, ex ss. particularly in town planting, by Order of the Trustee.

MESSRS. PROTHEROE & MORRIS will sell by Auction on the premises as above, On Monday and Tuesday, October 15th and 16th, at 12 o'clock each day,

- 2,000 Eranthis, golden and white, 2000 Tree Ferns, gold and silver, 2,000 Golden Pinks, 1,000 Jasmines and other climbing, 2,000 Box, in variety, 1,000 Anemons, 15,000 Clematis, 1,000 Polyantus, 4,000 Dahlie, Meteorium, and others, 700 Garrya elliptica.

Also the beneficial interest in the property of the Nursery, 5 acres, with cottage, stabling, and buildings, held at £61 per annum, and numerous Greenhouses, which are the property of the tenant, and which will be included in the purchase.

May be viewed. Catalogues can be had on the premises, at the Nurseries, Richmond, of F. Mason, Esq., F.C.A., The Trustee, 64, Grosvenor Street, E.C. 4; or of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2. N.B.—The lease of the Home Nursery at Richmond is also for sale, together with the goodwill. Particulars of the conditions.

THE OLD NURSERIES, CESHUNT, AND THE NURSERIES, HIGH BEECH, ESSEX.

Important Sale, by order of Messrs. Paul & Son (Ceshunt), Limited, who are relinquishing the business in consequence of the retirement of Mr. George Paul. MESSRS. PROTHEROE & MORRIS will sell by Auction on the premises as above, On Wednesday, October 17th, and two following days,

the best portion of the extensive Stock, Specimen Conifers, Ornamental Evergreens, New Chinese, and other Shrubs of recent introduction, thousands of ornamental and flowering Trees, one of the finest collections in the country, Standard Limes and Planes, many hundreds of Palms.

Standard Pyramid and Dwarf-trained Fruit Trees, 100 Standard and Bush Malbarines, Præver in quantity, 1,000 Rhododendrons, well loaded, best named varieties, including Paul's new Fortune hybrids, Pink Pearl, and others, 1,000 named gold, silver, and other Bulbs, 2 to 8 inch Green Bulbs for hedges, Azalea Mollis. May be viewed. Catalogues can be obtained at the respective Nurseries, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C. 2. N.B. The Freehold Nurseries at Lind are for sale.

MESSRS. WALTERS' RUSTIC WORKS, AMBERLEY GROVE, CROYDON.

ROBT. W. FULLER, MOON & FULLER will sell by Auction on the premises, On Tuesday, October 9th, at 11 o'clock, the whole of the valuable STOCK IN TRADE, MACHINERY, and PLANT, by Order of the Executors, of the late Mr. Robert Fuller, of the premises, 15, High Street, Croydon, and at Purley and Epsom.

NOTICE.

Sale by Auction on October 19th, AT THE BULB FARM, TERRINGTON ST. CLEMENT, KING'S LYNN, commencing at 11 o'clock.

To meet the requirements of the War Agricultural Committee of this district, and on account of shortage of labour, Mr. Frank Ley will be compelled to sell, at his farm at Terrington St. Clement, without reserve, about

1,500,000 to 2,000,000 BULBS

of forcing and planting size, in the following varieties: Omnis, Double White, Grande, Bata, Hot-field, Victoria, Campanella's Regulus, Lappes, Watton, Solihull Phoenix, Tulip, Mirella, Grande, de la Cour, Holland, Prince of Austria, Le Roman, Phoenix, Downy China Bell, Favourite, Sander, Bata de la Fertigue, and others, in quantities to suit all buyers. Also will be offered at the same time a few tons of bog material, in lengths suitable for bog raising, from 2 1/2 to 4 long, and in the form of fine banks of peat 1 1/2, 2, and 10 1/2, spruce grass, 1 1/2, 2 1/2, and about the same quantity in 1 1/2 x 1 1/2 x 1/2, by almost one long hump to 2. No catalogue, but varieties will be labelled on the flats where they have been laid, and sold there, per van or lorry. Full particulars in this form.

BUSINESS FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORESTY AND SEED BUSINESSSES to be Let or Sold. Published by

MESSRS. PROTHEROE & MORRIS every month. Copies may be obtained post free on application—Estate Offices, 67 and 68 Cheapside, London, E.C.

BUSINESS CARD.

R. H. S. EXAM.—Correspondence class, preparing Gardeners and students, start October, brilliant past records; prospectus—MEDALLIST, Pughle, Letheringsett, Holt, Norfolk.

PROPERTY TO LET.

THE BARLEY FERRY, LAMER T. A. 1/2 acre, Market Gardeners, and other, from 10 to 15, 10/6 per week.

TO be LET, from Christmas, 1917, the whole well-known GARDENS, known as the Woodland Nurseries, for many years past in the neighbourhood of the late Mr. John Keywell, situate in the parish of St. Thomas the Apostle, and within one mile of the centre of the City of Exeter, comprising

- 10 1/2 P. (1/2 acre) 10 1/2 P. (1/2 acre) 15 0 14 (1/2 acre) 5 1 2 (1/2 acre)

The buildings consist of a factory, 160 x 212 ft. and commodious Dwelling-house, and ample accommodation for storing and packing fruit, a Carpenter's Shop, Stable, Washhouse, Washhouse, Pigsties, Cart, and other sheds.

The Gardens contain a stock of 2 1/2 the choicest sorts of standard Apple, Pear, Plum, and Cherry Trees, Gooseberries, and Currant Bushes, and Raspberry Canes. There is also Pear, Plum, and Cherry Trees on about 4000 bush of wall.

The whole Stock consists of about 7,000 Trees and 25,000 Bushes. The great part of it was planted by Mr. Keywell, who was in excellent judge of the most profitable and profitable sorts of Fruit to grow. The whole is now the property of the Landlord, and will be included in the letting.

Further particulars with permission to view, may be obtained, and the form of Lease Agreement inquired, at the offices of MESSRS. J. & H. DREW, 15, Queen Street, Exeter, Land Agents, and Surveyors.

SPECIAL NOTICES.

MR. R. GREENFIELD begs to remind all friends that, although engaged on National Service work, he continues Malton representative to John Paul & Son. Orders this season will be very much appreciated, and may be directed either to the firm at West Woodford, or to Mr. R. GREENFIELD, 61, Radford Road, Leamington Spa.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, good plants, suitable for stock; cash or exchange. See other advertisements; catalogues free.—SMITH, Logan's Fern Nursery, Loughborough Junction, London, S.W.

WANTED, choice Fruit, Flowers, and Vegetables; best market prices returned; boxes &c. sent. Surplus stock from Gardens accepted.—MORLE & CO., 150 156, Finchley Road, N.W. 3.

WANTED, PAUL CRAMP'EL Geranium plants, and second plants. WILLIAM DAY, Forest, Loughborough, Leics.

PLANTS, &c., FOR SALE.

LIVERPOOL CORPORATION.

NURSERY STOCK. FARM AREA, near GATEacre.

- Special offer of the following LEAVED PRIVE: 1000, per 1,000, 90s. per 10,000, 900s. per 100,000. Very bushy in disposition, cut backs, 15 to 24 in. high. 20s. per 1,000, 250s. per 10,000, 2500s. per 100,000. Very fine in disposition, cut backs, 24 to 30 in. high. 40s. per 1,000, 350s. per 10,000, 3500s. per 100,000. Very strong and bushy, 24 feet high. 50s. per 1,000, 10s. per 100, 80s. per 10,000. Very strong and bushy, 15 feet high. 2s. and 3s. each, 2s. and 3s. per doz., 20s. per doz., 200s. per doz., 2000s. per doz., 20000s. per doz., 200000s. per doz.

ALSO THE FOLLOWING, ALL FINE: Another specimen, bushy plants, 15 1/2 inches. 2s. and 3s. each, 2s. and 3s. per doz., 20s. per doz., 200s. per doz., 2000s. per doz., 20000s. per doz., 200000s. per doz. These prices are free on rail at Gateacre or Garton Station.

Apply to THE CITY ENGINEER, Municipal Buildings, Dale Street, Liverpool; or his Representative, MR. J. HAIGH, Public Offices, Grange Lane, Gateacre.

PERNS' FERNS'—Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Heavy Garden Ferns, catalogues free. E. SMITH, Logan's Nursery, Loughborough Junction, London, S.W.

ORCHIDS for QUICK SALE owing to Death.

- PURCHASED CYPHERS, 1917. ALL GOOD PLANTS. £ s. d. 12 Calanthis in variety ... 3 0 0 12 choice Cypripedium ... 3 10 0 4 Vandae ... 1 10 0 2 Laelia purpurata ... 1 10 0 12 choice Brevantherum ... 4 15 0 12 Oncidium-Lossium ... 3 0 0 12 choice Laelia anceps ... 4 0 0 6 Cattleya L. O. ... 3 0 0 6 Oncidium ... 1 10 0 3 Sophronitis Veitchii ... 1 10 0 Also 4 doz. mixed Cyphs. and Orchids, to clear... 7 0 0

T. WHITWORTH, OAK LODGE, BRISTOL Rd. NORTHFIELD, Nr. BIRMINGHAM.

MISCELLANEOUS.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipcord Tweed; wears like leather's showpiece; 7 yards for 17s. 6d. Patterns free.—BRADFORD WOOLLEN CO., 71, Bradford.

IF YOU'VE NEVER WORN BEACON OILSKINS

You've never known the bodily comfort that they afford in wet and stormy weather. They are proof against the hardest storms, and have no disagreeable stickiness. We sell them on the understanding that you may have your money returned if BEACON OILSKINS don't satisfy you. There's no risk in dealing with us. We specialise in making Men's Black Coats from 10s., Long Leggings from 3s., Short-waistors from 1s. 6d., Children's Oilskins 10s. 6d., upwards, Ladies' Smart Oilskins from 2s., Send post. for Free Beacon Booklet, and choose the style that suits your purpose.—BEACON OILSKINS LTD., 66, BEACON BUILDINGS, SOUTH SHIELDS (6)

"Bull's" THE FOOD FOR PLANTS

ROSES FOR AUTUMN PLANTING

ORDER EARLY.

Beautiful plants of the best possible cultivation, our selection from the finest sorts including:—
The Brilliant Coloured

"MDME. EDOUARD HERRIOT"
(Daily Mail Rose.)

12/- per doz. bushes, carriage paid.
Catalogue Free on request.

STUART LOW CO., BUSH HILL PARK,
MIDDLESEX.

CHEALS' NURSERIES.

ORNAMENTAL TREES, SHRUBS,
ROSES, FRUIT TREES, &c., in
immense quantities and in the pink
of condition.

Send for Catalogue to—

J. CHEAL & SONS, Ltd.,
The Nurseries, Crawley.

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
Reasonably priced pots required and have carriage paid -
reason "Carriage" frequently amounts to half value of
goods, or write for Price List, free.
All POTTS of all descriptions. Daily Bawls and Fern
Pans from 3d. each.
RICHARD SANKEY & SON, LTD.
Bulwell Potteries, NOTTINGHAM.

Write for this
FREE BOOKLET
and avoid all drainage troubles



with pot plants. It explains also the porosity, root-roominess, and cleanliness of CRET POTS, of importance to all gardeners. FREE SAMPLE CRET pot also on request. Write to-day.
PETER BAILEY & SONS Ltd.
2 Heaton Mersey Pottery,
near Manchester.

BLACK CURRANT BUD MITE.
Are your bushes free of this incurable pest? If not
Plant "SEABROOK'S BLACK" Currant,
the only proved mite resistor.

This variety has also every other good quality, being the
heaviest cropper and stoutest grower, producing large, firm
berries.
Young Bushes 6/- and 8/- per dozen.
W. SEABROOK & SONS,
Fruit Tree & Rose Nurseries, CHELMSFORD.

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.



IMPORTANT : Please write for a Catalogue, or to send to those who apply to
LAXTON BROTHERS, BEDFORD.

FRUIT IN THE GARDEN.

Root up useless shade trees and unproductive Shrubs, and replace with Fruit in these times, when food is all important.

Specially grown trees of

APPLES, PEARS, PLUMS,
of fine quality for the Walls, Edging or Vegetable and Flower Borders. Many of fruiting size. Also

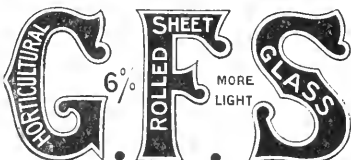
FINE STANDARD TREES

A grand lot of Peaches, Nectarines and Cherries for the House and Garden Walls, also

BUSH FRUIT TREES.

Catalogue free on request and special quotations given on hearing exact requirements.

STUART LOW CO., BUSH HILL PARK,
MIDDLESEX.



A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/8 in. (or equal to sheet 21 oz.) in thickness. Can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of
GENUINE WHITE LEAD PAINT.
"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tin- and 1 cwt. wide-neck cans.
AND
BEST LINSEED OIL PUTTY.



Complete Price List of
Paints, Colours, Varnishes, &c., on application.
GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
AND Blackfriars Wharf, Upper Ground Street, E.C.
Quote GARDENERS' CHRONICLE.

TURF LOAM.

Very Fibrous Yellow Turf Loam
For VINE BORDERS, CARMATIONS,
ROSES, MELONS, CHRYSANTHEMUMS,
FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid or Delivered.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.

BATH'S HOME-GROWN BULBS.

BUY YOUR BULBS DIRECT FROM
BATH'S BULB FARMS.

We have for years been very large growers of Bulbs, and can supply Tulips, Narcissis, Crocus, etc., in first-class quality, and probably in greater variety than any other firm. Write for catalogue to-day. Awarded GOLD MEDAL for Tulips by Royal Horticultural Society, April, 1917.

POPULAR EARLY FORCING TULIPS.

(These are very scarce.)

	Doz.	1/6
CRAMOISIE BRILLANT. Dazzling vermilion-scarlet	1 6	10 6
KEIZERSKROON. Brilliant scarlet, edged yellow	2 3	18 -
LA GRANDEUR. Brilliant scarlet	1 9	12 6
LA REINE. Pure white, flushed pink	2 1	15 -
MOUCHERON. Deep glowing scarlet	1 9	12 6
PRESIDENT LINCOLN. Distinct light violet	2 -	14 -
PRINCE OF AUSTRIA. Striped orange-scarlet	2 3	15 -
PRINCE DE LIGNY. Deep golden yellow	1 9	12 6
PRINCESS HELENE. The finest white tulips for forcing	2 3	15 -
ROSE REINE LIM. White, shaded rose	1 5	10 6
ROSE OF HOLLAND. White, flushed pink	1 5	10 6
THOS. MOORE. Dark terra-cotta	2/-	14/-
WHITE SWAN. Pure white	2 -	14 -
YELLOW PIGEON. Pure off yellow	2 -	14 -

EARLY DOUBLE TULIPS.

LADY PALMERSTON. Deep rose, flushed white	1 9	12 6
MURILLO. White, flushed pink	2 3	18 -

POPULAR COTTAGE (MAY-FLOWERING) TULIPS.

BOUTON D'OR. Very deep yellow, egg-shaped flowers	1 6	10 6
GESNERIANA LUTEA. Rich yellow	1 6	10 -
GOLDEN CROWN. Deep yellow, red edge	1 3	8 -
INGLESODMBE PINK. Pink, shading to buff and salmon	1 6	10 6
MACROSPILA. Intense crimson-scarlet	1 -	6 -
PICDOTE. White, edged cerise	1 3	8 6
FINEST MIXED TULIPS all sections, an extra fine mixture	5 -	-

POPULAR DARWIN TULIPS.

ADOLPHE VAN DEN NEEDE. One of the best brilliant scarlet	1 9	12 6
BARONNE DE LA TOMAYE. Deep rose, margined light pink	1 9	12 6
CLARA BUTT. Delicate salmon-rose, the most popular of all Darwins. Top size	1 6	10 6
Good strong flowering bulbs for bedding	1 -	7 6
G. DE CORDOUS. Dazzling Turkey red, very early flowering	1 6	10 6
LA PETITE BLONDINE. Lilac, shaded blue	1 5	10 6
LOVEINESS. Beautiful satiny-rose	1 9	12 6
MARGARET. Silvery white, interior rose-pink	1 3	9 -
MRS. FARNCOMBE SANDERS. Rich cochineal-red, white base	2 -	15 -
MRS. POTTER PALMER. Glowing purple-violet	2 3	18 -
PRIDE OF HAARLEM. Rich glossy cerise, early	1 9	1 1/2 -
REV. EWANK. Bell-trope and lilac, light edged	2 8	17 6
SALMON KING. Brilliant soft scarlet, white base	1 6	10 6
THE SULTAN. Glossy maroon-black	1 9	12 -
WHITE QUEEN. White shading to blush, a grand forer	2 3	15 -
WM. COPLAND (Sweet Lavender) Brilliant-lilac, the best of all for forcing	2 6	17 6
MIXED DARWINS, from all the best named varieties	1 2	8 -

POPULAR VARIETIES, DAFFODILS (Narcissis).

BARRI CONSPICUUS. Primrose, orange-cup edged scarlet	1 6	10 6
C. J. BACKHOUSE. Yellow, orange-scarlet cup	1 6	10 6
EMPEROR. Yellow trumpet, large size	1 6	10 6
DD. Good strong flowering bulbs	1 2	8 6
EMPRESS. White perianth, yellow trumpet. Top size	1 10	12 6
FAIRY. Strong flowering bulbs	1 5	12 6
DAFFY QUEEN. Pure white, a lovely variety	1 9	12 6
GOLDEN SPUR. Deep yellow, grand forer	1 8	12 6
DD. Flowering bulbs	1 2	8 6
DD. Double. Pure white, yellow trumpet	1 1	7 6
HENRY IRVING. Deep yellow trumpet, early forer	1 5	10 -
MRS. LANGTRY. White, cup edged yellow	1 7	7 -
ORNAUTS. The early forcing Post Narcissis	9 6	5 6
DD. Good flowering bulbs	7 4	4 -
POETICUS (Pleasant Eye). The late variety	5 -	5 9
PRINCEPS. Yellow trumpet and sulphur perianth	10 6	5 -
SIR WALKIN. Bright yellow, very large flower	1 8	10 6
DD. Strong flowering bulbs	1 2	7 6
VICTORIA. White with yellow trumpet, extra fine	1 9	12 6
OLD ENGLISH DOUBLE DAFFODIL (Telemonium Pleus)	1 9	12 6
DOUBLE WHITE POETICUS.	7 4	4 6

CROCUS.

Very fine mixed, all colours	5 0	10 6
	2 9	5 -

Complete Illustrated Catalogue with Cultural Notes free on application.

R. H. BATH, Ltd. (Dept. A.)
The Flower Farms, WISBECH, Cambs.

THE

Gardeners' Chronicle

No 1606.—SATURDAY, OCTOBER 6, 1917

CONTENTS.

Acetic acid as an insecticide .. 142	Obituary— Colhins, J. C. .. 143
Apiary, The .. 144	Till, E. D. .. 143
Apples in East Lothian .. 143	Orchid notes and gleanings .. 136
Arquilegia Stuartii .. 137	Phoenix caracivensis in Australia .. 138-
Austin, McAslan, Messrs., Horticulturists .. 141	Picea pungens glauca, a new tree of .. 142
Basic slag supplies of .. 140	Populus heterophylla .. 137
Ballo, Dutch .. 140	Potato dealers register, the .. 140
Catalogues, seedsmen's .. 142	Societies— Royal Horticultural .. 141
Crisp, Sir Frank .. 140	Soil bacteria .. 141
Crops and stock on the home farm .. 143	Sweet Peas, Spencer Cupid 141
Eighteenth-century catalogue, an .. 138-	Trees and shrubs— Cerastostigma Willmottianum .. 137
Food production, an inquiry into .. 138-	Time measuring .. 144
Broad Beans .. 138	Down planning and allotments .. 142
Potato-Snowdrop .. 138	Vegetable seed supplies 140-
Potato spraying .. 138	Weeds in Australia .. 137
Potatoes, degeneration of .. 138	Week's work, the— Flower garden, the .. 139
Gardeners, four veteran 141	Fruit and glass .. 139
Indian Azalea and Deciduous garden .. 142	Hardy fruit garden, the .. 139
Japan, letters from— Akinuka taxifolia .. 137	Kitchen garden, the .. 138
Kivur Edge, Worsley .. 140	Orchid houses, the .. 138
Medlar seeds as poultry food .. 141	Plants under glass .. 139
Morris, seedlings of .. 142	
Synthesia stewartii .. 142	

ILLUSTRATIONS

Arquilegia Stuartii, .. 137
Azal a indica flowering in a Dorsetshire garden .. 142
Cypripedium sin Reubens Bulb .. 136
Gardeners, four veteran .. 141
Picea pungens glauca .. 142

AN EIGHTEENTH-CENTURY DURHAM CATALOGUE.

MY articles on "Some Old Seed and Plant Catalogues" in the issues of the *Gardeners' Chronicle* for December 23 and 30 last produced so many interesting reminiscences, which, owing to a visit of several months to the United States, I have only recently seen, that I am induced to send some notes on a much earlier catalogue which has just come into my possession. Its title is "A Catalogue of Kitchen Garden, Flower, Grass, Forest, Tree Seeds, and Flower-Roots; with their Season of Sowing, Planting, and Culture; Chiefly adapted to the Northern Climates," &c., by James Clarke, Seedsman, at Houghton le Spring, near Durham, 1779. I can find no trace of any other copy of this catalogue. There is none in the British Museum nor the Bodleian; it is not even recorded in that monumental work, Watt's *Bibliotheca Britannica*, nor is it in G. W. Johnson's *History of English Gardening*, and it is unmentioned in the list of printed books appended to Hon. Mrs. Evelyn Cecil's *History of Gardening in England*. The rarity, therefore, of James Clarke's catalogue may be taken as proved.

But who was James Clarke? Unfortunately, on this point there is no information available. Even the date of his death has not been found, nor does his name appear in the *Extracts from the Houghton le Spring Registers, 1581-1812*, printed in 1910. There are there recorded several Clarks and Clarkes, but none that can be associated with the seedsman in whom we are just now interested. It,

of course, may be that James Clarke was living after 1812. Hutchinson, in his *History and Antiquities of the County Palatine of Durham, 1785-94*, deals exhaustively with the parish of Houghton le Spring, and particularly with its greatest celebrity, "the Apostle of the North," Bernard Gilpin; but there is no reference to Clarke or to his nursery, of which even the site is not now known. The present rector very kindly made inquiries for me, and the oldest inhabitant of his parish told him that when she was a girl a man named Hutchinson had a very large garden in a position now covered with houses, but she scarcely remembered the character of the garden. With this faint clue, and the possibility that Hutchinson may—*longa intervallo*—have succeeded Clarke as a nurseryman, we must for the moment rest content.

Another point of inquiry concerns the typography of the catalogue. It extends to 52 pages octavo, and is admirably printed. It was certainly not printed at Houghton le Spring. Durham or Sunderland would have been the most likely place at which to find a good printer at that time. We know from Cotton's *Topographical Gazetteer* that printing was in use in Durham in 1733, and in Sunderland during the latter half of the eighteenth century. But this catalogue is so well printed, and the title-page set up with so much taste, that one would be inclined to suggest that it was done in London. But the point is one of local rather than general interest, and the printer might be identified by comparing the typography of the pamphlet with books locally printed at about the same time, some of which are probably now to be found in the libraries of Durham and other large centres in the county.

The catalogue itself is quite an unconventional one, the author at the outset admitting that "I have taken the Liberty in the following Sheets to deviate from the Common Methods of Seed Catalogues," his wish being, not to supplant those who have written more copiously on the subject, but to "render the general Knowledge of Gardening more easily attain'd, to the young and unexperienc'd in this Branch." Instead of the usual lists now familiar, the author roughly classifies his subjects, the first of which is: "Seeds of Esculents, with their season of Sowing and Culture." Each vegetable is dealt with in a paragraph, with very brief directions for sowing, and the varieties named in the margin are doubtless those of which Mr. Clarke had seeds to sell. These lists are especially interesting to us as showing the kinds in cultivation in 1779. Of Onions, for instance, there were the Portugal, Strasbourg, White and Red Spanish, English, Silver-skinned, and Welch. Eight varieties of Cabbage appear to have satisfied all needs Dwarf, Battersea and Sugarloaf among the early ones, Russian, Flat or Scotch, and Long, which were late, and the Dutch and Turnip. Of Broccoli there were only the Purple and White; these were nine kinds of "Lettice," the White-

Green, and Red Cos, the Silesia, Brown Dutch, Capuchin, Imperial, Cabbage and curled.

Among the salad seeds we find Sorrel, Burnet, Orach, Fimochia (Italian Fennel), and Tarragon. Only four sorts of Cucumbers are mentioned, the Early Short and Long Prickly, and the Long Green and White Turkey, but this "esculent" was evidently regarded as an important crop, for two pages are devoted to its cultural directions. So, also, "Mellons" and "Pompions" (gourds) receive two pages. Among the "Medicinal Seeds" are enumerated Cardus, Scurrey-grass, Angerico, Lovage (perhaps *Achillea ligustica*), Smallage (this I cannot identify), Wormwood, Gronwell (Lithospermum officinale, at one time administered for the cure of gravel), Bill and Brown Mustard, Poppies, Caraway, Fenugreek (Trigonella), Coriander, Anise, and Cummin (Cuminum Cuminum), also occur among the sweet and pot-herb seeds.

Beans and Peas occupy a page and a half, the former headed by the Mazagan and followed by the Portugal, Small and Broad Spanish, and Windsor, and also with two other varieties, Toker and Bog Dwarf, which are not familiar to me. There are fifteen varieties of Peas, with, of course, various Marrow (or "Marrowfat" of later times), and one called the Reading, which suggests that it was raised at Reading, but long before the advent of Messrs. Sutton's business. There are also Tall and Dwarf Crooked Sugar Peas, which "are commonly gathered when young, and, when boiled, eat as Kidney Beans." Of these latter there are six varieties of the dwarf and four of the runners.

The prizes devoted to flower seeds, respectively grouped as Tender and Hardy annuals, and biennials and perennials, are divided into three columns, the first with cultural directions, the second with the name of the plant, and thirdly, "their colours." The Amaranthus appears to have been a popular plant, for there are six varieties. The Sensitive Plant, we are told, "closes by a touch," and the Humble Plant "falls by a touch." It is interesting to note that the Tobacco Plant was cultivated for decorative purposes: "if the Season prove favourable, it may be brought to great Perfection; if in the Autumn it be properly cured or dried, it will be equally good as that brought from Abroad." Bulbous and tuberous flower-plants are dealt with briefly, but no named varieties, perhaps because even in those days they were legion, are specified. The list of perennial flower-roots calls up visions of the old English gardens which were such attractions to our country homes during the eighteenth century. There are Wallflowers, Sweet Williams, the double Bachelor's Button, the double Ragged Robin, Pinks, Rockets, Soapwort, Paeonies, Sunflowers, and others.

Mr. Clarke catered for agriculture as well as for horticulture. We have succinct directions concerning grass and Clover seeds, Spurry, Buckwheat (which sounds American rather than English), Lentils,

Flax, Hemp, and Canary. There are also directions for the sowing and culture of Fir and Pine seeds, and of trees and shrubs of all sorts, evergreen and deciduous. Fruit trees occupy eleven pages. Of Apples there are 27 varieties, including Codlings, various kinds of Pippins, Russets, and Pearmain, "with many other sorts." Among Apples there were the Masculine, the Transparent, the Bunsell, and Anson's, "a kind lately introduced into English gardens, probably by Lord Anson, an exceedingly large fruit, and a good bearer." The May Duke and the White and Black Harts."

Is each, dwarfs on Paradise stocks, 10d., and those on crab stocks, 3d. Apricots, standards, from 1s. 4d. to 2s.; and dwarfs from 1s. to 1s. 6d.; Currants, Filberts, and Gooseberries were 2d. per plant; Pears, standards 1s. 2d., and dwarfs 1s.; Plums, 1s. 2d. and 1s.; Nectarines and Peaches, 2s. and 1s. 6d.; and Quinces, 3d. Like all other nurserymen, Mr. Clarke dealt in sundries, such as "all sorts of garden tools and bass mats." Altogether his catalogue forms a very interesting document in the history of gardening during the last quarter of the eighteenth century. W. Roberts.

From a fine-flowered spike, well represents that showy hybrid, and a large and finely-formed *Cattleya Wavriana* (*granulosa* - Warszewiczii) is included.

Masdevallia Boeking Hybrid and its parent *M. Veitchiana grandiflora* are also sent, Mr. Cypher remarking that he is seldom without flowers of these two handsome *Masdevallias*, which, like the *M. Harryana*, *M. Inza* and other showy species, thrive so well at Cheltenham.

Cypripedium Sir Redvers Buller (*insigne* × *Smithii*) (see fig. 49), taken from a part of the original, which received a First-class Certificate on January 9, 1900, shows it to be still the best of a very variable cross. The consignment includes *C. Rossetti*, one of the finest of the yellowish *Cypripediums*, and some *C. Rothschildiana* crosses.

ORCHIDS FROM BLENHHEIM.

MR. JAMES SMITH sends us flowers of hybrid Orchids raised in the Duke of Marlborough's gardens at Blenheim; the plants have been previously recorded, and being now matured, show their true characters. The finest is *Cattleya Veiris*, raised from *C. Venus* × *C. Iris*. The second use of *C. Iris* (*bicolor* × *Dowiana aurea*) in the parentage of this hybrid has given marked results, the form of *C. Iris* being retained, but the colour of the lip, which is blood-red with orange and rose shades, is intensified. The sepals and petals are pale yellow, veined and tinged with buff colour. *Cattleya Rexfil*, of which a three-flowered inflorescence is sent, is the progeny of *C. Rex* and *C. fulvescens* (*Dowiana aurea* × *Forbesii*), and adheres closely to *C. Rex*, the sepals and petals being light yellow and the lip rosy-mauve with gold lines from the base.

Cattleya Guillemont, raised from *C. Gaskelliana* and *C. Pittiana*, is a large flower with silver-white sepals and petals tinged and veined with pale lilac, of which the lip has a number of purple lines in front of the yellow disc. *Laelio-Cattleya Fazouana*, obtained by crossing *C. Fabia* (*labiata* × *Dowiana aurea*) and *L. C. Schulzeana* (*C. labiata* × *L. C. elegans*), is an interesting instance of intensified colour development, the cause of which is imperfectly understood, for its deep mauve flower with claret-red lip is darker than any of the parents. The question of colour in flowers is a very complicated problem, but it is known that there may be more than one pigment in any one flower, as stated in the leading article in the last

issue, p. 130. In certain conditions *C. Dowiana aurea* has been known to develop intensified colours inherited from other parents but not present in itself, and probably that has been the agent in the present case.

Laelio-Cattleya Ingrabaw, *Cattleya Lawrenceana* × *Laelio-Cattleya Ingrabawii* (*C. Dowiana aurea* × *L. Dayana*) has flowers of the *C. Lawrenceana* class, but with a more expanded lip. The colour is mauve; the lip has a purple front and deep orange base, with purple lines.

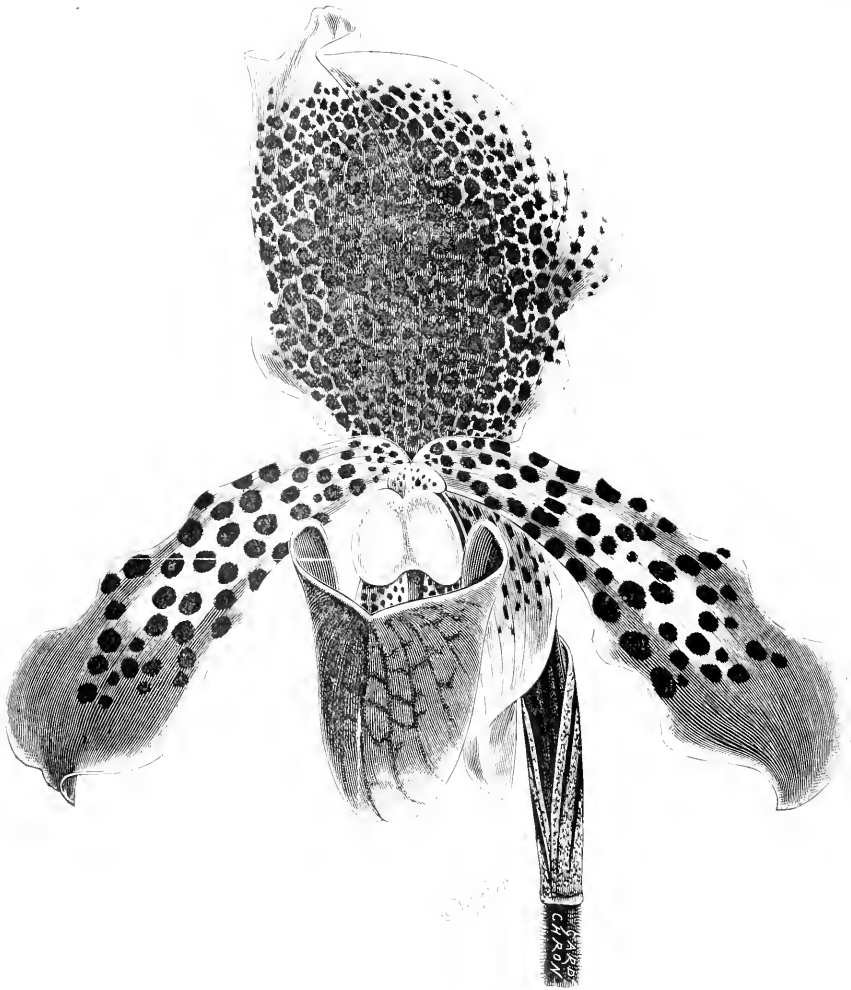


FIG. 49. —*CYPRIPEDIUM SIR REDVERS BULLER*.

ORCHID NOTES AND CLEANINGS.

ORCHIDS FROM CHELTENHAM.

Messrs. J. Cypher and Sons send us flowers of a selection of seedling *Laelio-Cattleyas* and *Cattleyas* recently in bloom in their nurseries. They show great variety in form and colour, the sepals and petals varying from white to rose, and the labellum from rose-purple to dark crimson. One of the latter type is very distinct, with a small, bright-yellow blotch on each side of the labellum. A very dark *L. C. Dominiana*, taken

the Kentish and Harrison's Duke, figure among the Cherries. Familiar varieties of Grapes occur, such as the Black, White, and Red Hamburgh and various Frontinians; there are also the Tokay, the Lombardy, and the Burgundy, the special features of which are briefly noted. Peaches, Plums, Pears, and Gooseberries and Nectarines are represented by what were the best sorts in cultivation at the time.

It is not until the last page of the catalogue is reached that we come to pines, and these are very modest indeed. Standard Apple trees were

TREES AND SHRUBS.

CERATOPSTIGMA WILLMOTTIANUM.

AMONGST the plants at the meeting of the R. H.S. on September 25 last was a specimen of this new species of *Ceratopstigma*, shown by Miss Willmott. It is one of Mr. E. H. Wilson's discoveries in Western China when he travelled for the Arnold Arboretum in 1903. He describes it as abundant in the semi-arid regions of the Mia River valley, in Szechuan, which was the only place in which he found it. Miss Willmott raised it at Warley from seeds collected by him, and it flowered with her in 1911.

In a wild state it grows from 1 to 3½ feet high, but under cultivation at Warley it has reached 5 feet in height. Its half woody stems are angled, purplish, and clothed with hoary tomentum. The leaves, 1½ to 2½ inches long, and often more or less diamond shaped, are also hoary. The flowers are borne successively in a large head terminating each twig, also in smaller ones in the uppermost leaf-axils. They are bright blue (Wilson says "cobalt-blue") and about 1 inch wide. Miss Willmott informs me that flowers have appeared with her as early as May, but its proper flowering season is probably from July to November. Few hardy plants have so long a blossoming season, and to this quality is added the beautiful and, among hardy shrubs, rare colour of its flowers. At Key last year it fell back to the ground, but sprang into vigorous life and flowered well during the summer. It is a most attractive plant, and evidently capable of bearing our hardest winters. *E. H. Wilson.*

POPULUS - GENEROSA.

I do not suppose my old friend Dr. A. G. Rees, Henry will object to my giving a gratifying account of one of his new hybrid *Populus generosa*, which he has been successful in raising. The tree, three years old from the cutting, has already made a growth of 17 feet, 8 inches in height during this year, and a measurement of the leaf, which I enclose, shows 9½ inches across the middle and 17 inches from base of stalk to tip, together with its brilliant dark green colour, will give you some idea of the amazing vigour of this new offspring of our botanical treasures. If the tree will keep up anything approaching to this rate of growth, it ought to prove a most valuable acquisition from the economic standpoint. *E. H. Wilson, Aldenham House, near Ely.*

WEEDS IN AUSTRALIA.

VALUABLE hints on the destruction of weeds are given by Mr. H. W. Davey, District Surveyor, Victoria, Australia, in a paper read at the annual convention of the Chamber of Commerce. Mr. Davey concludes from his experiments that arsenical weed killers, useful though they be for destroying weeds on gravel paths, are useless on cultivated land. These, employed in great strength and large quantities they only kill the tops, and if so employed they render the ground unfit for cultivation for several years.

For young plants eradicating petroleum or kerosene is much better.

Salt is effective, and in many cases also improves the fertility of the soil.

Mr. Davey comments on the fact that the "Thistle Act" is administered very laxly in parts of Victoria, and that Thistles may be seen growing in the yards of many public buildings. This testimony is valuable, inasmuch as demands for similar "noxious weeds" Acts are frequently urged in this country. We all wish to get rid of weeds, but most of us are tired of Acts which cannot be rigorously enforced, if all events until we all become Government inspectors. The worst weed in Victoria appears to be St. John's Wort (*Hypericum perforatum*). Though eradicable without great difficulty on

* *The Journal of the Dept. of Agric., Victoria, Australia, July, 1917.*

arable, it is very hard indeed to get rid of from pasture-land. As is the case with so many perennial weeds, owing to death by frequent cutting is in the long run the cheapest way of exterminating it. In southern parts of Victoria the Blackberry is becoming a serious pest, choking everything else—except St. John's Wort. Like many another pestiferous weed, it is an invader—in this case from Europe. Two or three cuttings, together with applications of salt, are required to exterminate it. *Rosa rugosa* is qualifying as a pest in Victoria, and so are African Boxthorn (*Lycium horridum*), largely planted for hedges in Victoria, and *Elmum violaceum*, known picturesque as Paterson's Curse. It makes its attack like so many weeds, by way of the railway line. Banken, too, is a well-wooded, nesting grass from steep hillsides. Cutting and salting are the remedies, and it may be remarked in parenthesis that this combined method in all will be a good one. The cutting should be done at least early in the late afternoon, the best done just before the plants show, and two cuttings a year are necessary.

sepal, while the white-tipped petals are also deep violet-blue at the base. Seeds are produced freely, and plants raised from them show less variation than in the case of many species—that is, if care be taken to prevent cross fertilisation by insects. *Stuartii* grows best in a moist, partly shaded situation, in strong loamy soil, with manure buried somewhat deeply during the digging. *H. W.*

LETTERS FROM JAPAN. III.

JUNIPERUS TAXIFOLIA ON BONIN ISLAND.

THE only Conifer on Bonin Island is the endemic *Juniperus taxifolia*, and why a *Juniperus* should be there is a mystery. But there it is, a perfectly distinct species, with small, polished chestnut brown fruits, the edges of the confluent scales glaucous. At one time this *Juniper* was a common tree on the island, and in the sheltered gullies, alongside of Palms and Tree Ferns, grew 50 feet high, with a trunk 6 feet in girth. Such



FIG. 50. JUNIPERUS TAXIFOLIA. SEEDS AND PETALS, VIOLET BLUE.

Seeds, introduced from Europe, were planted in Victoria, and, as well as mumps, spreading, causes disease in cattle. As a result of a River-wort competition in one district of Victoria, school children pulled up and burnt over two million plants and earned £507 by their beneficent work.

Mr. Davey, in conclusion, makes the wise suggestion that a knowledge of noxious weeds should be inculcated in school children by means of Nature Study lessons.

AQUILEGIA STUARTII.

AQUILEGIA STUARTII (see fig. 50) is one of the most attractive plants in this popular genus. It was raised by Dr. Stuart, of Chirnside, Scotland, in 1830, and first flowered with him in May, 1831. The result of a cross between *A. glandulosa* and *A. Witmannii*, it may be described as a much improved form of the first named species. It has proved to be a good perennial, improving each year with deep cultivation in rich soil. The flowers are large and handsome, with wide-spreading, violet blue

tree, no longer exist. The wood lasts in the ground and out longer than that of any other tree on the island, and in consequence all the larger trees have been felled and used for building purposes. The largest tree (and, indeed, the only large tree that I could find) was 45 feet tall - 4½ feet in girth of trunk. On the wind-swept hilltops this *Juniper* is reduced to a low, broad mat, and in this form and as a bush it is still abundant. As a tree, *J. taxifolia* is singularly handsome; old specimens would appear to be flat-topped, but the usual habit is loosely pyramidal with ascending, spreading branches; the branchlets are relatively long, slender, and always pendant, the leaves a light green, flat-tied subulate, obtuse, and have two stomatal lines. I gathered many specimens of this little-known plant, also ripe fruits, and took three photographs. The seeds I send under separate cover. Unfortunately, there is no likelihood of this *Juniper* proving hardy in the Arboretum, but in and around New Orleans it may grow, also in the warmer parts of California, and possibly in Cornwall and other favoured places. It is so beautiful a tree that it deserves a thorough trial. *E. H. Wilson.*

PHOENIX CANARIENSIS IN AUSTRALIA.

With reference to Mr. Turner's comment in *the Gardeners' Chronicle*, Vol. LX., p. 122, on a tree of *Phoenix canariensis* in the Garden Palace Grounds, Sydney, I may say that my statement was as follows:—"Its history is not very clear, but it is over thirty years old, and where it originally came from I cannot ascertain." I have since ascertained that the seed came from Kew during the directorship of Sir J. D. Hooker. Mr. Turner, however, writes that the seed came out during the directorship of Sir William Jackson Hooker, written at full length so that there shall be no mistake. Sir William, however, died in 1865.

Mr. Turner was employed on the gardening staff here for fourteen months in 1831, and Mr. James Camfield succeeded him, after an interval, as overseer of the Garden Palace Grounds (an integral part of the Botanic Gardens) at the beginning of 1832. Mr. Camfield continued in his duties until his death, on November 25 last.

It was my official duty for twenty years to inspect the grounds with Mr. Camfield, and this was done every week, and in some weeks much oftener. As I take a special interest in Palms, I usually included the Palm bed referred to in my inspection. Mr. Camfield told me that he planted most of the Palms, including this *P. canariensis*, and added that at the time its name was doubtful, which is borne out by the *Kew Bulletin* (1916), which states that the name was not used till 1842.

The name of the gardener (Mr. Camfield, and not Mr. Turner) who actually put the Phoenix in the ground out of the Botanic Garden nursery can have no interest for your readers, but I never raised the question.

Mr. Turner et al., that Mr. Charles Moore (my professor) gave him a free hand. This is another instance of a defective memory, for Mr. Moore was the most autocratic of men, and never was known to give anyone a free hand in anything. Mr. Turner, however, does himself less than justice by omitting to mention the assistance he gave Mrs. Macquarie in planting the Wishing-tree (*Araucaria excelsa*). *J. H. Maiden*

is still offered true in a seed list. Myatt's Pro 266 Ashleaf was raised a little earlier than R347. I had Magnum Bonum in 1876. Extra Early Veumont had a First-class Certificate in 1875; Snowflake had a similar award in 1874; Schoolmaster likewise in 1876; and Scotch Champion in 1879 it was extensively cultivated in the North before them. Vicar of Laleham and White Elephant had awards in 1881, and many others in cultivation then are still grown. *J. E.*

POTATO SNOWDROP.

I HAVE found this variety quite one of the best on this dry, sandy soil, both for cropping and its edible qualities. I well remember growing it in Wiltshire some years ago, when it was considered the best Potato for exhibition, but I had to discard it on account of its susceptibility to disease, especially in a wet season. This season we have had a rare crop on some woodland that has been cut and grubbed for kitchen garden crops. Last year it was fair though small, but its eating quality was good, and it lasted until January. I exhibited a dish some time since at an allotment show held in the town, and though there were some hundreds of dishes, none looked so beautiful as Snowdrop. *W. A. Cook, Abbot's Wood, Godalming.*

POTATO SPRAYING.

I WAS surprised to read the unfavourable experience of Mr. Harford on Potato spraying (see p. 122). Surely his experience is exceptional. Can anything have been wrong with the mixture used, and did the local Society spray with the Bordeaux mixture or the Burgundy mixture, as recommended by the Board of Agriculture. I am afraid much disappointment will be felt where the work was not done well. Growers are not altogether to blame, as in many instances spraying machines and chemicals came to hand late in the season, when the haulm had completely covered the ground, and in many cases was entangled. Rather than risk doing damage, in many cases the haulm merely was given a top spray, which was almost useless. When the growths get up to this size they must be carefully turned on one side, and after being well sprayed, turned back, and the other side treated similarly.

My experience is in direct contrast to your correspondent. I gave spraying a thorough trial by leaving two plots of separate varieties unsprayed and growing side by side with those sprayed. Only one spraying was given a thorough one with the Burgundy mixture. During the third and last weeks in July. The foliage of the unsprayed varieties was attacked by disease and it completely died down at the end of August, while the others were as green as a bed of Parsnips. The same thing happened on the farm, the difference being that only one variety *Arran Chief* was grown. There I also had a portion left unsprayed, and the dividing line could be seen a long way off.

The crops on the sprayed plots were splendid, with hardly a diseased tuber, and some individual roots weighed 40½ lbs. The unsprayed had quite a third of diseased tubers, and the loss would have been serious had it not been counterbalanced by the heavy crop already mentioned. *Arthur J. Cobb, The Gardens, Doffry, near Cardiff.*

BROAD BEANS.

To secure an early supply of Beans in the coming spring, make a sowing of Early Mazagan at the end of October. Select a site that is well drained and with a south aspect; sow in drills 5 inches deep and 3 feet apart. Protect the plants with litter if frosts are severe. Last year I sowed Early Longpod and Early Mazagan, but the former variety succumbed to the severe winter, whilst the latter, with protection, withstood the winter well. *C. Davis, Holly Well, Park Gardens, Ipswich.*



THE KITCHEN GARDEN

By J. DUNN, Foreman Royal Gardens, Windsor.

BEEF.—Nothing will be gained by leaving this crop in the ground after the roots are of sufficient size for use. Lift the roots carefully, taking care not to break or injure them in any way, or they will be of inferior quality when cooked. If stored in pits, a covering must be provided to ward off heavy rains; dry Fern will answer this purpose well. If shed room is available, they should be stored in sand.

CABBAGE.—A good plantation of Cabbage should be made to form the principal batch for spring and early summer supplies, for although the earlier plantations will prove useful, this planting must be regarded as the most important. Ground which has been occupied by spring-sown Onions or mid season Potatoes is suitable. If planted where Onions have been grown it will be necessary to fork the surface a few inches deep in order to destroy seedling weeds. The plants may be put out in rows 18 inches apart. As soon as growth commences, the hoe should be freely used during dry days, to keep the bed free from weeds during the winter. Slugs are very troublesome this season, and will require a good deal of attention during the autumn. There is no better deterrent to slugs than dusting the bed freely with lime in the early morning. Plants which remain in the seed bed after planting is finished should be transplanted on a sheltered border, as some may be required in spring to make good any that have failed or for making new plantations.

RADISHES.—A sowing of early Turnip-rooted Radish may be made thickly in a pit in rich soil that should be raised to within 15 inches of the roof glass.

CELERY.—Earthing-up should be proceeded with whenever the foliage is dry. Tie the leaves carefully together with some soft material and break the soil as finely as possible before placing it round the stems. After this work has been done the ties may be removed and used for the same purpose on successional beds. The latest batch of plants should be carefully examined at the roots, and if the soil is dry a good soaking of clear water may be given at least 24 hours before any soil is applied to the plants, and as this work is being done care must be taken that no soil reaches the heart of the plants, or diminished growth will result. In giving the final application of soil to early plants it should never be applied in sufficient quantities to have a choking effect on them.

ENDIVE.—Continue to plant Endive until every available pit is filled. The bed should be enriched by mixing some decayed manure with the soil so that quick, clean growth may result. Allow 9 inches between the plants each way and stir the surface soil as often as possible when once the plants have become established. The lights should be left off the pit until severe frosts or heavy rains are expected.

LETTUCE.—Plants of Lettuce should be lifted carefully from the open garden and placed in cold pits to make certain of a supply during the winter. Those which are not too far advanced should be selected, and the lights left off the pit until protection from frost or rains is required. Ventilation must be freely applied in favourable weather during winter.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

ODONTOGLOSSUMS have been benefited by the cool, damp nights, and the plants should be developing vigorous growths. The houses in which they are grown should be ventilated carefully at this season, air being admitted through the bottom ventilators at all times, according to the outside temperature. During warm

ON INCREASED FOOD PRODUCTION.

DEGENERATION OF POTATOS.

I HAVE been greatly interested in this discussi on (pp. 100, 122 and 132), but nothing has struck me more forcibly than the sentence:—"I see no reason why, given good treatment, a Potato should not go on for ever" (p. 122). The late blight, or *Phytophthora infestans*, has been carried all over the world by means of mycelium liberating in the tubers. *Macrosporium Solani* (Potato Leaf curl) has been carried about in a similar way. Once infested, the old tubers communicate these diseases to their offspring, and no one can see what is inside tubers when planting them. When old varieties of Potatos are said to be improved, selected, or the tendency to disease eliminated, this can only mean that someone has worked in a fresh stock in which no disease is present. Except in the case of a possible sport, none of these improved Potatos can be anything else than a healthy stock of the old origin. Just how many years a Potato may be considered worth growing depends upon how long it can be kept healthy and productive. It may, of course, get superseded by a modern and more profitable one of a similar type. The point of the sentence quoted above is whether or not a given variety of Pot to could be grown indefinitely. That has not been proved, but science and practice might contrive to do it. There are some very old ones still in existence, of which I would like to mention a few. The Old Ashleaf

nights the top ventilators may be opened slightly to admit the dew, which is very beneficial to *Odonotoglossums*, especially those that have been lately re-potted.

CATTLEYA AND LAELIA.—Report plants of *C. gigas* and *C. Hardyana* that have passed out of flower, together with such *Laelias* as *L. tenebrosa*, *L. purpurata*, and its hybrid, *L. C. Canhamiana*, and others that have commenced to make their young growths, and are pushing forth roots from their base. In re-potting, after removing the plant from the pot, the old, useless pseudo-bulbs, especially those that have no leaves, should be cut away, also the decayed roots. The plants should then be placed in receptacles of sufficient size to accommodate them for the next two seasons. Pots which are to contain moderate-sized plants should be filled to about one-half their depth with clean crocks, whilst for larger specimens a greater depth of drainage should be used, and less potting material. Keep the rhizome of the plant just below the rim of the pot, and press the compost firmly among the roots.

Plants of *Laelia* which have recently passed out of bloom should be dealt with in a similar manner. Such Cattleyas as *C. Mendilli*, *C. Mossiae*, *C. Trianae* and *C. Schroderae* that have grown too large for their pots, and are producing roots from the base of the youngest pseudo-bulb, may be afforded more rooting space, but care must be taken not to disturb the roots any more than is unavoidable; do not pull the plants from their pots, but break these latter and carefully remove the pieces, and without disturbing the drainage or roots place the whole into a pot of suitable size, fill in the drainage space with clean crocks, and fill in round the ball of the plant with new compost. A suitable rooting medium for all the above-named plants will be found in equal parts of A 1 fibre and *Osmunda* fibre, cut up rather roughly, a little chopped *Sphagnum* moss, and crushed crocks. After they are re-potted, the plants should be afforded only sufficient water at the pots to prevent shrivelling, for if the compost is not continually damp at this period the plants will commence to grow instead of taking their proper season of rest. I do not advocate any re-potting of the general collection of Cattleyas, *Laelias*, and hybrids at this time of the year, but where many of these plants are grown they are not all ready to be dealt with at the same time. Re-potting should be done when it is seen that new roots are emerging from the base of the pseudo-bulbs or leading sprouts. It often happens that at this season of the year the outer covering of the pseudo-bulbs has become damp and discoloured, and may cause the bulb to decay. When this is observed, increase the ventilation of the house, even if it becomes necessary to employ more artificial heat. Give as much light as possible for a few days, and keep such plants rather dry at the roots; also reduce the atmospheric moisture. Two agencies, light and air, when properly balanced, are the best means we have to produce solidity in the pseudo-bulbs. The Cattleyas which flower in the autumn, such as *Cattleya Boverianorum* and such of its hybrids as *C. Martini*, *C. Mes. L. W. Whiteley*, *C. Browniae*, *C. Wendlandii* and *C. Parlati*, should be kept rather dry at the roots, until the flower-stalks are observed pushing up at the base of the sheaths, when a slight increase of water may be allowed, the supply to be again reduced when the flowers have expanded.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVY, Abbots Wood, Grafting, Surrey.

ORCHARD TREES.—Large, highly coloured fruits are generally obtained from the tops of large standard trees, and they should be left as long as possible to thoroughly ripen. The finest specimens of Blenheim Pippin, Ribston Pippin, King of the Pippins, and Cox's Orange Pippin, are to be found usually in these positions. Apples that are now being gathered should be selected, and for convenience of storing may be placed in boxes or tubs and stored in dry places. Small, badly formed fruits should be disposed of in some other way, and small, worthless varieties should be discarded, the roots grubbed up, and good varieties

substituted, or the old trees re-grafted. Be careful to select varieties that succeed best in the district. Newton Wonder is a large and weighty fruit that should be given extended cultivation, being good in colour and capable of being kept in excellent condition for a long period. Rev. W. Wilks should be added to the list. Dumbley's Seedling (Wellington) is still one of the very best, and is, moreover, a great bearer, and second to none for culinary uses from December to April. Annie Elizabeth is a great bearer, and keeps in condition till May when well ripened and stored.

RIPE STRAWBERRIES.—These should be covered with hand lights or given other protection, as with the showery weather they soon suffer.

LIFTING AND ROOT PRUNING OF FRUIT TREES.—Proceed with these operations as opportunities occur. The earlier they are accomplished the better chance will the trees be given to make fibrous roots quickly.

HARDY VINES COVERING BUILDINGS.—Any loose or growing laterals on hardy vines should be removed, and where there are Grapes ripening it is the more essential in order to allow the sun's rays to reach the bunches.

FRUITS UNDER GLASS.

By JAS. HUDSON, Head Gardener at Ginnethsury House, Axon, W.

THE POTTING OF FRUIT TREES.—No time should now be lost before re-potting or thoroughly dressing the trees. With the exception of one instance only I have always reported them annually, which is a sufficient indication of my belief in this method of cultivation during a period of more than twenty years. The pottings should be done under cover, so that there will be no hindrance to the work. I used to erect a temporary shelter with a tarpaulin, but in recent years I have had an opportunity of doing this work under glass, which is much better. Prepare a sufficient number of pots beforehand. Allow for a few trees being put into larger pots, but only those that actually need them. As the work of knocking out proceeds, let the empty pots be washed and well dried before they are again used.

THE POTTING PROCESS.—When a knocked out of the pot, an idea can be formed by the state of the roots and of the growth of the tree if a larger pot is required, but do not be too generous in this extension of root room. When the tree is free of its pot, proceed by removing the ball of soil round in an equal degree, removing also the surface or top soil, and the top dressing, as well as the bottom next to the crocks in the new soil to allow of a good amount of rough, fairly soil to be put over the crocks. Let this be well rammed down, and then add just a little soil and place the tree therein, making allowance for a fairly good surface dressing, and for sufficient depth for watering. As a rule, my plan is to reduce the ball sufficiently for the hand to be worked easily around the ball when the tree is put into its fresh pot; this is a good guide to follow as to the amount of old ball to be removed. When the roots are very plentiful, and it is not an easy matter to reduce the ball, then a larger pot may be used. If the trees have been plunged since they were taken inside after fruiting, a good number of surface roots will have developed. These should be preserved, spread out evenly, and just covered with soil. While pottling is in process, let the soil be well rammed, only adding a little at a time. I firmly believe in hard or solid pottling.

AFTER TREATMENT.—After pottling, keep the trees under cover if possible, and use the syringe freely for a few weeks. Give the roots one or two good soakings at once, and never let the soil get dry. In only a few instances have I observed any shrivelling of the wood after pottling. For reducing the ball we used searchers made like a fork with two points, these are laid at right angles with about 2 inches turned over. Three runners are needed, one of obtuse shape, one fairly thick, and one thin for tight places. As to the soil, I described its preparation in the notes published in these pages on September 22.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Normwicks, Eastwell Park, Kent.

VIOLETS IN POTS.—These are usually great favourites, as good plants may be taken in the dwelling-house for a few days. When lifting the plants from the border a batch should be selected for potting up. Choose healthy and compact plants, with good, firm crowns, and put up in 2½ or 3 inch pots, according to the size and variety preferred. The treatment advised is exactly the same as for those planted in a frame, but as the weather gets colder the pot plants may be brought in and placed on a shelf or stage in the greenhouse. A few plants will perfume the house or conservatory, and their fragrance is always appreciated. The best varieties are La France, Princess of Wales, and Admiral Acland for singles, whilst Marie Louise, Lady Home Campbell, Mrs. Astor, and Mrs. Arthur are first class double varieties.

LATE FUCHSIAS.—Fuchsia plants in full bloom must be kept well supplied with water and liquid manure, or be given a pinch of artificial plant food occasionally. Pinch off the old blooms before seed forms. Fuchsias grown as standards are particularly well adapted for greenhouse and conservatory decoration, supplying the requisite height for artistic grouping.

PROPAGATING YOUNG STOCK.—To ensure a batch of young Fuchsias for flowering early next season, cuttings may be taken now, and inserted in pots or pans of light, sandy soil, which should be placed in the propagating pit. When nicely rooted, pot them into 3 inch pots, and keep them on a shelf near the glass in an intermediate house all winter.

THE FLOWER GARDEN.

By W. J. GRICE, Gardener to Mrs. DUMPER, Keele Hall, Staffordshire.

TRANSPLANTING VIOLETS.—Transfer Violets from the open ground to frames with a south aspect. Some surplus plants were planted in a vegetable frame last year in these gardens, and beyond giving them a light dusting of fertiliser tacked into the soil they gave us no further trouble. The plants flowered profusely. Frames that have been used for Melons or Cucumbers are quite suitable for Violets. Remove the old soil, thoroughly wash the glass and woodwork inside and out, and lime with the walls. Prepare a fresh bed 12 inches deep of stable litter and leaves, covering it to a depth of 3 inches with a compost of loam, leaf-mould, manure, sand, and a little soot, mixing the ingredients thoroughly together. The bed should be brought up close to the glass as will just allow room for the foliage. Give the plants a liberal watering before hitting them if the soil is at all dry, and syringe the foliage with an insecticide. Lift each plant with a good ball of soil, pick off all runners, and plant firmly 9 inches to 12 inches apart. Apply water freely through a coarse rose to settle the soil directly the frame is planted. Keep the frame closed for a week or ten days, and apply a light shading during bright weather. When the plants are established air must be admitted on favourable occasions, for any attempt at forcing will result merely in leaf growth. Mats or other protecting material should be in readiness to place over the glass during frosty weather.

SWEET PEAS.—In favourable districts a sowing of Sweet Peas may be made for flowering out of doors in June. In other districts the best method is to raise the plants in a cold frame or greenhouse. Sow the seeds very thinly in pots, boxes, or trays. Water very carefully during the winter months, and admit air in favourable weather. If the plants are given cool treatment it should not be necessary to pinch the leading shoots.

PINKS.—Transfer Pinks that were rooted in frames into their permanent positions or reserve quarters. Prepare the beds at once, make the soil firm, and plant about 6 inches apart each way. They should be firmly planted and watered through a rose to settle the soil. It is well to plant some in the herbaceous or mixed borders, in groups of five.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, OCTOBER 9—

R.H.S. COMPETITIVE Exhibition of British-grown Fruits, at the Drill Hall, Buckingham Gate, Westminster.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 53.6.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, October 4, 10 a.m.—Bar, 29.0, temp, 62.0; Weather Rain.

SALES FOR THE ENSUING WEEK.

MONDAY—

Bulls, at 67 and 68, Cheapside, at 1 o'clock, by Protheroe & Morris.

WEDNESDAY—

Trade Sale of Bulls, at 67 and 68, Cheapside, at 1 o'clock, by Protheroe & Morris.

FRIDAY—

Bulls, at Protheroe & Morris' rooms at 1 o'clock.

The latest reports* from America indicate that Vegetable Seed Supplies.

present year has not been favourable to seed production, owing to the weather having been too wet. Naturally, in so large an area the seed crops show large variations. California, which is, of course, one of the greatest seed-producing regions, has suffered from hot winds, and the embarrassments of seed growers there have been increased—as has been the case in this country—by the difficulty experienced in obtaining sufficient acreage for seed growing. The high prices obtaining for cereals and the requirements of the canning factories have introduced new competition, and have naturally made seed raising more expensive. It is noteworthy, also, that our own special difficulty—shortage of labour—has already been felt severely by American seed growers. According to the preliminary reports received by the *Seed World*, Californian Onions will yield

a 60-75 per cent. crop (the report of this crop from the Canary Islands is, however, favourable, and a full harvest is expected); Californian-grown Lettuce, 80-90 per cent., and Spinach, from 10 to 20 per cent.

The reports from seed growers in Washington are dismal reading. Over 40,000 acres of Peas were grown, but the crop is extremely poor. Better prospects are reported from the Colorado district, where Beans, Spinach, Onions, and Turnips are grown for seed. Beans in Michigan are not expected to give more than 10 bushels per acre, and reports of the Pea crop indicate half to three-quarters of a crop.

The reports received from Denmark show that the severe winter and unfavourable spring weather have affected adversely the biennials grown for seed in that country. Cabbage is far below the average, and so also are Mangels and Turnips. It is said that it is doubtful whether any Cabbage seed will be exported. Cauliflower is about 60 per cent. of the average, and prices generally are high. The *Seed World* concludes from its investigations that the seed supply of the United States will be the shortest ever experienced.

So far as this country is concerned, there will be need for the strictest economy in the use of vegetable seeds. The wholesale trade may be relied upon to do everything that is possible to provide adequate supplies. Their industry is one that at all times demands the largest measure of provision, but present circumstances are extraordinarily difficult, and it behoves everyone to exercise the greatest economy in the use of vegetable seeds, for otherwise it will not be possible to provide the seed for the sowing of the yet larger acreages of garden vegetables which should be grown during the coming year. The Food Production Department is issuing a leaflet on economy in the use of vegetable seeds, and it is greatly to be hoped that everyone who cultivates garden ground will see to it that the seeds which he sows are made to go as far as possible.

Spencer Cupid Sweet Peas.

An interesting and successful application of Mendelian principles to a specific practical problem was recently laid before the Scientific Committee of the R.H.S. by Mr. George T. Dickson, of Newtownards. Mr. Dickson's object was to produce a race of Sweet Peas combining the dwarfness of the Cupid grandiflora type with the Spencer flower as borne by a tall parent. Instead of contenting himself with the old-fashioned hit-and-miss method, Mr. Dickson worked out for himself a scheme of probabilities, based on what is known as Mendelian expectation. Assuming—as he had good reason for doing—that tallness would prove dominant to dwarfness and the grandiflora type of flower would be dominant to the Spencer type, Mr. Dickson was prepared to expect that by crossing a tall Spencer with a dwarf (Cupid) grandiflora-flowered plant

he would obtain an F_1 hybrid of the ostensible form of a tall grandiflora. The cross was effected with some difficulty—only one in 130 pollinations proving successful. The F_1 hybrid fulfilled expectations in manifesting the two dominant characters of "tallness" and "grandiflora-floweredness." But instead of giving up his experiment because of its apparent lack of success in the first generation, Mr. Dickson was encouraged by his knowledge of Mendelism to continue it for another generation. Reasoning that the F_1 hybrid, although resembling only one of its two parents in each of the characters under consideration, must also be carrying in its germ cells the opposing characters (of dwarfness and Spencer-flower), Mr. Dickson was able to predict that by crossing the F_1 hybrids together he would obtain on the average in one of every sixteen members of the F_2 generation a plant of dwarf stature and with flowers of Spencer form. Experiment verified the prediction, and thus Mr. Dickson succeeded not only in demonstrating the usefulness of Mendelism as an aid to practical plant-breeding, but also in raising a charming and dainty race of Sweet Peas—the Spencer Cupids.

In recognition of the value of this work the Scientific Committee has awarded a Certificate of Appreciation to Mr. Dickson.

SIR FRANK CRISP, BART.—It is announced that the Borough Council of Henley-on-Thames has decided to confer the freedom of the borough on Sir FRANK CRISP, whose residence, Friar Park, is situated close to the town.

R.H.S. FRUIT SHOW.—The Royal Horticultural Society's annual competitive fruit show will be held on Tuesday next, the 9th inst., in the Drill Hall, Buckingham Gate, Westminster. Members of the Fruit and Vegetable Committee will meet at 12.30 p.m. to adjudicate on novelties. None of the other committees will meet on this occasion.

SUPPLIES OF BASIC SLAG.—We regret that in the paragraph on the fixed prices of basic slag published in our last issue (see p. 151), a portion of the letterpress was accidentally omitted, the result being that the additional charges for smaller quantities than 4 tons were given as full prices. It should be understood that these latter vary according to the percentage of phosphates contained in the samples, the lowest being 44s. and the highest 80s. per ton.

DUTCH BULBS.—According to statements in the U.S. Horticultural Press an embargo has been placed on the export of Dutch bulbs. The *Florists' Exchange* computes the average yearly importation of Dutch bulbs at 35,000 to 40,000 cases. One consignment of 12,000 cases is apparently all that is likely to reach the United States.

THE POTATO-DEALERS' REGISTER.—The Food Controller announces that the last day on which wholesale dealers and retail dealers in Potatoes may apply for registration has been postponed from October 1 to October 8. Forms of application may be obtained from the local food office for the area in which the dealer's premises are situated.

KINVER EDGE, WORDSLEY.—Those who have visited the seed trial grounds of Messrs. EDWARD WEBB AND SONS, which are situated at Wordsley, in Staffordshire, will remember the beautiful eminence known as Kinver Edge, a short distance from the nurseries. It is always a surprise to visitors to find such a beautiful

* *The Seed World*, Chicago, Sept. 5, 1917.

spot within so short a distance of the heart of the Black Country. Kewer Edge has now been presented by the family of the late Mr. THOMAS GOSVENOR LEE, of Birmingham, to the National Trust, to be held for the use of the public. This magnificent gift comprises some two hundred acres of heathery moor, which will be much appreciated, and will serve to keep green the memory of the famous naturalist. At a public celebration of the gift on September 20, Canon BAWNSLEY, the chairman of the Trust, formally accepted the gift, and Lord DARTMOUTH and the Mayor of STORRBRIDGE, made speeches congratulating the Trust on the acquisition of its first piece of property in the heart of the Midlands.

FOUR VETERAN GARDENERS.—We reproduce in fig. 51 an interesting photograph of four veteran gardeners, Messrs. H. BALSANINE, T. ROBINSO, J. JEMMIE, and A. SINGHAR, taken recently in the garden of Mr. BALSANINE at Westwood, Elham, where he now resides. Each of these four gardeners is over eighty years of age, and their combined ages amount to 356 years. Mr. BALSANINE was born in 1835, and began his gardening career in Scotland. Whilst a young man he was apprenticed to a brewer and barliff at "The Dell," Baron Sinton's residence at Englefield Green. Here he stayed for nearly half a century, and the late Baron, who esteemed him very highly, on his death left BALSANINE a legacy of one thousand pounds. He was a keen and successful Orchid grower, and was for twenty-five years a member of the R.H.S. Orchid Committee. In 1907 he was presented with the Victoria Medal of Honour, and in 1911 he retired from "The Dell" appointment. Some particulars of his career, and a portrait, were published in *Gard. Chron.*, Sept. 14, 1907, and his retirement is more fully dealt in the issue for April 1, 1911. Mr. T. ROBINSO was born in 1835. His experience was chiefly gained in the south of England, but his last post as head gardener was at Marlborough Park, Cork. Later he was for twenty-one years gardener and barliff at the Royal Indian Engineering College, Cooper's Hill, and retired in 1890. Mr. J. JEMMIE is the eldest of the party group, having been born in 1831. He is still in harness and has never been absent from work for a day through illness, being lame and hoarse. For the last fifty-six years he has held the post of gardener at Milton Park, Elham, where he has served three generations of Barons de Wormes. Mr. A. SINGHAR is 18 years younger than Mr. JEMMIE. He began work at the age of 22, and has had a very varied experience, having served in gardens as far north as Banff. His last position was that of head gardener to R. CHAMBERSON, Esq., at Hamble House, Wares, where he remained for fifty-one years, retiring in 1909.

POTATO GROWER FINED £300.—At Walsby Police Court, recently GEORGE TAYLOR, a Potato grower, was fined £300 on the grounds of having sold seed Potatoes at prices above the maximum. The excess profit was £10. He pleaded that the Government had commandeered 957 tons of his Potatoes at 2s. a ton, while his neighbours had obtained 4.11 a ton on the market.

MEDLAR SEEDS AS POULTRY FOOD. It is not generally known (states the *Journal of the Royal Society of Arts*) that the seeds of the Japanese Medlar (*Eriobotrya japonica*), a tree which is grown for its fruit on the French Riviera, can be used for feeding poultry, rabbits, and other domestic animals. They can also be used for distilling a spirit resembling Kirschwasser. Food for poultry can be prepared by simply boiling the fresh or dried seeds in water for thirty to forty-five minutes, and then crushing them or using them whole, as may be desired; or, instead of being boiled, they may be roasted like coffee. Another plan, which has the advantage of not requiring heat, is to crush the seeds, then moisten them with suffi-

cient water, and allow them to remain in this state for twelve hours. The mass is spread out in a thin layer to dry in the sun, in order to remove any traces of the bitter flavour. This poultry food can be used dry or wet as preferred.

SOIL BACTERIA. During the past eight years Mr. H. JOEL COSS has been engaged in the very difficult and important work of studying the bacterial flora of the soil. "Our knowledge of the bacterial content of the soil progresses very slowly, and this because of the fact that it is a new branch of science. The organisms have to be isolated and cultivated. Many of them are new and not easy of cultivation under artificial conditions. The soil bacteria are of two types; those which form spores and those which do not. The former are relatively few in number, and are probably not of agricultural importance, since they appear to occur in the soil only in their spore—or resting—stage. The non-spore, or, on the other hand, occur in great number and variety, increase amazingly when the soil is

HISTORIC FIRM.

WITH some notable exceptions British seed firms have been more or less short-lived. They have flourished for periods of varying brevity, but few have continued successful for more than a century. That being the case, it is cheering to find an exception in the case of a firm which is known, not only throughout Scotland, but also throughout the whole of the United Kingdom—that of Messrs. Austin and McAslan, of Glasgow. The bicentenary of the firm was celebrated on the 28th ult. by a dinner in the Trades Hall, Glassford Street, Glasgow, at which a numerous and representative company was present. The chair was occupied by Mr. Alexander N. Hunter, the present head of the firm, and the guests numbered about one hundred and fifty. The Lord Provost and other important townspeople were present, and Sir Robert Wright, the chairman of the Board of Agriculture for Scotland. Representing the staff of Messrs.



FIG. 51. FOUR VETERAN GARDENERS. From left to right, H. Balsanine, T. Robins, J. Jemmie, and A. Singhar.

cient water, and it is when it is agitated. Some of them are known to be ammonifiers—that is, producers of ammonia. As an example of the effect of aeration in the bacterial population of the soil, Mr. COSS mentions that whereas 1 gram about 15 grams of dry soil yielded about 10 million colonies of a similar amount of the same soil yielded after aeration about 20 million colonies. It will evidently be a long while before we shall be able to purchase soil fertility factors in stores, which, added to soil, will infallibly set going those beneficent processes of corruption, and those only whereby the food and abundant necessary for perfect vegetable growth are produced. Yet it does not require much vision to see the agriculture and horticulture of the future employing the bacteria of the soil in as sure and beneficial a manner as the dairyman now employs cultures of microorganisms to act as starters in producing the kind of cheese he wants.

Austin and McAslan were Messrs. John Cairns, R. M. Young, S. G. Smith and J. J. Robertson. The following represented the garden and agricultural seed trade and nursery trade: W. Cuthbertson (Dobbie and Co., Edinburgh), J. M. Bridgford (Watkins and Simpson, Ltd., London), A. W. Johnson (Hurst and Son, London), Andrew Aitken (Chas. Sharpe and Co., Ltd., Stamford), T. S. Findlay (Findlay Bros., Barlingston), Joseph Dobson (Wm. Leighton, Glasgow), T. B. B. Kerr (Kerr and Co., Glasgow), James Gray (Glasgow), W. P. Maltman (Alex. Cross and Sons, Glasgow), James McKenzie (Glasgow), Andrew Matherwell (Glasgow), T. C. Meldrum (Smith and Meldrum, Forfar), John Sutherland (Lenzie), John Smellie (Busby), Thos. Jeffrey (Edinburgh), Chas. Young (Kennohead), Thos. Thomson (John Donaldson and Co., Edinburgh), J. D. Alexander (Pringle and Alexander, Glasgow), R. W. Todd (Danlop and Todd, Glasgow), Robt. Howie (Glasgow), W. Gilchrist (W. Gilchrist and Sons, Glasgow), P. M. Hamilton (Arch Hamilton and Sons,

* *Soil Flora Studies*. Pails No. 57, 58, and 59, New York Agric. Exp. Station, Geneva, N.Y.

(Glasgow), Andrew Giffen (Glasgow), John Hughes (Dunlop), Wm. White (James Gray and Co., Stirling), John Gray (James Gray and Co., Stirling), James Ramsay (Helenburgh), Andrew Dewar (Cartshore and Sons, Stirling), J. W. Cook (Cook and Blair, Greenock), W. S. Newton (Saxnor, Cooke and Ridal, Sheffield), J. S. Soutar (Ransomes, Sims and Jeffries, Ipswich); J. S. Brunton (*Horticultural Trade Journals*), John Yuille (*Glasgow Citizen*), James Cameron (*Glasgow Herald*); G. W. McHattie (representing the Royal Caledonian Horticultural Society), H. M. Mackie (representing the Glasgow and West of Scotland Horticultural Society), Wm. Strang (representing the Glasgow Agricultural Society).

The toast of the evening was "Austin and McAslan," which was proposed by the Lord Provost and replied to by the host. There were a number of other toasts, and the evening concluded by the singing of "Auld Lang Syne."

This event is full of interest, in that, as we have hinted above, it is practically unique in the history of the British seed trade. It seems a pity that there is extant no historical record of this most absorbing of trades, and of all the vicissitudes through which it has passed. We fear that, at this late date, anyone who took on such a task would find it overwhelmingly difficult, owing to the scattered nature, or indeed, in many cases, the total absence of material.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

PICEA PUNGENS GLAUCA.—I enclose a photograph (see fig. 52) of a very fine specimen of *Picea pungens glauca* in the gardens of this college. The tree originally came from the nurseries of Messrs. Dicksons, Ltd.; it is 35 feet high, and the spread of branches at base has a circumference of 44 feet. (*Miss Evelyn Lucas, Horticultural College, Chester.*)

ACETIC ACID AS AN INSECTICIDE.—A distinguished chemist of my acquaintance tells me that acetic acid or vinegar is a powerful insecticide, and that it will get rid of white fly and aphid generally from greenhouses. The acid is put in a small enamelled kitchen pan, and is volatilised by means of a spirit lamp—the house, of course, being kept closed during the fumigation. I write to inquire whether this apparently simple remedy is generally known, and whether, if it has been tried, it has proved as efficacious as my informant believes it to be? J. N.

INDIAN AZALEA IN DERBYSHIRE.—The accompanying photograph (see fig. 53) of my white single-flowered Azalea (*Rhododendron indicum*) in flower was taken on June 8 last. This plant has been out of doors in this garden for seven years, with no protection at all in winter, yet even last winter it looked green and happy all the time. I moved it from its original east border three years ago, but it has thriven equally in either situation. Derbyshire is supposed to be a cold county, and here we are over 500 feet above the sea, so I think the single-flowered Azalea has fairly earned a place among hardy plants—especially as I have several others also out of doors, but not so big and old. W. Arkwright, Sutton Seeds, dale, Chesterfield.

TOWN-PLANNING AND ALLOTMENTS.—Mainly through the practical assistance of the Food Production Department great help has been given to allotment holders, and their holdings have been rendered more secure, at all events until after the war. But the advantages in many cases only extend until the owners of the land to be used for building purposes require the sites to carry out their plans. The use of allotments, with their pleasures and profits in food production during the war, has made the holders keen on getting more permanent arrangements whereby they may enjoy as concessions. Groups of local authorities around London and in other parts are now busy in preparing town-planning schemes under which all the property owners

in their district are concerned, and it should now pass into law that no scheme for the development of groups of dwelling-houses should be passed by the superior authorities to whom they have to be submitted unless a proportionate area for allotment gardens be embodied. The portion so assigned should be purchasable by the local authority at a price based on its value as agricultural land as shown by the assessment, or the original cost to the owner, and not at its

main roads and other sanitary arrangements, might well be modified with advantage. But to get back to the land. The allotment gardener and smallholder has now got something of the gardening facilities which he has been craving for a long time, and it will be his own fault if he does not get still better things by law and right. The local authorities are always anxious to do their part, but the laws under which they may acquire land only by showing that they can make it pay as allotments render them powerless. The higher authorities must see to it. James O'Brien, Harrow-on-the-Hill.

SEEDLINGS OF MORISIA.—Sir Herbert Maxwell's experience of the seeding propensities of *Morisia hypogaea* quite accords with my own. The plants, which are growing in full sun on a south-facing bed of granite chippings and soil of a considerable depth, seed very freely every year, and amongst the older plants there are now, as in previous years, a large number of seedlings, which, as he observes, may easily be mistaken by the unwary for *Grondsel*. Whenever I have grown the plants under what might be described as hard and superficially dry conditions seedlings in rather large numbers are to be found at the beginning of the autumn. I am convinced that many people grow this plant in too rich a soil, when it either fails to ripen seed, or the seedlings damp off. J. B. F.

NYMPHAEA STELLATA.—A pot of this blue Water Lily ("Berlin" variety) was left out in a lead tank here last winter. The tank has about 3 feet of water in it, and was frozen over to a depth of about 6 inches for several weeks. During the summer leaves appeared, and now (September) it is in flower. The plant has not been disturbed since it was placed in the tank about 18 months ago. I am informed that this Lily has not usually been considered hardy enough to withstand a winter in this country. Gerald Leder, Walkhurst Place, Sussex.

ORDERS OF THE ROYAL COMMISSION ON PAPER AND SEEDSMEN'S CATALOGUES.—In March last the Royal Commission on Paper issued an Order under the terms of which tradesmen's catalogues, price lists, or advertising circulars could be sent out only in response to direct applications for such catalogues, etc. On March 12 a representative meeting of members of the seed trade was held, and a committee appointed, of which I was asked to act as chairman. As a result of several meetings of the committee, and correspondence and interviews with the Paper Commission, a very valuable concession was made on May 15, by which the distribution of seedsmen's catalogues was permitted by the Commission during the present year on condition that not more than 50 per cent., whether in number or in weight, of the catalogues distributed in the year 1914 were sent out, and that the catalogues contained the offer of "Food Product" seeds only. Subsequently, on August 20, a further Order, which revoked the earlier Order, was issued by the Paper Commission, granting licence for the issue and despatch of tradesmen's catalogues, price lists, and advertising circulars, between the date of this licence and January 31, 1918, to the extent of one-third of the weight of paper used for such catalogues, etc., between August 1, 1916, and January 31, 1917. The situation thus raised was so serious that an interview was at once arranged with the Paper Commission. As a result of subsequent interviews and correspondence, the Commission has now definitely declared that seed merchants may still avail themselves of the special concession granted in May last for the issue, without application, of 50 per cent. of the weight of catalogues sent out in the season 1915-14, provided that such catalogues refer exclusively to "Food Product" seeds, and has asked me, as chairman of the Trade Committee, to communicate this decision to the members of the seed trade. It is therefore now open to seedsmen either to send out combined catalogues of vegetable seeds, flower seeds, etc., as formerly, but using only one-third of the paper utilised between August 1, 1916, and January 31, 1917, or else to divide their catalogues into two parts, and thus make use of the 50 per cent. concession for catalogues of "Food Product" seeds, in addition to the one-third allowance for other catalogues. The Paper Commission, in response to my appeal, will not now place a limit



FIG. 52.—*PICEA PUNGENS GLAUCA* AT CHESTER HORTICULTURAL COLLEGE.

estimated value is building land. It may be said that this would press heavily on the owner on whose property the selected land for allotments was situated, but that might easily be met, for all the owners included in a town-planning scheme to which they have consented have a common interest, and could contribute *pro rata* the difference between the lower price coming to the owner of the ground taken for allotment

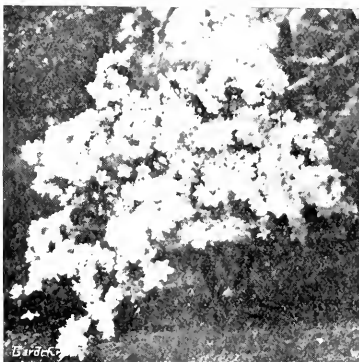


FIG. 53.—*AZALEA INDICA* IN THE GARDENS AT SUTTON SEASDALE, DERBYSHIRE.

gardens and its value as building land, which they were about to test. Furthermore, as a concession to the interests of the estate owners for land set aside for open spaces and allotments, the local authorities should be empowered to relax some of the more or less non-essential building byelaws, and especially clauses relating to the open spaces in front and rear of domestic buildings which, under town-planning schemes, with their broad

on the number of catalogues issued, provided that the weight of paper does not exceed 50 per cent. of that used in the year 1915/16 in the case of catalogues of "Food Product" seeds, or 55 per cent. of the weight of paper used between August 1, 1916, and January 31, 1917, in the case of all other catalogues. But it is definitely laid down that catalogues issued under those concessions must include the total number sent out, whether in response to applications or without application. The Commission has agreed that catalogues of "Food Product" seeds may include the offer of grass seeds, and also of garden sundries.

— P.S.—The chairman of the Royal Commission on Paper received a deputation from the Seed Trade Committee on September 28, and, after very full and sympathetic consideration given to points raised by the deputation, the following official ruling was given:—The recent Order of the Paper Commission relating to all catalogues issued between August 20, 1917, and January 31, 1918, shall not be deemed to apply to any catalogues for bulbs, nursery stock, seeds, etc., which had been printed before the date of the Order (August 20, 1917) but had been sent out since that date. Any balance of the catalogues so prepared and printed which may have been reserved for issue to customers, and which have not yet been sent out, must now be deemed as coming within the recent Order of the Paper Commission dated August 20, 1917, and the weight of such catalogues must consequently be included in the weight specified in the recent Order affecting all catalogues issued between August 20, 1917, and January 31, 1918. Catalogues containing the offer of "Food Product" seeds exclusively are still covered by the concession of May 15 last as explained in my letter to you of September 25. I may also mention that the secretary of the Paper Commission, after writing to the secretary of the Horticultural Trades' Association on September 29, 1917, stated:—"Catalogues of flower seeds fall within the conditions of the general licence of August 20, 1917, a copy of which is enclosed herewith, and in the case of catalogues containing both food and flower seeds the proportion of an *all printed matter* must be observed at least at one." Arthur W. Sutton.

APPLES IN EAST LOTHIAN (see p. 111).—When I stated on p. 52, that the Apple crop in East Lothian was under the average, that, of course, referred to the crop as a whole, some trees being heavily cropped, though in a neighbouring garden, I am told, there is no fruit at all. A feature of some trees which is rather uncommon, as far as concern fruit, every blossom having set instead of only one or two, which is usual. Red Astrachan is very fine here, as well as in Mr. Taylor's garden, the fruits measuring 9 inches round and beautifully coloured, but this variety crops only once in ten years, and then gives mispud fruits. Neither is Duchess of Oldenburg, worth a place in any save large collections. Mr. Taylor is correct in assuming the existence and cultivation of more than one variety of James Grieve. Our trees came from the raiser, and the variety is a consistent cropper, yielding fine Apples. The green grown Cadross Green some 35 years, but would not esteem it equal to Stirling Castle. It has, perhaps, carried two full crops in that period, and it keeps much longer than the variety first named. The Apple trees here, though in high time, are really equal to cordons, the number of branches being limited to only as many as leaves them fully exposed. Bezug to the exact question of trees on grass, I do not find, as I have before stated, that fruit is smaller from trees on grass than on trees on cultivated land. Red Astrachan is a case in point. Our largest fruits are from trees on grass, also in the case of Warner's King, Ribston Pippin, King of the Pippins, and others. Since Apples had grass grown on the border in which they are rooted, the trees have been much healthier, and there has been no deterioration in the fruit. The same is true of Peas. It is not remarkable, notwithstanding the quantities of Apples grown in Great Britain and Ireland, that dealers should anticipate a famine two months hence? I have had hitherto no difficulty in maintaining a regular supply up to May. It has been explained that

orchardists in the past have rushed early and late varieties on the market previous to supplies from America arriving, and I have frequently seen in September and October varieties that are at their best in March and April exposed for sale. "Cannot these be kept back this season?" R. P. Brotherton.

ABSENCE OF BIRDS AND WASPS.—In my Surrey garden it is impossible in normal years to have any fruit—Peaches, Plums, and even Apples and Pears, unless it is protected from attack by birds and wasps. Shortage of labour prevented this precaution from being taken this year, and even the Peaches and Nectarines, of which there has been a wonderful crop, were left uncovered. Nevertheless the fruit crops have survived, so far as a Peach or Nectarine, and, so far as my observation goes, not a Plum, Apple or Pear, has been attacked either by bird or wasp. The birds seem to have deserted—not one of my nesting-boxes was occupied, and wasps are all but absent. Am I particularly lucky with my fruit, or is this immunity from attack fairly general? J.

SOCIETIES.

ROYAL HORTICULTURAL TRIALS AT WISLEY, 1918.

The Royal Horticultural Society will hold their 52nd Annual Show at Wisley, Surrey, from August 20 to September 25, 1918. The principal classes are:—(1) Perennial plants, including all kinds of flowers, and (2) Chrysanthemum maximum and its allies, to be held in 1918. Three plants of each variety to be tried together with the necessary entry forms, one for each variety, should reach the Director, R.H.S. Gardens, by November 30, 1917.

TRIAL OF LATE PEAS AT WISLEY.

The following awards have been made to Late Peas by the Council of the Royal Horticultural Society after trial at Wisley:—*Best of Year*, Latest of All, sent by Messrs. Barr and Sons, Longstender, sent by Messrs. Barr and Sons, and Messrs. Barr and Sons, Buntingford, sent by Messrs. Barr and Sons, Hildburgh, sent by Messrs. Barr and Sons, The Gladstone, sent by Messrs. Simpson and Messrs. Barr and Sons. *Commended*, Anticipation, sent by Messrs. J. Carter and Co., Late Queen, sent by Messrs. Nutting and Sons, Michelmas, sent by Messrs. Barr and Sons, No. 15 Ultra Selected, sent by Messrs. Barr and Sons.

Obituary.

J. C. COLLINS, Messrs. W. Guthrie and Son, of Hildburgh and Barmouth, writes an interesting and pithy account of the death of their traveller, Mr. J. C. Collins, who passed away on the 50th anniversary of the age of 66 years. He was greatly esteemed by all who knew him, and had worked conscientiously for the firm for the past thirty years.

E. D. TILL, The death has occurred of Mr. E. D. Till, of Exminster, Kent. Mr. Till, who was 75 years of age, was a keen naturalist, more especially enthusiastic on the subject of tree-planting. He worked for many years toward the establishment of Arbor Day in the country, and his own district contains many evidences of his energetic planting. He upheld the necessity for the establishment of trees, not only in towns, but also in villages and along country lanes. He was an occasional contributor in former days to the *Gardener's Chronicle*, and his letters on his favourite subject will be recalled with pleasure by our other readers.

CATALOGUES RECEIVED.

- 1. *Plant Book*, 45, Ltd., 65, South Street, Cardiff, 1917, 110 pp.
- 2. *LEWIS & SON*, 106, St. Mark Lane, E.C. 4, London, *Gardeners' Art plant Catalogue*, 1917, 110 pp.
- 3. *CHRYSA & SONS*, Ltd., 1, Grosvenor Gardens, Chelsea, *Chelsea Fruit Trees, Trees, Shrubs, and Roses*, 1917, 110 pp.

CROPS AND STOCK ON THE HOME FARM.

WARDS FOR AGRICULTURAL WORKERS.

THE Corn Production Act, passed on August 21, which guarantees minimum prices of Wheat and Oats, also makes provision for fixing minimum rates of wages.

All farm workers, and also workers in market gardens, nursery grounds, orchards, woods and other beds, are included under the Act, which applies to boys, women and girls as well as men.

For the purpose of settling, under the Act, the lowest rates of wages which may be paid to workers in agriculture, a Central Agricultural Wages Board is about to be formed, consisting of sixteen members representing employers, sixteen members representing workers, and seven impartial persons appointed by the Board of Agriculture and Fisheries. The Wages Board will be established by the Board of Agriculture and Fisheries, after consultation with the Minister of Labour.

The Wages Board will have power to issue permits to enable workers who are infirm, or physically injured, to obtain employment at less than the minimum rates. Nothing in the Act prevents the payment of wages at rates higher than the minimum rates.

District Wages Committees will be set up throughout England and Wales, each comprising an equal number of representatives of employers and workers, respectively, and also one or more impartial persons appointed by the Board of Agriculture and Fisheries. These Committees will have to make recommendations to the Central Board as to the rates of wages applicable to their districts.

The representative members on the Central Board will be partly elected by organisations representing farmers and labourers, respectively, and partly nominated by the Board of Agriculture and Fisheries. The President will be glad to receive and consider suggested names or representatives of employers, submitted by farmers' organisations, or by groups of at least ten farmers, and of representatives of workers, submitted by labourers' organisations, or by groups of at least ten agricultural labourers. From among the persons so suggested nominated representative members of the Central Board and of the District Committees will be selected.

All suggestions of names, together with the full postal addresses of the persons suggested, should be forwarded at an early date to The Secretary, Board of Agriculture and Fisheries, 30, Pall Mall, S.W. 1. Members of the Central Board and of District Committees will be entitled to an allowance in respect of out-of-pocket expenses.

MAIZE FOR CATTLE.

THIS season is most favourable for the growth of Maize, and although milk cows have a quantity of grass available, a daily feed of Maize is a good change and it improves the milk, which, owing to the gross, soft growth of the grass, is not quite of the same quality as during drier weather. As there is likely to be a surplus of Maize this season it should be given to young stock on the pastures, thus saving the grass for autumn and winter food, as well as providing a change of food. Maize cannot withstand frost, a few degrees being sufficient to injure the succulent leaves. Breeding sows, too, appreciate this green food given in the yard.

THE CABBAGE CROP.

ESPECIALLY promising is the Cabbage crop intended for the cows and sheep during October and onwards. Some plots are infested badly with caterpillars from the Cabbage Butterfly, which will quickly do much harm to a valuable crop unless the plants are syringed with a strong solution of salt and water, which will cleanse the plants from the caterpillars. As the grass declines in the autumn in quantity and quality, Cabbage, given either on the grass or in the cowhouse, assists milk production, and, continued later with Mamollets, it is equally valuable. For sheep, too, Cabbage is a favourite food, especially for fattening lands, which thrive in some cases amazingly. E. Moloney.

THE APIARY.

By CHLORIS

WINTERING BEES.—It is necessary that each colony should have a sufficiency of sealed stores to carry the bees through the winter and early spring. To be quite safe the amount should be 30 lbs. As sugar is unobtainable for feeding it would be wise to sacrifice a stock in order to increase the food available for other colonies, and utilise the bees for strengthening any weak hives. Spacing combs that cannot be covered on both sides with bees should be removed, and the broad chamber reduced by the use of the division boards placed on each side the remaining frames. A strong hive is one that has 3 frames crowded with bees. The distance between frames should be reduced to a minimum, so that the distance from centre to centre of the frames should be 1½ inches, and this may be attained by using a wide and a narrow metal end alternately. Naturally the full combs of food will be on the outside of those containing brood. To prevent the bees from going under the frames to get their food, two pieces of wood about 2 inch square should be placed on top of the frames. When bees are compelled to use the lower part of the frames they are liable to be chilled during cold weather. It is surprising how many bee-keepers fail to realise how well every colony should be wrapped up. Over the frames place a piece of woollen carpet, or similar non-conducting material, that will exactly cover the whole of the frames, so as to leave no gaping holes, which only create a draught, which is harmful. Over this lay a good piece of folded brown paper, and on this another strip of carpet. Then provide yourself with a lightly packed cushion, fill it with chaff, cork dust, leaves, torn paper, shavings, or some similar non-conducting material, and the bees should be in no danger of suffering during any severe weather. In the case of "W. B. C." hives, and these are undoubtedly the best, the space between the brood chamber and the outside wall should be filled with chaff, as in the case of the cushion. See that the roofs are watertight. If there be any doubt, stretch tightly over the roof a piece of calico, tack firmly down, and give it several coats of paint. Sometimes the roofs are a considerable source of worry to those whose bees are some distance from home. They need cause no worry if a peg be driven into the ground on one side of the hive and a rope fixed to this long enough to nearly reach the ground on the other side, on the free end attaching a brick. The entrances should be closed so that one bee only can pass at a time, and where the strips of wood regulating the entrances are not like a "V" in shape, as under



the entrances should be shaded from direct rays of sunlight, for when snow has fallen and the sun shines brightly, bees are tempted to take a flight, which usually ends in death.

CLEARING WEEDS.—This is an excellent time of the year to make the ground around the hives free of weeds. It is essential that bees have unimpeded access in front, and it is decidedly good that the whole hive stand on a clear piece of ground, so that the air may circulate freely, and thus help to keep the hives quite dry, for damp hive walls are the cause of dysentery. To facilitate keeping the space free of weeds a good coating of coal ashes may be applied to the whole space freed, and this will make hoing very easy during the coming year. By this means the apiary will present a tidy appearance and render any work necessary in winter much easier and more comfortable, for weeds, including grass, retain much moisture from rains and dew, and soon make the strongest hoods wet through.

WEAK STOCKS.—Whenever the colonies are weak, or are headed by unproductive queens, do not hesitate to unite such stocks to others that would benefit by a little addition, utilising all the brood as far as possible and destroying use less or worn out queens.

ANSWERS TO CORRESPONDENTS.

CORRECTION.—Mr. Molyneux informs us that an error crept in in regard to the name of the prolific Potato illustrated last week; the correct name is Warwick Castle.

ELMS AS FOREST TREES.—If, *as I doan*, The Common Elm (*Ulmus campestris*) is the only species of *Ulmus* used on a large scale as a forest tree in this country, though *U. stricta* (ornamentalis), the Cornish Elm, and *U. Weymouthii* are also used to a certain extent. The two latter are more in demand as street-trees, the branches being more ascending than those of most Elms of quick growth, and therefore less liable to be broken by wind or snow. There are two trees known as the Dutch Elm: *U. Belgica*, a hybrid between *U. montana* and *U. nitens*, which is chiefly used on the Continent as a street-tree, and *U. major*, a hybrid of the same parentage, which is of the same, or somewhat less, value than *U. campestris* as a forest tree. Superficially there is a strong resemblance between the two, but the latter is a much larger and stronger grower.

NAVES OF FRUITS.—In the naming of fruits, we desire to oblige our correspondents as far as we can, but the task would become too costly and too time-consuming were there no restrictions. Correspondents should observe the rule that NO MORE THAN SIX VARIETIES be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. The fruits should be just approaching ripeness, and they should be properly numbered, and carefully packed in strong boxes, cartboxed, as often mentioned in the past. A leaf or shoot of each variety is helpful, and in the case of Plums, Peaches and Nectarines, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. By neglecting these particulars, correspondents add greatly to our labour and run the risk of increased delay and incorrect determination. We do not undertake to send answers through the post, or to return fruits, Fruits and bearing plants must not be sent in the same box. Being in any case is unworkable.

- J. C.* 1, decayed; 2, *Bourne*; *Diel*; 5, *Bourne*; *Bose*; 4, *Fondante*; *d'Automne*; 5, *Glen*; *Morcan*; 6, *Duchesse*; *d'Angoulême*; 7, *Aston*; *Town*; 8, *Boycume*; *du*; *Conic*;—*W. T. W.* 1, *Bourne*; *Superline*; 2, *Doyenne*; *du*; *Conic*; 5, *Dumoulin*; 4, *Baronnie*; *de*; *Mello*; 5, *Bourne*; *d'Amant*; 6, *Easter*; *Bourne*; 7, *Bourne*; *Clairjean*; *L. B.*; 3, *Collin*; 9, *Jubilo*; 10, *Deformed*; *fruit*, cannot name; 12, *Cat's*; *Head*; *M. S. P.*; 1, *Potts's*; *Seedling*; 2, *Collin*; *Pippin*; *J. J. S.* 1, Not recognised; 2, *New*; *Haythorn*; 3, *The*; *Queen*; 4, *Dutch*; *Collin*; 5, *Franklin's*; *Golden*; *Pippin*; 6, *Washington*; 7, *Amie*; *Elizabeth*; *Shakespeare*; 1, *Gravenstein*; 2, *Royal*; *Bussot*; 3, *Bramley's*; *Seedling*; 4, *Reinette*; *de*; *Caux*; 5, *Golden*; *Nolle*; 6, *Lady*; *Hempden*; 7, *Hertfordshire*; *Pearmain*; 8, *Mildred's*; *Pearmain*; 9, *The*; *Queen*; 10, *Amie*; *Elizabeth*; 11, *Green*; *Blenheim*; 12, *Gronacher*; 15, *Dumoulin's*; *Seedling*; (*Wellington*); 14 and 15, decayed—*M. D.*, *Norwich*, 1 (from pyramid tree), *Williams'*; *Bon*; *Christian*; 2 (from espalier), *Bourne*; *d'Amant*.

NAVES OF PLUMS. Correspondents not answered in this issue are requested to let us know as to consult the following number.

- F. Smith, Hull.* 1, *Saxifraga*; *lingulata*; var. *lutescens*; 2, *Saxifraga*; *var.*; *sub*; *integrifolia*; 5, *Saxifraga*; *var.*; *anthonia* (not hardly known as a wood and garden use);—*J. H. Gray*, *Clematis*; *President*;—*C. H.*, *Bo*; *quercus*; *He*; (*Evergreen*); *Oak*;—*E.*, *Bo*; *ing.*; 1, *Viburnum*; *Chalms*; 2, *Symphoricarpos*; *memmosus*; 5, *Paris*; *Am*; 4, *Eucynus*; *europaeus*; 5, specimen insufficient.

TIMBER MEASURING.—*T. H. B.* The timber measurer's equipment consists of a 66-foot Chestman's tape-line, or, instead of this, a 5-foot wooden rod, standard girth strap, scribe knife, and a bent piece of iron with eye at end for drawing the girth-strap beneath such trees as the arm cannot readily pass under. A piece of thin whipcord or string is frequently used for girthing timber, but as the elasticity of this varies greatly and has in many instances led to dispute, a much fairer plan,

and one that is liable to no abuse, is to use the 12-foot girth-strap, upon which every inch in length is reckoned one-quarter. The proper quarter-girth can, on this strap, be seen at a glance, and by adopting it the usual trickery to which the string and rule is liable is done away with. For entering the measurements the most convenient book is that 9 inches by 4 inches, with stiff pasteboard covers, ruled with horizontal lines, and divided into four vertical columns. To measure proceed as follows. Mark a number with the scribe on the butt end of the tree, and enter a similar number in the first column of the book, which will serve not only to identify the particular log, but prevent any risk of measuring twice. Should the taper throughout the whole length of the tree be tolerably gradual, set down the length in the second column of the book, opposite the number already entered. At exactly one-half of the length of the portion measured take the girth by passing the girth-strap tightly around the stem. Put this down in the third column of the same horizontal line as the number and length. Should, however, as frequently happens, the trunk taper not be fairly uniform throughout the entire length, several measurements may require to be taken. For example, a tree may be 36 feet in length, running of regular taper to perhaps 12 feet, after which it branches out, reducing the size of the remaining part very considerably for, say, another 12 feet, where it again branches and leaves the last 12 feet of a relatively small size. With such a tree it would be impossible to obtain anything like a correct measurement by taking only one length and girth. The difficulty is, however, readily got over by first measuring the lower 12 feet, then the second and third, giving the respective lengths and girths in the same vertical column as already described. The measurement of these trees, so far at least as the field work is concerned, is now completed, the contents being made up at leisure, by referring to "Hoppus's Measurer"—a book with which every forester should be supplied. By squaring the quarter-girth in inches, multiplying by the length in feet and dividing by 144, the same result will be obtained. This is, however, a tedious method, especially where a large number of trees have to be dealt with, and should only be adopted when Hoppus is not at hand. Measuring the height of trees: The most simple way is as follows: Take three laths, such as bricklayers use for tiling, and nail them in the shape of the frame: *a a* must be of equal length; *a* and *b* being placed on the ground, the eye must follow up the larger lath *d d* until it is in a line with *c*, the top of the tree or object you wish to measure. The frame must be placed as level with the bottom of the tree as possible. Should the ground be very uneven you must give and take accordingly. It will be seen that *b* to *c* is the same length as *c* to *e*. Kay's Dendrometer is also useful for obtaining heights of trees; it may be obtained from Dicksons and Co., Edinburgh. Average prices of home-grown timber: Apple and Pear, from 28, 6d. to 38, 6d. per cubic foot; Ash, from 35, 6d. to 48, per cubic foot; Alder, from 5d. to 10d. per cubic foot; Beech, from 10d. to 18, 4d. per cubic foot; Birch, from 5d. to 10d. per cubic foot; Chestnut (Spanish), from 18, 3d. to 18, 6d. per cubic foot; Chestnut (Horse), from 2d. per cubic foot; Cherry, from 9d. to 18, 2d. per cubic foot; Elm, from 7d. to 18, 3d. per cubic foot; Larch, from 9d. to 18, 6d. per cubic foot; Oak, from 18, 3d. to 28, 6d. per cubic foot; Poplar, from 9d. to 18, 4d. per cubic foot; Scotch Pine, from 4d. to 18, per cubic foot; Spruce Fir, from 7d. to 18, 4d. per cubic foot; Willow, from 18, to 18, per cubic foot; Walnut, from 18, to 38, 6d. per cubic foot; Sycamore, from 18, to 28, 6d. per cubic foot.

Communications Received.—H. W. J. H., P. R. A., C. F. W., O. D., W. R. E. T. B., H. M. T. A., L. W. B., S. J. M. G. F. S. H., F. H. W. M., H. G. R., J. M. H. D. W. L. B., J. R. W. S. N., E. G. H., A. H. P., D. R., to B. W. C., M. L. W., R. C. H. W. J. B. E., C. D. M., E. H. M. W. C. S., A. A., L. M. R. H. E., Broches; A. W. R., A. Brother; M. S. Rombey; L. J. F., J. T. M. (next week); S. A., W., L. H. & Son.

MARKETS.

COVEY GARDEN, October 5

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate from day to day, but occasionally several times in one day.—Eds.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots and their average wholesale prices. Columns include plant names (e.g., Aralia Sieboldii, Asparagus plumosus) and prices per dozen or per bushel.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers and their average wholesale prices. Columns include flower names (e.g., Asters white, Carnations) and prices per dozen or per bunch.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage and their average wholesale prices. Columns include foliage names (e.g., Adiantum Maiden Hair) and prices per dozen or per bushel.

REMARKS. Cut flowers are only in moderate demand, and the trade is affected by the frost on the roads, and there is also some delay in the early morning arrivals. Prices generally are unchanged, and there are no new subjects on offer. Carnations are sufficient to the demand, and Roses are being offered in excellent condition. Chrysanthemums are getting more plentiful. Yellow varieties are the most scarce. Among the large blooms there are a few more in bunches of both white and coloured varieties. Several bunches of Violets (Princess of Wales) are arriving in better condition. Gladioli, Eucharis, and Stempetums are almost over for the season. There is abundant supply of Michaelmas Daisies of various sorts.

Vegetables: Average Wholesale Prices.

Table listing vegetables and their average wholesale prices. Columns include vegetable names (e.g., Artichokes, Beans) and prices per bushel or per dozen.

SITUATIONS WANTED (Continued from page iii)

GOOD SINGLE-HANDED GARDENER; Handyman, can be well recommended, married, over military age, good references, GARDENER, The Spring Lodge, Church Road, Hantsill, W. 7.

J. W. HARRIS, Beverden Gardens, Ox-shott, Surrey, highly recommended, a good, experienced, all-round GARDENER, with two or three men, age 40, two children, grown up, excellent character, 11 years in present situation.

SITUATION required as JOURNEYMAN (discharged) by discharged soldier, age 25, Eastern Counties preferred, E. CARTER, The Gardens, Holme Dale Hall, Theobald, North Hants.

LADY GARDENER seeks Situation, within 30 miles of London. Single. References on Nurses and Gardens and in Garden and Orchard. E. M. R. LARK, The Barnaby, Sparpeny Lane, Farningham, Kent.

WANTED, by TWO LADY GARDENERS, Post together, fifth or six class, previous experience, South of West Country preferred, state wages, Apply, MRS. HAY, Tempstone, Longborough, Leicestershire.

TRADE.

GENTLEMAN (50) desires WORKING MANAGEMENT, Farming, Gardens, small Estate, Food Production, improving, extending Fruit Plantations, Tomatoes, Mushrooms, Dairy Herd, Pigs, Accounts, Cart responsibility, B. Cox 6, 41, Wellington Street, Covent Garden, W.C. 2.

MANAGER, Market or Retail Nursery; life experience in all branches, 11 years' good previous experience, obstinate, married, age 45, not eligible, B. Cox 6, 41, Wellington Street, Covent Garden, W.C. 2.

MANAGER OF FOREMAN (WORKING) requires Post on good established Nursery, competent to take entire charge, good organizer of labour; orchids, Fruits, Fruit, Rose Trees, and general Nursery stock, energetic, Box 57, 41, Wellington Street, Covent Garden, W.C. 2.

MANAGER OF FOREMAN seeks Re-employment, end of October, life experience in Grapes, Tomatoes, Cucumbers, and Chrysanthemums, married, over military age, good references, F. 8, 74, East Street, Barking.

FOREMAN PROPAGATOR, Grower, and Salesman, life experience holding and setting out small all round Market Grower, well known in Covent Garden, JOHN SOLOMONS, Colgate, Essex.

SITUATION WANTED immediately, as CHARGE HAND, life experience with Cucumbers, Tomatoes, Chrysanthemums, and Carnations, also Vegetable, please state wages, protected through deafness, age 31, 10 years reference, White, 125, Albany Road, South Westham, Surrey.

FOREMAN, LADY desires re-engagement, experienced in all branches, highest references, Address, 11, LINDSEY, by, Albany Road, Leekship Lane, Wood Green, London N.

The Gardeners' Chronicle SCALE OF CHARGES FOR ADVERTISEMENTS.

Table detailing advertisement charges for The Gardeners' Chronicle. Columns include ad type (e.g., Ordinary Positions, Facing matter) and rates per page or per line.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

For discounts apply to address below.

SITUATIONS WANTED. 26 words 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

ROYAL GARDENERS' ORPHAN FUND. B. WYNNE, Sec., 10, Bedford Chambers, Covent Garden, London, W.C.

THE WEATHER.

THE WEATHER IN SCOTLAND.

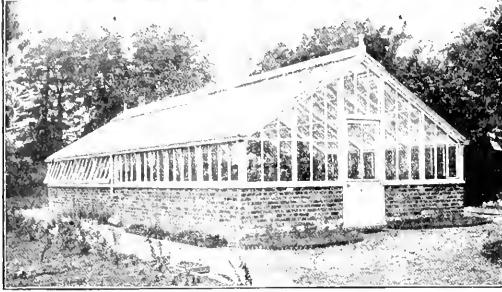
At 10 p.m. on the 5th, in all districts, with a steady and south-easterly wind. The barometer had fallen to the level of the month was not so marked as it usually is in September. Remarkable on certain days, of which the following may be given as an example: On the 11th of the month, with a calm, and the wind only 1.42 m.p.h. by 10 a.m. on the 12th, by 10 a.m. on the 13th, the highest maximum temperature of 51° was recorded, and the lowest minimum 51°. On the 14th, the highest maximum temperature of 52° was recorded, and the lowest minimum 51°. On the 15th, the highest maximum temperature of 53° was recorded, and the lowest minimum 51°. On the 16th, the highest maximum temperature of 54° was recorded, and the lowest minimum 51°. On the 17th, the highest maximum temperature of 55° was recorded, and the lowest minimum 51°. On the 18th, the highest maximum temperature of 56° was recorded, and the lowest minimum 51°. On the 19th, the highest maximum temperature of 57° was recorded, and the lowest minimum 51°. On the 20th, the highest maximum temperature of 58° was recorded, and the lowest minimum 51°. On the 21st, the highest maximum temperature of 59° was recorded, and the lowest minimum 51°. On the 22nd, the highest maximum temperature of 60° was recorded, and the lowest minimum 51°. On the 23rd, the highest maximum temperature of 61° was recorded, and the lowest minimum 51°. On the 24th, the highest maximum temperature of 62° was recorded, and the lowest minimum 51°. On the 25th, the highest maximum temperature of 63° was recorded, and the lowest minimum 51°. On the 26th, the highest maximum temperature of 64° was recorded, and the lowest minimum 51°. On the 27th, the highest maximum temperature of 65° was recorded, and the lowest minimum 51°. On the 28th, the highest maximum temperature of 66° was recorded, and the lowest minimum 51°. On the 29th, the highest maximum temperature of 67° was recorded, and the lowest minimum 51°. On the 30th, the highest maximum temperature of 68° was recorded, and the lowest minimum 51°.

GARDENING APPOINTMENTS.

Mr. Charles Oakford, Gardener to the The Gardeners' Orphan Fund, 10, Bedford Chambers, Covent Garden, London, W.C. Mr. T. Barclay, for the past 24 years Gardener to Earl of H. S. Helms, and Lady of Holly Mount, Wellington, as Gardener to Colonel C. W. Whiston, R. G. Garden Park, Kirkby Lonsdale.

M. J. H. Saunders for 9 years Gardener to Mrs. CHRISTIAN, Matthe's Works, Place, Winchester, as Gardener to H. S. WATTS, Esq., at the same place.

W. RICHARDSON & CO., DARLINGTON.



**HORTICULTURAL BUILDERS
and HEATING ENGINEERS.**

PLANS and ESTIMATES prepared free of cost.

REPRESENTATIVES sent to any part of the Kingdom to advise and take particulars.

LARGE CATALOGUE of photographic views of Horticultural Buildings free on application.

GARDEN FRAMES, GARDEN SEATS, &c., supplied from stock.

LONDON OFFICE: BELGRAVIA CHAMBERS,
VICTORIA STREET, S.W.

**EVERY
GARDENER
KNOWS
THAT**

Clay's gets there
and makes the Garden
gay all the year round

Sold everywhere in TINS at 6d. & 1s., and in BRANDED & SEALED
BAGS: 7lbs. 2s. 6d., 14lbs. 6s. 6d., 28lbs. 7s. 6d., 56lbs. 12s. 6d., 112lbs. 20s. Or
direct from the Works. Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mfrs. & Bone Crushers, STRATFORD, LONDON E.

CLAY'S
LONDON
FERTILIZER
TRADE MARK
EVERY GENUINE
TIN, BAG & SEAL
BOARDS
TRADE MARK

**IT IS THE
STANDARD
FOOD FOR
PLANTS.**

NOTICE TO HEAD GARDENERS.

Revision forms for the "Gardeners' Chronicle" HORTICULTURAL DIRECTORY have been posted to Head Gardeners in every county in England, Wales, Scotland, and Ireland. In order to facilitate the early publication of the revised edition for 1918, gardeners are asked to return the forms with the necessary corrections **AS SOON AS POSSIBLE**. It is only by the co-operation of all gardeners that the 1918 edition of this invaluable work of reference can be made perfect.

ANY HEAD GARDENER who has **FAILED TO RECEIVE A FORM**, should send for a form to

**THE EDITOR, Horticultural Directory,
41, Wellington St., Strand, London, W.C. 2.**

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 4007

No. 1607. VOL. LXII. {THIRD} SATURDAY, OCTOBER 13, 1917. {Registered as a Newspaper. (PRICE 4d. POST-FREE, 3d. SERIES)}
 SUBSCRIPTION—Inland, 19 6; Foreign, 22- per annum. Entered at New York Post Office as second-class matter.
 Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 145

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

NOW IS THE TIME TO PLANT.

KELWAY & SON,
 The Royal Horticulturists,
 LANGFORD, SOMERSET.
 are now booking orders for their Choice Hardy Perennial Plants. Plant a Colour Border this Autumn, and you will be able to enjoy its beauty for many years without any additional expense or trouble.
 Send measurements of your Borders.
 Paecenes, Delphiniums, Thloxes, Galliarthas, and other beautiful flowers, included in their Colour Schemes, which provide blooms from early Spring to late Autumn.
 WRITE NOW to the RETAIL PLANT DEPARTMENT for Reduced Price List.

J. GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wires, 303. Western, London. Telephone 201, Western.

ROSES—ALLEN'S GOLD MEDAL NORWICH ROSES—Our new descriptive price list, with Hints on How to Grow Roses, now ready, post free.—Write to-day, A. J. & C. ALLEN, Rose Growers, Norwich (for over 50 years).

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers; also Dickson's Improved Mushroom Spawn. Priced circulars free on application to DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.

GISHURST COMPOUND—Epsom salts and Fungicide—over 50 years' reputation; highly Commended R.H.S. Scientifically controlled Trials at Wisley, 1914-15. Sold by dealers in Garden Sundries. Wholesale: PRICE'S PATENT CANDLE CO. LTD., Batterssea, London, S.W. II.

WATERER'S ALPINES AND HERBACEOUS PLANTS.—New Catalogue now ready.

WATERER'S BRITISH GROWN BULBS.—New Catalogue now ready.

WATERER'S WARGRAVE ROSES.—Catalogue and Supplementary List of new and choice varieties now ready.

WATERER'S RHODODENDRONS AND GLOBE SHRUBS.—Catalogue free.
 All or any of the above catalogues forwarded post free on receipt of name and address.
JOHN WATERER, SONS & CRISP, LIMITED
 The Nurseries, Bagshot, Surrey, and Twyford, Berks.

BARR'S May-flowering **TULIPS.**—The best coloured flowers of spring plant here. In 1/6 per 1000 free. **BARR & SONS,** King Street, Covent Garden, W.C. 2.

SUTTON'S GOLD MEDAL COLLECTIONS OF BARVING TULIPS.
 Double—12 per 1000 ready to grow, 12/6; 12 per 1000 ready to grow, 12/6; 12 per 1000 ready to grow, 12/6; 12 per 1000 ready to grow, 12/6.
 Single—12 per 1000 ready to grow, 12/6; 12 per 1000 ready to grow, 12/6; 12 per 1000 ready to grow, 12/6; 12 per 1000 ready to grow, 12/6.

SUTTON'S CATALOGUE OF ENGLISH-GROWN BULBS.—This catalogue, the most popular of the kind, is now ready, and contains lists of all the best varieties of Tulips, Narcissus, and other bulbs, with prices and full particulars.

SUTTON & SONS, The King's Seedsmen, Reading.

HOBBES, LIMITED, Norfolk Nurseries, Dereham.—Send for our Catalogue, post free.

BUNYARD'S STRAWBERRIES.—Our new descriptive list is now ready, and will be sent on receipt of card.
ALPINE STRAWBERRIES a speciality.
GEORGE BUNYARD & CO., LTD., Royal Nurseries, Maidstone.

THE HORTICULTURAL DIRECTORY AND YEAR BOOK is being completed, and will be ready to go to the press in a few days. It is the most complete and up-to-date directory of the kind, and contains full particulars of all the leading horticultural firms, nurseries, and growers in the United Kingdom, with their addresses, telephone numbers, and other useful information. It is a valuable work for all those who are interested in horticulture, and is sold at a special price of 1/6 per copy, post free, to subscribers who order it before the end of the year. Write to-day for a copy.
W. & A. GARDNER, 10, Abchurch Lane, London, E.C. 4.

DOBBIES Autumn List of Bulbs, Sweet Peas, Rice, Canna, and Scolding and Vegetable Plants, post free. **DOBBIES & CO., Royal Nurseries, Tottenham.**

PHILOXERA.—Finest varieties in cultivation. Send for list. **H. J. JONES, Ryecroft Nurseries, Leighton, N.H. 17.**

GREENHOUSE PAINTING & GLAZING.—Painting superior to White Lead. Paints, Glazing, and Repairs. Full particulars from **W. CARSON & SONS, Grove Works, Battersea.** Agents throughout the country.

W. M. DUNN & TUCKER & SONS, LTD., Lawn Road, South Tottenham, N. 15. Conservatories, Winter Gardens, Vinerias, Pacha-houses, Porches, Buildings, &c. Catalogues gratis.

MACKENZIE and MONCRIEF, Limited, Builders and Heating Engineers, London, Edinburgh and Glasgow. By special Appointment to H.M. the King. London Office: 8, Camden Road, S.W.

ORCHID PEAT, 7s. 6d. per sack; Rhododendron Peat, free from bracken. 12s. per yard. 5 to 10 yard trucks, bags 50s. dozen. Linn, Leaf Mould, Silver sand, in bags and truck loads, bags of O.N. Fertilizer, 6 for 10s., special rates, special Bulk Contract for London, see bag. **J. HANSCOMBE, The Nurseries, Feltham, Middlesex.**

For Advertisement Charges see Oct. 6, page v.

WEBB'S BRITISH-GROWN BULBS.—The finest varieties of Tulips, Narcissus, Daffodils, Snowdrops, Pansies, &c. PRICE LIST post free on application.—**WEBB & SONS, LTD., The King's Seedsmen, Sloughbridge.**

BUNYARD'S FRUIT TREES.—New Price List now ready, and will be sent free on receipt of post.
GEORGE BUNYARD & CO., LTD., Royal Nurseries, MAIDSTONE.

BATH'S ROSES and PAEONIES.—New illustrated catalogue, containing full cultural notes of the best new and standard varieties is now ready, and will be sent post free on application.—(Dept. A.) **R. H. BATH, LTD., The Floral Farm, Wisbech.**

BATH'S HOME-GROWN BULBS.—New illustrated catalogue of the finest Narcissus, Tulips, &c., as supplied in the Royal Parks and Gardens, with full cultural directions, is now ready, and will be sent post free on application.—(Dept. A.) **R. H. BATH, LTD., The Floral Farm, Wisbech.**

SANDERS, Orchid Growers, St. Albans.

KING'S ACRE FRUIT TREES have produced the finest and most remarkable Apples and Peaches on record. 60 acres of Choice Fruits, to select from. Please see our Illustrated Catalogue, free by post, before ordering elsewhere.—**KING'S ACRE NURSERIES, LTD., Hensted.**

KING'S ACRE ROSES and FOREST and ORNAMENTAL TREES and SHRUBS, of finest quality. Catalogues free by post.—**KING'S ACRE NURSERIES, LTD., Hensted.**

ALPINES.—Fine collection from Yorkshire—141 plants, 42 in 6 varieties, 8s. doz., 50 varieties, 45s. 100 Wallflowers, stout seedlings, Blood Red, Vulture, Golden King, 2s. 100, transplanted, extra strong, 5s. 100. Canterbury Bell, white, strong, 8s. 100. Bellflower, red, strong, 8s. 100. Pinks and carnations free by post with order.—**BROADBEN'S, Woodside Nurseries, Thongubridge, Huddersfield.**

DAFFODILS and large Trumpet Narcissus for Grass, Slambories, and Wild Gardening, all over 45s. and 21s. 3/60; as dug, 12s. per hundred. **DAFFODILS, 2s. 6d. per 1000 bulbs.** **J. HANSCOMBE, 1, E. B. St., Pitham Nurseries, Middlesex.**

WANTED, PAUL CAMPPEL, Geranium seeds, one season plants. **WILLIAM DAY, 1, 1/2, Croftborough, Sussex.**

MALMAISONS, Princess of Wales, for sale, strong, healthy trees, 4s. per dozen. **J. MURRAY, Spicy Park Gardens, Christchurch, Hants.**

NANDINAS, strong plants, Japanese; 4s. 1/2, vigorous, hardy, attractive foliage, 100 at 1s. each, suitable for borders. **GARDNER, Barley, Wootton Hill, N. Surrey.**

FERNS—FERNS!—Tree Ferns, Climbing Ferns, Basket Ferns, Stone and Greenhouse Ferns, Hardy Garden Ferns, all grades free. **J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

SALES BY AUCTION.

BULBS.

Messrs. PROTHEROE & MORRIS are... Clearing Sale of Bulbs every Monday, Wednesday, and Friday...

HOME-GROWN BULBS. GREAT TRADE SALE.

Wednesdays, 4,000,000 Bulbs, including Narcissus, in all the best-known varieties for forcing or planting out...

Messrs. PROTHEROE & MORRIS will sell the above by Auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2.

DUTCH BULBS.

TO BE SOLD BY PUBLIC AUCTION, by Order and by Account of the Marshal of the Admiralty, by...

Messrs. PROTHEROE & MORRIS at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2.

On Wednesday, October 17th, at 3 o'clock, 5 Bags Vegetable Seeds, ex ss. "Poodijk," per...

202 CASES & BASKETS DUTCH BULBS ex ss. "Olat Wijk."

Comprising Hyacinths, Tulips, Narcissus in variety, &c. The goods will be sold subject to Government regulations...

THE WOOD LANE NURSERY, ISLEWORTH, MIDDLESEX.

Clearance Sale of the whole of the extensive stock of Mr. E. R. Russell, grown particularly for town planting...

Messrs. PROTHEROE & MORRIS will sell by Auction on the premises as above...

On Monday and Tuesday, October 15th and 16th, at 12 o'clock each day,

- 2,000 Eranthis, golden and 2,000 Tree Lilies, gold and silver... 2,000 Golden Pinks, 1,000 Jasmines and other... 2,000 Begs, in variety, 1,000 Clematis, 700 Double Gorse...

Also the beneficial interest in the Lease of the Nursery, 5 acres, with cottage, stabling, and buildings, field of 40 acres, pasture, and numerous Greenhouses...

May be viewed, Catalogues can be had on the premises, at The Nursery, Richmond, of F. Mason, Esq., F.C.S., The Trustees, 64, Grosvenor Street, E.C. 4, or of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

THE OLD NURSERIES, CHESHUNT, AND THE NURSERIES, HIGH BEECH, ESSEX.

Important Sale by order of Messrs. Paul & Son (Cheshunt), Limited.

Messrs. PROTHEROE & MORRIS will sell by Auction on the premises as above...

On Wednesday, October 17th, and two following days, at 12 each day,

the best portion of the extensive Stock, Specimen Coniferous and Ornamental Evergreens, thousands of Ornamental Flowering Trees, Standard Limes and Plumes, Standard Pear and Dwarf-trained Fruit Trees...

HAWKENBURY, TUNBRIDGE WELLS.

Clearance Sale of the whole of the Nursery Stock, by order of the Trustee, without reserve. Messrs. PROTHEROE & MORRIS, in conjunction with Mr. C. E. Westbrook, will sell by Auction on the premises...

DANE'S NURSERIES, HAWKENBURY, TUNBRIDGE WELLS.

On Tuesday and Wednesday, October 23rd and 24th, at 12 o'clock each day,

2,000 Thuya Lobbii, 2,000 Anonias, 3,000 Laurals, about 2000 of Przew. 500 Japanese Maples, including many specimens, 1,000 dwarf Roses, Specimen Border Shrubs in variety, and other Stock...

May be viewed, Catalogues can be had on the premises, of F. Lester, Esq., the Trustee, 4, Dudley Road, Tunbridge Wells, Mr. E. C. Woodcock, Auctioneer, Bank Buildings, Tunbridge Wells, and of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

THE BULB FARM, TERRINGTON ST. CLEMENT, KING'S LYNN.

To meet the requirements of the War Agricultural Committee of this district, and on account of shortage of labour, Mr. Frank Lacey will be compelled to sell, at his farm at Terrington St. Clement, without reserve, about...

1,500,000 to 2,000,000 BULBS

of forcing and planting size, in the following varieties: ornamentals, Double Warts, Anemones, Bells, Borehole, Victoria, Camperdown, Keelbush, Empress, Watkin, Sulphur Phoenix, Tulips, Marillo, Gisborne, Globe Brilliant, Prince of Austria, Le King, Peacock, Darwin, Clara Hint, Fairmount, Sander, Kenrick, 1/2 Tontage, and others, in quantities to suit all buyers...

Also will be offered at the same time a few tons of young material, in quantities suitable for tree (young, from 2 1/2 to 100, and in the original hanks of perfect year, and 10,000 spruce crosses, 1 1/2 to 1 1/2, and about the same quantity in 1 1/2 x 1 1/2 and 1 1/2 by almost any length up to 2 1/2 inch.

No catalogues, but varieties will be labelled in the fields where they have been lifted, and sold there at per cent on 1000.

Enquiries are to be addressed on the Farm.

NOTICE.

TO OWNERS OF ORCHARDS AND GARDENS THE Invited Children's Aid Association will be extremely grateful for any surplus Apples or other Fruits or Vegetables for the use of the Institute in any of the four homes for children requiring special treatment...

- 1 Home for Invalid Boys, Chesham, Broadstairs, 2 Florence Emma Home, Keswick, near Dover, 3 Village Home, Hildon, Bedfordshire, 4 Summer home, near High Wycombe. Who to they should be sent direct, and will be acknowledged by the Mother in Charge will be paid if necessary. Mrs. M. M. R. O. Secretary, F.C.A.A., 69, Deodar House, Vauxhall Bridge Road, London S.W. 1, will be glad to supply any further information that may be desired.

PUBLISHERS' NOTICE.

A NEW 1/2- EDITION OF THE PERPETUAL FLOWERING CARNATION.

By MONTAGU C. ALLWOOD, F.R.H.S. A practical book by a practical man, containing all necessary information for the good cultivation of Carnations. Post free 1/2 from...

ALLWOOD BROS., Carnation Specialists HAYWARD'S HEATH

PLANTS, & Co., WANDIC.

WANTED, choice Fruit, Flowers, and Vegetables, best market prices returned, boxes, &c. sent. Surplus stock from Gardens accepted. MOBLE & CO., 150-156 Finchley Road, N.W. 3.

WANTED, 1,000 Large ASPIDISTRAS, old plants, suitable for stock, cash or exchange. See other advertisements, catalogues free. SMITH, London Fern Nursery, Loughborough Junction, London, S.W. 11.

WANTED, YELLOW and BRONZE CALCEOLARIA CUTTINGS, also Miss Sander's double white Marguerite, in exchange for Primula umbellata, ready for 2/6 per doz. SILVENS' NURSERIES, Coventry.

WANTED, a few thousand GOLDEN GLEM CALCEOLARIA CUTTINGS, 700 T. DOWES & SON, Blackstock Road, Finchley Park, N.

WANTED, several thousand YELLOW and DARK CALCEOLARIA CUTTINGS, small quantity and price per 1,000 to W. D. Box 20, 41, Wellington Street, Covent Garden, W.C. 2.

PLANTS, & Co., FOR SALE.

LIVERPOOL CORPORATION NURSERY STOCK

FARM AREA, near GATEacre. SPECIAL OFFER OF THE FOLLOWING LOTS, all in grand condition: Two years, strong and well rooted...

- Very bushy, transplanted cut backs, 18-24 inches... 20s. per 1,000 Very bushy, transplanted, cut backs... 30s. per 1,000 Very bushy transplanted, cut backs, 24-35 feet... 40s. per 1,000 Very strong and bushy, 3 1/2 feet... 6s. per 100 Very strong and bushy, 4 1/2 feet... 8s. per 100

ALSO THE FOLLOWING, ALL FINE:

- Anemba japonica, bushy plants, 15-16 inches... 3s. 6d. per doz. 25s. per 100. Daffs, 24 inches... 5s. per doz. 50s. per 100. Specimens, fine well-furnished trees, 12-16 feet, 28 and 35 each; 20s. and 30s. per doz. Laurel roundheads, 1 1/2 ft., 9s. per doz.; 60s. per 100. Thorns, Camomil and Pauli, 6 1/2 feet, 1s. each; 9s. per doz. Fruit Trees, in a number of leading varieties, 3 and 4 years old; 70s. per doz.; 70s. per 100. Pear Trees, Cherry Trees, large fruiting size, 2s. and 3s. each. Primes Pissardii Bushes, 3-4 feet... 7s. 6d. per doz.

These prices are free on rail at Gateacre or Garston Station.

Apply to THE CITY ENGINEER, Municipal Buildings, Dale Street, Liverpool; or his Representative, MR. J. HAIGH, Public Offices, Grange Lane, Gateacre.

100,000 LARGE GARDEN FERNS.

20s. 100; Palms, Begonias, Crotons, Dieracarias, Roses, Bricas, Gloxinas Lilies, Hydrangeas, &c.; catalogues free.—E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

ATROPEA BELLADONNA PLANTS.

Atropa 9s. per 100, carriage paid JOHN CARLISLE, Bolton, Kirkby Lonsdale.

MISCELLANEOUS.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipcord Tweed; wears like leather; shoeproof; 7 yards for 17s. 6d. Patterns free.—BRADFORD WOOLLEN CO., 71, Bradford.

THEY WILL KEEP YOU DRY!

BEACON OILSKINS never fail to keep out the wet. That's why they are worn by hundreds of farmers, gamekeepers, and other outdoor men, women, and children. You should wear them if you want weather comfort. They aren't sticky like ordinary oilskins. We return your money at once if they don't satisfy you. The Beacon Booklet will show the style which suits you best. Men's Coats from 10s. up; Children's 10s. 6d. up; Ladies' Smart Oilskins, 21s.; Sou'-westers, from 1s. 6d. Long Leggings, from 5s. Send postcard today for this Free Booklet of "Weather Comfort." Send now before you forget to BRADFORD'S, LTD., 59, BEACON BUILDINGS, SOUTH SHIELDS. (1)

FOR SALE, Moshum Vanner ROAN GELDING, can be seen at work. SAYERS & COX, LTD., ALTON, HANTS.

FOR SALE, the GLASSHOTTES, in good condition, standing in the Gardens of Penmark Farm, near Barry, Glamorgan-ship, and comprising approximately 2,500 sq. ft. glass.—Apply, E. H. DAVID, 3, Park Place, Cardiff.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two). 6d. for each succeeding line.

PRIVATE.

GARDENER (HEAD).—WANTED, an experienced man, stable age and wages required; Fisher Gardener kind.—Apply by letter to E. J. ALLCARD, Holmesdale, Teddington.

WANTED, experienced HEAD GARDENER, without children, wages 35s. per week, and small lodge.—Apply, getting all particulars, GEO. FOOTER, Rickard Hall, near Ormskirk, Lanes.

WANTED, UPPER GARDENER, of 16, for small, compact Garden on Bristol Channel, must be over age 40, reliable.—Write to H. P., Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, HEAD WORKING GARDENER for Raynton House, Westbury, Wilts, married man preferred, good cottage, but live in house in winter; knowledge of crows a consideration—Apply, 356, High Street, London, W.C.2, to WARD SOAMES, Hilberton, Bradford.

HEAD WORKING GARDENER WANTED at home, single or married (no family), thoroughly understanding crows and late (bring all kinds Fruit, Vegetables, Cucumbers, 12 large Houses, 2 men and 2 boys' man), Pleasant Grounds, not more than 10 miles' single, with preferred, 250 to 275, to Mrs. C. REPP, 2 PICKERING, Kenton, near Newmarket.

WORKING HEAD GARDENER required at home, 250 to 275, good wages and outtage—CROPPER, Potters, 20, Mountbusham.

WANTED, GARDENER (SINGLE-HANDED), chiefly Fruit and Vegetables, must be able to handle crows, good wages; references; six persons required, with applications Apply, BALDWIN, Springfield, Rosemont Road, Acton, W.2.

WANTED, man—lately, experienced SINGLE HANDED GARDENER, some help given, for about 1 acre, Lawns, Flowers, and Kitchen Garden, single, with preferred, 275, to Mrs. C. REPP, 2 PICKERING, Kenton, near Newmarket.

WANTED, GARDENER (SINGLE-HANDED), intelligible, good references, independent, cottage provided, adjoining Gardens, Apply, stating wages required and experience, BODD-KIN, Hillmorton, Kent.

WANTED, GARDENER (SINGLE HANDED), Kitchen and Flower Garden, 20,000 sq. ft., in 1/2 acre, 200 to 250, good cottage, PERRY COOPER, H. Johns, Burch Hill, Watlington, Oxon, Wood Street, Oxford.

WANTED, GARDENER (in-chief), to work in garden, 100 to 120, 200 to 250, good wages and outtage, permanent place, 10 to 15, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, GARDENER, chiefly Kitchen Garden, interested, manage the daily work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, GARDENER, two apt, good wages, Apply to Mrs. C. REPP, 2 PICKERING, Kenton, near Newmarket.

WANTED, a GARDENER (in-chief), to work in garden, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, GARDENER, good knowledge of crows and late, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, GARDENER (in-chief), to manage the daily work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, SECOND GARDENER, for 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, UNDER GARDENER, to run all house or crows, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, FOREMAN and TWO JOURNEYMEN, for 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, FOREMAN or good capable MAN, to manage crows, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, JOURNEYMAN (in-chief), to manage the daily work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, JOURNEYMAN, for Inside, intelligible, crows, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, JOURNEYMAN (in-chief), to manage the daily work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, a MAN, for the Houses, intelligible, crows, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, a thorough good, experienced MAN for Fruit and Flower Gardens, married, or one who intends to be married, intelligible, excellent cottage, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

GROOM-GARDENER required to drive young stock and help in Garden, good references—FENNAN, Oldford House, Uxley, near Stansted, Essex.

WANTED, GROOM-GARDENER, to take care of peas and help in Garden, good cottage, 250, a week and 100, Apply, Sandilott Lodge, Wellington College, Sandilott, Dorset.

WANTED, good MAN, to take charge of fruit and plant in house, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, good all-round MAN, for garden work, with a knowledge of all crows, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, two IMPROVERS; also two APPRENTICES for Peas, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, a YOUTH, 16-17 years, of 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, TWO STRONG YOUTHS, 14-17 years, of age, to cut and stack 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

VACANCY FOR PUPIL: Fruit, Vegetables, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, HANDYMAN, on Small Cottage, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, TWO good GARDEN LABOURERS, to manage the daily work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, FOREWOMAN, with girl, to manage the daily work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, LADY GARDENER, under the supervision of the HEAD GARDENER, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, LADY GARDENER, for the management of the daily work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, YOUNG LADY GARDENER, to manage the daily work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, several experienced LADY GARDENERS, to manage the daily work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, immediately, TWO WORKING WOMEN GARDENERS, for general outside work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, TWO YOUNG WOMEN, to manage the daily work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

TRADE.

R. W. WALLACE & CO. LTD., require experienced men for LANDSCAPE FOREMEN, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, PROPAGATOR and GARDENER, to manage the daily work, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, GROWER of Roses and other flowers, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, a FOREMAN, principally for crows, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, FOREMAN to actually work in the garden, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

WANTED, a MAN quick at Putting and Boxing, and good at Fairs, good wages—Write, A. S., Box 11, 41, Wellington Street, Covent Garden, W.C.2.

WANTED, respectable MAN, for General Nursery (100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent).

WANTED, a MAN (in-chief) to assist in Glass Department and help with fires—Apply, stating wages, etc., to JOHN COWAN & CO., Nurseries, Gateacre, Liverpool.

SHOP MANAGER WANTED; smart, up to date, and good at book-keeping, knowledge of Agricultural Seeds preferred, permanent, White, stating age, references, and salary required, to B. T., Box 19, 41, Wellington Street, Covent Garden, W.C.2.

SEED TRADE.—WANTED, VEGETABLE SEED FOREMAN for retail trade—Apply by cover, stating age, salary required, and full particulars of previous experience, BARK & SONS (PROVINCIAL), Box 15, King Street, Covent Garden, London.

WANTED, SHOPMAN; permanent and to progress in a situation to suitable, man, intelligible—Apply to C. WILFRED & SON, Ltd., 293, Merchants, Colchester.

WANTED, ASSISTANT (Male) or Female, for Seed and Fertiliser Shop, State experience and wages expected, W. THORNTON, 105, Newington, Preston.

WANTED, LEDGER and INVOICING CLERK, for GENERAL CLERK, intelligible, T. BARK & SONS, The King's Station, Southampton.

LADY FLORIST wanted, with good knowledge of trade, making up, etc., able to do own selling in market. Home Apply, stating wages required and previous experience, to JOHN FEE & SON, The Cottage, West Norwood, S.W.2.

WANTED, LADY, smart, capable, to assist with crows, and to help to learn or with 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

NURSERY STOKERS WANTED; good wages to suitable men—Apply, LOWE & SHAW (FR. LTD.), The Nurseries, Exbridge.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d for each succeeding Eight words or less.

PRIVATE.

HEAD or GARDENER BAILEFF, where several are kept, crows, good character, 2 years Royal warrants, keep, age 40, full discharge from Army, H. BAILEFF, The Gardens, Rowland House, Clifton, Bristol.

HEAD GARDENER or PARK SUPER-INTENDENT, 20 years' first-class experience, 43 years' total, 100 to 120, 200 to 250, good wages, with full particulars and references, age 42, married, 42, to Mr. J. WILLIAMS, The Lodge, Hildes, Hamp, S.W.2.

GARDENER (Head), where several are kept, 100 to 120, 200 to 250, good wages, with full particulars and references, age 40, full discharge from Army, H. BAILEFF, The Gardens, Rowland House, Clifton, Bristol.

GARDENER (Head) A Gentleman very highly recommended by HEAD GARDENER, where several are kept, 100 to 120, 200 to 250, good wages, with full particulars and references, age 40, full discharge from Army, H. BAILEFF, The Gardens, Rowland House, Clifton, Bristol.

DISCHARGED Soldier requires Situation in any branch, where there are kept 100 to 120, 200 to 250, good wages, with full particulars and references, age 40, full discharge from Army, H. BAILEFF, The Gardens, Rowland House, Clifton, Bristol.

HEAD WORKING GARDENER; 29 years' experience, inside and out, age 44; wife and 4 children—100 to 120, 200 to 250, good wages, with full particulars and references—BAILEFF, Park House, Lonsdale, Hildes, Hamp, S.W.2.


GARDENER (HEAD WORKING or good) STABLE HAND, to help, practical life experience in private gardens, married, age 40, intelligible, 100 to 120, 200 to 250, good wages, with full particulars and references, to HEAD GARDENER, Dan Court, Faversham, Kent.

"Bull's"
THE FOOD FOR PLANTS

ORCHIDS,
Clean, well-grown and cheap; also
Many Rare and Choice Varieties
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

CHEALS' NURSERIES.
ORNAMENTAL TREES, SHRUBS,
ROSES, FRUIT TREES, &c., in
immense quantities and in the pink
of condition.
Send for Catalogue to
J. CHEAL & SONS, Ltd.,
The Nurseries, Crawley.

The Modern Pied Piper
"LIVERPOOL VIRUS"
RATS & MICE EXTERMINATES
Rats and Mice come
out of their holes, not
to dance to the pipes
of the chamber, but to
die—a less pestiferous but far
better way of exterminating
these pests.
Apart from the desirability
of getting rid of the
vermin on the grounds
of health, think of the
tremendous wastage of food
due to their raiding of
our granaries, cornfields and
gardens. It is a patriotic
duty to destroy them.
In tins ready prepared with
bait for Rats 2/6 and 6/-;
for Mice 1/6 and 4/6 each tin.
Full particulars from
EVANS SONS LESCHER & WEBB, LTD.,
68, Hanover Street, Liverpool.



SALE OF SURPLUS STOCK.
We still hold certain small stocks of
Garden Seats, Garden Engines and Pumps, also
Garden Rollers, Water Carts, Garden Arches
and Hand Lights,
which we shall be pleased to clear at special prices, subject
to being unsold.
Particulars on application.
BOULTON & PAUL, Ltd., ROSE LANE WORKS
NORWICH.

ROSES FOR AUTUMN PLANTING
ORDER EARLY.
Beautiful plants of the best possible cultivation,
our selection from the finest sorts including:—
The Brilliant Coloured
"MDME. EDOUARD HERRIOT"
(Vaino Mail Rose.)
12/- per doz. bushes, carriage paid.
Catalogue Free on request.
STUART LOW CO., BUSH HILL PARK,
MIDDLESEX.

LAXTONS
BEDFORD
FRUIT TREES
&
ROSES
CATALOGUE & CULTURAL
HINTS GRATIS

IMPORTANT: Please write for a Catalogue,
as the Paper Commission only
allows us to send to those who apply—
LAXTON BROTHERS, BEDFORD.



✓ **SLUGS**
SLUGS
"SANITAS" POWDER
will rid your Garden of Slugs and
protect your Seeds and Plants from
other pests such as Worms, Rats,
Mice, Sparrows, Cats, &c.
Leaflet and Free Sample
with instructions Free.
6d. and 1/- Tins & 15/- per Cwt (over London)
of all Chemists, Stores and Nurserymen.
THE "SANITAS" CO., Ltd.
Limehouse, London, E.
Awarded Medal at Royal Horticultural
Exhibition, 1911.

THOMSON'S
CELEBRATED
MANURES
PERFECT PLANT FOODS
UNRIVALLED FOR
ALL GARDEN CROPS.
SOLD BY ALL SEEDSMEN
OR FROM SOLE MAKERS.
WM THOMSON & SONS, Ltd.
CLOVENFORDS, N.B.

FRUIT IN THE GARDEN.
Root up useless shade trees and unproductive
Shrubs, and replace with Fruit in these times,
when food is all important.
Specially grown trees of
APPLES, PEARS, PLUMS,
of fine quality for the Walls, Edging or Vegetable
and Flower Borders. Many of fruiting size. Also
FINE STANDARD TREES
A grand lot of Peaches, Nectarines and Cherries
for the House and Garden Walls, also
BUSH FRUIT TREES.
Catalogue free on request and special quotations
given on hearing exact requirements.
STUART LOW CO., BUSH HILL PARK,
MIDDLESEX.

BLACK CURRANT BUD MITE.
Are your bushes free of this horrible pest? If not
Plant "SEABROOK'S BLACK" Currant,
the only proved mite resister.
This variety has also every other good quality, being the
heaviest cropper and stoutest grower, producing large, firm
berries
Young Bushes 8/- and 2/- per dozen.
W. SEABROOK & SONS,
Fruit Tree & Rose Nurseries, CHELMSFORD.

Write for this
FREE BOOKLET
and avoid all drainage troubles
with pot plants. It ex-
plains also the porosity,
root-rottness, and
cleanliness of CRET
POTS, of importance
to all gardeners.
FREE SAMPLE
CRET pot also on
request. Write to-day
PETER BAILEY & SONS Ltd
2 Heaton Mersey Pottery,
near Manchester.



SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
"Larger quantity of each size required and the 'Mersey' and 'Nottingham' varieties frequently demanded; half value of
others." (The Gardener)
Write for Price List, free.
4 1/2" - 14 1/2" POTS of all descriptions. Balm Bees and Fern
Pots from 2d. each.
RICHARD SANKEY & SON, LTD.
Bulwell Pottery, NOTTINGHAM.

FRUIT TREES.
SPECIAL OFFER.
Exceedingly well grown Fruit-bearing
Apples and Pears.
Each. Dozen
Standards, stout stem, fine head 3 - 4 3/8 33 - 4 40 -
Dwarf Trained very fine 3 6 42 -
Pyramid, very fine 3 - 4 3/8 33 4 - 40 -
ALSO A VERY FINE STOCK OF
Peaches, Apricots, Plums, Cherries,
Currants, Gooseberries, Loganberries,
Extra Strong Fruiting Vines in variety, 7/6 each.
Catalogue Post Free.
ROSES in all the leading varieties. Climbers,
Standards and Dwarfs.
Catalogue Free.
ALFRED A. WALTERS & SON,
NURSERYMEN and Fruit Tree Growers, BATH.

RIVERS'
Fruit Trees, Roses,
Vines, Figs, Oranges,
AND
Orchard House Trees
ARE OF
First-class Quality.
A Large and Select Stock always on View.
PRICE LIST POST FREE ON
APPLICATION.
THOMAS RIVERS & SON
Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.

ROYAL GARDENERS' ORPHAN FUND
B. WYNNE, Sec.,
19, Bedford Chambers, Covent Garden,
London, W.C.



THE
Gardeners' Chronicle

No. 1607.—SATURDAY, OCTOBER 13, 1917.

CONTENTS.

Austin and MeAslan, Messrs.	147	Obituary— Brown, R. C.	142
Bonquet, a novel	150	Orchid notes and gleanings	148
Catalogue, eighteenth-century Durham	152	Cattleya Verna	148
Farm, crops and stock on the home	152	Cypripedium Eliza	148
Food production on increased— Cabbage Exelsior	148	Orchids, new hybrid	148
Carrot Champion Star	146	Potato-spraying in 1917	149
Let Iron	146	Rosa setpoda	151
Celeriac	146	Notes on— National Chrysanthemum	144
R. H. S. food campaign	146	National Sweet Pea	144
Seasonable notes	146	Royal Horticultural	144
Formosa, the flora of	150	Scottish Horticultural	144
French miscelany products, exports of	150	United Hort. Benefit and Provident	144
Fruit, storing late	144	Superphosphate, the price of	144
Fruits, new or noteworthy	150	War items	144
Gardeners, legends to	150	Week's work, the— Flower garden, the	144
Gummers in the North	152	Fruit under glass	144
Lilium Martagon album at M. Heath	152	Hardy fruit garden, the	144
		Kitchen garden, the	144
		Orchid notes, the	148
		Plants under glass	144

ILLUSTRATIONS

Austin, James, portrait of	147
Austin, Robert, portrait of	147
Austin, William, portrait of	147
Carrot Champion variety, Hon. Hunter, Alex. N., portrait of	146
Hunter, James, portrait of	147
MeAslan, John, portrait of	147
Rosa setpoda, fruit of	151

struction and a better system of organisation, so that the allotment movement might be developed on sound lines. The Conference commenced on September 24 and closed on October 5; Mr. F. J. Chittenden presided over the Conference, and was assisted by Mr. A. S. Galt, Leeds University, and Mr. C. Wakely, Instructor in Horticulture to the Essex County Education Committee. Lectures were given and demonstrations held on eleven days, followed in every case by discussions which brought out the best methods of teaching, of practice, and of organisation. Some idea of the scope and value of the Conference may be gathered from the Syllabus of the subjects considered, the latter including: The Soil

about an hour and a half was added during the second week. The utmost enthusiasm prevailed throughout the Conference, and the desire was expressed that such a gathering should be held annually. The Rev. W. Wilks attended when the question of organisation was discussed, and it then transpired that three thousand letters had been sent to Allotment Associations with reference to the lectures and demonstrations on Food Production, and that the R. H. S. is working in close touch with the Food Production Department of the Board of Agriculture. Associations desirous of having lectures and demonstrations should apply to the secretary of the Royal Horticultural Society, who will notify the representative for the district; the Society

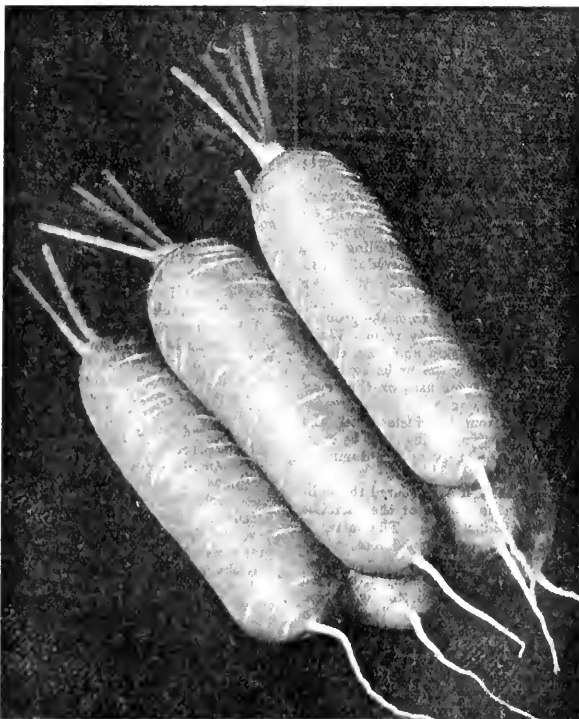


FIG. 54. CHAMPION SCARLET HORN CARROTS, AS OWNED BY THE R. H. S. COLLECTION ON SEPTEMBER 25, 1917.

ON INCREASED FOOD PRODUCTION

THE ROYAL HORTICULTURAL SOCIETY'S VEGETABLE CAMPAIGN.

WHEN war broke out in August 1914, no one knew how long hostilities would continue, but many realised that a great European conflict would be bound to cause extraordinary demands by the fighting services upon capital and labour for a considerable period. Further, that some restriction of food imports would follow the commandeering of shipping for military transport, and that the withdrawal of labour from the land to supply the Army and Navy would inevitably reduce the amount of food-stuffs produced at home. The increase of allotment holdings throughout the country, and improved methods of cultivation, were obvious methods whereby additional food could be produced at home, in spare time, by those too old to fight, and by women; and the Council of the Royal Horticultural Society promptly advocated these methods. Within a few hours of the declaration of war the Council commenced a Vegetable Food Production Campaign, and it has been developed since in many ways, chiefly by the distribution of pamphlets, and by practical advice given by itinerant lecturers and advisers, and panels of gardeners who have voluntarily taken up this work in the various districts. In furtherance of this campaign the Council recently invited the lecturers and advisers to attend a Conference at the Society's Gardens, Wisley, for the purpose of securing uniformity of in-

struction and a better system of organisation, so that the allotment movement might be developed on sound lines. The Conference commenced on September 24 and closed on October 5; Mr. F. J. Chittenden presided over the Conference, and was assisted by Mr. A. S. Galt, Leeds University, and Mr. C. Wakely, Instructor in Horticulture to the Essex County Education Committee. Lectures were given and demonstrations held on eleven days, followed in every case by discussions which brought out the best methods of teaching, of practice, and of organisation. Some idea of the scope and value of the Conference may be gathered from the Syllabus of the subjects considered, the latter including: The Soil

will pay the lecturer's fees and the Association any out-of-pocket expenses incurred. In addition to Messrs. F. J. Chittenden, A. S. Galt, and C. Wakely, those present at the Conference included Mr. T. A. Lawson (Newcastle), Mr. J. Glavin (Bingley), Mr. G. Corbett (Bolton), Mr. A. C. Lehane (Mansfield), Mr. W. Stewart (Whitechurch), Mr. C. H. Starling (Norwich), Mr. W. H. Morter (Birmingham), Mr. W. H. Turner (Tenbury Wells), Mr. E. R. James (Reading), Mr. C. R. Fielder (Wimbleton), Mr. W. H. Divors (Surbinton), Mr. Chas. H. Curtis (Brentford), Mr. J. G. Weston (Ashford, Kent), Mr. A. E. Usher (Blandford), Mr. C. E. J. Walkley (Taunton), Mr. A. Andrews (Plymouth), and Mr. J. Lloyd (Denbigh).

SEASONABLE NOTES.

A SUPPLY of wholesome, well-flavoured Cabbage in spring is worth considerable trouble in procuring, and home-grown plants are usually preferred. The young plants may now be removed from the seed bed. At this season of the year a sharp frost may come at any time, and tender young plants crowded together are liable to suffer very severely. Plant them out, therefore, at once, so that they may be as strong as possible before frost is experienced. They should be planted 15 inches apart in their final quarters, the rows being 2 feet asunder. Plants with stems of a hard, woody texture will stand any amount of frost; in fact, the more exposed they are, the better they thrive.

Now is the time for ensuring the blanching of the heart and stems of Celery by enclosing the plants—i.e., drawing soil round them and banking it. The roots of the plants should receive a good soaking of water previously to earthing them; but it must not fall upon the stems, otherwise they will decay when the soil has been drawn round them. All suckers should be removed, and also any small, yellow, outer leaves, but no healthy green leaves ought to be taken off. The stems should be first drawn round the heart of the plant and tied with matting, or the plant must be held together with one hand while the earth is placed around it with the other. No particles of soil must be allowed to fall into the centres of the plants during the operation. Water should be given to the Celery copiously, and occasional doses of liquid manure will be followed by beneficial results. Liquid prepared from farmyard manure is best; failing this, soot dusted on the soil and watered in will stimulate the plants and be distasteful to worms and slugs.

Onions having been removed from the ground, should be put in a shed or empty room. When dry, the loose, rough outer skin and long, coarse roots may be removed, and the bulbs stored in any dry place to be kept for use; or they may be tied in bunches and strung on sticks, which may be suspended from holdfasts until the bulbs are needed. Decaying bulbs must be carefully excluded, otherwise they will contaminate the rest.

A supply of Radishes can be procured throughout the winter by sowing seeds of the varieties Black Spanish and China Rose. The latter is an excellently flavoured, oval-shaped root, which is largely grown for market during winter. Seeds of both varieties may be sown thinly at once on a warm, sheltered border, or, better still, in a frame. Thin the seedlings out as they attain size, finally leaving them 5 inches apart.

Spinach is a favourite vegetable with many persons, and if seeds have not yet been sown there is just time to repair the neglect. Choose the prickly-seeded, for it is the best. Sow thinly in drills 18 inches apart, and when the seedlings appear thin them out, leaving those remaining about 6 inches asunder in the rows. If allowed plenty of room they will become sturdy and hardy plants.

Carrots of all varieties that are fully grown should be lifted and stored without delay. If they are allowed to remain in the ground and much rain comes the roots will produce numerous fine rootlets, and when this happens the flavour is impaired; furthermore, if left in the ground many split and are rendered useless.

Beetroots should now be lifted from the soil with a fork, so that none of the rootlets is broken up, as this causes them to bleed and lose colour. For the same reason, the leaves should never be cut close to the crown. The roots must be dried for a day or two in the open before storing them in a cool shed or cellar; to preserve them properly and prevent shrivelling they should be stacked and covered with moderately moist leaf soil or sand.

Parsnips are much better left in their growing quarters until spring, a quantity being lifted

from time to time for use before severe frosty weather.

Potato stems have mostly died, and lifting of maincrop and late Potatoes is being proceeded with. If the object is to store the tubers outdoors in pits they should be allowed to dry first; choose a dry position and well line the ground with straw. The tubers should, as they are picked up, be separated, and those to be reserved for seed stored in a dry, airy shed. Carefully exclude all those that are diseased, and handle the sound ones with care. Pile the tubers on the straw in a ridge as high as convenient, cover with straw, and over the straw place 9 inches or a foot of soil and beat flat with a spade. Slope the surrounding soil away from the pit to enable all water to run away. The better and more convenient plan is to store the Potatoes in a shed, covering the tubers lightly with straw; this makes access easy for picking them over. Take note of the cropping capabilities, appearance, comparative immunity from disease, and, further, which are the best eating varieties. By strict note-taking the most serviceable varieties for any soil and purpose may be selected.

Give every attention to the winter greens. Make Brussels Sprouts firm in the ground by treading, or the autumn winds may dislodge them. Go over the plants and remove all decaying foliage and superfluous growths. Afterwards give the rows a dusting with superphosphate. This fertiliser is best applied in the autumn, for it is slow in acting. Basic slag, another good phosphatic manure, should also be applied in the autumn. Tie up the foliage of Endive to blanch the centres. Do this when the leaves are dry. Another method is to lift the plants and blanch them in a dark building, and it is particularly suitable for low-lying gardens.

Take advantage of fine, dry weather to transplant strong Lettuce plants into open, but partly sheltered, borders, where the soil is fairly dry and will remain so all the winter. These plants will prove of much value next spring.

Cauliflower plants should be examined daily that exposed heads may have the leaves broken and laid over them for protection against frost. Young plants for spring use should be planted in three or four inch soil in a sunny position, so that protection may be given by handlights. Attention must be directed to ventilation each day, the lights being removed during mild and sunny weather.

Leeks rank amongst the hardest of vegetables, and with a scarcity of others would be appreciated more than usual. In order to have extra fine, well-blanched stems, numbers of plants ought to have been put out in trenches, Celery fashion, or dibbled in rich ground, several weeks ago, but Leeks keep growing whenever the weather is mild, and if planted now on rich, freshly dug ground, may yet attain to a serviceable size. Make holes 8 inches deep and 12 inches apart with a stout dibber, drop a strong plant into each, and fix with water poured into the holes.

Turnips—There is a likelihood of these being in great demand during the winter. Plants ought now to be growing strongly, and there should be no undue delay in thinning out the later breadths, doing this lightly at first, and eventually leaving the plants about 8 inches apart. Where possible, water freely after thinning, that is, if the ground is dry; a surfacing of soot prior to the watering will do good.

Globe Artichokes—Remove all the lower leaves that are the least scathed, and dig the soil between the plants, ridging it in the rows to form little gullies between the lines of plants. Where the soil is of a retentive nature this ridging will prove beneficial. Later in the year leaves and other suitable material may be placed round the plants in northern counties as a protection from frosts.

Vegetable Marrows—Gather all large fruits, and place them in an airy house to ripen; they

can then be preserved if cut into small squares about the size of lump sugar.

Tomatoes.—Where the plants are heavily clothed with leaves some foliage must be entirely removed, and other partly cut away. However well favoured the plants may be in regard to position outside, few Tomatoes will swell from the green stage now and mature properly if left on the plants. The removal of the leaves has a beneficial effect, and fruits that are commencing to colour will finish well. Many cultivators gather the green fruits and ripen them on shelves; this course will answer, but I prefer to pull up the plants, strip off all leaves, and then suspend the stems from the wires in an airy glass structure or on the back wall. Many of the fruits so treated will ripen sufficiently, and are firmer.

All Asparagus ripe enough should be cut down and the "grass" burned. The surface of the bed must then receive a thorough cleaning, and the weeds removed to the heap for burning. It is not beneficial to put on a heavy dressing of manure immediately. A light mulch may be given later.

Parsley.—Plantations of Parsley should have all leaves which are not fresh and green removed. In many cases when this is done there will be a few large leaves left, but if there are plenty of young ones these will soon spring up and afford a useful winter supply. I prefer a thin row of fresh, young leaves to a bushy one of old foliage at the beginning of winter.

Finish the drying and storing of all herbs. J. A. P.

CARROT CHAMPION SCARLET HORN.

ONE of the best exhibits in the competitive vegetable classes at the R.H.S. Show on the 25th ult. was a dish of Champion Scarlet Horn Carrots, exhibited by Mr. H. E. Wallis, gardener to Eastace Palmer, Esq. The class was for a collection of nine kinds of vegetables, to be selected from a given list. The Carrots, which are illustrated in fig. 54, were perfect specimens, of regular shape, well coloured, and without a trace of bluish. Stump-rooted Carrots of this kind are exceedingly economical, as no waste occurs in preparing them for the table.

CABBAGE EXCELSIOR.

THE merits of this wonderful cabbage are all that one could desire. It should be sown under a south wall to be planted out early in the New Year to follow the Spring Cabbage. One foot apart each way is ample room, since it is a small variety, but it produces a firm head and excellent flavour. C. Davis, *Holy Wells Park Gardens, Ipswich*.

CELERIC.

NEVER do I remember this vegetable looking more satisfactory than it does at present. It is one of the most useful of winter crops, and if the roots are lifted and stored in sand, or finely sifted ashes, early next month, they can be used, as required, until next March.

The culture of Celeric is easy on land deeply cultivated and well enriched, but the plant needs plenty of water during dry weather. We have this year made an experiment of intercropping a long border devoted to Shallots, and I am more than pleased with the results. The latter have been harvested some time, and the border is now fully occupied with the Celeric.

In this particular case the variety is a new variegated form which much impressed me at the trials last year at Wisley. It was sent by Messrs. Barr and Sons. It has proved to be perfectly true, with a pleasing silver variegation and refined growth, and will, I feel sure, become a general favourite, and the plant is both ornamental and useful. Another very fine variety sent by the same firm, named Apple Shaped, is very promising. *Edwin Beckett*.

MESSRS. AUSTIN AND McASLAN.

In our last issue we gave particulars of the commemoration dinner which took place at Glasgow to celebrate the bicentenary anniversary of the establishment of Messrs. Austin and McAslan's business. We now give some particulars of the history of this firm, together with portraits of some of the more notable proprietors during the two centuries.

The business was founded in 1717 by John McAslan, who, in that year, rented ground from Hutcheson's Hospital as a nursery, situated behind the hospital buildings, at the foot of what is now known as Hutcheson Street. His brother Duncan was associated with him in the concern, and there is a record in 1727 showing that part of the lands of Deanside were let to Duncan McAslan. When John died is not known, but Duncan died in 1741. His widow succeeded him and carried on the business for some time. The first printed mention of the seed shop is in the form of an advertisement in the *Glasgow Journal* of January 17, 1760, when the business had passed into the hands of John McAslan, Duncan's son, and consequently a nephew of the founder.

In 1720 he gave up the ground at Deanside and also that on lease from Hutcheson's Hospital and removed his nursery to his own property, called The Hill. There he built a factory

in mission, which was the first house erected on that part of the site. This property was founded by Rottenburgh, Dollery's farm, property belonging to the Earl of Patrick, Bell, and what is known as Parliamentary Road. McAslan Street is on the site.

John McAslan was Trades Corporation, Trades Barle, Treasurer of the City, Foursinger for 30 years of the Buchanan Society, and afterwards President, Deacon of the Incorporation of Gardeners and Deacon Conventor of the Trades House, and he laid the foundation stone of the present building in 1791.

Robert Austin, who was born in the nursery, was made a partner in 1742, and the business was then styled McAslan and Austin. He was born at Craighton, Midlothian, in 1754, and served his apprenticeship in the gardens of Mr. Glassford of Douglasdale. He then went to London and was for a time in the nursery of Mr. Gammond at Chelsea, also at Hunt's Nursery at Putney, and with Mr. Chinnery at Ericson, returning to Glasgow in 1779 to enter the employment of Mr. McAslan, whose daughter Margaret he married in 1776. He sat in the Town Council for 25 years, part of that time with Mr. McAslan; he was Barle of the City, Treasurer of the City, Foursinger of the Trades House, President of Anderson's College, and was elected a corresponding member of the Horticultural Society of London in 1817. He was also a



JOHN McASLAN, 1717-1760. PROBABLY THE FIRST FORMER PROPRIETOR OF THE FIRM.



JOHN McASLAN, 1750-1815. WILLIAM McASLAN, 1756-1873.

JAMES McASLAN, 1812-1849.

ROBERT AUSTIN, 1752-1850. JAMES HUNTER, 1800-1904.

FIG. 56. SOME FORMER PROPRIETORS OF THE FIRM OF MESSRS. AUSTIN AND McASLAN.

Second Lieutenant in the Association of the inhabitants of the city of Glasgow—his commission bears the signature of King George III and the Duke of Portland; Captain in the 1st Glasgow Volunteer Infantry in 1805, commanded by Lieutenant Colonel Lawrence Craigie; and he became Lieutenant Colonel of the regiment in 1807.

The nursery was removed to Little Gosan in 1793, the ground there belonging to Mr. Rae, lying between Rutherglen Road and the Clyde, opposite the Fishers Haugh on the Green. Silver Fir Street, Lime Street and Orchard Street are on or near the site. The next move took place in 1828 to Coplawhill, on Pollokshaws Road, but when the Glasgow, Barrhead and K.I. mainock Railway passed through it another removal became necessary in 1863 to Titwood, on the Pollok Estate.

James Austin (grandfather of the present proprietor of the business) was brother of Robert, although 20 years his junior. He was born at Craigton in 1776, served his apprenticeship with John McAslan, subsequently went to London to gain further experience in the nurseries of Messrs. Ronald at Brentford, and also with Mr. Aiton in the Royal Gardens, Kew. He returned to the nursery as foreman about 1800.

In 1803 John McAslan retired from business, and his son Alexander was then made a partner by Robert Austin, and the designation of the firm was changed to Austin and McAslan. James Austin was admitted a partner in 1812. John McAslan died in 1815, Robert Austin in 1830, and Alexander McAslan in 1841. James Austin was then joined by his son Hugh, and Robert Thomson; the latter had been in the employment of the firm for a number of years. James and his son Hugh both died in 1849, and Mr. Thomson then assumed John Lowe as a partner. Mr. Lowe had been gardener to the Duke of Hamilton at Hamilton Palace. He died in 1854. Mr. Thomson then secured the services of William Austin, a nephew of Robert and James, as manager. He had been in business as a nurseryman at Partick, his firm being known as Brown and Austin. He was made partner in 1859, but the following year Mr. Thomson died. Mr. Austin was then joined by James Hunter, and under their joint management the business was much extended.

The seed shop, in 1760, was in Trogate (opposite the New Guard), at the corner of King Street; next, in 1769, it was in Hutcheson's Hospital Buildings, on a 15 years lease at £12 per annum. *Jones' Directory of 1788* gives the address as McAslan and Austin in Company, Shop 79, Trogate; from there it was removed to Number 114, John McAslan's own property (the present number of this shop is 168); then

to 186, premises now occupied by Mr. Robert Miller, stationer. In 1864 Mr. Hunter and Mr. Austin removed to 16, Buchanan Street, and, as already stated, the nursery was transferred to Titwood in 1863, where it remained till 1886, when another removal became necessary to its present site at Cathcart. The shop at 16, Buchanan Street, was burned down in 1868; new premises were, however, found at 89, Mitchell Street, the present headquarters.

William Austin died in 1873, and his son Hugh was admitted in 1877. Alexander Nielson Hunter, the present proprietor, was assumed in 1892. Hugh Austin died in 1894, and James Hunter in 1904.

ORCHID NOTES AND CLEANINGS.

CATTLEYA VENUS.

A FLOWER of a very remarkable variety of this cross between *C. Dowiana aurea* and *C. Iris* (*Dowiana aurea* × *bicolor*) is sent us by Mr. R. Windsor Richards. In this, and in most other *C. bicolor* crosses, that decided and distinct species asserts itself in the formation of the lip, with its front lobe on a narrowed extension from the base, the side lobes being small and closely approaching the fleshy column. In the variety now received the form is of *C. Dowiana aurea*, and *C. Iris* does not appear except in the thickened substance of the sepals, which also shows its bronzy-greenish colour, and the thick, white column. The sepals and petals have a pale bronze green ground, tinged and veined with rosy mauve. The openly expanded, crimped and fringed lip is purplish-mauve with a network of gold veining extending from the base to the centre.

CYPRIPEDIUM ETNA.

Mr. J. E. SMITH sends a flower of a very large and handsome hybrid between *C. Dreadnought* (insigne *Harfield Hall* × *Tidius* and *C. Lecanum Clinkaberryanum* (insigne × *Spicerianum*). *C. Dreadnought* was a fine development of the best forms of *C. insigne*, especially in size, but still retaining its colour and markings. The introduction of *C. Lecanum* in the present hybrid has further increased the size and shape and introduced showier colouring. The broad dorsal sepal is apple-green on the lower half and pure white above, and bears numerous spotted lines of rose-purple, the broader and darker lines being in the middle. The petals and lip are yellow tinged with mahogany red.

NEW HYBRID ORCHIDS.

(Continued from September 1, p. 85.)

Hybrid.	Parentage.	Exhibitor.
Brasso-Cattleya Catherine	B. C. Digbyana-Mossian × C. Mrs. Maria Peeters	Baron Schröder.
Brasso-Cattleya Delicia	C. Mendelii × B. C. Digbyana-Mossian	Duke of Marlborough.
Brasso-Cattleya Lady Veitch	B. C. Hene × unrecoloured	Flory and Black.
Brasso-Cattleya Lotus	B. C. Digbyana-Mossian × C. Rex	Flory and Black.
Brasso-Cattleya Sofrana	B. C. Mrs. J. Lenham × C. Iriseleensis	Charlesworth and Co.
Brasso-Cattleya Virginia	B. C. Mme. Chas. Maron × L. C. unrecoloured	Duke of Marlborough.
Brasso-Laelio-Cattleya virginiana	B. C. Mme. Chas. Maron × L. C. Phryne	Sir J. Colman.
Cattleya Anemon	Yems × <i>Dowiana aurea</i>	Charlesworth and Co.
Cattleya Danarum	Lord Rothschild × <i>Articulis</i>	Sir J. Colman.
Cattleya Zornheke	Adula × Mrs. Pitt	Sir J. Colman.
Cypripedium Etna	Dreadnought × <i>Lecanum Clinkaberryanum</i>	Baron Schröder.
Cypripedium Etna in Hood	Digbylene × Gaston Butler	sander and sons.
Laelio-Cattleya Eburnea	Geo. Woodhouse × <i>Thyone</i>	C. J. Phillips, Esq.
Laelio-Cattleya Bronze King	Anacondia × <i>Imunies</i>	Armstrong and Brown.
Laelio-Cattleya Commander-in-Chief	C. Iris × L. C. Mrs. Evelyn Norrie	Armstrong and Brown.
Laelio-Cattleya Bonnamia	L. C. Bonnamia × C. Rex	Duke of Marlborough.
Laelio-Cattleya Helena	C. Adula × L. C. <i>hieteleensis</i>	Sir J. Colman.
Laelio-Cattleya Ingralaw	L. C. Ingrams × C. Lawrenceana	Duke of Marlborough.
Laelio-Cattleya Lammomend	L. C. <i>Imunies</i> × C. Mendelii	Duke of Marlborough.
Laelio-Cattleya Penelope	L. C. Wellbia × C. <i>Calceus</i>	Sir Mervyn Butler.
Laelio-Cattleya Rajah	L. C. Etna × C. <i>Dowiana Rosita</i>	Flory and Black.
Odontioda Eacheham	Oda rosei- <i>hietensis</i> Odm T. aus var. <i>Georgis Rex</i>	
Odontioda Rollene	Odm Airworth × Oda Charlesworthii	
Odontioda Torne	Oda Brandhawiae × Odm Louise	
Odontoglossum Fardesinere	Jasper × Hybrid Yagelke	C. J. Phillips, Esq.
Odontoglossum Eardwice	crispum Florii × Her Majesty	
Odontoglossum Foxworth	Lantia × <i>Kilbonniam</i>	
Odontoglossum Penelope	Ridgely × <i>Olympia</i>	Charlesworth and Co.
Odontoglossum S. Wright	undulata × <i>Armstrongiana</i>	Armstrong and Brown.
Odontoglossum W. E. Bisset	crispum Mossian × Mats	Armstrong and Brown.
Sophronitis Eudoris	C. End × S. C. Doris	F. Smith, Esq.



The Week's Work.

THE KITCHEN GARDEN

By J. DEXX, Foreman, Royal Gardens, Windsor

MINT AND OTHER HERBS.—In order to have a supply of green Mint in winter a gentle hotbed should be made up as soon as possible, so that by the time the roots are ready for lifting a gentle bottom-heat may be available. The bed may consist of new leaves and manure from the stable in equal parts, and should be made tight by treading. A covering of sifted leaf-soil should be placed over the bed to the depth of 4 inches, so that the Mint roots may be lifted and placed closely together on the surface of the bed and covered with 1 inch of the sifted soil. Water should be applied at a temperature of 70° to settle the soil about the roots, and care must be taken to prevent the bed becoming overheated, or the roots may be scalded. When young growth appears the pit should be freely ventilated. Tarragon roots may be lifted and placed on the same bed as soon as the following has down. Marjoram plants which have been growing in the open border should be lifted and potted into 6-inch or 7-inch pots and placed in a slightly heated pit, which may be kept close until the roots are active. A temperature of 50° will suit this herb during winter, and the plants should be quite near the glass. Sweet Basil for winter use may be raised from seeds which should be sown at once in a temperature of 65°. Prick off the seedlings as soon as large enough and grow them quite near to the roof glass. Chervil should be sown at once in a cold pit to make certain of a supply in rough weather. After the seedlings are through the soil the lights may be removed until frosty weather sets in.

PARSLEY.—If this crop seems likely to become overgrown some of the plants may be cut down close to the ground, so that short, stocky growth may be produced; this will stand the winter much better than if left uncut during the autumn. Hoe the ground between the rows and sprinkle them freely with soot.

TOMATOS.—For a supply of Tomatos in early spring, sow seeds at once, germinate them in a temperature of 60°, and when large enough carefully pot the seedlings into small pots, placing them quite close to the roof-glass. Water carefully until the pots are well filled with roots, then shift the plants into 5-inch pots, making the fresh soil moderately firm. Admit sufficient air to keep the plants stocky and short-jointed. The temperature may range from 55° to 60°. Liberty and Dwarf Red are free setting varieties producing fruits of medium size. Tomato plants now swelling their fruits may receive a plentiful supply of weak manure water. Ventilate freely, and do not allow the foliage to become overcrowded. Plants now yielding supplies require a little fire-heat, so that the lights may be left slightly open at night. Gather the fruits as they become fit and place them in a cool, dry store room, where they will keep in good condition for some time.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Hon. ARTHUR J. BAYLY, Abbots Wood, Godalming, Surrey.

FRUIT-GATHERING.—In some cases the fruit trees will be visited more than once, as the fruit for storing will not be all ready at one time. Pears require careful handling if the bloom is required intact for the exhibition table. A little woodwool of the finest texture should be put at the bottom of the baskets or trays in which the fruits are to be placed, so that in transit from the tree to the fruit room they will not be shaken or bruised, and if Pears are grown for show purposes several trees of each variety selected for the purpose must be grown in order to obtain a selection. Louise Bonne of Jersey is still a popular and good variety, being wonderfully nice when in prime condition. Beurré Superfin, on most soils, produces fine-flavoured fruits; Comte de Lamy, though small,

is a fruit of great excellence. Marie Louise still takes some beating in its season—there are some people who still think that there is no Pear like it, as others think of Williams' Bon Chrétien, but, of course, in its season Doyenne du Comice is the best of all. Knight's Monarch, Ne Plus Meuris, and Olivier des Serres are finely flavoured, late varieties, and should be left some time yet before gathering. Many of the October varieties are useful for cooking or preserving.

ROOT-PRUNING.—The work of root-pruning may be started as soon as the crops are gathered, keeping the roots as near the surface as practicable, except trees on the Quince stock, which should be planted more deeply to allow the union between stock and scion to be just below the surface of the soil. In commencing root-pruning open out a trench 5 or 6 feet from the tree; for cordon trees a less distance will suffice. Carefully fork away the soil and examine the roots, and it may be necessary to lift the tree altogether in order to ascertain that no roots strike straight down into the soil from the centre of the root system. This done, cut away any long and useless or damaged roots and replace the soil. If the ground appears impoverished add a small quantity of new loam, mortar rubble, and bone-meal. Cover the roots and well ram the soil round with a wooden rammer, and if it is dry give a good watering. Add sufficient earth to allow for a slight sinking. Large trees are often much improved by this treatment—Apples, Pears, Plums, can all be so successfully root-pruned in this manner. In the case of old trees it is essential to apply plenty of new loam.

OLD FRUIT WALLS.—Some of the older fruit walls may require attention after the fruit is gathered, in order to make good the holes that afford harbours for insect pests. The best thing is to repoint them, but if this is impracticable in the present circumstances, give them a thick lime wash. The wash may consist of 1 peck of lime, ½ peck of soot, and 1 peck of slaked lime, mixed in petroleum and skim milk in equal proportions. This is an inexpensive but effectual wash when mixed well together to the consistency of mud and put on with a stiff brush.

FRUITS UNDER GLASS.

By JAS. HURSON, Head Gardener at Gurnersbury House, Aylesbury, W.

CHERRIES.—For repotting cherries use a little more finely broken up mortar rubble, with the soil mentioned last week, but make no other difference. If the Cherries are not quite so well rooted as one would desire, be very careful to preserve all the roots possible, or do not repot for one season. The early trees should be the first to receive attention. Those that have only just been relieved of their fruits can afford to wait for a few weeks until well ripened.

FIO HOUSES.—When the fruit is all gathered from planted out trees let the house be thoroughly well ventilated, and continue in this instance to use the syringe on fine days. If the wood has not been fairly well thinned out, it should be done at once. Do not leave any long, thin, attenuated shoots, but clear them right away, thus making more room for young growths. In the case of Figs, keep the borders rather on the dry side for some time yet; no risk will be run in doing this, it will rather assist in the ripening process.

POT STRAWBERRY FORCING.—Straw berry plants in pots should be examined as to the state of the drainage after the heavy rains, for it often happens that when standing upon ash beds the drainage becomes choked. Take off any runners, turn the plants round, and rearrange them, raking over the ashes at the same time. In the case of the earliest varieties it is a good plan to stand them upon the top of a low wall or upon boards, so that the plants may not receive quite so much water as formerly. If any of the later varieties were not potted up sufficiently early for the growth to be well advanced, place the plants in frames to finish off the growth. The lights can be left off on fine days, but put on at night, leaving them partly open. This will be a much better course than leaving them fully exposed during heavy rains,

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Nourmont, Eastwell Park, Kent.

RICHARDIA AFRICANA.—If Richardias (Callas) are required for early winter flowering, some plants are usually kept in the pots all the season. Having been given a good rest by completely drying them off in the summer, they are potted up or top-dressed as found necessary, and watered to start them into growth. This is now developing rapidly, and the plants should be placed indoors. Give them plenty of ventilation for the present, and sufficient room so that the foliage will not get drawn. Those plants which were planted out-of-doors for the summer should be potted up without delay, as the foliage is very susceptible to injury by frost. Reduce the ball slightly and pot up in sizes according to the strength of the plant. Give a good watering, and stand the plants in a frame, or falling this, place them behind a wall for a few days. As soon as they have recovered from the shock, take them indoors and treat as recommended for those grown in pots.

CHRYSANTHEMUM.—Practically all plants, with the exception of the batch of bush plants in late blooming, will be best indoors after this date. In any case, all plants with well developed buds must be got inside, or the buds will be damaged by the heavy night dews or showers. The plants should be carefully examined, and if signs of mildew are found, a dressing with a reliable mildew specific should be given. I have found "Sedle" efficacious. Arrange the plants as thinly as is possible, with the space at command. Ventilate in favourable weather. Do not have high night temperatures; 55 is a safe temperature to aim at. If green or black fly is noticed, fumigate the plants as soon as housed, repeating this in a few days if any doubt exists as to their clearance. Water fairly early in the day, and as soon as the pots have drained, have the floors mopped as dry as possible. Keep the atmosphere from getting close and stagnant.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMY COLMAN, Bart., Gaxton Park, Beigate.

DISA.—The present is a suitable time for the repotting of Disas, commencing with *D. Lima* and other hybrids, while the species *D. grandiflora* may be given attention at a rather later period. Ordinary flower pots or deep pans from the most suitable receptacles, and for well-rooted plants they should be at least two sizes larger than those the plants now occupy, so that very little root disturbance will be necessary. Good drainage is essential. Let the rooting medium be composed of fibrous loam with the small particles removed, a little peat and Sphagnum moss cut rather short, and a fair sprinkling of crushed crocks and silver sand. The compost should be pressed moderately firm, and the receptacle filled to just below the rim of the pot. Place some living heads of Sphagnum moss over the surface of the compost; this will help to keep the roots in a moist condition, and at no time should Disas be allowed to suffer from drought, as they are perpetual growers, and have no defined season of rest. Place them in the coolest and shadiest part of the Odontoglossum house, and admit fresh air at all seasons. When repotting the house, remove the plants to another structure until the frames have escaped, or the leaves will become discoloured. After the repotting is finished, one watering should be given to settle the compost, and then for some time spraying once or twice each day, or often, according to the outside conditions, will be sufficient to keep them moist. The plants should be given occasional overhead sprayings with a liquid insecticide, or the leaves may be immersed in a similar solution to destroy thrips. The stock may be increased by breaking up any large specimens, taking care that each portion has a tuber attached; they may be potted up in rather small receptacles.

MILTONTIA ROEHLII AND OTHER SPECIES.—Both *M. Roezlii* and the variety *alba* are now making growth, and forming fresh roots. If repotting is necessary, be sure to arrange for ample drainage, and use a compost similar to

that recommended for *Miltontia vexillaria* in a former calendar; the plants should be given a light position near the roof glass in the intermediate house. Any plants of *M. vexillaria* which have been cultivated in the cool house during the summer should now be removed to the Cattleya or intermediate house. During dull, damp weather the immediate surroundings of the plants should not be kept too moist, or the foliage will decay. Brazilian *Miltontias*, such as *M. Regnellii*, *M. Bonatii*, *M. spectabilis*, and *M. Morelana*, having flowered, should only be given sufficient water at the roots to prevent shrivelling. *M. canattii*, *M. Lawsoni*, and *M. candida grandiflora*, as they pass the flowering period, should also receive similar treatment.

DECIDUOUS CALANTHES of the *Yeddoii* and *Vestita* types are now finishing their growth. The plants should be placed near the roof glass, and given plenty of space, so that the foliage may not shade the bulbs; a brisk temperature should be maintained in the house, with a good circulation of air. Plenty of water will be required at the roots until after the foliage begins to decay.

THE FLOWER GARDEN.

By W. J. GURSE, Gardener to Mrs. DEMESTRIE, Keele Hall, Staffordshire.

NATURALISING BULBS.—Recent rains have left the turf in good condition for planting bulbs. Where forced Daffodil bulbs were early harvested they should be planted at once. The bulbs will flower well in two years. If the soil below the turf is of poor quality it is advisable to replace it with a rich sandy compost. Woodland walks, grass banks, shrubberies, and positions under trees are all suitable places for bulbs. British grown bulbs are now available of most kinds, including Snowdrops, Winter Aconites, Scillas, Crocuses, Muscari, Anemones, Chionodoxas, Erythroniums, Narcessis, and late flowering Tulips. Most of these give the finest effects when planted in bold, irregular masses. If beds or borders are to be planted the ground must be prepared at once and a liberal dressing of decayed manure, leaf mould, or old potting-soil, well incorporated with the staple.

SEEDLING PERENNIALS.—Transplant seedling perennials in their permanent or reserve quarters. Plant moderately firm, and beyond watering through a fine rose to settle the soil nothing more is required.

VARIOUS BEDDING PLANTS.—Lift, and place in pots or boxes, *Lobelias*, *Alyssums*, *Alternantheras*, and similar plants required for stock purposes. Shallow frames are suitable for the *Lobelias* and *Alyssums*. Keep the frames close, shade from sunshine for a few days, and spray them overhead occasionally. Air must be admitted gradually, and just sufficient heat retained to exclude frost. Keep *Alternantheras* in a gentle heat and spray them lightly during bright weather.

PROPAGATING PITS AND FRAMES.—Pelargoniums that were rooted in boxes outside should now be removed to pits or frames, keeping them near the glass. Admit air on all favourable occasions. Cuttings rooted in frames should have the soil stirred lightly with a pointed stick. Pick off dead leaves and all flowers. The lights must now be placed in position. Cuttings in the propagating frame should be removed to cooler quarters directly they are rooted, for in a close atmosphere they grow weak and tender. Place the best of the old plants from the beds in pots or boxes for stock purposes next spring. The young shoots of *Verbenas* and *Freesias* are liable to attack by aphid, which can easily be kept in check by light fumigations or syringings with an insecticide.

CLIMBERS.—Wall plants and climbers growing in narrow borders get very dry at the roots, and occasionally a plant will collapse during a spell of dry weather, so examine the borders, and if any are dry, give sufficient water to reach all the roots. Complete the thinning and tying of the shoots, keeping them naturally disposed. Thin the shoots freely, only retaining those needed to fill bare spaces.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would oblige by abstaining from obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plans to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 39.8.

ACTUAL TEMPERATURE.—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, October 11, 10 A.M. Bar. 29.5. Temp. 45.0. Weather.—Bright sun-bine.

SALES FOR THE ENSUING WEEK.

MONDAY—Bulls at 67 and 68. Cattle, at 1 o'clock, by Protheroe & Morris.
WEDNESDAY—Trade Sale of Bulls at Protheroe & Morris' rooms at 1 p.m.
FRIDAY—Bulls, at Protheroe & Morris' rooms at 1 o'clock.

It is to be hoped that steps will be taken to collect material for a comprehensive report on the results of spraying Potatoes during the past season. Such a report would be particularly valuable, for although the effect of spraying with Burgundy or Bordeaux mixture in preventing outbreaks of late blight is not to be gainsaid, there are many points on which further information is urgently required. One of these points relates to the conditions under which the spray fluid appears to produce damage to the foliage. Although, having regard to the large extent to which spraying was practised, the number of cases of damage does not appear to have been large, there appears to be little doubt but that in some instances the foliage of sprayed plants took on a sorry appearance after being treated with Burgundy mixture, and this result was not unimmutably attributed to the spray fluid.

In some cases there is evidence which points to the conclusion that if Potatoes have been subjected to severe attacks of aphid, spraying with copper sulphate results in damage to the leaves. The Potatoes grown in the beds outside Buckingham Palace are a case in point. Those who had an opportunity of watching the plants noted that the foliage was subjected

to a particularly severe attack by aphid. Nor is it surprising that leaves so attacked should be adversely affected by copper sulphate, for the innumerable punctures of the leaf mean so many wounds whereby the copper solution may gain access to the tissues of the leaf. The experiments carried out by Professor Barker and his colleagues at Long Ashton have shown that whereas intact foliage is impervious to the entrance of copper, foliage punctured by aphid does not oppose a like resistance to the entry of soluble poisons.

Hence it is quite possible that spraying foliage after aphid attacks may do more harm than good. It would be interesting to know whether in such cases a dry spray might not be used with better effect. It seems fairly clear that in general the wet spray is superior to the dry, although even here it must be admitted that further experiment is required.

Another point which appears to be worth further investigation is the apparently greater susceptibility to injury by spraying of Potato foliage growing in the neighbourhood of manufacturing towns. This possibility is again in accordance with what is known of the effects of town smoke and its contained impurities on leaf growth in general. Mr. Crowther's experiments have shown that the normal processes of leaves grown under those conditions are impaired, the vitality of the tissues is lowered, and in these circumstances it is not difficult to imagine that a fluid which may be spread with impunity on a vigorous leaf may do real damage when brought in contact with a leaf in a poor condition.

It is only natural, albeit entirely unscientific, for us to draw a general conclusion from a special case, and it is therefore to be hoped that the broad results of this year's spraying may be published. For our part, we have seen enough to be confirmed in our previous view that spraying is an indispensable method of insurance against loss of crops, and we hope that the practice will be followed yet more generally during the coming season than it has been during the past year.

A NOVEL BOUQUET.—On the occasion of Queen Mary's visit, on September 19, to a large vegetable-growing establishment in Coventry, a novel bouquet was presented to Her Majesty, composed entirely of vegetables. It contained red and yellow Tomatoes, young Carrots, Dwarf Beans, Potatoes, and Onions, while the necessary foliage was supplied by Parsley and Thyme.

REQUESTS TO GARDENERS.—The late Mr. George F. Insole, of The Court, Llandaff, Glamorganshire, left the sum of £100 to his former gardener, Mr. JOHN, and £50 to his present gardener, Mr. ARTHUR FRY.

EXPORT OF FRENCH NURSERY PRODUCTS TO THE UNITED KINGDOM.—The Board of Trade Journal for the 4th inst. states that the French Journal Officiel for September 13 contains a Ministerial Decree, dated September 17, which provides that by way of exception to the export prohibition imposed by the Decree of August 24, trees, shrubs, and all other nursery products may be exported or re-exported from France, without special authorisation,

when consigned to the United Kingdom, the British Dominions, Colonies and Protectorates, Belgium (uninvaded territory), Japan, Russia, or American countries.

WAR ITEMS.—We regret to record the death of ROBERT LEIGH KER, aged 19, who was killed in action on September 20 last. Deceased was the eldest son of Mr. ROBERT B. KER, Liverpool, and grandson of the late Mr. R. WILSON KER.

—News has reached us of the death of Private W. HEDGGS, who was formerly employed in the gardens at Shipton Court, Oxfordshire. He was wounded and taken prisoner on April 27, and died on June 27.

—We regret to learn that Lieutenant HENRY GEORGE MICHE, fourth son of Mr. ANDREW MICHE, nurseryman, Alnwick, died of wounds received in action in France, on September 26 last.

NEW OR NOTEWORTHY FRUITS.—In this bulletin Mr. U. P. HEDRICK continues his account of promising varieties of fruit. The Peach J. H. Hale, a chance seedling, probably from Alberta, continues to justify its high reputation with American growers. The fruit is perfectly spherical and of fine colour, a little harder in wood and had than its putative parent, and ripening a few days sooner. A newcomer is Pearson, a mid season, white-fleshed Peach of a quality similar to Champion, though perhaps not so well flavoured. It is, however, freer in the stone and ripens ten days earlier. A new red Raspberry which gives promise is Empire. The berries are larger than those of Cuthbert, but of similar colour. The texture is firm, and Mr. Hedrick thinks that it will prove a good "shipper"—a specially important thing in the Raspberry. Empire is the result of a cross between Ruby and Coutant. A new Strawberry, Good Luck, is among the best late berries in the station. Of firm flesh, it stands transportation well, and is very little susceptible to leaf-spot. The wedge-shaped fruits are large and handsome. It is, however, somewhat acid for a dessert fruit.

THE FLORA OF FORMOSA.—The Government of Formosa has issued the sixth volume of Dr. BRUNO HAYATA's *Icones Plantarum Formosamarum*, dated December 25, 1916, and the seventh (and last?) volume is promised for September, 1917. Previous volumes have been noticed in these columns, and Volume V, somewhat fully on July 29, 1916, p. 55. Volume VI, of the *Icones* contains descriptions of 126 new species, arranged after BENTHAM and HOOKER, and comprising new members of various families, from the Heberidiaceae to the Gramineae, and a few additional ferns, illustrated by twenty plates and sixty-one figures in the text. Ten genera are added to the flora, including a new one, named *Parasitipomoea*. The others are:—*Naphar*, *Picrasma*, *Gerbera*, *Gardneria*, *Acanthephippium*, *Vrydaggyia*, *Myrmecia*, *Gymnadenia*, and *Woodisia*. All of these genera, except, perhaps, *Acanthephippium*, are represented in China. *Parasitipomoea*, as the name suggests, is a parasite, and belongs to the Convolvulaceae. It is a leafless plant with liform stems, about 3 feet long and cymose flowers with funnel-shaped corollas, $1\frac{1}{2}$ inch long. Dr. HAYATA gives no particulars of the nature of the parasitism, nor of the hosts, of this interesting novelty, which has the habit of a *Cuscuta*, associated with flowers "nearly the same as those of *Ipomoea*." Among the new plants figured are: *Corylopsis stenopetala*, *Carpinus rankanensis*, *Vanilla Somai*, and *Archangiopsis Somai*. The *Carpinus* is remarkable in having slender, pendulous female catkins 4 to 5 inches long. There are few plants described in this volume of special horticultural interest, so far as one can judge from a cursory examination, though perhaps there may be something good among the fifteen new *Bambusae*. Accepting

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

STORING LATE FRUIT.—More or less frequently it is necessary to challenge opinion and set forth evidence in favour of new methods. The storing of fruit is very imperfectly understood. Few fruit rooms are of proper construction, and the influence of air, moisture and the emanations from fruit are not discerned so fully as to lead to good results. It is commonly stated that fruit Apples and Pears should be

Dr. HAYATA'S estimate, the total number of species of flowering plants and ferns now recorded as inhabiting Formosa is 5,346, belonging to 954 genera and 160 families.

THE PRICES OF SUPERPHOSPHATE.—The War Cabinet has fixed maximum prices for the sale of superphosphate in the United Kingdom on the basis of a delivered price of 26 5s. for 23 per cent. grade if delivered in December, with a reduction of 1s. per month before December and 1s. per month rise from January until May, 1918. Thirty per cent. superphosphate costs £5 10s. From 30 per cent downwards there is a reduction of 2s. 6d. per ton for each complete unit; from 30 per cent. upwards an extra of 4s. for each complete unit. The prices are for net prompt cash, in makers' or vendors' bags, delivered by rail or water to consumer's nearest railway station or wharf. An Order to this effect has been issued by the Ministry of Munitions, and a circular explaining the provisions of the Order can be obtained from the Food Production Department. The principal provisions of the Order are summarised as follows: (1) Superphosphate is to be sold by makers in lots of 2 tons and upwards delivered by rail or water at consumer's nearest railway station or wharf at the rates specified in the schedule given below; (2) farmers, mixers, agricultural merchants and dealers, and Co-operative Societies registered under the Friendly Societies Acts are to be allowed a discount on the scheduled prices of 2s. 6d. per ton on purchases of 2 tons and upwards; (3) where the consumer takes delivery from maker's works into his own carts or wagons for conveyance direct by road to his premises in lots of 2 tons and upwards, a deduction of 10s. per ton is to be made from the scheduled prices. It must be understood that makers are under no obligation to sell on these terms, as the ability to deliver into farmers' carts is obviously dependent on the orders in hand for delivery by rail, the stocks available for the fulfilment of orders of a future delivery, and the loading facilities at the works. Makers are not required to incur any expense or to provide labour for loading; (4) in the case of sales of lots of 2 tons and upwards for shipment to the Channel Islands, superphosphate is to be delivered f.o.b. at port of shipment at the scheduled prices; (5) where superphosphate is sold for delivery ex vendor's store or shop (but not ex maker's works), or ex warehouse, railway goods yard or public wharf, the following additional amounts may be charged: 4 tons and over, 5s. per ton additional to the prices shown in the schedule; 1 ton and over but less than 4 tons, 10s. per ton; 2 cwt. and over but less than 1 ton, 1s. per cwt.; less than 2 cwt., 2s. per cwt. These additional prices do not apply to sales of more than 1 ton for delivery ex railway goods yard or public wharf; (6) in the case of sales for delivery by road to consumer's premises from maker's works or vendor's store or shop, or from warehouse, railway goods yard or public wharf, cartage or haulage at local rates may be charged in addition to the prices specified in paragraph 5; (7) the prices referred to above are in all cases net prompt cash prices for superphosphate in maker's or vendor's bags. Where credit is given to the purchaser a reasonable extra charge may be made, provided that a price for net prompt cash is quoted on the invoice and does not exceed the maximum price authorised. If purchaser's bags are used, a reasonable allowance is to be made; (8) the above prices apply to superphosphate of fine manufacture from mineral phosphate, but do not apply to basic superphosphate, bone superphosphate, dissolved bones, bone meal, or bone compound, guano, or compound manure.

ROSA SETIPODA, HEMBLEY AND WILSON.—In flower and fruit, this new Chinese Rose is a distinct and pleasing addition to the wild Roses cultivated in pleasure grounds and shrubbery

leaders. The plant first flowered in this country in Messrs. JAMES VEITCH AND SON'S Combe Wood nursery in 1909, raised from seeds collected by Mr. E. H. Wilson in the Hupé district of Central China. At Kow a large bush is conspicuous in the Rose collection. In habit *Rosa setipoda* forms a large spreading bush 2 feet or more in height and as much in diameter. Unlike most Roses, it has a few spines, but these are a large size and borne in the main stems. Most of the leaves consist of 7 to 8 serrated leaflets. The purplish roseal and blossoms, about



FIG. 57.—FRUIT OF ROSA SETIPODA.

2 inches in diameter, are freely produced during June and followed in autumn by quantities of richly coloured, dark red, bottle-shaped fruits, each exceeding an inch in length, and copiously furnished with glandular bristles and large, persistent sepals. Fruiting sprays were shown by Mr. J. ATTENBORO at the Drill Hall on September 11. The elegant and graceful habit of this species forms a pleasing contrast or foil to the stately and handsome bushes of *R. Moyesi* both in flower and fruit

gathered when perfectly dry. As a fact, a wet or clean water surface is more an advantage than otherwise. Fruit should not be taken direct from the tree to the store room. To develop to the full flavour, colour, aroma and keeping quality in fruit, it requires to be sweated a process whereby carbon dioxide escapes through the skin and deposits an oily or grass-like coating which ensures a continuance of movement and perfect development of the fruit. The larger the body of fruit the better and more evenly it will sweat, but to avoid bruising

Photograph by W. J. Wallis

by pressure it is best to gather into boxes or baskets holding four or five layers, or, say, half a bushel of fruit. The boxes or other receptacles should be stacked close and compact in a dark or confined chamber below the reach of sun heat and air in motion. A barn, shed or disused stable, if free from strong odours, serves very well. Sacks or mats should be placed over the fruit in order to confine escaping gas, and thereby induce a mild rise in temperature and proper deposit on the skin of the fruit. The sweating process occupies from two to four weeks—the greener and harder the fruit, the longer it should remain in sweat boxes. Pears do not call for as much sweating as do Apples, and, taken as a whole, they require a drier chamber and drier air than do Apples, but sweating should always be resorted to excepting where fruit is taken from the tree perfectly ripe, in which case sweating would cause rapid decomposition and decay. It may here be said that fruit, to keep well, should be gathered whilst still firm and unripe. This applies more to Apples than to Pears, though some varieties prove exceptions to this rule. The fruit which comes to us from Australasia is taken from the trees fully two months before it may be regarded as ripe. It is not necessary for the pips to be brown for fruit when properly sweated and stored in a cool chamber holding plenty of moisture will go on developing from the time the pips are only slightly coloured. The ideal temperature for storing fruit is between 40° and 50° F. During transit in cool chambers a temperature of 41° is aimed at, but this is rather too low, and has a retarding effect on most fruit stored on land. Moreover, if a fruit room is very cool, fruit is incapable of change for the better, and it is owing to irregular temperatures that much late fruit is either woolly or tough, or too acid, or crude in flavour. The average fruit room is kept too dry, and that is why fruit shrivels and perishes. When fruit is properly sweated and placed in a chamber containing moist air it is virtually impossible for it to shrivel or fail to keep well. The way to control moisture in the fruit room is to place pans or buckets of water on the shelves or the most draughty parts of the floor. Such water should hold lumps of sulphur, and in the event of the air becoming very thick the pans or buckets of water may be removed. Water should not be thrown on the floor. There is no better way of judging the condition of the air of the fruit room than by noting the influence it exerts on the human body. When it seems a death-train—a chilling damp, catch-cold place, it is in ideal condition to preserve fruit well. Very hard and extra late fruits should be stored in the coolest and dampest positions. These will always be near the floor and in the least ventilated corners. Late fruit should never be stored with early or ripe fruit. The chamber should be made clean by whitewashing and by spreading fresh quicklime on the floor. Also a few ounces of sulphur should be burnt. Four ounces of sulphur reduced to fumes will serve for an area equal to a square of 20 by 20 feet. When the fruit is brought in it should be graded according to size, density and degrees of ripeness, and arranged accordingly. This saves a lot of labour and ensures a larger profit in every way. Fruit should not be laid the best side uppermost, or on its broadest base or side, but always with the most mature side downwards. The moisture and movement within the fruit is always upwards, and where the influence of this law is understood it will be noted that the ripening is evened and the fruit develops a mellow and attractive flavour in all its parts. For this reason it is sometimes necessary to turn fruit. Soft-skinned fruit keeps best on a bed of hay or rushes. Leaves and straw are liable to develop such worms as seize on any weakness in the skin of fruit. Sulphur should never be burned in a chamber containing fruit, as it virtually kills the skin and leads to shrivelling and loss of flavour, but slaked lime should be used to prevent mould on the floor or shelves. Air should be given only in the early morning and during the night. Ventilators should be in the roof or near it—and on all walls. If fruit does not mature fast enough, it should be placed on the highest shelves, the air reduced by closing vents, and more water brought

in. These are but a few hints for the proper construction of a fruit-room; the preparation and management of fruit is a business in itself, and not to be easily acquired or made plain. A. C.

THE WHITE MARTAGON LILY (LILIMUM MARTAGON ALBUM).—In 1913 we raised a large number of this beautiful variety of the common Martagon from seed saved from our own plants. About 30 per cent. came true, 15 per cent. reverted to the normal dull red, and 5 per cent. showed intermedial hues of pink. A few flowered in their second year; in the third year there was a fine display. I shall be happy to send seed of this year's crop to anyone who will forward a stamped, directed envelope. *Herbert Maxwell, Moncreith, Whauphill, Wigtonshire.*

AN EIGHTEENTH-CENTURY DURHAM CATALOGUE (see *Gard. Chron.*, pp. 155-6).—Largely through the kindness of Mr. H. M. Wood, of Durham, a well-known authority on local genealogy, I am able to answer, in part, my own query, "Who was James Clarke?" Among his volumes of Durham marriage licences Mr. Wood found one dated October 22, 1770, concerning James Clarke, of Houghton-le-Spring, aged 25, gardener, and Elizabeth Purdy, of Conhill, aged 25, the bondsman being Thomas Clarke, of Durham, gent. They were not married at Houghton-le-Spring, and Mr. Wood suggested my writing to the rector of Cornhill-on-Tweed. This I did, with the result that I have obtained a copy of the marriage certificate, from which it appears that James Clarke and Elizabeth Purdie (another form of Purdy) were married at St. Helen's Chapel, in the parish of Cornhill, Durham, on October 28, 1770, by the Rev. W. Whinfield, the witnesses being Samuel Purdie and James Foulton. Neither the Christian names, surnames, nor ranks of the respective parents is given in the certificate, nor the rank or profession of the contracting parties. The bondsman Thomas Clarke was probably the father of the bridegroom, and the witness, Samuel Purdie, the father of the bride. Since Mr. Wood could not find in the Houghton-le-Spring registers any baptism of a James Clarke, 1744-6, and assuming that Thomas Clarke was the father, the natural inference is that James Clarke was a native of Durham, and had settled in business on his own account at Houghton-le-Spring. His designation as "gardener" was in those days and long after applied generally to those who had to do with gardens, master or servant. It may be interesting to point out, though there may have been no connection whatever between the two Thomas Clarks, that the *European Magazine* records the death in February, 1792, at Jamaica, of a botanist of that name—a botanist, by whose name, who seems to have escaped the notice of Messrs. Britten and Boulton. Mr. Wood very kindly searched the Houghton-le-Spring registers and found the baptism records of four of James Clarke's children: the eldest, James, was baptised on December 26, 1771, and the youngest, Samuel, on April 27, 1773. As suggested in my article, James Clarke, the seedsman, may have been living after 1812, for there is no record of his death up to that year among the Houghton-le-Spring burials; or, on the other hand, he may have gone to another parish. At all events, I think these few supplementary facts are worth recording in print. Perhaps the most remarkable feature about this catalogue is that it was issued by a tradesman in a remote parish of England, and not from a big centre such as London, Edinburgh, or Dublin. If *Roberts, 18, King's Avenue, Clapham Park, S.W.*

GUNNERAS IN THE NORTH.—Of the larger Gunneras which have been tested in the colder parts of the country, the two calling for special remark are Gunnera scabra and G. manicata. The first is not absolutely reliable, although, if given a sheltered place, its success for at least a term of years may be anticipated. It appears, however, to be greatly harmed by strong winds. There are, however, places in the midlands of Scotland where it stands the winter quite well, and in Perthshire and on the west coast of Scotland it is apparently hardy, and attains large dimensions, its rugged, ornamental leaves being large and healthy. In other places, again, even where one might anticipate success, G. scabra may die in some severe winter, unless protected with

dry straw or other loose material. It also suffers from drought, and may be greatly weakened by a long spell of dry weather just before winter sets in. G. scabra major is a glorified form of the type, with larger and bolder foliage and taller stature. It originated, I believe, with Mr. T. Smith, Newry, and it does not appear to have found its way into many gardens. Although not so rugged-looking as G. scabra, G. manicata is the most majestic of the race in our gardens. It grows specially well in Ireland, where the humidity of the climate suits it perfectly. Some large plants receive as many as three loads of manure every year, and the leaves have in some cases reached the almost incredible size of 10 feet in diameter. I have measured leaves at Narrowwater Castle 9 feet across. So far as I can ascertain, this has not found its way so far north as G. scabra, but I believe that it is as hardy. In the south of Scotland there are some fine examples, probably the finest being that at St. Mary's Isle, Kirkcubright. In one garden not far from there, however, G. manicata refuses to grow well, although it has proved hardy there for more than a decade. Of the other Gunneras the only specimens I have seen tried in the north are the minims, G. magellanica and G. monica. The former seems to be the hardier of the two, but they have not been widely tried, as they appeal mainly to the esoteric cultivator of Alpine plants. G. magellanica has lived for the past twelve or thirteen years in a Kirkcubrightshire garden, but in another in the same county is only survived for a couple of years, dying in one of the severe winters, with which even this favoured shire is occasionally afflicted. *S. Truitt.*

CROPS AND STOCK ON THE HOME FARM.

WEEDS IN PASTURES.

WEEDS have flourished abnormally owing to the showery weather. Quite one of the worst of pasture weeds is the Yellow Ragwort (*Senecio Jacobaea*), occupying much space it allowed to establish itself. The bitterness of the flower-stems is liable to taint the milk of cows eating them. Merely the cutting of the flower-stems is not sufficient remedy, as the plants increase rapidly by root extension. With the flower-stems attached the roots are easily pulled up during wet weather. If this be done now the grass will quickly grow over the spot. Thistles, too, are numerous, but if these are repeatedly cut off they weaken and perish.

HEDGES AND THE HARVEST.

The showery weather experienced during the late harvest was a convincing proof, if any were needed, that high hedges around arable fields are a mistake, owing to the difficulty of drying the soil quickly after showers or heavy dews. In arranging the crops in the future, especially of Wheat, Oats and Barley, there should be no unnecessary high hedges around these fields. In the ordinary course of cropping with roots or other sheep food which usually follows some of these cereal crops hedges are not so harmful. In the case of pasture fields high hedges provide valuable shelter for the animals. But in the case of Wheat high hedges should on no account be permitted, as they harbour sparrows, which were so troublesome this season that in some fields they were responsible for a loss of 25 per cent. of the grain. This is a serious loss at a time when the crop is of a moderate character. *E. Molyneux.*

Obituary.

R. C. BROWN.—Mr. Richard Chapman Brown, of the firm of Messrs. W. and J. Brown, died at Peterborough on September 18. Deceased had been confined to his house for the past four months. He was only 43 years of age, and had resided in Peterborough for the past twenty years, where he controlled the firm's establishment in Narrow Street, and supervised the nurseries at Star Road, New Road, and Eastfield, Peterborough. He was a keen horticulturist, and took an especial interest in Rose growing. He leaves a widow but no children.

ROYAL HORTICULTURAL SOCIETY.

Exhibition of British-Grown Fruits.

OCTOBER 9. The exhibition of British-grown fruits in the Drill Hall of the London Scottish, Buckingham Gate, Westminster, on Tuesday last, was one of the most successful functions of the R.H.S. during the present year. The quality of the exhibits, both from out-of-doors and under glass, was exceedingly good, and we doubt if finer Apples and Pears have been shown at any previous exhibition. Choice dessert fruits from under glass were staged well by numerous exhibitors; Grapes were of choice quality, but the bunches were not so large as they are sometimes seen at exhibitions. The collections of hardy fruits staged by nurserymen were deserving of the highest praise, and competition in these classes was unusually keen. Messrs. SPOONER AND SONS' highly coloured fruits were the subject of general comment, whilst Mr. ALGERNON'S fine exhibit in the larger of the nurserymen's classes was of the highest perfection, and the same may be said of Messrs. G. BENVARD AND CO.'s and Messrs. J. CHEAT AND SON'S collections. We missed the pot fruit trees usually staged by Messrs. T. RIVERS AND SON and Messrs. BENVARD AND CO., it being a difficult matter to transport such bulky subjects by rail in these abnormal times.

The Fruit and Vegetable Committee met at 12.30 p.m. to consider novelties. An Award of Merit was recommended for a new late Plum of the Monarch type.

Fruit and Vegetable Committee

Present: Messrs. A. H. Pearson in the chair, A. R. Allan, G. P. Berry, J. Basham, F. P. Kins, J. G. Weston, H. Markham, A. Balfour, J. C. Allgrove, E. A. Bunyard, F. Jordan, T. Gumber, G. Reynolds, Owen Thomas, F. C. M. Veitch, W. H. Davis, J. Harrison, W. Bell, A. W. Metcalfe, Edwin Bockett, G. Woodard, E. Harris, Geo. Kell and W. Crump.

AWARD OF MERIT

Plum, Fatale Christian. The great merit of this new Plum is its late date of ripening. Fruits were shown on a previous occasion, and a sub-committee was appointed to inspect the tree on September 25 last in Mr. Vizard's fruit grounds. The report was favourable, the tree, growing as an isolated specimen, being found to be a vigorous grower and fruiting profusely. It is either a seedling or sucker sport, probably from Monarch, which it resembles, but is a fortnight later. The colour is deep purple, almost black, with a lighter bloom. The flavour is poor. Branches exhibited were crowded with fruits. Shown by Mr. Vizard, Churchdown, Gloucestershire.

Messrs. VEITCH AND SON, Exeter, showed sprays of the purple-leaved Peach bearing numbers of small, dull red fruits, also a form of Euxynous, European named fruit, common with fruits of a richer scarlet than the type.

Mrs. BARKLEY, Stretchley Park, Worcester, showed fine fruiting sprays of Vitis rotundifolia with bunches of small, dark blue Grapes.

Mr. CLOSE, Ovington, exhibited a fine Plum, The long, narrow, dark red fruits of good flavour.

COMPETITIVE CLASSES

DIVISION I

FRUITS GROWN UNDER GLASS

There were four entries in the class for 6 dishes of ripe dessert fruits, and the 1st Prize, consisting of a Silver Hoop Medal and 50s. was won by Lord SOMERS, Easton Castle, Ledbury (gr. Mr. G. Mullins), with fine bunches of Black Alicante and Muscat of Alexandria Grapes, a seedling Melon, Cox's Orange Pippin and Horn-blow Apples, Marguerite Marillat Pears, Humboldt Nectarines, and Barrington and Gladstone Peaches; 2nd, the Duke of NEWCASTLE, Chumber, Worsnop (gr. Mr. S. Barker), with good bunches of Muscat Hamburg and Muscat of Alexandria Grapes, and extra fine Thompson and Doyenne

du Concom Pears; and, F. A. CANN, Esq., J.P., The Node, Welwyn, Herts (gr. Mr. T. Pateman).

For a collection of 6 dishes of ripe dessert fruits Lord HILLINGDON, Wilderness, Sevenoaks (gr. Mr. J. Shelton), was awarded the 1st Prize. He showed Black Hamburg and Muscat of Alexandria Grapes, Lord Palmerston Peaches, Ribston Pippin and Cox's Orange Pippin Apples, and a fine dish of Marguerite Marillat Pears; 2nd, the Duke of WELLINGTON, Stratfieldsaye, Mortimer, Berks (gr. Mr. E. Matthews); and 3rd, F. R. ROBEY, Esq., Trobachilla Hall, Limerston (gr. Mr. F. A. Billings).

GRAPE.

There was a fairly good competition in these classes. For 6 varieties, 2 bunches of each, four competed. The Duke of NEWCASTLE led with 24 bunches of Gros Guillaume, and Chasselas Napoleon the latter wonderfully fine, and Muscat of Alexandria, Mrs. Pearson, Gros Feldman, and Canon Hall Muscat. The 2nd prize was won by G. MILLER, Esq., Northfleet, Radlett, Herts (gr. Mr. J. Kidd), who had fair sized, nicely finished bunches of Madresfield Court, Muscat of Alexandria, Alwark Seedling, Black Alicante, Appley Towns, and Lady Hill; 3rd, Lord HASTINGS, Melton Constable, Norfolk (gr. Mr. J. G. Besant), who had very large berried bunches of Gros Maré, Muscat of Alexandria, and Madresfield Court.

Lord HILLINGDON, Sevenoaks, was placed 1st for two bunches of Black Hamburg, followed in order by the Duke of NEWCASTLE and E. MATTHEWS, Esq. There were five entries in this class. For 2 bunches of Mrs. Pine, Lord HILLINGDON, Sevenoaks, and the Duke of NEWCASTLE won 1st and 2d Prizes respectively, with well coloured bunches. Lord HILLINGDON also excelled in the class for Black Alicante, in which Lord SOMERS was 2nd among eight competitors. Lord HASTINGS was the only exhibitor of Madresfield Court and was awarded the 2nd Prize. There was only one exhibit of Prince of Wales variety, and this, from G. MAYER, Esq., Welles Wood, Widdingham (gr. Mr. F. Norwood), was awarded the 2nd Prize. In the only other Black Grape class the Duke of NEWCASTLE scored with 4 bunches of Muscat Hamburg, Lord HASTINGS being placed 2nd with Alwark Seedling.

The best pair of bunches of Muscat of Alexandria, of eight exhibitors, came from the Duke of NEWCASTLE, 1st, and they were brightly coloured specimens; 2nd, S. D. EXAMER, Esq., Oaklark Lodge, Wexbridge (gr. Mr. G. Kelly). In the class for the other variety of White Grape Lord SOMERS led with Mrs. Pearson, followed by the Duke of NEWCASTLE with Canon Hall Muscat; there were six competitors.

COLLECTIONS OF HARDY FRUITS

For a collection of hardy fruits arranged on a space of 12 feet by 3 feet, two competed, and the 1st Prize was awarded to Mr. R. SAWARD, Pan-lange Gardens, Bedford. This excellent exhibit comprised fine dishes of Emperor Alexander, Rev. W. Wilks, Gascoyne's Scarlet Seedling, The Hamilton Connection, and other Apples; Pears La Foyette, Doyenne du Comice; Peaches Princess of Wales, Sea Eagle, and Late Doyen; Plums Late Orange, Cox's Golden Drop, Red Cherrins, Hatfield Berry, and Figs; 2nd, Lord SOMERS, with excellent Apples, Pears, Peaches, Cherries, Nectarines and Plums.

DIVISION II

NURSERYMEN'S CLASSES

Two classes were provided for collections, the larger being for an exhibit occupying a space of 30 feet by 6 feet, in which five competed. The 1st Prize was worthily won by Mr. J. C. ALLGERNON, Middle Green, Langley Slough. His fruits, including 4 Apples, Pears and Plums, were highly coloured, large, and excellent in every other respect. A conspicuous place was

given to thirty large fruits of Rev. W. Wilks' Apple. Fruits of Peasgood's Nonesuch were equally big and of splendid colour. Other excellent fine Apples were Charles Ross, Bismarck, Beenhelm Pippin, Emperor Alexander, Allington Pippin, James Grieve, Tower of Glanville, and Cox's Orange Pippin; whilst the finest Pears were Conference, Doyenne Boussoch, Marguerite Marillat, and Doyenne du Comice; 2nd, Messrs. G. BENVARD, Ltd., Maidstone, whose fruits were of high merit, especially such culinary Apples as Bismarck, Norfolk Beauty, Mere de Menage, Lord Derby, Royal Jubilee, Lane's Prince Albert, Warner's King, and Ecklinville Seedling; Pears Beurré Doyen (of exceptionally large size), Emile d'Hoest, Doyenne Boussoch, Belle des Arbrès, and Beurre Jean Van Ceel were all good; 3rd, Messrs. H. CANNELL and Co., Eynsham; 4th, Mr. R. C. NORRUTT, Woodbridge, Suffolk.

The smaller class, for a collection occupying a space of 20 feet by 6 feet, attracted five exhibitors, all of good quality. The 1st Prize was won by Messrs. S. SPOONER AND SONS, Hornslow, for large fruits of exceptionally high colour. Fruits of Beenhelm Pippin Apple were a decided, and the specimens were nearly as large as Peasgood's Nonesuch, of which a superb dish was staged. Others of extreme merit were Ribston Pippin (of marvellous colouring), Emperor Alexander, Gloria Mundi, Cox's Pomona, Bismarck, Withington, Fillsbasket, William Crump, and Mother; 2nd, Messrs. J. CHEAT AND SONS, Crawley, for fruits of refined quality, not so highly coloured as in the 1st Prize exhibit, but of sterling merit; St. Edmund's Russet, King of the Pippins (a glorious dish), Charles Ross, Crawley Beauty, Ribston Pippin, Royal Jubilee and Rival are a selection; 3rd, THE BARHAM NURSERY COMPANY, Barham, Sussex.

DIVISION III

MARKET GROWERS.

The single class in this section was for 20 baskets of Apples of distinct varieties, suitable for market. The only exhibitor was Lt Col. H. LEMLEY WHE, Ham Green, Upchurch, Sittingbourne, whose magnificent exhibit was awarded the 1st Prize. The very excellent fruits of Egremont Russet, Peasgood's Nonesuch, King of the Pippins, Warner's King, Gloria Mundi, Paroquet, Ben's Red, Allington Pippin and Lord Derby were deserving of high praise.

DIVISION IV

F. A. CANN, Esq., The Node, Welwyn, Hertfordshire, had the best exhibit of four in the class for 24 varieties of Apples, 16 culinary and 8 dessert sorts. The fruits were of very large size, the more notable being Tower of Glanville, Bramley's Seedling, Lord Derby, Tyler's Kernel, Chas. Ross, Wealthy, and Rival; 2nd, Lord SOMERS; 3rd, JOHN LINDOPE, Esq. (gr. Mr. R. Leermouth), Sherfield Manor, Basingstoke. For 12 varieties of Apples, distinct, 8 culinary and 4 dessert sorts, Mr. G. MILLER, Newberries, Radlett, Hertfordshire, was placed 1st, his best fruits being Rival, Gascoyne's Scarlet Seedling, Rev. W. Wilks, and Peasgood's Nonesuch; 2nd, Mr. F. G. GRANT, Mr. Cus excelled in the class for six culinary Apples, distinct, with magnificent fruits of The Queen, Emperor Alexander, Rev. W. Wilks, and others; 2nd, Mr. GRANT. The last named exhibitor led in the class for 6 varieties of dessert Apples, showing highly coloured fruits of Rival, Chas. Ross, James Grieve, Ribston Pippin, Cox's Orange Pippin, and King of the Pippins; 2nd, Lord SOMERS.

Mr. JOHN LINDOPE had the finest 16 varieties of dessert Pears, the best being Durodonan, Conference, Beurre Bachelier, and Marie Louise.

In the smaller class, for 9 varieties, Lord SOMERS excelled, followed by Lord HILLINGDON.

Four competed in the class for 3 dishes of dessert Plums, and the 1st Prize was awarded

to C. H. BERNERS, Esq., Woolverstone Park, Ipswich (gr. Mr. W. Messenger), the varieties being Cox's Golden Drop, Reine Claude de Ravay, and President; Mr. LIPBELL, who won the 2nd Prize, had remarkably good fruits of Evans' Late Orange. Mr. GERRISH showed the best Blunsom, Lord Somers the best Morello Cherries, and E. PALMER, Esq., Drayton House, Sheffield-on-Loddon, the best Raspberries.

(To be concluded.)

SCOTTISH HORTICULTURAL.

OCTOBER 2.—The monthly meeting of this Association was held at 5, St. Andrew Square, Edinburgh, on this date, Mr. J. Highgate, vice-president, in the chair.

The Chairman made sympathetic reference to the sudden death of the President, Mr. John Phillips. A letter of condolence had been sent to Mrs. Phillips.

A paper on "Michaelmas Daisies" was read by Mr. ALEX. FORSTER, Davidson's Manse.

The exhibits were: Collection of Michaelmas Daisies from Mr. PORTER (Silver Medal) collection of "Collected" Dahlias, Chrysanthemum Harry Thorpe, and Potatoes, from Messrs. DOBBIE AND CO., Edinburgh (Cultural Certificate); Stevia paniculata, from Mr. M. TOWN, Musselburgh; Montrosea Star of the East, from Mr. W. G. PIRIE, Dalhousie (Cultural Certificate); new single Chrysanthemum Mrs. A. James, from Mr. A. INNES, Dean Cemetery, Edinburgh; tuber of Potato Duke of York, weighing 2 lbs., from Mr. F. Low, Cullen House, Banffshire.

NATIONAL SWEET PEA

OCTOBER 9.—The Annual General Meeting of the National Sweet Pea Society was held on Tuesday last at the offices of the British Wholesale Florists' Federation, 35, Wellington Street, Covent Garden. Mr. E. W. King, the president, presided.

The report and financial statement were presented. Both the Society's trials of novelties and the exhibition were abandoned in 1917. The *Sweet Pea Annual* was published, and a small exhibition was held at Westminster in conjunction with the Royal Horticultural Society's meeting on July 3. The financial statement showed a balance in hand of £3 14s. 5d.

The standing orders were suspended to permit the re-election en bloc of the president, officers, and committee. Mr. C. H. Curtis was appointed to fill a vacancy on the committee caused by the resignation of Mr. Gee. It was decided not to conduct a trial of novelties in 1918, but it is hoped to hold a small exhibition at one of the R.H.S. meetings in July next.

NATIONAL CHRYSANTHEMUM.

OCTOBER 8.—Not a solitary flower came before the members of the N.C.S. Floral Committee on Monday, October 8, at Essex Hall. The business conducted consisted in adopting the minutes of the previous meeting and passing a vote of condolence to the relatives of the late Mr. Eric Such, formerly a member of the Committee.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

OCTOBER 8.—Two special general meetings have been held on previous dates for the purpose of adopting the necessary additional and amended rules relative to juvenile members, but on neither date could a quorum be obtained. At a third meeting held on Monday last, sufficient members attended at the R.H.S. Hall, and the juvenile section was formally constituted.

ENQUIRIES

ADDRESSES REQUIRED.—"Can anyone give me the name and address of a firm in England or abroad which manufactures weed?" 2. Where can Dip-sus Inlamm (Piller's Teazel) be obtained? J. B. Hurry, M.D., Westfield, Reading.

TOMATO CHRYSON KING.—Where can I obtain seeds of Chryson King Tomato? Juy Ess.

ANSWERS TO CORRESPONDENTS.

ASPARAGUS; S. A. As soon as the foliage has died down it should be removed, and the surface of the bed carefully pricked over. If the soil is sour a considerable portion should be drawn off the bed and a dressing of sharp, sandy soil placed over the crowns to a depth of 2 inches. After this, add 2 inches of decayed horse manure to the bed and allow it to remain throughout the winter. At the end of February lightly break up the manure and place over it a covering of fine soil. A dressing of agricultural salt may be applied in March, and again a month later. In the meantime, trench and prepare a piece of ground, so that a new bed may be made up in spring. If two-year-old crowns are planted so much the better.

CELERY DISEASED; E. H. M. From your description the disease attacking the Celery would appear to be the Celery rust fungus. The first symptoms of this disease are swollen, pale spots on the leaves; soon afterwards the cuticle over these spots breaks, and liberates the brown, powdery spores, which spread over the leaves like snuff. You should pull up and burn all plants which display any of these symptoms, as the disease is very contagious, and spray the healthy plants occasionally with diluted Bordeaux mixture if the condition of the plants are not past remedy.

CERIC CONTENTS OF TIMBER; J. E. PROCTOR Webster's *Forestry Diary*, price 2s. 6d. net.

FOOD CROPS FOR GREENHOUSES; JAC. FISH. See reply to H. W., printed in the issue for September 22, 1917.

FORMAL GARDEN; C. M. L. The spaces between the flagstones were undoubtedly left for the accommodation of suitable plants of dwarf growth, and it should not be difficult to keep them clear of weeds. We do not think you could satisfactorily decrease the spaces except by taking up and re-laying the whole of the flags. You might try the use of cement, but I would probably crack, as you suggest.

FRENCH FUS LAWN; J. B. The growth is that of a foliose Lichen. Its presence on the lawn shows that the site is damp and ill-drained. If you remedy this by good draining, the Lichen will disappear.

LIME-WASHING FRUIT WALLS; F. J. F. Follow the directions given on p. 146 in the calendar on the "Hardy Fruit Garden."

MUSCAT GRAPES; B. B. The reason why vapourising with mercuric compounds is injurious to Muscat Grapes is that they have particularly thin, delicate skins. In order to get rid of aphides in the house you can try painting a mixture of flowers of sulphur and water on to the pipes when they are hot, closing all ventilators during the operation.

NAMES OF FRUITS. In the naming of fruits, we desire to oblige our correspondents as far as we can, but the task would become too costly and too time-consuming were there no restrictions. Correspondents should observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. The fruits should be just approaching ripeness, and they should be properly numbered, and carefully packed in strong boxes; cardboard is often smashed in the post. A leaf or shoot of each variety is helpful, and in the case of Plums, Prunes and Nectarines, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. By neglecting these precautions, correspondents add greatly to our labour and run the risk of increased delay and increased dissatisfaction. We do not undertake to send answers through the post, or to return fruits. Fruits and flowering plants must not be sent in the same box. Delay in any case is unavoidable.

H. C. P. Franklin's Golden Pippin;—H. B. S. Broad-eyed Pippin and Bramley's Seedling, both good keeping Apples. H. W. Pears; 1, Primston Duchess; 2, Emile d'Heyst; 3, Bourne d'Anandis; 4, Fondante d'Autumn; 5, Glou Morveau Apples; 1, Red Asterham; 2, Scarlet Nonpareil; 3, Stirling Castle; 4, P. M. A. Hornwood's Pearmain; B. not recognised; C, White Nonpareil; D, Golden Harvey; E, King of the Pippins; F, Ribston Pippin; G, Green

Fullwood; H, Lane's Prince Albert; J, Prince Bismarck; K, Lord Burghley; L, not recognised.—D. W. 1, Lord Burghley; 2, Potts's Seedling; 3, Cox's Pomona; 4, Stirling Castle; 6, Pear Doyenne Boussoch.—O. R., *Meopham*. 1, Cox's Orange Pippin; 2, Lord Suffolk; 3, The Queen; 4, Peasgood's Non-such; 5, New Hawthornden; 6, Warner's King; 7, deformed fruit; not recognisable; 8, Cox's Pomona. Pears; 1, Nouveau Poiteau; 2, Doyenne du Comice.—F. S. H. Pears; 1, Decayed; 2, Beurré Hardy; 3, Apples; 5, Tyler's Kernel; 4, Cackle Pippin; 5, not recognised, probably too small to be representative. H., *Sudbury*. Pears; 3, Catillac; 4, Beurré Rance—the rest too undeveloped to recognise. Apple; Norfolk Roofing.—G. A. Your Pears are not nearly ripe, and they were gathered before they had finished growing. They cannot be identified.—J. E. S. 1, Gascoyne's Scarlet; 2, Potts's Seedling; 3, Allington Pippin; 4, Prince Bismarck; 5, Cornish Mother; 6, Peasgood's Non-such.—J. K. 1, Yellow Ingestre; 2, Thompson's; 3, Fearn's Pippin; 4, Bacon's Incomparable; 5, Brockworth Park; 6, Cox's Orange Pippin; 7, Sickle.—C. H. W., *Reading*. King of the Pippins.—C. W. P. Mirabelle.—*Susse*. 1, Louise Bonne of Jersey; 2, Marie Louise d'Uccle; 3, Vicar of Winkfield; 4, Winter Queening; 5, Striped Beefing; 6, Beurré d'Anjou.—*Pomona*. 1, Hornwood Pearmain; 2, Nanny; 3, Alfriston; 4, Cheshunt Pippin; 5, Stirling Castle; 6, not recognised.—1, K. Apple Jolly Beggar; Pear Colmar d'Été.

NAMES OF PLANTS.—Correspondents not answered in this issue are requested to be so good as to consult the following number.

H. C. B. Carolean Cherry (Cornus mas);—E. G. H. 1, Crataegus punctata var.; 2, Pyrus betulaefolia;—J. H. Frame, Red Oak (Quercus rubra);—M. W. 1, Crataegus crus-galli (Cockspur Thorn); 2, Spiraea Douglasii.

PELAGONUM CUTTINGS; E. B. You need not apply water to the cuttings until they appear ready to flag. They should be removed indoors almost at once, as frost may occur. They can be potted singly at any time during the winter, when outside work is difficult; no harm will result if the potting be left until February.

PLUM TREES; C. H. W. That the fruits fall from the trees when about the size of Peas is probably due to a deficiency of lime in the soil, which interferes with the proper stoning of the fruits. Basic slag, applied to the soil at the roots of the trees in the proportion of three or four ounces to each tree, would probably be beneficial; it should be applied at once, as it acts slowly.

POTAMOGETON, OR ZANNICHELLIA; Pond-weed. The weed is Potamogeton perfoliatus. It bears a considerable resemblance to Zannichellia, but the stipules are free and fall away after a time, so that in autumn you can find them only on the terminal buds enclosing the young leaves. In Zannichellia the stipules are attached to the edges of the leaves, and may be found at all times until they decay. When labour can be found, this weed can be kept down or largely destroyed by dragging the pond with some form of rake. The most effective way of clearing the pond is to dry it, preferably in spring or summer, and shovel out the mud in which the weed finds a suitable root-hold. The mud, when laid in a heap, limed and allowed to sweeten for a year, turning it once or twice during that period, makes an excellent top-dressing for grass.

WORM-CASTS ON LAWN; O. D. M. Dissolve half an ounce of corrosive sublimate in 15 gallons of water, and sprinkle it over the lawn. When the worms come to the surface sweep them up, and do not let fowls eat them, as the sublimate is poisonous.

Communications Received.—R. D. (Thanks for 2s. 6d. for R.G.O.F. box);—J. H. R., D., Dublin.—F. H.—F. S. W., E. A., D., Mex.;—J. E. S. S., E. W.;—F. H. for naming overripe, send two fresh specimens;—A. Nix; J. W.—W. R. A.—G. W.—J. B. R.—W. T. J.—M. W.—P. R., Pries;—Sir W. C. G.—Dr. H. E. D.—F. H., Birmingham;—W. C.—H. W. T.—P. M.—F. G., Ralston;—J. Aspey—W. S.—L.—Alwood Bros.—Geo. L.

MARKETS.

COVENT GARDEN, October 12.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots and their prices. Includes items like Aspidistra, Begonia, and various ferns.

REMARKS: Consignments of pot plants are very numerous. Growers are showing their plants to the number...

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers and their prices. Includes items like Gladioli, Ranunculus, and various chrysanthemums.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage and their prices. Includes items like Aspidistra, Ferns, and various leafy plants.

Vegetables: Average Wholesale Prices.

Table listing vegetables and their prices. Includes items like Artichokes, Beans, Beetroot, and various leafy greens.

Fruit: Average Wholesale Prices.

Table listing fruits and their prices. Includes items like Apples, Grapes, and various berries.

REMARKS: Supplies of English fruit and vegetables are well maintained. Prices are plentiful, including some fine examples of Downy and Grosse from France...

GARDENING APPOINTMENTS.

Mr Arthur J Park as Gardener, Mr. CUSHMAN, as Head Gardener, Mr. B. E. BIRNCOMBE for 10 years Gardener at Buckland Court, Ashburn, Devon...

SITUATIONS WANTED (Continued from page 11).

GARDENER (HEAD WORKING) OF 1900... GARDENER (HEAD WORKING), who has been in the profession 26 years... COLONEL WHITMORE, highly experienced... GARDENER (HEAD WORKING) seeks situation... GARDENER (HEAD WORKING), thoroughly experienced... GARDENER (HEAD WORKING) requires position... HEAD WORKING GARDENER requires position... HEAD WORKING GARDENER requires position... GARDENER or GARDENER and MANAGER... J. W. HARRIS, Beverland Gardens, Oxford...

F. HUNFORD, Andover Cottage, New Road, Assot, Berks, discharged soldier, seeks situation as FOREMAN (inside), 9 1/2 years' experience in good establishments, age 26, excellent references.

WANTED, by Lady with experience in Country and in the training of English Gardening College, position as ASSISTANT GARDENER, under first-class Head Gardener, on gentleman's large estate, would like to rent a comfortable cottage on estate or in neighbouring village. Address, MISS, HOLSTON, Hunsdon, near, Iverg, Bucks.

GARDENER (Lady), with some experience, requires Post where good Head Gardener is kept, live-in or out, used to house and children, near London. Write - A. H., Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

LADY GARDENER seeks Post in November, under good Head, glass Department, 15 months' experience. Home Counties, preferred. F. FOWLER, under gardener, Dunham Wissey Hall, Atrium, ham, Cheshire.

GARDENER'S Daughter seeks Situation, where other ladies or Lady Head are kept, some experience, able to take duty, well recommended. State particulars, M. E., Box 26, 41, Wellington Street, Covent Garden, W.C. 2.

TWO WOMEN GARDENERS require Post, together, good practical experience in all branches, under good Head Gardener, good references. MISS, PEACOCK, The Gardens, Combe Abbey, Cheshire.

STRONG LAD, 15, requires Situation in Kitchen Garden, 2 years' experience inside and out, B. B. preferred, M. WELTON, The Gardens, Docking Hill, King's Lynn.

TRADE.

MANAGER, Market or Retail Nursery; life experience, Fiddle and other, Chrysanthemums, Tomatoes, Chrysanthemums, Plant Culture, Fruit, Vegetables, Salads, Floral Work, married, age 45, abstinent, not obliged, 17 years' good references as manager 8 to 9 wages and particulars, W. FOSTER, 3, Woodlands Cottage, St. Monica's Road, Barchin Heath, Tadworth, Surrey.

GENTLEMAN (50) desires WORKING MANAGER, London, Chrysanthemums, 43 years, Marchington, improving on roads, Fruit Plantations, Mushrooms, Tomatoes, Dairy Hand, Figs, Forge Crops, B. Box 25, 41, Wellington Street, Covent Garden, W.C. 2

TRAVELLER or MANAGER, Advertiser with long practical experience in the Farm and Garden Seed and Nursery Trade, desires engagement with retail or wholesale firm. Write, R. W., Box 14, 41, Wellington Street, Covent Garden, W.C. 2

MANAGER of FOREMAN (WORKING), in Market Nursery, over 25 years' experience in Tomatoes, Chrysanthemums, 43 years, Marchington, Milk, Fencing, Baking Stuff, married, age 46, good references, W. H. Clark's Cottages, Woodland Street, Waltham Abbey.

MANAGER or FOREMAN desires Re-engagement. The experience in up-to-date London and provincial Nurseries, good references, B. V., Box 4, 41, Wellington Street, Covent Garden, W.C. 2.

MANAGER, SHOPMAN, or CLERK; life experience in Retail Seed Trade, buying and exporting orders, used to bank counter trade, intelligent, W. C., Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

DUTCHMAN, aged 50, single, who had long charge during the last 10 years of one of the largest Nurseries connected with Landscape Gardening in Holland, some experience in Seed Growing, seeks situation as MANAGER of Nursery or Landscape Business. Write, R. C., Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

PERK RAISER and GROWER, age 46; life experience in London, Market Nurseries; can perform any stage, including growing, good references. Write, R. C., Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

PERK RAISER requires Situation; per-son new, married, intelligent, well up; take full charge. Write, A. R., Box 12, 41, Wellington Street, Covent Garden, W.C. 2.

SITUATION Wanted, immediately, as CHARGE HAND. Life experience with Cucumbers, Tomatoes, Chrysanthemums, and Corianders, also Vegetable plants, various stages, reached through deafness, age 41, 10 years' reference. WHITE, 125, Albany Road, South Mertonham, Surrey.

SITUATION Required as SHOPMAN; 7 years' experience in Wholesale and Retail Seed, also Floral and Nursery trade, intelligent, age 21, good references. Write, during office hours, E. B., Box 22, 41, Wellington Street, Covent Garden, W.C. 2.

TWO experienced WOMEN GARDENERS seek situation in market or retail Nursery, well up in Glass, Inside, and Out work, ages 25 and 31, E., Box 9, 41, Wellington Street, Covent Garden, W.C. 2.

Horticultural Directory and Year Book, 1918.

(PRICE 1s. 4d. POST FREE.)

This Directory is

NOW BEING THOROUGHLY REVISED

in preparation for the new issue, which will be published early in December. Revision Forms have been sent to those whose names appear in

ANY LIST

and every page is being corrected to date. Besides this, many new names are being added. Will those who have not yet sent back their forms kindly do so **AT ONCE**, otherwise it will be too late to make any emendations.

This Directory forms a

FIRST-CLASS MEDIUM FOR ADVERTISEMENTS,

and the charges are extraordinarily low. Those who have not yet booked a page in this widely-read publication should send at once for a list of prices.

THE EDITOR, Horticultural Directory, 41, Wellington Street, W.C. 2

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



16 net
per
Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. P. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD

TULIPS. By the Rev. JOSEPH JACOB.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof. BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

Each Volume 1/10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from

THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841 No. 4008

No. 1608. Vol. LXII. (THIRD SERIES) SATURDAY, OCTOBER 20, 1917. {Registered as a Newspaper.} {PRICE 4d. POST-FREE, 11d.}

Subscription—Inland, 19 6; Foreign, 22- per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 155.

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

BATH'S ROSES and PARONIES. New illustrated catalogue containing full and complete list of the best new and standard varieties, is now ready and will be sent post free on application. BATH, A. R. H. BATH, LTD., The Floral Farms, Wolsch.

BATH'S HOME-GROWN BULBS. New illustrated catalogue of the finest Narcissus, Tulips, &c., as supplied in the Royal Parks and Gardens, with full colour descriptions, is now ready, and will be sent post free on application. Bath, A. R. H. BATH, LTD., The Floral Farms, Wolsch.

NOW IS THE TIME TO PLANT KELWAY & SON. The Royal Horticultural Society, LANGFORD, SOMERSET, are now looking for orders for their Choice Hard Foliage Plants, Fruit & Flower Plants, and other plants, all of which will be able to supply this season, per many years, without any additional expense or trouble. Send measurements of your Borders. Fuchsiae, Pelargoniums, Philaeas, Galatheas, and other plants to furnish, in order to quote. Catalogues free. We provide blooms from early spring to the Autumn.

WRITE NOW TO THE REAL PLANT DEPARTMENT for Reduced Price List.

KING'S ACRE FRUIT TREES have produced the finest and most remarkable Apples and Pears on record. 20 acres of Choice Fruit, for sale from. Please see our Illustrated Catalogue, free, by post, before ordering elsewhere. **KING'S ACRE NURSERY, LTD., Hereford.**

KING'S ACRE ROSES and FOREST and ORNAMENTAL TREES and SHRUBS, for sale from. Catalogues free, by post. **KING'S ACRE NURSERY, LTD., Hereford.**

DOBBI'S Autumn List of Bulbs, Sweet Peas, Herbs, Grammas, Seed, and Vegetable Plants, &c. post free. **DOBBI & CO., Ltd., 10, Colinton, Edinburgh.**

BUNYARD'S FRUIT TREES. New Price List now ready, and will be sent free by return of post. **GEORGE BUNYARD & CO., LTD., Royal Nurseries, MADSTONE.**

PHLOX.—Finest varieties in cultivation. Sent for list. **H. J. JONES, Ryecroft Nurseries, Lewisham, S.E. 13.**

GREENHOUSE PAINTING & GLAZING. "Vitrolite," superior to White Lead Paint. "Plastine" superdies putty. Full particulars from **W. CARSON & SONS, Grove Works, Battersea.** Agents throughout the country.

SUTTON'S DAFFODILS and NARCISSUS are in season by the banks of streams and ponds, under trees, in woodland gardens, fields, shrubberies, meadows, and among grass. 1,000 in 10 named varieties, 50/-; 500 in 10 named varieties, 25/-; 250 in 10 named varieties, 15/-; 100 in 10 named varieties, 8/-.

SUTTON'S CATALOGUE OF ENGLISH-GROWN FLOWERS. 100-2 page lists of the most popular Double and Single, Mail, Spring and Autumn flowers, with a complete post-free on application.

SUTTON & SONS, The King's Seedmen and Florists.

WM. DUNCAN TUCKER & SONS, LTD., 11, The Arcade, Southampton, S. 15. 15, W. Waterloo, London, W.C. 2. Telephone, 201.

THE DIFFERENCE between a good advertisement and a bad one is a frequent subject for discussion among those who are determined to get the best use out of the money they spend on publicity. In the end, it resolves itself into the difference between wealthy readers and poor ones. Those who are advertising cheap goods naturally turn to a journal with an enormous circulation, even though it may be composed of people of indifferent means. But those who supply the highest and only necessities of a large garden, for as that such a garden presupposes a number of means as the owner, who can afford to employ the garden itself, but a staff of permanent gardeners to tend it. To such a salesman, a journal that reaches the hands of thousands, or even millions, of poor people, is of no use. He should turn rather to a journal, such as the "Gardeners' Chronicle," which reaches the right people, the keen professional gardeners, and the few but rich amateurs. The response of such readers to a well-placed advertisement is immediate and substantial.

BARR'S May-flowering TULIPS, the finest in the world, from spring, plain now. 10/- per dozen. **BARR & SONS, King Street, Covent Garden, W.C. 2.**

J. GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Bury Street, Chelsea, London, S.W. 3. Wire, 201. West End, London. Telephone, 201, Westminster.

WATERER'S ALPINES and HERBACEOUS PLANTS. See Catalogue, free, by post.

WATERER'S BRITISH-GROWN BULBS. See Catalogue, free, by post.

WATERER'S WARGRAVE ROSES. Catalogue and Supplementary List of new and standard varieties, post free.

WATERER'S RHODODENDRONS and CHOICE SHRUBS. Catalogue, free, by post. All orders to be sent to the above Catalogues forwarded post free, on receipt of name and address. **JOHN WATERER & SONS & COMPANY, LIMITED, The Nurseries, Baginbun, Surrey, and Taybald, Berks.**

ROSES.—ALLEN'S GOLD MEDAL NORWICH ROSES. Our new descriptive price list, with hints on how to grow roses, now ready, post free. Write today. **A. J. & C. ALLEN, Rose Growers, Norwich** (for over 50 years).

For Advertisement Charges see page v.

HOBBIES, LIMITED, Norfolk Nurseries, DIBBEHAM. Send for Rose Catalogue, post free.

BUNYARD'S STRAWBERRIES. Our new descriptive list is now ready, and will be sent on receipt of card. **ALPINE STRAWBERRIES** a speciality. **GEORGE BUNYARD & CO., LTD., Royal Nurseries, Madstone.**

SANDERS, Orchard Growers, St. Albans.

DICKSON'S HORTICULTURAL MANURE and other high-class Fertilisers, also Dickson's Improved Mushroom Spawn. Fixed ingredients from an application to **DICKSON'S, Royal Seed Warehouse and Nurseries, Chester.**

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes about 1lb., 3lbs., and 12lbs., by Dealers in Garden Supplies. Wholesale **PRICE'S PATENT CANDLE CO. LTD., Battersea, London, S.W. 11.**

SURPLUS FRUIT. Have you any? If so, write to **J. JONES, Ryecroft Nurseries, Lewisham, S.E. 15.**

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipcord Tweed; waxy like leather, shoe-proof; 7 yards for 17s. 6d. Patterns free. **BRADFORD WOOLLEN CO., 71, Bradford.**

ORCHID PEAT, 7s. 6d. per sack; Rhododendron Peat, free from bracken, 15s. per yard, 6 in. Fertilisers, bags 30s. dozen; Loam, Leaf Mould, Silver Sand, in bags and truck loads, bags of C.N. Elix, 6 for 10s., special rates, special Bulb Compost for bulbs, 5s. bag. **J. HANDBSOMME, The Nurseries, Feltham, Middlesex.**

FERN'S FERNS!—Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogues free. **J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

DAFFODILS and large Trumpet Narcissus for Grass, Shrubberies, and Wild Gardening, 15/- and 25/- 1,000; selected for forcing, 25/- 1,000; as slug, 12s. per bushel (2,000), 3s. 6d. per peck (500 bulbs). **J. HANDBSOMME, E. H. H. S., Feltham Nurseries, Middlesex.**

100,000 LARGE GARDEN FERNS, 25s. 100. Palms, Begonias, Crotons, Dracaenas, Roses, Ferns, Gloxinias, Lilies, Hydrangeas, etc., catalogues free. **J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.**

WANTED, choice Fruit, Flowers, and Vegetables; best market prices returned; boxes &c. sent. Surplus stock from Gardens accepted. **WORTLE & CO., 150/156, Finchley Road, N.W. 3.**

WANTED, good LAYERS of "Cecilia," "King Arthur," "Ruby Castle," "Duchess of Erie," and "Mrs. Nicholson"; must be absolutely the best stock. State price to **ALLWOOD BRUS, Carnation Specialists, Haywards Heath.**

SALES BY AUCTION.

HAWKENBURY, TUNBRIDGE WELLS.

Clearance Sale of the whole of the Nursery Stock, by order of the Trustee, without reserve.

MESSRS. PROTHEROE & MORRIS, in conjunction with Mr. C. E. Westbrook will Sell by Auction on the premises.

DANE'S NURSERIES, HAWKENBURY, TUNBRIDGE WELLS.

On Tuesday and Wednesday, October 23rd and 24th, at 12 o'clock each day.

5,000 Thuya Lobbian, 2,000 Anemones, 3,000 Lantanas, thousands of Peonies, 500 Japanese Maples, including many specimens, 1,000 dwarf Roses, Specimen Border Shrubs in variety, and other Stock.

May be viewed. Catalogues had on the premises of E. Lester, Esq., the Trustee, 4, Dudley Road, Tunbridge Wells; Mr. E. C. Westbrook, Bank Buildings, Tunbridge Wells; and of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

HAMPTON HILL, MIDDLESEX.

Clearance Sale, by Order of Mr. G. Vazell, who is relinquishing the Nursery.

MESSRS. PROTHEROE & MORRIS will Sell by Auction on the premises.

46, WINDMILL ROAD, HAMPTON HILL.

On Monday, October 29th, 1917, at 12 o'clock.

4,000 Asparagus plumosus nanus, 600 Callas, 1,200 Anemones, 200 Cyperpedium in-vase, 450 Stocks of Papines, 8,000 Flower Pots, Herbaceous Stock, Bamboo Stakes, and Sundries. May be viewed. Catalogues can be obtained on premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C. 2.

BURNT ASH HILL NURSERIES, LEE, S.E.,

AND

BICKLEY HILL NURSERIES, BICKLEY, KENT.

Sale of well-grown surplus stock in tables for immediate planting.

MESSRS. PROTHEROE & MORRIS will Sell by Auction on the premises as above.

On Thursday, November 1st (Lee) and Friday, November 2nd (Bickley), at 12 o'clock each day.

5,000 Standard and Trained Fruit Trees, 2,500 Cupressus Lawsoniana, 1,200 Planes, 1,500 Junos, 1,000 Thorns.

Quantity of Yews, Thujas, Libanurnus, Elms, and other ornamental Trees, and Standard and Bush Roses, and Lawns, &c.

May be viewed. Catalogues can be obtained on premises, also at Burnt Ash Road Nurseries, 61, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C. 2.

BULBS.

MESSRS. PROTHEROE & MORRIS are holding Sales of Bulbs every Monday, Wednesday, and Friday. Experience in stamps will ensure a supply of twelve catalogues. Commissions executed. Auction Rooms, 67 and 68, Cheapside, London.

HOME-GROWN BULBS.

GREAT TRADE SALE.

Wednesday Next, October 24th, at 1 o'clock.

Consists of 2,000,000 Bulbs, including Narcissus, in all the best-known varieties for forcing or planting out. Early Darwin Narcissus of sorts, in sacks as received. Early Darwin (many of which will force) and Mass-flowering Tulips; many thousands of Snowdrops, Freesias, Scillas, Anemones, Aconites, English and Spanish Iris, early-flowering Gladioli, Bearded Iris.

MESSRS. PROTHEROE & MORRIS will Sell the above by Auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2. Catalogues forwarded on application.

Wetherby Holme, Branksome Avenue, STANFORD-LE-HOPE.

About one mile from the Railway Station. **MESSRS. OFFIN & RUMSEY** are instructed to Sell by Auction on

Tuesday, October 23rd, 1917,

presently at half past three o'clock, about 6,000 feet run 801 NO TIMBER, comprising quarter, boards, posts, &c., of various dimensions, 150 ft. of 5-in. by 4-in. Pitch Pine.

1,200 ft. of 3-in. Hot-Water Pipes, BISSON BOILER

about 1,250 ft. in good order, 550 Pipes, consisting 550 sheets of 2½oz. Glass, each 30 in. by 17 in., fixed in grooves to slate on timber if required.

Catalogues may be obtained at the place of sale, and of the AUCTIONEERS, ROCHFORD, ESSEX.

BUSINESS FOR SALE.

PROTHEROE & MORRIS, HORTICULTURAL MARKET GARDEN, AND ESTATE AUCTIONEERS AND VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

GARDENER'S and FLORIST'S BUSINESS on premises, 22½ acres, could be accepted for four Greenhouses (150 feet), Golden Lights, Borders, and Accessories; good opportunity for discharged soldier.—Apply, FRANK N. BATEMAN, 55, The Broadway, Wimbledon.

BUSINESS WANTED.

WANTED, NURSERY, suitable for Tomato growing, 1,000 to 2,000 feet run, Wortham district preferred. State price and full particulars to S. J., Box 9, 41, Wellington Street, Covent Garden, W.C. 2.

BUSINESS CARD.

BRITISH CORRESPONDENCE SCHOOL OF HORTICULTURE, DENNINGTONS, 54, Oxford Road, Manchester.—Complete courses for R.H.S. Senior, Junior, Teachers, and National Diploma of Horticultural Examination. Fees moderate.—Write, SECRETARY.

PROPERTY TO LET.

THE BARLEY ESTATE, EXETER.

To Nurseyman, Market Gardeners, and Others whom it may concern.

TO be LET, from Christmas, 1917, all these well-known GARDENS, known as "The Bechall Nurseries," for many years past, in the occupation of the late Mr. Geo. Kerswill, situate in the parish of St. Thomas the Apostle, and within one mile of the centre of the City of Exeter, comprising:—

House, Buildings, and Yards	£ 1 10 0
Gardens	13 0 14
Pasture Land	5 1 8

The Buildings consist of an historically interesting and commodious Dwelling-house, with ample accommodation for storing and packing fruit, &c., Carpenter's Shop, Stable, Van-house, Cowshed, Piggeries, Cart, and other sheds.

The Gardens are fully stocked with the choicest sorts of standard Apple, Pear, Plum, and Cherry Trees, Gooseberry and Currant Bushes, and Raspberry Canes. There are also Peach, Plum, and Cherry Trees on about 400 yards of wall.

The whole Stock consists of about 7,000 Trees and 24,000 Bushes. The greater part of it was planted by Mr. Kerswill, who was an excellent judge of the most profitable and marketable sort of fruit to grow. The whole is now the property of the Landlord, and will be included in the letting.

Further particulars, with permission to view, may be obtained, and the form of tenancy Agreement inspected, at the offices of MESSRS. J. & H. DREW, 15, Queen Street, Exeter, Land Agents and Surveyors.

PUBLISHERS' NOTICE.

A NEW EDITION OF THE PERPETUAL FLOWERING CARNATION.

By MONTAGU C. ALLWOOD, F.R.H.S.

A practical book by a practical man, containing all necessary information for the good cultivation of Carnations. Price 1/2 from

ALLWOOD BROS., Carnation Specialists, HAYWARD'S HEATH

PLANTS, &c., WANTED.

WANTED, the GARDENERS' CHRONICLE, bound in an original, clean, for the last few years; also Nicholson's Dictionary of Gardening, complete, in good condition.—Offer to G. HODGSON, Hensworth Gate, near Wakefield.

WANTED, LILIUIMS; Croceum, Speciosum, Tricatum, Umbellatum, Elegans, and other lovely varieties. BAKERS, Codsall, Wolverhampton.

WANTED, 1,000 Large ASPIDISTRAS old plants, suitable for stock; cash or exchange. See other advertisements, catalogues free.—SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, a large quantity of CALCEOLARIA CUTTINGS, Golden Gown.—W. GROUT, Folly Farm Nursery, Monkgate Road, Lower Edmonton.

PLANTS, &c., FOR SALE.

LIVERPOOL CORPORATION.

NURSERY STOCK.

FARM AREA, near GATEACRE.

OVAL-LEAVED PRIVET.

Special offer of the following lots, all in grand condition: Two years, strong and well rooted, all—

10s. per 1,000	10s. per 1,000
90s. per 10,000	800s. per 100,000.
Very bushy transplanted out backs, 18-24 inches	20s. per 1,000.
Very bushy, transplanted, cut backs, 30s.	250s. per 10,000.
Very bushy, transplanted, cut backs, 24-35 feet	40s. per 1,000.
Very strong and bushy, 3-4 feet	350s. per 10,000.
Very strong and bushy, 4-5 feet	10s. per 1,000.
Very strong and bushy, 4-5 feet	80s. per 1,000.

ALSO THE FOLLOWING, ALL FINE:

Aucuba japonica, bushy plants, 15-18 inches, 2s. 6d per doz.; 25s. per 100.	
Doitto, 24 inches	3s. per doz.; 30s. per 100.
Sycamores, fine well-furnished trees, 12-16 feet, 2s. and 3s. each; 20s. and 30s. per doz.	
Laurel rotundifolia, 4-4½ ft., 9s. per doz.; 60s. per 100.	
Thorns, Crimson and Pink, 6-7 feet, 1s. each; 9s. per doz.	
Fruit Trees, in a number of leading varieties, 5 and 6 years old, 10s. per doz.; 70s. per 100.	
Pear Trees, Cherry Trees, large fruiting size, 2s. and 3s. each.	
Prunus Pissardi Bushes, 3-4 feet	7s. 6d. per doz.

These prices are free on rail at Gateacre or Garston Station.

Apply to THE CITY ENGINEER, Municipal Buildings, Dale Street, Liverpool; or his Representative, MR. J. HAIGH, Public Offices, Grange Lane, Galsacre.

MISCELLANEOUS.

THEY'RE NOT STICKY.

Beacon Oilskins are quite free from any stickiness, and what is more important, they never fail to keep out the hardest rain or sleet. Hundreds of farmers, gamekeepers, and other outdoor men, women, and children wear them because they bring weather comfort. You ought to wear them if you want to keep dry in any deluge. The Beacon Booklet will help you to choose the style you need. Children's Coats from 10s. 6d., Men's from 10s., Ladies' Smart Oilskins, 28s. Long Leggings from 5s. Sou'-westers from 1s. 9d. Your money back if they don't satisfy you entirely. Send a postcard today for our Free Booklet of "Weather Control."—Send now, before you forget—to **BEACON OILSKINS, LTD., 60, BEACON BUILDINGS, SOUTH SHIELDS.** (2)

LANG'S "IDEAL" MANURE, for Fruit, Flowers, and Vegetables: 12s. 6d. per cwt., 210 lbs. per ton, carriage paid.—G. LANG & SONS, LTD., Hounslow, Middlesex.

"PESTITE" destroys all soil pests (caterpillars, grub, wireworm, wart, disease, &c.) and promotes vigorous growth. Price 10s. 6d. per cwt., £5 per ton, carriage paid.—G. LANG & SONS, LTD., Hounslow, Middlesex.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

PRIVATE.

WORKING HEAD GARDENER required at once, three milder, exact wages and cottage.—CROPPER, Portcuthrie, Monmouthshire.

WANTED, UPPER GARDENER, of two, for small, compost Garden on Bristol Channel, must be over age or ineligible.—Write to H. P., Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, GARDENER (HEAD WORKING), first-class man; two kept; thoroughly experienced Vegetables, ornamental Fruits, and Herbaceous; small Greenhouse and supervision of poultry and pigs; house (4 good rooms and scullery), coal, and vegetables. Full particulars of experience, wages, age, and family; also copies of testimonials of any.—PRESCOTT, High Lanes, Widdingham, Surrey.

WANTED, HEAD WORKING GARDENER for moderate-sized Garden; must have knowledge of electric light engine; good wages, cottage, coal.—Apply, S. H. A., Avon Carrow, Avon Dassett, Warwickshire.

"Bull's"

THE FOOD FOR PLANTS

ROSES FOR AUTUMN PLANTING

ORDER EARLY.

Beautiful plants of the best possible cultivation, our selection from the finest sorts including—
The Brilliant Coloured

"MDME. EDOUARD HERRIOT"
(Dainty Mail Rose.)

12/- per doz. bushes, carriage paid.
Catalogue Free on request.

STUART LOW CO., BUSH HILL PARK, MIDDLESEX.

Write for this FREE BOOKLET and avoid all drainage troubles



with pot plants. It explains also the porosity, root-roominess, and cleanliness of CRET POTS, of importance to all gardeners. FREE SAMPLE CRET pot also on request. Write to-day
PETER BAILEY & SONS Ltd
2 Hatton Messy Pottery,
near Manchester.

ARTICULARY G.F.S. MORE LIGHT

A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/8 in. (or equal to about 21 oz.) in thickness. Can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of GENUINE WHITE LEAD PAINT.

"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cases.

BEST LINSEED OIL PUTTY.



Complete Price List of Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.

LAXTONS BEDFORD FRUIT TREES & ROSES

CATALOGUE & CULTURAL HINTS GRATIS

IMPORTANT: Please write for a Catalogue, as the Paper Commission only allow us to send to those who apply—
LAXTON BROTHERS, BEDFORD.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being unsold.

Particulars on application,
BOULTON & PAUL, Ltd., ROSE LANE WORKS NORWICH.

FRUIT TREES.

SPECIAL OFFER.
Exceedingly well grown Fruit-bearing Apples and Pears.

Standards, about stem, fine head	Each	Dozen
Dwarf Trained, very fine	3 - A 3 6	33 - A 40 -
Pyramid, very fine	3 - B 3 6	33 - A 42 -
	3 - A 3 6	33 - A 40 -

ALSO A LARGELY PINE STOCK OF Peaches, Apricots, Plums, Cherries, Currants, Gooseberries, Loganberries, Extra Strong Fruiting Vines in variety, 7 6 each. *Catal gives Post Free.*

ROSES in all the leading varieties, Climbers, Standards and Dwarfs. *Catalogue Free.*

ALFRED A. WALTERS & SON,
NURSERYMEN and Fruit Tree Growers, BATH.

TURF LOAM.

Very Fibrous Yellow Turf Loam
For VINE BORDERS, CARBONATES, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.
Quotations Carriage Paid or Delivered.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.

SANKEY'S FAMOUS GARDEN POTS

The BEST and Cheapest.
None so plenty of each size (round and hex) carriage paid or delivered. (Carriage & freight extra.) Half price of 40/- (incl. pot) or 50/- (incl. pot) List, free of charge. POTTS of all descriptions. Bush Beds and Fern Pots from 2s. each.

RICHARD SANKEY & SON, L.T.P.
Bulwell Pottery, NOTTINGHAM.

ORCHIDS,

Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

RIVERS'

Fruit Trees, Roses, Vines, Figs, Oranges, AND Orchard House Trees ARE OF First - class Quality.

A Large and Select Stock always on View.
PRICE LIST POST FREE ON APPLICATION.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.

FRUIT IN THE GARDEN.

Root up useless shade trees and unproductive Shrubs, and replace with Fruit in these times, when food is all important.
Specially grown trees of
APPLES, PEARS, PLUMS, of fine quality for the Walls, Edging or Vegetable and Flower Borders. Many of fruiting size. Also FINE STANDARD TREES
A grand lot of Peaches, Nectarines and Cherries for the House and Garden Walls, also BUSH FRUIT TREES.

Catalogue free on request and special quotations given on hearing exact requirements.
STUART LOW CO., BUSH HILL PARK, MIDDLESEX.

CHEALS' NURSERIES.

ORNAMENTAL TREES, SHRUBS, ROSES, FRUIT TREES, &c., in immense quantities and in the pink of condition.

Send for Catalogue to—
J. CHEAL & SONS, Ltd.,
The Nurseries, Crawley.

EVERY GARDENER KNOWS THAT

Clay's gets there

and makes the Garden gay all the year round

Sold everywhere in TINS at 6d. & 1s., and in BRANDED & SEALED BAGS: 7 lbs. 2s. 6d., 14 lbs. 4s. 6d., 28 lbs. 7s. 6d., 56 lbs. 12s. 6d., 112 lbs. 20s. Or direct from the Works. Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mfrs & Bone Crushers, STRATFORD, LONDON, E.

CLAY'S FERTILIZER
TRADE MARK
EVERY GENUINE TIN BAG & SEAL BEARS THIS TRADE MARK.

IT IS THE STANDARD FOOD FOR PLANTS.

THE

Gardeners' Chronicle

No. 1608.—SATURDAY, OCTOBER 20, 1917.

CONTENTS.

Agricultural machinery	Paradise Apple stocks .. 101
in Palestine .. 101	Plum Victor Christian .. 137
India and Brins .. 102	Scale insects and Ameri-
Dutch seed prospects .. 101	an blight .. 102
Farm, crops and stock on	Seedlings, damping of .. 109
the home .. 103	Shigs, control of .. 102
Flowers in season .. 169	Societies—
Food production on in-	Manchester and North-
creased .. 158	of England Orchard .. 103
Allowments in 1917 .. 158	Royal Horticultural .. 102
Beet, a zoöloproct .. 158	United Hort. Benefit
Celery .. 158	and Provident .. 103
Fruit and corn crops .. 158	surveyors' Institution .. 100
Kohi rabi, cooking .. 158	Wilde programme in
Potato competition .. 158	1918 .. 100
Potato crops, success-	Trees and shrubs—
ful of .. 158	fruit of trees and
Potato trial .. 158	shrubs .. 137
Potatoes and Onions at	Hibiscus syriacus .. 107
Kilmarock .. 158	Climo pumila .. 104
Galloway garden, notes	War Items .. 101
from a .. 150	Week's work, the—
Germination, speeding	Flower garden, the .. 139
up .. 101	Fruits under glass .. 101
Gunders in the North .. 102	Bardy fruit garden, the 150
Market turf garden, the 150	Kitchen garden, the .. 150
Orchid notes and glean-	Orchid houses, the .. 149
ings—	Plants under glass .. 101
Cattleya Zonnebake .. 156	
Cattleya-Cattleya Gatto	
Princess .. 156	

ILLUSTRATIONS.

<i>Hemerocallis aurantiaca</i> var. major .. 156
Plum Victor Christian .. 137
Potato, stem tuber of .. 103
<i>Nantheoceras sorbifolia</i> , fruits of .. 104

NOTES FROM A GALLOWAY GARDEN.—XII.*

ALAS! for the wealth of Blackberries that has gone to waste this season for want of sugar to preserve them withal. Moreover, the dye works, whither in former years the "black boys," as they are called in Ayrshire and Galloway, went sent by rail in hundred-weights, have ceased to take them, being concerned, I suppose, mainly with the production of khaki goods. This is the occasion of loss to villagers and cottars, who have become accustomed of late years to draw a very fair profit from the hedges and sensible banks. Berries of nearly all kinds abound this year. A notable exception is *Cotoneaster frigidula*, of which there are many trees here 20 to 40 feet high. They were loaded with scarlet fruits after the wet summer of 1916; this autumn they bear hardly any. As for Rowans, a correspondent writes to me, "What would we not eagerly disburse for a Rowan tree if it came from some remote valley in China?" The golden-fruited variety, as I saw it lately at Pollok, in Renfrewshire, and again in a grimy colliery village in Lanarkshire, is a desirable variety. *Nantheoceras sorbifolia* (see fig. 60) has had a hard fight to retain its great nuts—bigger than a Horse Chestnut's—during the equinoctial gales. They withheld their beauty till they open, when they disclose rows of orange-tawny seeds resting on a couch of sleekest, whitest satin. The flowers of *Lonicera nitida*, introduced by Wilson in 1908, are fragrant, but inconspicuous. They are followed, however, by shining berries of an unusual colour—bright violet,

like beads of amethyst, and very attractive. The fruits of *Magnolia parviflora* are of extraordinary beauty, and, being borne on longish footstalks, render this charming shrub or small tree almost as conspicuous as when flowering in summer. The carpel is about 2 inches long, in colour a rich carmine; when ripe, it opens and discloses rows of scarlet seeds.

I have never seen the scarlet-fruited Elder (*Sambucus racemosa*) fruiting so freely in the United Kingdom as it did last year in Mr. F. R. S. Balfour's grounds at Dawyck, Peeblesshire. The trees, whereof there were many, were loaded with the brilliant berries, which struck me as remarkable after a miserably wet and cold summer. Mr. Balfour presented me with fifty seedlings, now 4 and 5 feet high. We shall await their behaviour next year with such patience as may be at command.

The handsomest of all the Day-lilies is *Hemerocallis aurantiaca* major (see fig. 58), not less to be esteemed because it delays display till late in the season. Last year it opened its first bloom on September 23; this season it started a day earlier. It is somewhat chary of flowers; a clump which has stood here for ten years or so is bearing but three flower-stems; but it atones in quality for lack of quantity, each head carrying about a dozen blossoms, opening in succession, the corolla being of great substance, of a rich and peculiarly luminous apricot colour.

Another autumnal flower of distinction is *Rubella maxima*, from Texas, which must have received its specific name before its Californian congener, *R. laciniata*, was classified, for it has neither the stature nor the coarseness of that species. From a tuft of fleshy, glaucous, lanceolate-leaves, measuring with their stalks 14 to 16 inches long, rises a flower stem to a height of 4 or 5 feet, with a few clasping leaves. The flowers are solitary or two on a stem, with clear yellow, ray florets and a cone of brownish-purple fertile florets $\frac{1}{2}$ inch high. Full exposure to the sun and a rich loam are the requirements of this most desirable plant, which is seldom seen in cultivation.

I am not greatly enamoured of the *Simulifera* family, but there is one, *Helianthus mollis*, which I first saw in the Cambridge Botanic Garden many years ago, and have never since been without. It wins favour by its moderate stature—4 feet or so—by the contrast between its soft, gray-green leaves and the rich golden flowers which it produces in a long succession from early in August till far into autumn.

In a former paper I drew heavily upon the vocabulary of vituperation in discoursing about the Knotwoods (*Polygonum*). Howbeit, there are two of this most prorean genus which are devoid of the vice of their rampant kindred and are greatly to be prized at this season. One is *P. vaccinifolium*, which spreads a close mantle over the stones of a retaining wall, and decks that mantle in September with crowds of erect, hoath-like

flower-spikes of lively pink. When the bloom is past, the plant is grateful for a liberal top-dressing of peat. Very different in habit and appearance is the other species, *P. equisetiforme*. It sends up a sheaf of slender, rush-like stems, 3 feet high, which become studded in autumn with small white flowers along two-thirds of their length. A graceful plant and desirable, which I owe to the liberality of Kew Gardens. As it does not appear in the *Hand List* for 1902, it may be presumed that it is of recent introduction. It seems not so hardy as could be wished. Of two strong plants here, one succumbed to last winter's cold, and the other, though green and vigorous, shows no sign of flowering, whereas it ought to begin in August. The same is the case with *Agapanthus umbellatus*, of which several clumps came through the winter without protection and apparently unharmed, but only one is flowering. A. Moore, on the contrary, was never more prodigal of bloom.

What we have known as *Montbretia*, but are bidden in the *Kew Hand List* to call *Tritonia*, is a beautiful autumn flower in many of its varieties, but it is embarrassing in its fecundity, springing up in places where it is not wanted, and smothering less robust growths with a cataract of leafage. It is too bright and friendly for utter banishment from the borders, though it lightens the woodland wayside finely, so we have readily adopted a course suggested by its own behaviour. A large, round bed, 25 feet across, filled with dark and light blue *Delphiniums*, was a very satisfying sight at midsummer, and the plants, having been cut over before going to seed, are now quite gay with a second bloom. Some vagrant bulbs of a *Montbretia* known by the sinister name "Germania" are haunting their flames among the blue Larkspurs, with telling effect; so with a view to autumn, 1918, we intend to dot them all over the bed.

Much of the charm of a border depends on the juxtaposition of flowering plants, and it is profitable to take note of such chance combinations as occur in such a disorderly, informal collection as we have here. For October effect the following are very gratifying: A bevy of blue-purple *Crocus speciosus* pushing up through a silvery carpet of *Cerastium tomentosum*; a tangle of pink *Polygonum affine* (*P. brunonis*) and light blue *Geranium Walli-chianum*; a furnace of *Kniphofia aloides* in a sea of snowy *Anemone japonica* *Honorine Jobert*; a crimson cascade of *Berberidopsis corollina* over *Crimm Powellii album* at the foot of the wall; the pink *Aster St. Egwin* alongside of sky-blue *Anemone Fischeri*; lastly, a group composed of *Cimicifuga simplex*, latest and best of Bugwarts, a sheaf of hybrid *Lobelia* of a rich carmine hue, and a clump of pale yellow *Kirengeshoma palmata* 4 feet high.

The first snow on our hill-tops on October 5 warns us that the flush of the year is drawing to an end. *Herbert Marshall, Monroith, Wigtonshire.*

* Previous articles appeared in the issues for Jan. 13, Feb. 17, Mar. 10, April 13, April 28, June 2, June 20, July 21, Aug. 28, Sept. 8, and Sept. 29, 1917.

ORCHID NOTES AND CLEANINGS.

LAELIO-CATTELEYA GATTON PRINCESS.

Mr. J. COLLIER, gardener to Sir Jeremiah Colman, Bart., Gatton Park, Surrey, sends us a flower of this very pretty and brightly coloured hybrid between *Laelia pumila* and *Cattleya Maunifii* (Bowringiana \times *Dowiana aurea*). The flower is 6 inches across, the sepals and petals

(*Dowiana aurea* = *Harrisoniana*) is also from Gatton Park, and presents another interesting instance of the domination of *C. bicolor*, for in size, shape, and most other particulars it closely approaches that species, notwithstanding the several larger and more ample species coming into its composition. The sepals and petals are of light lilac colour; the short, side lobes of the lip and the base are tinged with yellow and show

THE MARKET FRUIT GARDEN.

In September the rainfall was moderate, but sufficient, with the frequent morning fogs, to keep the land somewhat wet. Rain fell at my station on nine days, amounting to 1.50 inch. Urgent work in gathering and carting fruit prevented attention to the cultivation and hoeing of

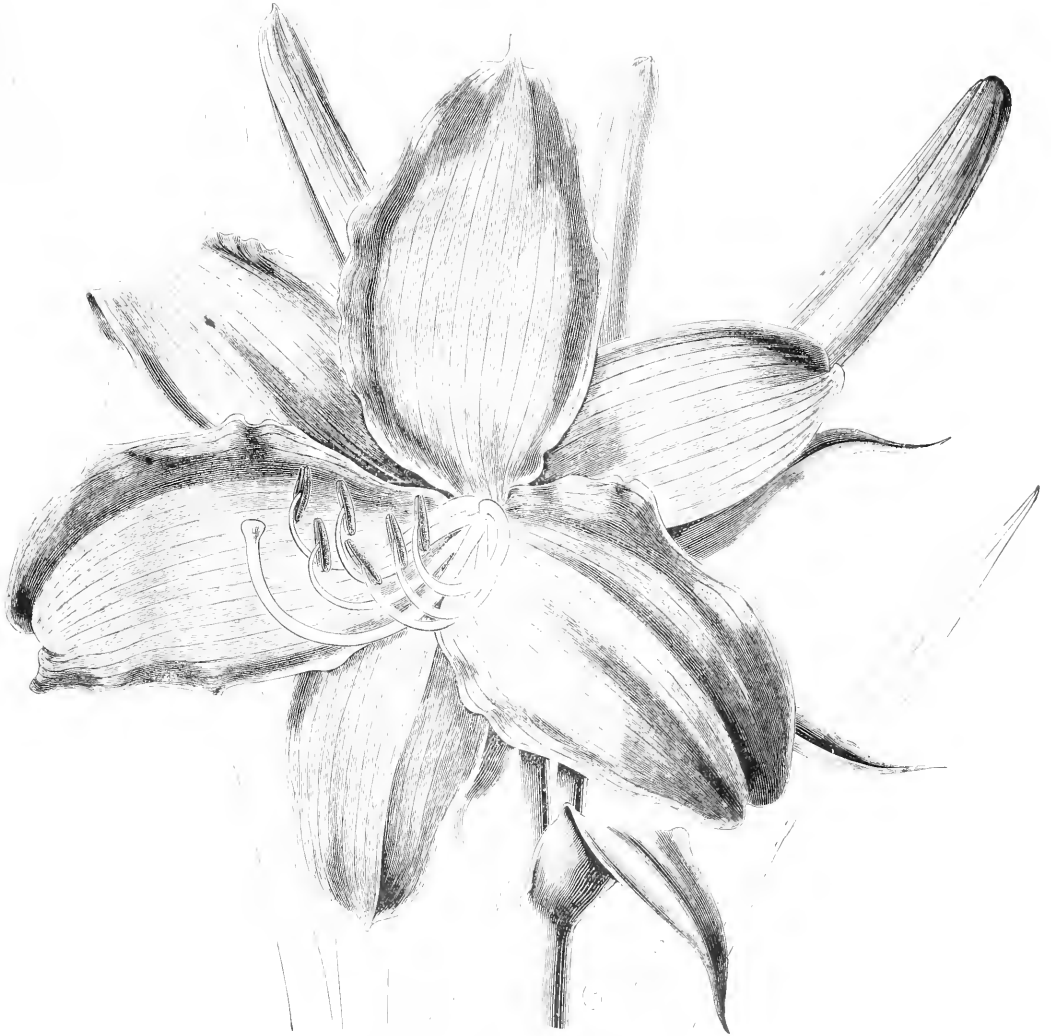


FIG. 58.—HELMSFORDALLIS AURANTIFLORA VAR. MAJOR
(See "Notes from 'The Garden,' p. 155.)

of a light mauve shade, and the lip, which plainly shows *L. pumila*, reddish-violet with Indian-red base and yellow lines, the apex bearing a light lavender blotch. It is a very acceptable addition to the late-flowering Laelio-Cattleyas.

CATTELEYA ZONNEBEKE.

C. ZONNEBEKE, a new hybrid between *C. Adula bicolor* = *Hardyana*) and *C. Mrs. Pitt*

some raised orange-coloured lines traceable to *C. Harrisoniana*, the front being light mauve. It is probable that other plants of the batch will show more of the larger *Cattleya* form.

PUBLICATIONS RECEIVED. *On Fruit Bottling and Storing and on Vegetable Bottling and Storing.* Revised edition. By Royal Horticultural Society. (Wesley & Son.) 3d.

orchards almost entirely, and the growth of grass and other weeds, particularly Chickweed, was rampant. In the spring my orchards were remarkably clean, when most others were foul, as hoeing had been carried on up to a late date in last autumn. Now they are in worse condition than they have ever been before at any period of the year, except where there is a good plant of *Leucome*. Hoeing done since July has only checked weeds without killing many.

WORK CAUSED BY GALES.

The work caused by the two great gales of the latter part of August, and subsequent strong wind, has been tiresome and expensive. The picking up of windfalls alone consumed a great deal of time, and selection for marketing in addition. In order to release trays for the gathering of mid-season Apples, the windfalls to a great extent had to be placed in heaps wherever there was room for them under cover. Afterwards, when time was available, the heaps had to be tiresomely gone over to have rotting fruits taken out, and saleable Apples graded and packed. This work is not yet finished.

APPLES IN HEAPS.

The necessity of storing most of the windfall Apples in heaps has shown that they keep better so than in trays. There has been much less shrivelling of immature fruit in heaps than in trays, and no more rotting. The temperature during the greater part of September was too high to allow of even gathered Apples keeping well, and great quantities of mid-season varieties, kept for a few weeks in consequence of lack of empties, became over-ripe, and therefore depreciated in value. Some tons of windfalls and gathered fruit together rotted entirely, or to an extent rendering them unsaleable, excepting a limited quantity sold at 1s. per cwt. for cider. By-the-way, the few makers of cider in my district, makers only for home consumption, say that Apples rotted completely, if brown, but not black, make the best beverage. An agreeable surprise is the condition of Cox's Orange Pippins, blown down when not nearly mature, and stored in heaps. The best of them are firm, though they have lost their brightness, and are saleable at remunerative prices. Even thirds have made as much as the best of ordinary varieties.

SPECKED APPLES.

In addition to the rot spots alluded to in the *Gardeners' Chronicle*, September 22 (p. 121), numerous small specks have appeared on Domino and Duchess of Oldenberg. These specks, which developed entirely in store, though the cause of them apparently acted while the fruit was on the trees, are sunken, but do not cause any curvy degeneration of the cells under the skin as either Bitter Pit or Fruit Pit does. They do not look at all like scab, and there are hardly any typical scab marks and no cracks on Domino. They occur chiefly on shrivelled Apples. After a time a white mould shows on the specks. Thus, Mr. Salmon says, is "the *Hyphomyces* fungus *Cephalothecium roseum*," and is a very frequent cause of rotting. In all cases, he adds, it attacks the Apple where a spot of scab is or has been. This seems to assume that the specks are scab marks, in which case it is curious that there should be no large scab scars or cracks. Moreover, the specks did not show before the Domino Apples were stored, the fruit being remarkably clean when gathered. By-the-way, evidence as to the development of funguses attacks upon Apples in store being strictly development and not origination in store, is afforded by the fact that the specking is almost entirely confined to Domino and Duchess of Oldenberg, other varieties stored close to the two sorts named being quite free from specking, and almost free from rot spots.

IMPROVED PRICES.

The great glut of windfall and mid-season Apples had subsided by the end of September, and a considerable advance in prices has since taken place. Hitherto they have been much lower than they were last season, but scarcity will soon cause a great improvement, and probably late Apples, which are not generally a great crop, will become very dear before Christmas. Cobnuts also have gone up in price to a small extent, though still much below last season's value.

COBNUITS AND FILBERTS.

Why do market growers ever grow Filberts? These Nuts yield much less than Cobs, and sell regularly at 1d. per pound less money. In this we have one of the numerous instances of size affecting price more than quality, for Filberts are greatly superior to Cobnuts in flavour, and embody much less woody fibre. Although the foliage of Cobnuts was badly infested with caterpillars, the fruit is exceptionally fine and sound. The size is probably due to the wetness of the summer. Apparently the caterpillars included very few of the maggots which infest the kernels of nuts. *Southern Grower.*

PLUM VICTOR CHRISTIAN.

This new variety of Plum, which received the R.H.S. Award of Merit on the 9th inst., is a prolific bearer, as may be seen from the small branch illustrated in fig. 59. The fruits are dark purple, and resemble somewhat those of Monarch, of which the variety is probably a seminal or sucker sport. The fruits are only

of the more beautiful, which were recently at their best:—

H. SYRIACUS Totus albus—an exceptionally fine, pure white single flower; *colostriis*—a splendid single variety, blue, with crimson base to petals; it makes a fine standard; *flore roseo striatis*—possibly the finest and largest pink variety, flower blotched with crimson; *Hamabo*—generally one of the best, but not so good this year; pale pink with crimson base, single; *elegantissimus*—a semi-double variety, bluish, blotched with crimson; *monstrous*—a fine, very pale pink, single form; *albo plenus*—semi-double, white, with blotched base; it makes a good standard or half standard; *coerulea plenus*—single, pinkish purple; *Lady Stanley*—one of the best double; pink, with base blotched; *rubis*—single, colour ruby red; *forms fine bushes*; *Admiral Doway*—double white; *violet claire double*—pale violet, excellent as a standard; *Compte de Flan*—double, rose-pink; *Duc de Brabant*—rich double rose-pink; very effective as a half standard; *paony florus*—paony pink, double; a good half standard; *hybridus*—single; pinkish-white blotched with crimson; *bicolor hybridus*—

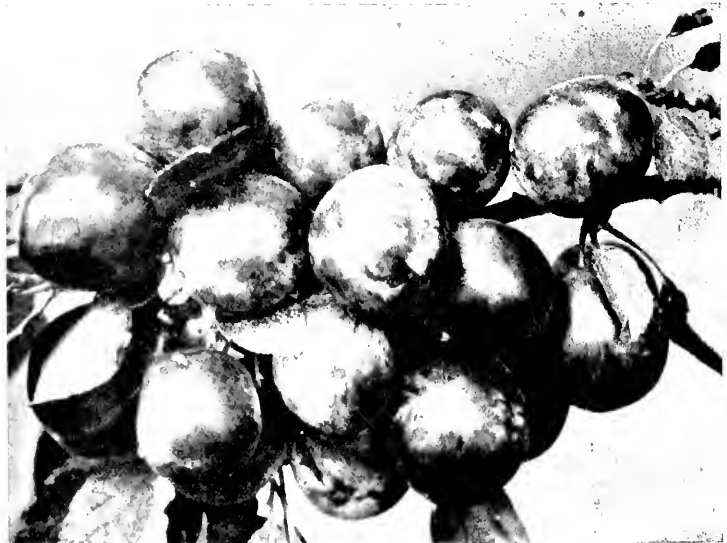


FIG. 59. PLUM VICTOR CHRISTIAN

(Photograph by R. A. M'Clay)

of moderate flavour, but they ripen later than most Plums, and the variety will be valuable for the late market.

TREES AND SHRUBS.

HIBISCUS SYRIACUS.

In spite of a dull, sunless summer, rarely, if ever, have I seen *Hibiscus syriacus* more beautiful than it is this year. Having been grown in this country for hundreds of years, and known as *Althaea frutex*, it is surprising that the shrub is not grown much more extensively than is the case. The plants will succeed in almost any soil or locality, are perfectly hardy, and they give a wealth of flowers when most flowering shrubs are over.

They make ideal plants for small gardens, as well as large, as they are somewhat slow growing and are easily kept within suitable bounds. Either as bushes, standards, or half standards, they are equally beautiful, and there are one or two varieties with variegated foliage which are wonderfully effective. I append a list of some

double pink, blotched; *rubra flore plenus*—a pinkish purple double; *pauciflorus plenus*—semi-double red; *minutiflorus plenus*—deep rose-pink, double; *Boule de Feu*—deep crimson, double; makes a good bush; *Amaranthus*—double; deep purplish pink; *albo luteolus plenus*—double; creamy white; *variegatus*—variegated foliage; flowers double; purple. *Edwin Beckett.*

THE FRUITING OF TREES AND SHRUBS.

In very few years is it possible to record such an abundant and very varied harvest of tree and shrub seeds. This is no doubt largely due to the weather conditions. In the first three months of the year, and notably during February, the conditions were colder and retarded growth; coupled with this there was an absence of late spring frosts, so that in the spring of 1917 the early-flowering trees and shrubs developed in suitable conditions. A few examples are worth placing on record, notably *Brica arbor* and *E. linstanica* (colonades), *Nyssa sylvatica*, *Nan'hoeris sorbifolia*, numerous species of *Lonicera*, *Penus cerasifera*, and *P. divaricata*, also many of the newer trees and shrubs introduced from China.

ON INCREASED FOOD PRODUCTION.

POTATO TRIAL.

A TRIAL of four different varieties of Potatoes has been carried out at St. Osyth's Priory Gardens, Colchester. I received two pecks each of the following varieties from Messrs. Austan and McAslan on March 3: What's Wanted, Great Scot and Scottish Triumph. I planted one rod of the following varieties on March 19: Scottish Triumph, Great Scot, What's Wanted, and Pink Blossom. This is the third year that Pink Blossom has been growing at the Priory; it is a splendid cropper and a good keeper when the seed is changed every second year. The results from the trial of one rod of each, planted with a space of 2 feet between each row and 15 inches between each set, all unsprouted, set 1½ oz., are as follows:—

	Per rod.	Per acre.
Scottish Triumph ..	360 lbs.	25 tons 18 cwt. 6½ lbs.
Great Scot ..	340 lbs.	22 tons 17 cwt.
What's Wanted ..	260 lbs.	18 tons 11 cwt.
Pink Blossom ..	250 lbs.	17 tons 17 cwt.

Scottish Triumph 10 cut sets = 45 lbs.; 10 uncut sets = 40 lbs.
 Great Scot .. " 41 " " = 34 " "
 What's Wanted .. " 25 " " = 22 " "
 Pink Blossom .. " 22½ " " = 25 " "

I may state that all cut sets were dipped in unslaked lime. The plants were sprayed twice throughout the season, and all were free from disease. The only artificial manure they received was ¾ oz. of sulphate of ammonia per lineal yard. Twelve people were present at the lifting and weighing. *Peter Murphy, Gardener, St. Osyth's Priory.*

POTATOS AND ONIONS AT KILMARNOCK.

MR. DEWAR, a plot-holder at Dankeith, near Kilmarnock, has grown a remarkably good crop of Cranston's Excelsior Onions. Four thousand seedlings were planted on a space measuring 33 yards by 14 yards, about the middle of April. The crop was lifted during the last week in September, and weighed 2 tons 5 cwt.; twelve of the largest bulbs together turned the scale at 28½ lbs. He also planted whole one tuber of Conquering Hero Potato weighing 18 oz., in a mound of mixed soil and leaf-mould. When lifted there were 75 tubers, weighing together 26 lbs. 4.

A SUCCESSION OF POTATO CROPS.

A CORRESPONDENT sends us an extract from the *Journal de Genève*, according to which it is possible to obtain a second or even a third crop of Potatoes from the same plant. To achieve this the *Journal* states that it is only necessary to dig the plant carefully, and after removing the fully developed Potatoes to replace it, when it will yield as large a crop as before. Although it does not do to be too sceptical, we feel a certain difficulty in accepting these statements if only because to obtain a second crop the plant must be dug whilst the haulm is still vigorous, and hence before the "first" crop has reached its full size.

ALLOTMENTS IN 1917.

THE Food Department has just issued details of the allotments in cultivation this season. Up to the 28th ult. the Department had received reports from 1,036 districts, in which allotments have been provided under the Cultivation of Lands Order. The number of "war time" plots is stated to be 130,066, representing a total area of 13,263 acres. In addition to these allotments, provided under special powers granted during the present year, many of the authorities concerned have been able to arrange on amicable terms with owners of land for large numbers of permanent allotments, and are proposing to lay out still further areas.

POTATO COMPETITION ON ALLOTMENTS.

THE Dumfries and District Horticultural Society instituted a competition among allotment

holders for the heaviest crop of Potatoes as lifted from a space of five lineal yards. The Potatoes were raised on the same day, and the lifting and weighing supervised by members of the Horticultural Society's Committee. The prizes were awarded as follows:—

DUMFRIES ALLOTMENTS.

1. S. Thom, Barkerland Allotments, 4 st. 4 lbs.
2. J. Ross, Annan Road Allotments, 3 st. 1½ lb.
3. Constable Killop, Johnstone Park, 3st. 6ozs.

MAXWELLTOWN ALLOTMENTS.

1. W. McAdam, Palmerston Allotments, 3 st. 1½ lbs.
2. J. Carruthers, Palmerston Allotments, 3 st. 7 lbs.
3. W. Currie, Portland Allotments, 3 st. 5 lbs.

Correspondent

A GOOD CROP OF BEET.

At the end of the first week of May last, agreeably to the desire of a new allotment holder, I bored holes for two lines of Beet, and sowed the seed. The allotment holder was not desirous of very large roots, though quality was a desideratum. Accordingly I allowed only a space of 18 by 12 inches for each root. A little manure had been placed over the gravel at a depth of 16 inches (the full depth of the soil), and one or two light dressings of sulphate of ammonia were given during the early period of growth. Fearing that the roots were getting too large, the holder dug them up on September 10. The largest root weighed 3 lbs., and 78 roots weighed 100 lbs. He found them of most excellent quality, but thought he would not require such a quantity, as his family had never used so many during the season they were in use. I replied that he might not use so much if he had to buy them. He had not seen it in that light before, and felt more than satisfied. *J. F.*

CELERIAC.

BEING interested in Mr. Edwin Beckett's remarks on Celeriac (see p. 146), I may say that I planted a batch on a plot of ground which had grown Shallots, harvested in the first week of July. The ground was simply hoed over and the Celeriac planted and well watered. I have pulled to-day some nice roots, a little larger than a cricket ball. I may say the ground was bastard trenched and given a little manure for the Shallots, and I am very pleased with the results. *W. Griffiths, Wild Wood Gardens, Clay Hill, Enfield.*

FRUIT AND CORN CROPS.

THE Shropshire and Staffordshire report to the Food Production Department for the week ending October 6 mentions that although the pulping station at Newport handled 55 tons of Damsons daily, the local crop was so heavy that much fruit was left to waste on the trees as not worth picking. Home-grown corn is coming steadily on the market in Lincoln, Rutland, and Nottingham; the condition is good, but the quality variable. Damsons here are abundant, the Pear crop is large, and the Apple crop, though less bulky, is of excellent quality. In Somerset the Apple crop was a record.

COOKING 'CHOU' RAVE (KOHLE RAMB).

1. Peel and cut in slices about ¼ inch thick, and cook till tender. Meanwhile, chop up all the young leaves, hold them slightly, strain off the water, and put them to stew with a white sauce. Drain the cooked slices, pour on the same, keep warm to compose a bit, and serve. 2. This may be used for older stems, which are becoming fibrous, if, after cooking, they are passed through a sieve. Fry a little steed onion till nicely browned, add some stock or gravy suitably seasoned, and then stew the cooked (sliced or mashed) vegetable gently till well composed. A large, maincrop variety, gathered early, is perhaps best. We find it stores well through the winter. *H. E. D.*



THE KITCHEN GARDEN

By J. DUNN, Foreman, Royal Gardens, Windsor.

WINTER SPINACH.—Thin out the plants of Winter Spinach to 3 or 4 inches apart. The leaves will then grow much larger and the plants will stand the winter better. Hoe the surface of the bed frequently, and if slugs are troublesome stand freely with soot in the early morning.

BEET.—The main crop Beet should be lifted as soon as possible and stored in some frost proof shed where a good covering of sand can be placed over the roots. Great care should be taken to lift this crop without injuring the roots.

WINTER GREENS.—Keep the hoe at work amongst all green crops while the weather is favourable. Remove decaying leaves from Brussels Sprouts as these plants will benefit greatly by full exposure to sun and air. Cauliflowers which are forming heads will require to have the leaves bent over the curds in case of early frost, but should not be severed from the plant, as they soon begin to decay, and may discolour the curd before they are noticed.

GLOBE ARTICHOKE.—As soon as this crop has been cut, the stems should be cut to the ground and all rough foliage removed. The ground between the rows should then be dug and allowed to remain rough and fully exposed to the weather until sharp frost sets in, when protection must be afforded.

MUSTARD AND CRESS. Small sowings of these salads should be made weekly in some slightly heated pit. Cover the seeds with paper for a few days, and when growth commences admit an freely, or the plants may be injured by the damp.

SEAKALE.—All decaying foliage should be removed from plants which are intended for early forcing, so that the crowns may be fully exposed to early frosts. When all the leaves have died down a few crowns may be lifted.

RHUBARB.—Lift a few strong roots of Rhubarb and expose them to the weather for a week or two before placing them in heat.

CELERY.—Continue to earth up late plantations of Celery, observing the directions already given for carrying out the work.

FRENCH BEANS IN POTS.—There should be no difficulty in producing French Beans in winter provided a light, well-ventilated structure is available where a temperature of 60° can be maintained. The soil may consist of three parts loam from a used Melon bed and one part decayed horse-manure, mixed thoroughly together. Use 7-inch pots, and after crocking them, three parts fill them with the compost, which should be pressed moderately firm. About seven Beans may be placed in each pot and covered 1 inch deep. Place the pots in the structure already described, and as soon as the plants are well through the soil place them near to the glass to ensure stocky growth. Later on weak liquid manure may be given freely, and the foliage should be syringed twice daily.

CABBAGE.—Continue to plant out Cabbage as the plants become large enough. Examine the beds carefully and make up at once all blanks with plants from the seed bed. Dust the plants freely with lime if slugs are present, and prick out all seedling plants remaining in the seed bed.

CARROTS.—Spring-sown Carrots should be lifted, or many of them will become too large and rough; these roots may be stored in a cool, dry shed until required for use. Later Carrots may be allowed to remain in the ground for some time longer. At Frogmore all late-sown Carrots remain in the ground until spring, and are pulled as required.

LETTUCE.—Plants in the open which are likely to be injured by frost may be lifted and placed in cold pits for use in early winter. Very

careful attention is necessary in order to retain a sufficient quantity of soil on the roots to keep the plants from flazzing, and a good watering should be given to each light after the plants are put in position to settle the soil about the roots. The pit should never be closed unless a frost likely to injure the plants is expected. Young Lettuce plants of hardy varieties, such as Maximam, may still be planted on a warm border for spring supplies. The border should be well raised at the back, so that no water may remain on the surface during the winter.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gaton Park, Reigate.

SHADING.—The roof-blinds may now be removed from the divisions containing such Orchids as Cattleyas, Laelio-Cattleyas, Dendrobiums, and the Mexican Laelias. The Laelias are now producing their flower spikes, and need all the sun light possible. The blinds may be allowed to remain for a week or two later on houses containing Odontoglossums, Masdevallias, and Phalaenopsis, as they may still be required for an hour or so in the middle of bright days. Canvas blinds that are no longer needed should be stored in a dry shed, and in spare time in winter be given any small repairs that may be necessary. If lath blinds are used they may remain, and be let down over the roof glass on cold nights; it will economise fuel.

TEMPERATURES.—For the next few weeks the temperature of the East Indian or warmest house, at night, should be about 70°; that of the Cattleya house about 65°; the Mexican or intermediate house a few degrees less, and the Odontoglossum house about 55° or 57°. These readings should be maintained only when the outside temperature does not fall below 45°. In the event of very cold nights a few degrees lower may be permitted. Frost may occur suddenly in the early mornings, causing the temperature of the various houses to fall a little below the proper degree. On such occasions no water should be afforded the plants, neither should damping be done until the houses are sufficiently warm again, as a cold, moist atmosphere causes spot and disease in the foliage.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbots Wood, Glastonbury, Stroud.

PEACH AND NECTARINE TREES.—Gather any fruits still upon the trees, and put them to ripen in a box with some wood wool in the bottom, and place the box on a warm and dry shelf. Cut away any laterals or superfluous shoots. Should the ground close to the wall be dry give it a good soaking, and at the same time syringe the trees with an insecticide. The earlier trees should have a light twiggy hick branch drawn lightly over the foliage to shield any loose leaves, so that the sun may shine on every portion of the tree. Any trees to be shifted should be transplanted at once.

FRUIT GATHERING AND STORING.—If Apples and Pears are gathered and selected with care the work in the fruit room will be reduced to a minimum. At the present time several varieties of Pears and Apples are ready for use. They should be kept in a cool room, although Pears are never when eaten with the chill off, especially in the cold months. The varieties are—Hardy, Bourne Superfin, Gault's Bergamot, Triomphe de Vienne and others all ripen and are at their best in October. In Apples James Grieve and St. Edmund's Pippin—the latter a very agreeably flavoured variety—American Mother, Lord Rossberg, a fine, highly coloured fruit, are also ready in October. All these do well when grown as bush or pyramid trees. Later Apples, when gathered, should be placed in backward positions—that is, on the floor and on the top shelves, which are the coldest, leaving the middle stages for those which are to be consumed first, and as these stages are cleared the tops and bottoms can be thinned to continue to make a show, as Apples will bear being laid

several layers on top of each other. Plenty of air should be kept on the fruit stores to allow the moisture arising from the fruits to escape.

STAKES FOR YOUNG TREES.—Any replanted trees should be given strong stakes to keep them steady during the gales, which are usual in autumn; if this be done it is surprising how quickly the trees in new positions will take hold of the soil, especially if the work is done early.

CUTTINGS OF CURRANTS AND GOOSEBERRIES.—Cuttings may be put in now. Choose straight shoots, and in Red and White Currants strip off the buds to within 3 inches of the top, but not so with Black, as these should be encouraged to grow from the base. Make a small trench with a spade, and if the soil is wet and heavy put in some old rotting shod soil which has been passed through a fine-meshed sieve. Put the cuttings of about 8 or 9 inches apart and well tread them in; firm planting is essential.

STRAWBERRY QUARTERS.—Keep Strawberry beds free from runners and cross weeds.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTON, Eastwell Park, Kent.

BUSH CHRYSANTHEMUMS.—Late varieties grown for blooming about Christmas-time, may be kept outside a few weeks longer, but measures must be taken to protect them in case of bad weather. If wooden supports are provided, canvas covers or old blinds can be used at night, or, failing either of these, a double thickness of fishnetting. Water the plants before midday, so that they will not be saturated at nightfall.

FREESIA.—The light material placed on the surface, when the balls were potted, to keep the soil in a uniform condition, should be removed as soon as new growth can be seen. Give them all the light and air possible during mild weather to ensure a steady growth. When the weather turns cold, those required to flower early in the winter should be placed in the greenhouse on a shelf or stage near the glass. Be careful not to overwater the plants in the early stages of growth. Later, when the pots are full of roots, plenty of water may be given, and a little weak manure water and root water about twice a week. Support the plants with net stakes before they begin to fall about a temperature of 50° to 55° at night will be ample, with an increase of 10° in the day by daylight.

THE FLOWER GARDEN.

By W. J. GIBBS, Gardener to Mrs. DUNSTON, Keele Hall, Staffordshire.

PAEONIES.—The planting of herbaceous Paeonies should no longer be delayed, and if the severity of the autumn prevents the work being done, it should be postponed for another year rather than be done in the spring, when the root produces a mass of young fibres, making it impossible to lift and replant them without injury. When dealing with a number of large roots in these gardens last year, the positions for planting were well trenched and a liberal quantity of decayed manure and leaf mould incorporated with the soil. The roots were carefully lifted, and parted with the aid of two small border forks, the crowns being split into sections of four or five eyes. The eyes were planted just below the surface, and a mulching of manure and decayed leaves placed over them. The weather during the spring was certainly in their favour, for rarely have I seen herbaceous Paeonies give so good an account of themselves.

PERENNIAL LARKSPURS.—Although Delphiniums are not so exacting as Paeonies, plants lifted, divided, and replanted at once will certainly have the advantage over those planted in spring. As the soil is still warm, the plants will get well rooted and established before severe weather sets in. Young plants in reserve quarters should be transplanted to their permanent positions; they like a rich, light soil, and a fairly open situation sheltered from high winds.

Plant the crowns about 2 inches below the surface, and make the soil moderately firm about the roots.

THE ROSE GARDEN.—Cut out all old and exhausted wood from Rose plants, and complete the final tying in of the young shoots.

FRUITS UNDER GLASS.

By JAS. HENSON, Head Gardener at Gunnersbury House, Acton, W.

THE TOP-DRESSING OF POT FRUIT TREES.—For top dressing pot fruit trees it is advisable to use a little more manure with the soil than would be used in repotting. Let it be well decomposed, so as to encourage root action as quickly as possible. Proceed firstly removing the top-dressing of the past summer, and then with the scratcher, alluded to in my recent notes, carefully work amongst the older roots and endeavour to get down at least 3 inches into the old ball. In doing this preserve intact as many of the roots as possible, not only those in the top dressing but also those in the lower part of the soil, and carefully lay them out after a little fresh soil has been added; then incorporate the roots with this as equally as possible. Press the soil down quite firmly and apply at the least one good watering. Look closely to the drainage holes and see that they are free. If there are any indications of worms in the pot add some lime to the water and watch for the appearance of the worms on the surface.

EARLY FIG TREES IN POTS.—There is no better plan for securing an early crop of Figs than by growing a good batch of trees in pots, selecting the variety St. John's or Pango de Mel; it is immaterial which of these be chosen, for the fruits are similar, and both crop equally well. Later on the fruits of the second crop are not alike in this respect, for the last named variety has then more conical fruits than the former. If any forcing is to be attempted of these Figs no time should now be lost in paying attention to their needs at the roots. Every alternate year is ample for repotting, or every third year even, if they are grown in pots of large size. When potting them, however, do not be afraid to reduce the balls freely, whilst care fully preserving the roots. If larger pots are deemed advisable use them by all means, but be moderate in providing for fresh root extension. After repotting, or top dressing, as the case may be, keep the stock in a cold house, but one that is absolutely proof against frost. These Figs, if closely fairly close together, may be protected from any risk of draught by covering them with leaves, but not sufficient to cause any fermentation. Should insect pests be troublesome, take an early opportunity of cleansing the wood down to the base, and use the insecticide Early strong; a soap lather is a good penetrating insecticide after an application of water as hot as the fingers can bear without discomfort.

LATE FIGS NOW BEARING.—Make the most of the late Figs, for they are a most valuable acquisition to the dessert. Keep the stock in a temperature of 60° to 65° Fahr. Guard against any superfluous atmospheric moisture, but see that the plants do not suffer for want of water at the roots. At the time of writing we are picking both Negro Largo and Bourpasseotte Grise in quality, and they have never been better in quality. These two late Figs cannot be surpassed for October consumption if given a fairly warm treatment to mature the fruits.

YOUNG FIG TREES.—Those who may have a stock of Fig plants propagated from cuttings last January will now do well to let them go to rest, even if a few fruits should still remain upon them. Gradually reduce the watering and the heat and remove them to a cooler house. Later on do not be sight of these young plants, and on no account let them stand outside. Do not attempt any repotting of these until growth commences again. For the present do not do any pruning, but let them first go quite to rest. After another season's growth in pots a selection of these may be made, and be trained accordingly, for planting out in borders of limited dimensions. These will be better than raised or stunted plants.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41 Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would oblige by delay in obtaining answers to their communications and are as much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41 Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 46°.

A-TUAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, October 26, 10 a.m.: Bar, 29.2; temp., 45.5; W. other Bright sunshine.

SALES FOR THE ENSUING WEEK.

MONDAY—
Bulls at 67 and 68, Chapside, at 1 o'clock, by Protheroe & Motter's.

WEDNESDAY—
Teale Sale of Bulls at Protheroe & Motter's rooms at 1 p.m.

FRIDAY—
Bulls, at Protheroe & Motter's rooms at 1 o'clock.

of Paradise stocks should be set on a scurper basis than that on which it rests at present. For as Thomas Hitt sagaciously observed more than 150 years ago, "stocks are in some measure a sort of soil to the kinds of trees raised on them," and, needless to say, the value of an Apple plantation depends not only on the varieties of scion, but also on the kinds of stocks on which these varieties are grafted.

The experiments at East Malling, the fruit station of Wye College, were begun by Mr. Wellington in 1912, and have been continued since 1914 by Mr. Hatton. Throughout the whole period of the experiments Mr. J. Amos has acted as foreman assistant and recorder. The objects of the experiment were to isolate the different kinds of Paradise stock, to define their several characters, to work up stocks of each kind sufficient for testing their values on a large scale, and to determine which stocks are the best for different purposes.

Needless to say, the carrying out of such a programme must inevitably be a task of many years' duration, and hence we must look on the present contribution as an interim report, and hope that the importance of the advance made will lead to the recognition that much larger resources should be placed at the disposal of the East Malling station.

The first step in the carrying out of the programme just referred to consisted in determining the distinguishing characters of the types. For this purpose detailed comparative examination of the stocks in the dormant as well as in the growing season was made. As a result, eight distinct types of Paradise stocks may be recognised. They are:—The Broad-leaved English Paradise, the Doucin, Rivers' Nonsuch Paradise, the Improved Doucin (Doucin Amélioré), the French Paradise, and three others unnamed, of as yet unknown origin. In addition to these, the collections included two uncommon and uncertain types and a new French type—the Paradise Jaune de Metz, recently introduced into this country. Collections from Germany contained also several new unnamed sorts; so that in all 15 types of Paradise have been isolated.

Omitting the types which appear to belong to hitherto undescribed forms of Paradise, there remain nine which may be easily recognised. They are:—1, Broad-leaved English; 2, Doucin; 3, a stock identified by Mr. E. A. Bunyard as *Malus pumila*; 4, unnamed; 5, Improved Doucin; 6, Rivers' Nonsuch Paradise; 7, unnamed; 8, French Paradise; 9, Paradise Jaune de Metz. Each of these types is illustrated in Mr. Hatton's paper both by means of photographs of shoots showing summer characters, by figures giving the relative size and general leaf characters and by pictures of the root systems. With this excellent series of illustrations before him the nurseryman should have no difficulty in determining the true type to which the majority of his Paradise stocks belong. In this he is assisted by Table III., which gives the

winter characters of each of the nine types, and by Table IV., which records the summer characters.

Very full and careful records have been made of the essential characters of the root-system; for the value of a stock for a particular purpose must depend more on the nature of the root-system than on any other single character. A useful summary of the characters of the nine types brings out the striking differences between them and raises a number of interesting questions, among which one of the most important is whether the Doucin so widely used is worthy of an important place among Paradise stocks, and if so, whether it is suitable only for some soils.

In commending this valuable report to the attention of fruit growers we venture to support the author's suggestion that the work on which he is engaged will receive the co-operation of nurserymen and growers. We are sure that the investigations at East Malling deserve that co-operation, and we believe that if it is given there will be a general improvement in the Paradise stocks of the country. This, of course, is but one of the many subjects of economic importance which require investigation. The fruit growers of the country have a unique opportunity for pressing for fuller recognition and assistance of their industry by the State. In the present and prospective food shortage the importance of home-grown fruit has become of great importance to the community, and it can only be by systematised research in a sufficient number of well-equipped fruit stations that outstanding problems, the solution of which would increase the fertility of our orchards, can be solved—and then only if growers and nurserymen co-operate in the planning and carrying out the necessary investigations.

FLOWERS IN SEASON.—Messrs. ALLWOOD BROS. send us flowers of their hybrid Dianthus, which they state are from a cross between perpetual-flowering Carnations and the garden Pink. Flowers were shown at the R.H.S. meetings in the spring, when the question of the perpetual-flowering habit of the hybrids was discussed. The present flowers prove that the plants bloom well into the autumn, and specimens have been exhibited at the R.H.S. Shows almost continuously since the early part of the year. Some unnamed seedlings exhibited prettier tints than we have previously seen in the cross.

TILLAGE PROGRAMME FOR ENGLAND AND WALES IN 1918.—The Board of Agriculture appeals to farmers to increase, as compared with 1916, (1) the area under corn by 2,600,000 acres, (2) the area under Potatoes and Mangolds by 400,000 acres, (3) arable land by 2,000,000 acres.

THE SURVEYORS' INSTITUTION.—The first ordinary general meeting of the Session 1917-18 will be held on Monday, November 12, at 5 p.m., when the president, Mr. ARTHUR LYON RYDE, will deliver an opening address.

DAMPING OFF OF SEEDLINGS.—Experiments made by Messrs. C. HARTLEY and R. G. PIERCE* indicate that beside the methods of soil sterilisation by heat or by formalin the addition to the

All who grow Apples, whether for profit or pleasure—and most of us grow them for both—will find in Mr. R. G. Hatton's account* of his investigations into the different kinds of Paradise stock much valuable information and much to stimulate observation and reflection.

That there is pressing need for a thorough investigation into this subject would, we think, be immediately conceded by fruit growers; but if any there be who are satisfied with the present state of our knowledge on the variety and characteristics of "Paradise stocks," we commend to their attention Table I. in Mr. Hatton's paper. In that table is set out first the names under which some 35 British and foreign nurserymen sent in collections of stocks. Examination of these stocks showed the looseness with which the names are used. Thus, the name Broad-leaved English Paradise was used 21 times—18 wrongly and three rightly. English Paradise was used five times—in each case wrongly, and generally for Doucin. The Broad-leaved English Paradise was in some cases used for the most vigorous of Paradise stocks and sometimes for the most dwarfing. If these things are done in the "green tree" of knowledge by some of the most expert nurserymen, it is evidently high time that our knowledge

* Journal of the R.H.S., Sept., 1917.

* U.S. Dept. of Agric., Bull. 453.

soil of commercial sulphuric acid, at the rate of 1 fluid ounce to the square yard, is useful, at all events, in soils not containing too much lime. If the soil is dry the acid should be added to 2 pints of water, and the mixture watered in, and if wet 1 pint of water is sufficient.

SPEEDING-UP GERMINATION.—Experiments made by Professors MOORE and HAYES at the School of Agriculture, University of Minnesota, appear to indicate that the fumes of nitrobenzene accelerate germination of Maize seed and lead to the production of more vigorous seedlings. The seed is placed in a closed box in which is suspended a cloth which has been soaked in nitrobenzene.

ULMUS PUMILA.—Among the notable "plant immigrants" described by Mr. DAVID FAIRCHILD is *Ulmus pumila*, the Chinese Dry Land Elm. The figure of this Elm represents a

specimen 27 feet high grown from a cutting five years ago. The species has shown it all remarkably resistant to cold and drought, and withstands the rigours of the climate of Iowa and the Dakotas. It is no less at home in "the rainy winters and cool summers of the Puget Sound, the intense dry heat of the interior valleys of Northern California, and the humid subtropical summer climate of the Gulf States." Truly a most accommodating tree.

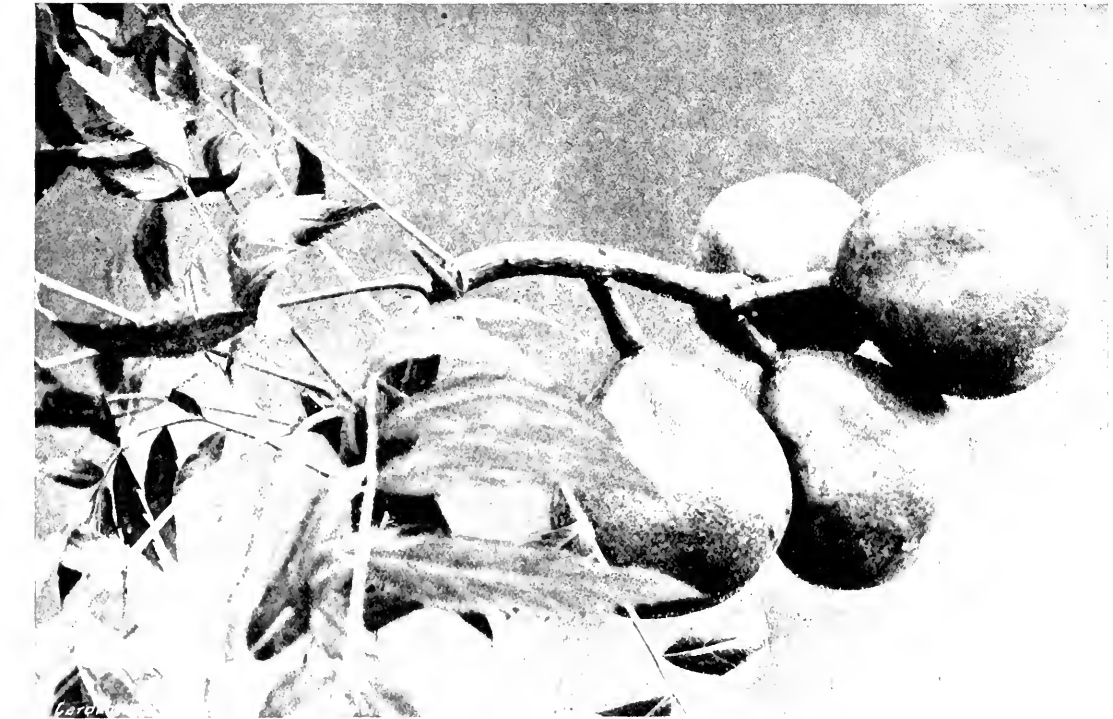


FIG. 100. FRUITS OF XANTHOXERANTHUS SORBIFOLIA (SIEB.) NAGAI, from the Garden of Golein, p. 180.

specimen 27 feet high grown from a cutting five years ago. The species has shown it all remarkably resistant to cold and drought, and withstands the rigours of the climate of Iowa and the Dakotas. It is no less at home in "the rainy winters and cool summers of the Puget Sound, the intense dry heat of the interior valleys of Northern California, and the humid subtropical summer climate of the Gulf States." Truly a most accommodating tree.

DUTCH SEED PROSPECTS.—Messrs. SEDIJS and GHOOR send us from their seed grounds at Enkhuizen, Holland, a report on the prospects of the harvest in various vegetable seeds, as follows: Cauliflower. Attacked by disease and spoilt by rain; small crop expected. Cabbages. Adversely affected by the severity of the winter; crop very small. Turnips and Beets

afterwards by excessive rains; the crop will be scarcely average. Dwarf and Runner Beans. Crop promises to be good. Broad Beans. Injured by drought; crop will probably be small. Sorghoma. Very little seed. Corn Salad. Almost destroyed by frost. Celery. The condition of this crop leaves much to be desired, and the crop will probably be negligible.

AGRICULTURAL MACHINERY IN PALESTINE.—The *Journal of the Royal Society of Arts* states that a memorandum prepared by the Arab Bureau in Egypt contains some interesting information on the subject of agriculture and supplies in Palestine. A good deal of dry scientific farming is carried on in the neighbourhood of Jerusalem, the ground being kept loose by continual tillage. The Arabs do not use harrows, but the Jewish colonists have introduced the harrow and American pulverisers with beneficial results. The ploughs chiefly in use in Palestine are the primitive Arab plough and the

German plough. British ploughs are said to be too heavy and of unsuitable shape. In the orangeries and other plantations American ploughs are exclusively used. The use of the American disc harrow is common, and American harvesters are in fairly general use even among the Arabs, whilst the Jews employ American binders. In the Jaffa Orange district the irrigation of the new groves is effected by means of pumps operated by oil engines. Most of these are of British make (3 to 3 h.p.), and it is estimated that there are about three hundred of them.

WAR ITEMS.—An exhibition of Chrysanthemums was held under the auspices of the Elgin District Horticultural Society on October 10 in aid of the Red Cross Fund. There were also numerous classes for fruit and vegetables. The exhibition, which was organised by Mr. F. L. MAXX, the secretary, and other local helpers,

was highly successful, the sum of £110 being realised.

With regret we learn of the death of Private W. EASLEY, son of Mr. W. EASLEY, Danerholt Nursery, Eastwood, Essex. He was killed instantaneously by a shell whilst performing the duties of stretcher-bearer during heavy shell fire. His officer writes: "A finer man I never met; he was absolutely upright and brave." Private EASLEY was a keen lover of Roses, and assisted his father in his nursery. He leaves a widow and one child.

— Private GILBERT EREY, of the Australian Forces, now in Bethnal Green Military Hospital, suffering from a broken arm and leg sustained in the fighting on the Ypres front, is well known to readers of the *Gardeners' Chronicle* by his occasional notes on Lilies and other plants contributed prior to the war. He is a keen gardener, and his garden, near Melbourne, is full of interesting plants.

* *Plant Immigrants.* No. 125, Sept., 1916, U.S. Dept. of Agric., Washington.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

EIGHTEENTH-CENTURY CATALOGUE. Will Mr. Roberts give a list of the varieties of Apples and other fruit mentioned in his rare old catalogue, including any descriptive efforts that there may be? Besides being of interest to many, it would be worth while recording more details than so unique a catalogue. *D.*

GUNNERAS IN THE NORTH (see p. 152).—I have reason for believing that Gunnera scabra could be grown all round the eastern and northern seaboard of Scotland from Aberdeen to Wick. Even on the northern coast of several counties to the south of the Morra Firth the climate is relatively mild, and snow seldom lies long. There was a plant of *G. scabra* in a private establishment in the early seventies, and during three years, while under my observation, it did no special treatment beyond a small heap of leaves over the crown during winter. It was grown in one of the herbaceous borders, and had no feeding whatever, but was sheltered from the north by a Beech hedge. The plant grew robustly every year, and was about 5 feet high, with the characteristic erect leaf-stalks. In those days it was more the plant of the specialist than the general cultivator who grew plants for their flowers or the fragrance of their foliage. This garden was about nine miles as the crow flies from the nearest seaboard, in a river valley, and the winter was mostly always severe. *J. F.*

BHENDI AND BRINJALS.—I am sure your numerous readers have been interested in Sergeant Aldridge's notes on "Gardening in Eden," but many of them may not be able to identify the fruits by their Oriental names, although they are often seen in Covent Garden. The former name, Bhendi, is Okra, okra Gombo, Gombar (various spellings of all these words). Hibiscus esculentus (*Malvaceae*), growing about 5 feet and with cut foliage, producing pods 4 to 6 inches long, something like the form of a long red Capsicum, but more sharply pointed and rather angular; they are used in the green state, and held in much esteem by the natives of India in making Bendi Kai and by imparting a mucilaginous thickening to soups; but it is considered heating, and leads to dyspepsia and constipation; the leaves are sometimes used as puffers. It is a native of the West Indies, and long naturalised in India. The plant yields a strong and plant fibre, and is well suited for the manufacture of ropes, strings, and paper. It would probably not succeed in the open ground nearer to England than a climate like Provence. Some members of the same genus produce good root plants; one is the source of Cuba Bast, which was much used in English gardens before the introduction of *Raphia*, Mahaut, H. arborous, Ambasi Hemp, H. cannabinum, Blue Mahoe, H. elatus, Rozelle Hemp, H. Sabdariffa, Brinjal, "Aubergine," "Egg Plant," Solanum Melongena. The Garden Egg is of various shapes and colours, but usually the above names are applied to the long and round purple varieties. The scarlet, white, striped and black are grown as ornamental pot plants in this country, the white variety being the most typical of the name. The purple varieties are generally cultivated in Oriental countries from Turkey to China and India, also in the United States, and are common fruits in baskets in the markets of New York and other cities. Mr. W. Roberts, in the *Gardener's Chronicle*, September 22, 1900, gave an interesting description, quoting, *inter alia*, from *Gard. Mag.*, 1826, as follows: "They are generally used in the East Indies in curries and made dishes, but the usual and best mode of dressing them is, first, to parboil them, and then dividing them lengthways, to scum them across and across with a knife, to dress them with butter, salt, and pepper, and to broil them on a gridiron." The latter some may have become more familiar than the Aubergine in French and English cuisines. *J. Harrison.*

SCALE INSECTS AND AMERICAN BLIGHT ON FRUIT TREES.—As frequent mention of these pests is made in all gardening papers, it may

interest readers to know of a very simple and effective method I have employed to destroy them. Some years ago, noticing during June that an Apple tree did not thrive as I thought it should, I closely investigated it to discover the cause. The leaves and ends of the branches showed no sign of insect or fungous attack, but I found the lower part of the branches and the whole of the trunk so thickly covered with brown scale insects as to touch one another. As they were of the same colour as the bark, I had not previously noticed them. Thinking I had a tough proposition before me to exterminate them, I determined upon a kill-or-cure experiment. So I made up a very strong mixture of crude Santal and water, and thoroughly scrubbed every part from the ground upwards to beyond where I could detect a scale insect. Allowing the specific to dry upon the tree, I then thoroughly painted the trunk and branches with linsed oil. The result of this treatment was that during that year the tree showed no signs of injury, nor any apparent improvement, but the next year it entered upon its vegetative period with great vigour, began to throw off the old bark, and ever since has increased in vigour of growth and fruit production. The one application of the remedy was quite sufficient, for the scale insects seem to have been exterminated. Patches of the Woolly Aphis or American blight appeared upon another tree during the same year. Knowing how very deadly oil is to all insects, I soaked the colonies of American blight with linsed oil. This completely destroyed the pest for the season, but in subsequent years it has sometimes reappeared, when a dose of oil at once destroys it, without appearing to harm the tree in any way. I think it very probable that if I had painted the scale-infected tree merely with oil it would have been quite as effective. However, the fact remains that the remedy was perfectly effective, without in any way injuring the tree. *N. E. Brown.*

SWEET PEA SPIKE WITH SEVEN BLOOM.—I send you a photograph (not reproduced) of a Sweet Pea with seven blooms, grown by Mr. Cooper in the garden of the Horton Red Cross Hospital, Gower, Glamorgan. *J. E. F. Benson, Enry Hill, Revaldston, R.S.O., Glamorgan.*

CONTROL OF SLUGS.—In reply to Mr. Pearson I hope to put an article together on the subject. When I used to collect them actually, I soon gave up counting, and estimated by the pint and quart. *H. E. Durham.*

SOCIETIES.

ROYAL HORTICULTURAL

British Fruit Show.

(Continued from p. 154.)

DIVISION V.

SPECIAL COUNTY CLASSES.

There were eleven classes in this section, open to Kent in county by itself, groups of other counties, and Scotland, Ireland, and the Channel Islands, respectively. In each case prizes were offered for 6 Apples, 4 culinary and 2 dessert varieties, also for 6 dessert Pears, of distinct varieties.

KENT.—*Apples.*—The only exhibitor was the Rev. J. R. LEIGH, Yalding Vicarage, and he was awarded the 1st Prize. *Pears.*—The Rev. H. A. BULL, Wellington House, Westgate (ex Mr. F. King), had the better of two exhibitors, and was awarded the 1st Prize. His fruits of Bourré Bachelier, President Roosevelt, Bourré Alexander Lucas, and Princess, were excellent.

SURREY, SUSSEX, HANTS.—*Apples.*—Mr. W. H. SMITH, West Dean Gardens, Chichester, had the best of eight exhibitors with highly coloured fruits of Pears-of-the-Noneseuch, Gloria Mundi, Warner's King, Lord Derby, Rival (very fine), and Chas Ross; 2nd, Rev. McMURDIE, Wolm Park, Wealdridge (ex Mr. A. Basile), *Pears.*—The Rev. McMURDIE excelled, beating

four others, with splendid fruits of Le Brun, Souvenir du Congrès, Pimaston Duchess, Durondeau, and huge specimens of Marguerite Maripault; 2nd, Lady MARY MORRISON, Tisbury (ex Mr. H. H. Mills), whose finest dish was Durondeau.

WILTS, DORSET, SOMERSET, DEVON AND CORNWALL.—*Apples.*—Major F. J. B. WINGFIELD DIGBY, Sherborne Castle, Dorset (ex Mr. T. Taitton), was placed 1st for immense fruits of Gloria Mundi, finely coloured Hollandbury, The Honiton, Cox's Orange Pippin, and others; 2nd, JOHN COPP, Esq., Teignmouth. *Pears.*—Major WINGFIELD DIGBY also showed best in the Pear class, in which Lady MARY MORRISON was placed 2nd.

GLOUCESTER, OXFORD, BUCKS, BERKS, BEDS, HERTS AND MIDDLESEX.—*Apples.*—Sir EDWARD PEARSON, Brickendonbury, Hertford (ex Mr. W. Stephenson), won the 1st Prize, Emperor Alexander, Ribston Pippin, Peasgood's Noneseuch and Bramley's Seedling being unusually good. *Pears.*—Sir EDWARD PEARSON also showed the best Pears, and was awarded the 1st Prize.

ESSEX, SUFFOLK, NORFOLK, CAMBRIDGE, HANTS AND RUTLAND.—*Apples.*—Only two competed, the 1st Prize being awarded to C. H. BERNERS, Esq., Ipswich (ex Mr. W. Messenger); his best varieties were Chas. Ross and The Honiton; 2nd, Sir R. SHAFFO ADAM, Bart., Flixton Hall, Suffolk. *Pears.*—These competitors were reversed in the class for Pears.

LINCOLN, NORTHAMPTON, WARWICK, LEICESTER, NOTTS, DERBY, STAFFS, SHROPSHIRE AND CHESHIRE.—*Apples.*—Only one competed in this section—MARK FIRTH, Esq., Carlton Park, Market Harborough (ex Mr. R. W. Thatcher).

WORCESTER, HEREFORD, MONMOUTH, AND WALES.—*Apples.*—W. J. GRESSON, Esq., Seven Stoke, Worcester (ex Mr. T. Parry), had the better of two exhibitors, his fruits of Chas. Ross being highly coloured and those of Peasgood's Noneseuch very large; 2nd, Mrs. SMART, Aberystwyth (ex Mr. R. Rogers). *Pears.*—Mr. GRESSON also showed the best Pears.

SIX NORTHERN COUNTIES AND THE ISLE OF MAN.—*Apples.*—Only two competed, and the 1st Prize was awarded to Mr. W. ORR, Silverdale, Lancashire, whose fruits of Chas. Ross, Red Victoria and Loddington were well coloured for such a northern district.

SCOTLAND.—*Apples.*—Capt GORDON, Threave House, Castle Douglas (ex Mr. J. Duff), was the only representative from Scotland. His fruits were very good, and, as showing how much later the season is for Apples in Scotland, those of Lady Sudeley, Worcester Pearmain, Castle Major and British Queen were in the pink of condition.

IRELAND.—*Apples.*—Ireland was represented by two good collections, the best from the Rt. Hon. the Earl of BESSBOROUGH, Piltown, Co. Kilkenny (ex Mr. S. E. Tomlin); 2nd, Earl of Drogheda, Pears.—Mr. HUGH INNES, Stewart Institute Gardens, Palmerston, Co. Dublin, showed small but good quality fruits of Pimaston Duchess, St. Luke, Douvenc du Comice, and Durondeau; 2nd, Earl of BESSBOROUGH.

AFFILIATED SOCIETIES.

As at last year's exhibition, the only exhibitor in this class, which called for six varieties of culinary Apples, six of dessert Apples, and six of ordinary Pears, was the Ipswich and District Gardeners' Association, and the 1st Prize was well merited.

SINGLE DISH CLASSES.

The number of exhibits in each class is given in brackets. The 1st prize winners were as follows:—

DESSERT APPLES.

Adam's Pearmain (10): Duke of WELLINGTON, Southfieldsaye, Mortimer, Berkshire (ex Mr. C. Matthews), *Millington Pippin* (17): A. E. CUMBERBATCH, Esq., Ware Park, Herts (ex Mr. F. W. Miles), *American Mother* (9): Duke of WELLINGTON, *Barnack Beauty* (8): Duke of WELLINGTON (finely coloured), *Ben's Red* (5): C. H. BERNERS, Esq., Wolverstone Park, Ipswich (ex W. Messenger), *Bleahem Pippin* (15): E. E. PALMER, Esq., (the best coloured and most regular of the fruits shown, though not the

largest). *Charles Ross* (19); W. J. GRESSON, Esq. (the best wretched fruits, and of high quality, but not very large). *Clayton's Pippin* (5); F. J. LANDSELL, Esq., West Woods, near Wimborne, Dorset. *Constitution* (9); F. J. LANDSELL, Esq. (a superb dish of fruit). *Lord's Orange Pippin* (24); Major WINGFIELD-DIGBY. *Egmont Russet* (4); Major WINGFIELD-DIGBY. *James Grieve* (10); JOHN CORP, Esq. *Lord Handley* (5); Lady MARY MORRISON (the largest and best fruits). *Myriad* (5); F. C. STOOPE, Esq., West Hall, Blythe, Surrey (gr. G. Carpenter). *Robinson Pippin* (19); MARQUIS OF RIXON, Compton, Christ. Kingston Hill (gr. T. Smith). (A superb dish of this old favourite, red all over.) *Royal Red* (16); Lady MARY MORRISON (the largest and best fruits shown in this class, and of high colour). *St. Edmund's Pippin* (4); Major WINGFIELD-DIGBY. *Wealthy* (15); E. E. PALMER, Esq. (there was a great divergence of colour among the exhibits, some being all red, others only striped). The fruits in the winning dish were very pretty).

ANY EARLY VARIETY NOT NAMED ABOVE.
FIT FOR USE.

(24) 1st. F. C. STOOPE, Esq. (*Governor*).

ANY LATE VARIETY NOT NAMED ABOVE.

(25) 1st. C. H. BERNERS, Esq. (*Winter Robinson*); 2nd. F. C. STOOPE, Esq. (*Broadland's Biscuit*).

COOKING APPLES.

Beauty of Kent (5); Rev. T. M. MURDIE, Bournemouth (6); Sir ED. PEARSON, *Blenheim Pippin* (7); F. WEST, Esq., Hackwood Park, Basing stoke. *Brandy's Scuddling* (10); Duke of WELLINGTON. *Cellini* (5); Mrs. C. M. NORDEN, Longfield, Loughton, Essex (gr. G. Gilbert). Very highly coloured. *Dunbar's Scuddling* (8); Duke of WELLINGTON. *Eden's North* (5); Duke of WELLINGTON. *Empress of Australia* (9); Sir ED. PEARSON. *Empress of North* (10); Sir ED. PEARSON. *Paishanger Gardens* (one of the finest dishes in the show). *Golden Noble* (3); Sir ED. PEARSON. *Granadina* (4); Capt. GORDON, Thravay House, Lisle, Douglas (gr. J. Duff). *Harold Pippin* (5); Duke of WELLINGTON. *John's Prince Albert* (15); A. E. CUMBERBATCH, Esq. *Lord Debach* (8); Rev. J. R. LUGH, Yalling, Kent (gr. G. Johnson). *Mary's Mince* (10); Sir ED. PEARSON (large fruits of fine quality). *Newton Wonder* (4); Duke of WELLINGTON. *Pearquod's Snowsuck* (9); MAEK FIRTH, Esq., Carlton Park, Market Harborough (gr. R. W. Thatcher). *Patt's Scuddling* (4); Major WINGFIELD-DIGBY. *Royal Jubilee* (5); W. H. SMITH, West Dean Gardens, Chichester. *Stirling Castle* (5); MARQUIS OF RIXON. *The Queen* (9); Sir ED. PEARSON. *Warrant King* (9); F. WEST, Esq. (an excellently contested class).

ANY VARIETY NOT NAMED ABOVE.

(15) 1st. E. E. PALMER, Esq. (huge fruits of *Charles Ross*); 2nd. Lady MARY MORRISON, with Rev. H. Wilks.

DESSERT PEARS.

Bourri d'Amaltes (4); F. WEST, Esq. *Bourri d'Amaltes* (2); C. H. BERNERS, Esq. *Colden Park*, Surrey (gr. G. A. Kember). *Bourri Rose* (5); Major WINGFIELD-DIGBY. *Bourri Handley* (3); Major WINGFIELD-DIGBY. *Bourri Superba* (5); C. H. BERNERS, Esq. *Charles Ernest* (2); C. H. BERNERS, Esq. (smaller, but beautifully coloured fruits, were shown by F. R. ROOD, Esq.). *Concord* (12); G. F. MANSIE, Esq., Wallington (very large fruits). *Doyenne du Comice* (17); HARRY SHURLEY, Esq., Bownside, Coldham, Surrey. *Durand's* (7); Rev. THOS. McMERDIE. *Easter Pear* (4); F. WEST, Esq. *Emile d'Hyet* (5); C. H. BERNERS, Esq. *Fondante d'Autonne* (5); C. H. BERNERS, Esq. *Fondante de Thibaut* (6); Rev. THOS. McMERDIE. *Gloria Marcon* (6); Rev. THOS. McMERDIE (large and well-coloured fruits). *Josephine de Malines* (8); Sir ED. PEARSON. *Louise Bonn of Jersey* (3); G. F. MANSIE, Esq. *Marie Bonnet* (5); Major WINGFIELD-DIGBY. *Marie Louise* (8); Rev. T. McMERDIE. *Nouriel Fédée* (3); Major WINGFIELD-DIGBY. *Painstons Duchess* (13); C. H. BERNERS, Esq. (very large fruits of good quality). *Souvenir du Congrès* (2); Rev. T. McMERDIE. *Thompson* (no entries). *Triomphe de Vienne* (2); C. H. BERNERS, Esq. *Winter Nélis* (5); Major WINGFIELD-DIGBY.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 20.—At the meeting held on Thursday, the 20th ult., the members of the Committee present were: The Rev. J. Crumple (moderator in the chair), Messrs. D. A. Cavan, J. Cypher, A. G. Ellwood, J. Evans, A. J. Handley, J. Howes, A. Keeling, D. McLeod, W. Mackleton, H. Thorpe, and A. Arthur (secretary).

First class certificates were awarded to the following novelties:—

Obontoglossum crispum Xanthotes Nadine and *O. President Edouard*, from W. R. LEF, Esq. *Cattleya Doreen Watson* & *Pittman*, from Miss S. GREENIE.

Sepholo-Cattleya Fehous & *C. Doree* & *C. Fabian*, from S. GREENIE, Esq.

Laetia Cattleya G. G. *Widdielegia longicauda*, from J. J. BOLTON, Esq.

Cattleya Venus The Knowledge (no. 1), from JOHN HARTLEY, Esq.

Sepholo-Laelia Cattleya The Bell (no. 1), *L. C. Marston* & *C. Fabian*, from P. SMITH, Esq.

Cattleya Thora unguicula (*Empress Frederick* & *Mrs. Pitt*), from J. WALKER, Esq.

AWARDS OF MERIT.

Trips, *Cattleya Bona The Knowledge* (no. 2), *B. C. Marston* & *C. Fabian*, and *Odin Henry Thompson* (no. 1), from J. HARTLEY, Esq.

Obontoglossum emblema (no. 1), *Royal Garden*, from J. J. BOLTON, Esq.

Cattleya W. Pitt (no. 1), *Louise*, from W. R. LEF, Esq.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

OCTOBER 2.—The monthly meeting of the Society was held in the B.H.S. Hall on the 2nd inst. Mr. C. H. Carter presiding. Two new members were elected. Two members withdrew from the Society, accounts the sum of 251. The stock for the month on the ordinary subscription to £42 11s., and on the share section £16 15s. 4d., and maternity benefits to 43. The meeting resolved itself into a special general meeting for the purpose of considering the amended rules of the Juvenile section, and these were adopted unanimously. The monthly meetings will take place at 7 p.m. during the winter months, instead of 7 p.m.

CROPS AND STOCK ON THE HOME FARM.

HARVESTING THE MANGOLD.

NOW that we have had the first taste of frost none may be expected at any time, and many Mangolds were spoiled by frost last year, not only during the winter months, but also before the roots were pulled. It will not be wise to risk the loss of a part of the present crop. Some say that frost does not injure Mangolds in a heap, even though they are frozen, provided they are allowed to thaw without interference. I have never seen frozen roots rot away, but they always come out in a rotten mass. The Mangold crop this year is a heavy one, probably it has never been exceeded, although the season of growth has not been ideal owing to a lack of sunshine; at any rate, in the Southern Counties. One cause of the heavy crop is no doubt the energy put into the matter, and early sowing. After the death of food during last spring, many farmers realised that the Mangold crop would be especially valuable, and thus devoted an extra share of manure to the land.

Mangold roots are easy to pull; they leave the ground readily, generally without soil attached. The most expeditious method of pulling the roots is to seize the tops some 3 inches from the crown with the left hand, and with a large knife sever the leaves within an inch or so of the crown; with the same action throw the roots into a heap of about two wheelbarrowful, working round the heap, dropping the leaves close to the heap. The roots are piled up cone shape, and by nightfall they are covered securely with the leaves, which are sufficient to ward off several degrees of frost. Usually the heaps are allowed to remain several days, or a week at the most, where they dry somewhat, and are in a better condition for storing than when put straight into a heap as pulled.

There are various ways of storing Mangolds. Where frost proof sheds or barns are available, no method is more economical in labour and in no way do the roots keep better, if they are freely ventilated for some time after storing, to dissipate water vapour arising from slight fermentation. I have seen Mangolds stored in barns 50 feet wide and as much as 10 feet high, and which came out quite sound in April. While, however, such conveniences do not exist, the old-fashioned method of clamp building can be utilised, and there is none better when properly carried out. Usually the clamps are made in the field where the roots are grown, to save cartage. Select a site as near the gate as possible, and if at the side which is sheltered from north winds all the better, as this necessitates less protection from that quarter. The width of the clamp at the base may be 6 feet or more up to 9 feet, building up in cone shape to a point, using, of course, the larger roots for the walls. The most expeditious method is to tip the cart up in the middle of the heap, working from the middle in two gangs to the opposite ends.

When the heap is complete, cover with straw, or, what is better, Barley or Oat chaff, which lies closer together, and naturally wards off more frost. A covering of straw will tend to keep the covering dry, which is not so liable to frost penetration as when wet. If there is danger from rain, a coating of soil 1 foot thick, dug from a trench around the clamp, should be put on three parts of the way up the clamp, leaving the apex open for the escape of moisture for at least two or three weeks, when the whole may be covered with straw and soil, introducing ventilators on the top of the ridge at every 6 feet, made either of straw bundles through which the steam will arise, or, what is better still, 4-inch drain pipes fitted on the top of the ridge. As long as the steam can escape, Mangolds will keep sound until August provided, of course, the covering is sufficient to keep out frost. A good plan is to thatch the soil, especially on the north side, which keeps it dry, and the clamp is then absolutely secure from frost. *E. Molyneux.*

WOMEN WORKERS ON THE LAND.

A PRACTICAL test of efficiency for women farm workers, organised under Government auspices, was carried out at the Metchley Park Farm of Messrs. A. J. Follows and Son, Edglaston, Birmingham, on the 4th inst. The test was intended to be an examination, and not in any sense a competition, match, or demonstration. The farm on which the tests were made is situated on high land about three miles to the west of Birmingham, and consists of upwards of 260 acres, 40-50 of which were placed at the disposal of the Committee.

The weather was most unsuitable for land operations, rain falling almost continuously throughout the day, and at times the downpour was unusually heavy, but the women stuck to their work in a thoroughly businesslike way. The general arrangements were in the hands of a Committee, of which the Lord Mayor of Birmingham is chairman, whose interest in the success of the scheme was very pronounced. The actual tests were arranged by practical farmers, who also acted as judges. About 250 workers—strong, healthy, active, and keen at their work—were drawn from a dozen Midland counties. The largest number of candidates from any one county was 62, from Warwickshire. The women were attired in trousers, leggings, loose coats reaching to the knees, and soft felt hats, and were grouped according to their skill and length of training. In order to gain the Board of Agriculture certificate of efficiency, it was necessary to get 75 per cent. marks, while candidates who obtained 70 per cent. received the Highly Commended certificate.

In the general labourers' tests 160 candidates entered for the pulling, cleaning, and piling Mangolds; 100 or so, in the hoeing and singling roots; 16 hay trussing; 20 thatching; 70 landing and unloading straw; and 40 mowing by hand, including whetting scythes. The women handled the implements deftly, and carried out the work expeditiously.

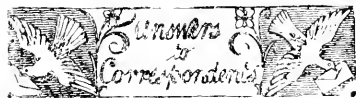
In the tests for waggoners, which included grooming, harnessing, and driving single-horse-wagon, backing it into position between pegs,

there were 35 entries: 20 for ploughing (pair of horses abreast); 15 for ridging; and 15 for drilling. The tests for cowmen were very popular, about 150 women entering for the milking by hand and by machinery, which included stripping cows and cleansing machines, etc. Milking commenced at 5.50 a.m., and all the 60 candidates satisfied the judges, who awarded the maximum number of marks to two women, and over 90 per cent. to 22 others. In the tractor ploughing test, candidates were required to drive the tractor and ride the plough alternately, two tests for each operation. They also had to set the plough, which was a by no means easy task under such trying weather conditions, but the opinions of the judges were quite favourable to the workers. It is proposed to continue these tests in other countries.

ENQUIRY.

MARKET TOMATO.—Will someone please tell me what variety of Tomato is most grown for the London market? L.

REPLY.—Many growers are cultivating the new Kundine Red variety, which gives excellent results as a market sort. Others still rely on such older varieties as Comet and Sunrise, whilst many have selections of their own from the older types of market varieties. A good market fruit should be of moderate size, possess a smooth skin and solid flesh, with few seeds, thus weighing well. If it is of better flavour than the generality of Tomatos so much the better. T.



"There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to enquire or from not knowing of whom to make the enquiry, they too often fail to obtain the information they are in want of. And let no one be alarmed lest his questions should appear trifling, or those of a person ignorant of that which he ought to know. He is the wisest man who is conscious of his ignorance; for how little do the wisest really know—except that they know little. If one man is unacquainted in a subject however common, it is probable that hundreds of others in the same position as himself are equally in want of similar information. To ask a question, then, to consult the good of others as well as of one's self."—*Gardeners' Chronicle*, No. 1, Vol. I, January 2, 1851.

CARROTS: E. L. Carrot-roots are apt to split when cultivated in soil containing much animal manure in a state more or less fresh. Again, if they are left in the ground after attaining full size and wet weather ensues they are also liable to split. We cannot tell which is the cause in your case, but would advise you to select for this crop next season soil that is sufficiently rich to need no fresh application. A free sandy soil is suitable, rather than a clayey medium, or one containing rough gravel.

EARTH WORMS IN POTS AND GREENS ON LILICUMS: Amateur. The worms may be introduced with the fresh top-dressings of soil, or, as you suggest, in the water. Worms are frequent in the material, such as gravel and shales, used on greenhouse stages, after it has remained undisturbed for some time. Send a specimen of the Lily bulb for examination.

FRUIT BOTTLING: J. E. C. Provided the rubber rings are sound they may be used a second time or oftener, but they should be thoroughly cleansed and sterilised in hot water.

FUNGUS ON A LAUREL: W. J. C. The specimen was too old and out of character when it reached us to determine the name of the fungus.

LILICUM ROOTS AFFECTED WITH INSECTS: W. S. Send a specimen for examination.

LILAC AND PLUM DISEASED: J. E. C. The fungus *Cephalothecium roseum* and a Botrytis are present on the Lilac leaves, but these fungi are not likely to cause whole branches to die. There is no fungus present on the bark sent;

the markings on it are the lenticles. The Plum tree attacked with "silver leaf" should be uprooted and burned.

LIST OF APPLES: M. R. H. There is nothing but Dr. Hogg's *Fruit Manual*, now out of print, and costing, second-hand, 25s. to 30s., but not easy to find. We could get you a copy of Leroy's *Dictionnaire de Pomologie*, section "Apples," but, of course, the text is in French, and the lists include mostly French varieties.

NAMES OF FRUITS.—In the naming of fruits, we desire to oblige our correspondents as far as we can, but the task would become too costly and too time-consuming were there no restrictions. Correspondents should observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. The fruits should be just approaching ripeness, and they should be properly numbered, and carefully packed in strong boxes; cardboard is often smashed in the post. A leaf or shoot of each variety is helpful, and in the case of Plums, Peaches and Nectarines, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. By neglecting these precautions, correspondents add greatly to our labour and run the risk of increased delay and incorrect determination. We do not undertake to send answers through the post, or to return fruits. Fruits and flowering plants must not be sent in the same box. Delay in any case is unavoidable.

Pra Bona Publica. Pear over-ripe—A. H., Wokingham, 1, 2 and 4, Apple Cox's Orange Pippin; 3, Pear Louise Bonne of Jersey; 5,



FIG. 61.—STEM TUBERATION IN POTATO.

King of the Pippins; 6, Beurré Clargéau; 7, small fruit of Beurre d'Amanlis.—A. L., Apples: 1, Peasgood's Nonesuch; 2, Spessing-Wine. The Pears were over-ripe—P. L., 1, Kerry Pippin; Crab not recognised.—J. M., 1, American Mother; 2, Old Nonesuch; 3 and 7, Hermaid Pearmain; 4, Henry Morning (striped); 5, Dutch Codlin; 6, Norfolk Beauty.—H. W., 1, Wadhurst Pippin; 2, Ross Nonpareil; 3, Annie Elizabeth; 4, Lady Henrick; 5, Melrose; 6, Dutch Mignonne.—Mrs. H., Pear Beurré de Capiaumont.—G. R. I., Annie Elizabeth; 2, Beauty of Kent; 3, small, not recognised; 4, Waltham Abbey Seedling; 5, Royal Russet; 6, Herefordshire Pearmain; 7, Cullen.—Shropshire, 1, Domino; 2, not recognised; 3, Tower of Glammis; 4, St. Edmund's Pippin; 5, Hawsell Souring; 6, Winter Hawthornden.—J. Mills, 1, Margil; 2, Domino; 3, Potts's Seedling; 4, Old Hawthornden; 5, Newton Wonder; 6, Beauty of Kent; 7, Small's Admirable.—F. G. M., 1, Tower of Glammis; 6, Cox's Orange Pippin; 11, Lord Derby; Pears: 20, Beurre Bosc; 17, Louise Bonne of Jersey.—C. W., 1, Allington Pippin; 2, Yorkshire Beauty; 3, Worcester Pearmain; 4, Potts's Seedling.—J. H., Cornish Mother.—J. G. B., 1, Lady Snidley; 2, Small's Admirable; 5, Woodcock; no number, Tower of Glammis.—F. W. O., You have not observed the rules in sending so many fruits. Those not named are either over-ripe or too immature to show the characters. 34, 25, Williams' Bon Chrétien; 4, Pitnaston

Duchess; 17, small fruit of Doyenné du Comice.—R. B., 1, Vinouse; 2, Colmar d'Été; 3, Beurre Diel.—F. R., 2, Cornish Gilliflower; 3, Ribston Pippin; 4, Nonesuch; 5, Lord Derby; 6, Ryken Pippin. Pears decayed.—J. B. E., Wivel.

NAMES OF PLANTS.—Correspondents not answered in this issue are requested to be so good as to consult the following number.

R. C., *Salvia Horminum*.—W. M., *Cotoneaster frigidula*.—J. K., *Rhamnus catharticus* (common Buckthorn).

PEARS DEFORMED AND DISEASED: Hy. D. The Pears are attacked by "type rot." A species of *Penicillium* is present, and this or some other fungus is the cause of the decay. In all cases the disease enters the fruit through some wound, such as punctures made by wasps and cracks due to scab disease.

PLANTS FOR CARPETING BRICK RUBBLE: Amateur. Besides Sedum acre, you could employ *Cerastium tomentosum*, *Arabis*, *Aubrietas*, and mossy Saxifragas.

POTATO CROP: A. L. The fault was not in the soil, or the plants of Midlothian Early would have failed. "The Factor" tubers may have got chilled before you put them into the ground. If this was not the case then they suffered some other kind of check that had the effect of destroying fertility whilst leaving them with extraordinary capacities for growth.

POTATO WITH STEM TUBERS: E. Bros. The specimen you send is not uncommon. The underground tuber of a Potato is nothing more than a modified stem or shoot, and it is not surprising that these thickened shoots should sometimes be produced above ground. The illustration in fig. 61 shows one of these aerial tubers in the axil of a leaf.

SEAKALE: E. B. The blanching of Seakale out-of-doors is done by means of special pots, inverted over the roots. These are usually covered with fermenting material, which gives rise to sufficient heat to cause the plant to grow more quickly than it otherwise would. As a rule, the earliest Seakale is produced from crowns lifted and forced indoors, the outdoor plants coming into use just as the indoor supply is exhausted.

SEEDLING APPLE: J. T. Mason. We have cooked the specimens you sent us, and find that their culinary qualities are very good. Moreover, being fairly sweet, they needed less sugar than many Apples usually employed for cooking; the variety is sufficiently attractive to be considered by some people good enough for dessert. It might be worth your while to submit specimens to the Fruit and Vegetable Committee of the Royal Horticultural Society at their next meeting, on October 23. The address of the secretary is Vincent Square, Westminster, S.W. 1.

SPRAYING POTATOS: C. Your African Chief Potatos should not have been injured by ordinary spraying, and the injury must have been primarily due to some circumstances which it is not possible to determine except by someone on the spot. Perhaps the ingredients of the spray fluid were too strong, or the haulms of the Potatos may have been injured in turning them from side to side for the purpose of spraying. It was quite correct to spray them, although they had shown no signs of disease.

VIOLET LEAVES DISEASED: W. S. N. The plants are infested with the disease known as *Ascochyta violae*. Burn all plants which show the symptoms, sterilise the soil, disinfect the frames, and plant fresh stock. When the new plants are well established, spray them about every fortnight with potassium sulphide, at the rate of one ounce to three gallons of water.

Communications Received.—Mrs. W.—E. H. H. W. C. H. B. E. M.—P. F. H.—J. C.—F. V. H.—M. S. P.—J. H. B. E.—F. W. F. & Co.—H. S. K. H. C.—P. B. A. W., Ryburgh (next week)—H. J. Elwes (with thanks)—W. R., B.E.F., France—N.—G. M.—H. & Son—W. W.—E. B.—G. E.—A. L.—J. T. M.—E. M. Boardman—R. B.—Sir H. J. V. Austin—M. J. G.—W. T.—X. E.—J. A. P.—F. G. Palestine—J. G. D.

MARKETS.

COVENT GARDEN, October 20. We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday...

Table with columns: Plants in Pots, &c., Average Wholesale Prices, s.d., d.s.d., and descriptions of various plants like Aralia Sieboldii, Asparagus plumosus, etc.

REMARKS: There is a fairly good supply of Asparagus plumosus and A. Sprengeri. Adiantum Fern is decreasing in quantity...

Table with columns: Cut Flowers, &c., Average Wholesale Prices, s.d., d.s.d., and descriptions of flowers like Lily-of-the-Valley, Michelia, etc.

Table with columns: Cut Foliage, &c., Average Wholesale Prices, s.d., d.s.d., and descriptions of foliage like Asparagus, Fern, etc.

REMARKS: There is an exceptional shortage of cut flowers, and certain coloured varieties of Chrysanthemums are unobtainable...

Table with columns: Vegetables: Average Wholesale Prices, s.d., d.s.d., and descriptions of vegetables like Artichokes, Beans, etc.

Table with columns: Fruit: Average Wholesale Prices, s.d., d.s.d., and descriptions of fruits like Apples, Grapes, etc.

REMARKS: Supplies of Apples and Pears are well maintained, but selected dessert and large cooking fruits are in demand...

DEBATING SOCIETIES.

READING AND DISTRICT GARDENERS.—The first meeting of the Reading and District Gardeners' Society was held on Monday, the 1st inst., at the Victoria Hall...

GARDENING APPOINTMENTS.

Mr. Charles Jameson, 140, Upper Richmond Road, W. 14. Mr. W. Woodcock, 1, Park Road, Finchley, N. 13. Mr. G. J. Platt, 1, 1/2, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

BLACK CURRANT BUD MITE. Are your bushes free of this insidious pest? If not, Plant "SEABROOK'S BLACK" Currant. This variety has the best and most reliable quality...

Young Bushes 6 and 8/- per dozen. W. SEABROOK & SONS. Fruit Tree & Rose Nurseries, CHELMSFORD.

THE Vegetable Garden.

This is an English translation, made by Mr. W. Robinson, of the celebrated work by the world-famous growers, MESSRS. VILMORIN, ANDRIEU & CO.

of Paris. There are no market growers to equal the French, and in this work English readers will find placed at their disposal, in readable and interesting form, all the experience and knowledge of centuries of successful cultivation...

EVERY FOOD PRODUCER should obtain a copy of this book, which will enable him to get the very best results out of the ground at his disposal.

PRICE 15s. 7d. POST FREE. From THE LIBRARIAN, 41, WELLINGTON ST., STRAND, W.C. 2.

SITUATIONS WANTED (Continued from page 11)

GARDENER (SINGLE-HANDED, or where help is given, 25 years' experience, first-class all round, highly recommended, married (no family), Church of England J. BRISON, Steeple Road, Southminster, Essex.

EXPERIENCED LADY GARDENER wants post, South Devon or Cornwall, good wages. Kindly state particulars. Write, MISS BOWEN, 6, Northman Place, Marylebone, London, W. 1.

LADY GARDENER desires Post as HEAD or JOINT HEAD, 10 years' long experience English and Scotland, some of largest gardens in Britain, used to organize labour and controlling large staff, small garden post, addressed to, MISS FRASER, The Gardens, Ramfield, Haslemere, Surrey.

LADY GARDENER requires post under Head Gardener, good practical experience, inside and out, Yorkshire preferred. W. F. Box 4, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (Lady) requires post; Greenhouse work, under Head Gardener, 16 years' experience, experienced, good references, MISS MOORE, 60, Prince's Square, Rochester, W.

AS COMPANION GARDENER or WORKMAN—Gentleman in socks post, all round experience, understands pruning trees, &c., excellent testimonials. S. G., Box 6, 41, Wellington Street, Covent Garden, W.C. 2.

TRADE.

MANAGER or FOREMAN (WORKING), in Market Nursery, over 25 years' experience in Tomatoes, Chumbers, Chrysanthemums, Grapes, Mushrooms, Mint, Fennel, Bocking Straw, marrows, age 45, good references. W. J., 10, Mark Lane, Gresham, Woodhall Green, Witham Abbey.

MANAGER or FOREMAN seeks Res. (management as above), 10 years' experience, Grapes, Tomatoes, Chumbers, and Chrysanthemums, good references, State wages. S. B., Box 14, 41, Wellington Street, Covent Garden, W.C. 2.

SITUATION WANTED immediately as CHARGE HAND, 10 years' experience with Chumbers, Tomatoes, Chrysanthemums, and Grapes, also Veg. &c., please state wages, references, through kindness, age 30, 10 years' references. WHITE, 13, Albany Road, South Mertonham, Surrey.

MAN (43) seeks good permanent Situation, 10 years' experience with Chrysanthemums, Tomatoes, and Vines, total distance, kindly state wages offered. WINGHAM, 54, Finch Road, Layton, Essex.

FERN RAISER requires Situation; permanently, married, middle-aged, well up, take full charge, W. F., A. 12, Box 12, 41, Wellington Street, Covent Garden, W.C. 2.

THREE Foreigners require Situation in Nursery, not far away from Manchester, good experience in Flowers, Chumbers, and Tomatoes, state wages, 25 years of age. JULIAN RASMUSSEN, Hennrich, Andrew's Lane, Chesham, Berks.

The Gardeners' Chronicle SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table with columns: Ordinary Positions, Facing matter and back page, Half and quarter pages, column and half column, spaces, per row.

Table with columns: 4 line space not exceeding 20 words, Per inch, single column, Per inch, across 2 columns, Per inch, across 3 columns.

Front page (no display allowed) 1/- per line space. (Headline counted as two lines.) For discounts apply to address below.

For DISCOUNTS WANTED, 26 words to 61, and 61, for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS. THE UNITED KINGDOM ... 19 6 per annum. ABROAD ... 22 ...

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2. Telegrams: "GARDENERS, RAMB, LONDON." Telephone: 1643 GERRARD.

Horticultural Directory and Year Book, 1918.

This Directory is

NOW BEING THOROUGHLY REVISED

in preparation for the new issue, which will be published early in December. Revision Forms have been sent to those whose names appear in

ANY LIST

and every page is being corrected to date. Besides this, many new names are being added. Will those who have not yet sent back their forms kindly do so **AT ONCE**, otherwise it will be too late to make any emendations.

This Directory forms a

FIRST-CLASS MEDIUM FOR ADVERTISEMENTS.

Those who have not yet booked a page in this widely-read publication should send at once for a list of prices.

THE EDITOR, Horticultural Directory, 41, Wellington Street, W.C. 2

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



16 net
per
Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE EUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daff. Soc. ty. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD

TULIPS. By the Rev. JOSEPH JACOB.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

IRISES. By W. R. DYKES, M.A., with preface by Prof BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

Each Volume 1 10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 4009

No. 1609. VOL. LXII. {THIRD} SATURDAY, OCTOBER 27, 1917. {Registered as a Newspaper.} PRICE 4d. POST-FREE, 11d.

Subscription—Inland, 19 6; Foreign, 22; per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 165

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note, the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

BRITISH-GROWN BULBS
WEBB'S MAY-FLOWERING TULIPS
Finest mixed, 1s. 3d. dozen, 7s. 6d. per 100.

WEBB'S DARWIN TULIPS Mixed,
in choice variety, 1s. 6d. doz., 7s. 6d. per 100.

WEBB'S NARCISSI or DAFFODILES
Choice mixture of double varieties,
1s. per dozen, 7s. per 100.
Mixed, all classes, 7s. 6d. per 100.

WEBB & SONS, LTD., The King's
Seedsmen, 210, BREADSTREET.

J. GRAY, LTD., Builder of Conservatories,
Greenhouses, As and Heating Engines,
Dankers Street, Chelsea, London, S.W. 2. War, 20,
Western, London. Telephone 201, Western.

WATERER'S ALPINES and HER
BACCO'S PLANTS. New Catalogue now ready.

WATERER'S BRITISH-GROWN
BULBS. New Catalogue now ready.

WATERER'S WARGRAVE ROSES.
Catalogue and Supplementary List of new and
choice varieties now ready.

WATERER'S RHODODENDRONS AND
CHOICE SHRUBS.—Catalogue free.
All of any of the above Catalogues forwarded post
free on receipt of name and address.
JOHN WATERER, SONS & CRISP, LIMITED,
The Nurseries, Bagshot, Surrey, and Twickenham, Berks.

SURPLUS FRUIT.—Have you any? If
so, write H. J. JONES, Royal Nurseries,
Levisham, S.E. 12.

GREENHOUSE PAINTING & GLAZING
"Vitreolite," superior to White Lead Paint.
"Plastine," superoxide putty. Full particulars from
W. CARSON & SONS, Grove Works, Buttersea. Agents
throughout the country.

ROSES.—ALLEN'S GOLD MEDAL
NORWICH ROSES.—our new descriptive paper
list, with hints on how to Grow Roses, now ready,
post free. Write today, A. J. W. C. ALLEN, Rose
Growers, Norwich (for over 50 years).

BUNYARD'S STRAWBERRIES.
Our new descriptive list is now ready, and will
be sent on receipt of card.
ALPINE STRAWBERRIES a speciality.
GEO. BUNYARD & CO., LTD., Royal Nurseries,
Maldenstone.

SUTTON'S GOLD MEDAL COLLEC-
TIONS of DARWIN BULBS.
Dwarf Tulips, 1s. 3d. doz., 7s. 6d. per 100, including
the best for decorative and for exhibition.
50, in 25 named varieties, 3s.
100, in 10 named varieties, 14s.
50, in 10 named varieties, 7s. 6d.

SUTTON'S CATALOGUE OF ENGLISH-
GROWN BULBS, containing particulars of the most
popular Daffodils, Narcissi, May-flowers and Tulips,
Tulips, A.S. & a very full list for appreciation.

SUTTON & SONS, The King's Seedsmen,
READING.

DOBBISS' Autumn List of Bulbs, Sweet
Peas, Roses, C. Plants, Seeding and Vegetable
Plants, and post free. **DOBBISS & CO., R. D. FLEMING,**
BIRMINGHAM.

THE DIFFERENCE between a good adver-
tising medium and a bad one is a frequent subject
of discussion among those who are determined to
get the best use out of the money they spend on pub-
licity, but, in the end, it resolves itself into the differ-
ence between wealthy readers and poor ones. Those
who are advertising cheap goods naturally turn to a
journal with an enormous circulation, even though it
may be composed of people of middle-class means. But
those who supply the thousand and one necessities of
a large garden, find that such a journal presupposes a
mode of woman of means is the one who can afford to
run a garden itself, but a staff of permanent
gardeners to tend it. To such a saleswoman, a journal
which goes to the hands of the amateur, or even a milliner,
of small people, is next to useless. He should turn rather
to a journal, such as the "Gardeners' Chronicle," which
reaches the right people, the keen professional gar-
deners and the wealthy amateur. The response of such
readers to a well-written advertisement is immediate
and satisfactory.

SANDERS, Orchid Growers,
St. Albans.

PHILOX. Finest varieties in cultivation.
See our list. H. J. JONES, Royal Nurseries,
Levisham, S.E. 12.

BATH'S ROSES and PALOMES. New
illustrated catalogue, containing full and full notes
of the best new and standard varieties, is now ready,
and will be sent post free on application. (Dept. A.)
R. H. BATH, LTD., The Floral Farms, Walsley.

BATH'S HOME-GROWN BULBS. New
illustrated catalogue of the finest Narcissi, Tulips,
A.S. is supplied in the Royal Parks and Gardens, with
full and full directions, is now ready, and will be sent
post free on application. (Dept. A.) R. H. BATH, LTD.,
The Floral Farms, Walsley.

HOBBIES, LIMITED, Norfolk Nurseries,
BRAMHAM. Send for Rose Catalogue, post free.

BARR'S May-flowering TULIPS, the
richest colored flowers of spring, plant now. De-
scriptive list free. **BARR & SONS, King Street, Covent**
Garden, W.C. 2.

GISHURST COMPOUND. Insoluble
and long-acting. Over 50 years' reputation. Highly
Commended. B.E.S. 8. Officially guaranteed. Trade ad-
dress: 194/5, Soled. by dealers in Garden Supplies.
Wholesale: **BIRCHES PATENT CANDLE CO., LTD.,**
Patterson, London, S.W. 11.

For Advertisement Charges see page v.

NOW IS THE TIME TO PLANT.
KELWAY & SON,
The Royal Horticultural Society,
LANGFORD, SOMERSET,
are now looking orders for their Choice Hardy Perennial
Plants, Plant a Colour Border this Autumn, and you
will be able to enjoy its beauty for many years without
any additional expense or trouble.
Send measurements of your Borders.
Roses, Delphiniums, Phloxes, Gaillardias, and other
beautiful flowers, included in their Colour Schemes, which
provide blooms from early Spring to late Autumn.
WRITE NOW to the RETAIL PLANT DEPARTMENT
for Reduced Prices List.

W.M. DUNCAN TUCKER & SONS,
LTD., Lovelace Road, South Tottenham, N. 15,
Covent Garden, Winter Gardens, Amers, Pouches, and
Partable Buildings, W.C. Catalogues gratis.

KING'S ACRE ROSES and FOREST and
ORNAMENTAL TREES and SHRUBS of most
quality. Catalogues free by post. **KING'S ACRE NUR-**
SERIES, LTD., Hereford.

KING'S ACRE FRUIT TREES have pro-
duced the finest and most remarkable Apples and
Pears on record. 500 acres of Choice Fruits to select
from. Please see our Illustrated Catalogue, free by post,
before ordering elsewhere. **KING'S ACRE NURSERIES,**
LTD., Hereford.

DICKSON'S HORTICULTURAL
MANURE and other high-class Fertilisers, also
Dickson's Improved Mushroom Spaw. Retail nurseries
free on application to **DICKSON'S Royal Seed Wars-**
house and Nurseries, Chester.

BUNYARD'S FRUIT TREES.
New Price List now ready, and will be sent free
return of post.
GEO. BUNYARD & CO., LTD.,
Royal Nurseries, MALDENSTONE.

ASH, Common, 4-5 ft., 40s.; Beech, Com-
mon, 12-2 ft., 25s.; Laurel, Common, 2-3 ft., 20s.;
Larch, Common, 3-4 ft., 25s.; Larch, Japanese, 4-5 ft.,
30s.; Elm, Wych, 4-5 ft., 25s.; Spruce, Common,
15-18 ft., 30s.; Scotch Fir, Native, 15-2 ft., 24s.; Scotch
Fir, Native, 2-3 ft., 30s.; Scotch Fir, Native, 3-4 ft.,
30s.; Spruce Fir, Norway, 12-2 ft., 30s.; Rhodod.
Common, 3-4 ft., 50s.; Oak, English, 2-3 ft., 35s.; Rho-
dodendron, 2-3 ft., 40s.; Holly, Hedges, in 20 var., our
selection, 45-10s. The above all per 1,000. Other Nur-
series, Scotch. Catalogues on application **HENRY**
DEBYSBIRE & SONS, Harley Hillside Nurseries, near
Market.

FERN'S FERNS. Tree Ferns, Climbing
Ferns, Ricket Ferns, Stone and Greenhouse Ferns,
Hardy Garden Ferns, catalogues free. **J. E. SMITH,**
London Fern Nursery, Loughborough Junction,
London, S.W.

DAFFODILES and large Trumpet Narcis-
sus for Grass, Sunflowers, and Wild Gardenings,
Dwarf and 2 1/2-1,000, selected for forcing, 25-1,000, as
long, 12s. per bushel (2,000), 7s. 6d. per peck (500 bulbs).
J. HANDSOMBE, FERNS, Feltham Nurseries,
Middlesex.

DUTCH BULBS, MORLE & CO. can
now offer five named Hyacinths, early Tulips,
South Holland, A.S., stock limited, early application re-
quired. 150/150, Finsbury Road, S.W.

SALES BY AUCTION.

HAMPTON HILL, MIDDLESEX

Clearance Sale, by Order of Mr. G. Ewell, who is relinquishing the Nursery.

MESSRS. PROTHEROE & MORRIS will Sell by Auction on the premises.

46, WINDMILL ROAD, HAMPTON HILL,

On Monday, October 29th, 1917, at 12 o'clock, 4,000 *Asparagus plumosus nanus*, 600 *Callas*, 1,200 *Adiantums*, 200 *Cyperium b-inago*, 350 stocks of *Paeonies*, 5,000 Flower Pots, Herbaceous Stock, Bamboo Stakes, and Sundries. May be viewed. Catalogues can be obtained on premises, and of the Auctioneers and Valuers, 67 and 68, Chispeade, E.C. 2.

SHORTLANDS, KENT.

18th Annual Sale

Of exceptionally clean and well-grown Nursery Stock, in order of Mr. J. B. Bryan, who requires the fund for replanting.

MESSRS. PROTHEROE & MORRIS will Sell by Auction on the premises.

The Shortlands Nursery, Ravenshourne Avenue, Shortlands, Kent.

On Wednesday, November 7th, 1917, at 11 o'clock,

2,000 Fruit Shrubs, 2,000 *Birds Eye* and *Bishes*, 2,000 Golden Privet, 500 Standard and Bush Roses, 1,000 ornamental Trees, and quantities of Climbers, Shrubs in Pots, Flowering Shrubs, Alpines, &c.

On view, Catalogues held on premises, at Mr. Bryan's Home Nursery, opposite station, and of the Auctioneers, 67 and 68, Chispeade, E.C. 2.

BURNT ASH HILL NURSERIES,

LEE, S.E.,

AND

BICKLEY HILL NURSERIES,

BICKLEY, KENT.

Side of well-grown surplus stock, suitable for immediate planting.

MESSRS. PROTHEROE & MORRIS will Sell by Auction on the premises as above.

On Thursday, November 1st 1917, and Friday, November 2nd (Bickley), at 12 o'clock each day,

5,000 Standard and Trained Fruit Trees, 2,500 *Cyperus Lawsoniana*, 1,200 *Platanus*, 1,500 *Limes*, 1,700 *Thorns*. Quantity of Yews, Thujas, Libanurns, Elms, and other ornamental Trees, and Standard and Bush Roses, and Laurels, &c.

May be viewed. Catalogues can be obtained on premises, also at Burnt Ash Road Nurseries, 61, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Chispeade, E.C. 2.

THE GOAL EXCHANGE, MARKET PLACE, MANCHESTER.

Opposite Victoria Hall, Paternoster Market, Manchester.

MESSRS. PROTHEROE & MORRIS have been instructed by the Revd. J. Crompton, Rector, to Sell by Auction at the above place,

On Friday, November 16th, 1917.

ABOUT

1,200 CHOICE CYPRIPEDIUMS,

embracing a choice selection of certified and duplicate plants, from which an excellent collection. The whole are in a fine healthy condition, many being either in flower or bud, giving purchasers a profusion of flowers by immediate effect.

On view, morning of sale. Catalogues can be had at the Goal Exchange; also of the Auctioneers and Valuers, 67 and 68, Chispeade, London, E.C. 1.

BULBS.

MESSRS. PROTHEROE & MORRIS are holding Sales of Bulbs every Monday, Wednesday, and Friday. Specimens in stamps will ensure a supply of twelve varieties. Commissions executed. AUCTION ROOMS, 67 and 68, Chispeade, London.

HOME-GROWN BULBS.

GREAT TRADE SALE.

Wednes (ay Next), October 31st, at 11 o'clock.

Consists of 2,000,000 Bulbs, including Narcissus, in all the best-known varieties for forcing or planting out. Polyanthus Narcissus of sorts, in sacks as received. Early Daffodil (many of which will force) and Mac-flowering Tulips; many thousands of Snowdrops, Frezias, Scillas, Anemones, Aconites, English and Spanish Iris, early-flowering Gladioli, Bearded Iris.

MESSRS. PROTHEROE & MORRIS will Sell by Auction at their Central Site Rooms, 67 and 68, Chispeade, London, E.C. 2. Catalogues forwarded on application.

SALES BY AUCTION OF

ROSES ROSES ROSES

Comprising

Thursday, October 25th, 1917,

and subsequent Thursdays.

By Messrs. PROTHEROE & MORRIS, 67 and 68, Chispeade, London, E.C. 2. These sales in stamps will ensure SIX COLUMNS.

TO MARKET GARDENERS AND OTHERS

Ideal Estate for Intensive Cultivation.

Four miles from Charing Cross.

The Freehold Estate known as

SOUTHAMPTON LODGE, FITZROY PARK, WEST HILL, HIGHGATE, N.

Occupying the finest position at Highgate, in a perfectly rural spot on the western slope, adjacent to and with charming views over Woodstock and Hampstead Heath, within 20 minutes' motor ride to City and West End. The property comprises a detached house, with 10 bedrooms, 3 dressing rooms, 2 bath rooms, 3 handsome reception rooms, garden, tennis, excellent offices, gas, water, and telephone laid on, stabling, 2 cottages, natural flower and kitchen gardens. The total area being about 60 acres, with valuable building frontages of nearly 1,000 feet. With houses to be obtained from

MESSRS. PRICKETT & ELLIS, in conjunction with Messrs. Leavelle & Barrill, of Grand ham, Lines., will sell the above Property by Auction

AT THE MART, E.C.,

On Thursday, November 8th, 1917, at 2 p.m.

Messrs. W. Calush & Son have an opportunity of transferring the Plant Dressing Department of their well-known and established business to another district. There are 14 modern Greenhouses, from 170 to 200 ft. in width, and mostly 6 to 8 ft. in depth, a total length of about 1,500 ft. All arrangements can be made for the Purchaser of the 1st lot to take over the trade, buildings, and Greenhouses, at a very valuation. Illustrated Particulars and Plans can be obtained from Messrs. Hubbard, Son & Co., Solicitors, 111, Cannon Street, E.C.; Messrs. Ewitt & Bartell, Auctioneers, Grantham, Leic.; and Messrs. Pricke & Ellis, Auctioneers, 4, High Street, Highgate, H.G. 2. Highgate Station (N. R.), N. 6, and 57, Chancery Lane, W.C. 2.

BUSINESS WANTED.

WANTED, NURSERY, suitable for 1-acre growing, 1,000 to 2,000 feet run, with the district preferred. State price, and full particulars to S. J. C. Box 9, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED TO RENT, about 200 feet run (Glass, 2 1/2 inch thick), with small pond of ground, little or no stock, Midlands preferred. W. Box 29, 41, Wellington Street, Covent Garden, W.C. 2.

PUBLISHERS' NOTICE.

A NEW 1/2- EDITION OF

THE PERPETUAL FLOWERING CARNATION.

By MONTAGU C. ALLWOOD, F.R.H.S.

A practical book by a practical man, containing all necessary information for the good cultivation of Carnations. Post free 1/2 from

ALLWOOD BROS., Carnation Specialists, HAYWARD'S HEATH

APOLOGY.

17, TRANQUIL VALE,

BLACKHEATH,

October 14, 1917

DEAR SIRS,

IN answer to your letter of the 13th referring to the issue of your flats, I am very sorry that such a mistake should occur, but I told my man to look up some copies to return to market, and also send some of my copies down to Essex to bring some fruit up to me, but, in mistake, he sent some of your flats which, of course, I shall see that it does not occur again.

I am,

Yours respectfully,

(Signed) MR. NOBLE

MESSRS. GEO. MONRO, LTD., Covent Garden, London.

DOVER ROAD,

FOLKSTONE.

October 16, 1917.

MESSRS. GEO. MONRO, LTD., COVENT GARDEN, LONDON.

DEAR SIRS,

WE hereby acknowledge, using your Chamber flats to send them to growers for purposes of our own business, and now acknowledge that this was a mistake on your copies, and also an infringement of your trade mark.

We, therefore, consent to have this letter published in the *First Trade Journal* and the *Gardeners' Chronicle*, at our expense, and will guarantee not to make any such use of your copies in future.

Yours faithfully,

(Signed) SWOFFER & CO.

BOOKS WANTED.

WANTED TO PURCHASE

second-hand copies of

Dr. HOGG'S "FRUIT MANUAL,"

(Fifth Edition.)

WHAT OFFERS?

"Amateur," Box 27, 41, WELLINGTON STREET, COVENT GARDEN, W.C.

TENDER.

SURREY EDUCATION COMMITTEE.

TENDERS FOR GARDEN SEEDS.

TENDERS are invited for the supply of Seeds for School Gardens for the period ending July 31, 1918.

Copies of Tender Forms, with Schedules, may be obtained from the undersigned, to whom the Tenders, on the prescribed forms, must be delivered not later than 10 a.m. on Thursday, November 1st, 1917, endorsed in accordance with the instructions contained in Paragraph 1 of the Conditions of the Contract. The Committee do not bind themselves to accept the lowest or any tender.

W. W. FINNEY,

Secretary.

County Education Office, Penton Road, Kingston-on-Thames.

October 17, 1917.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, old plants, suitable for stock; cash or exchange. See other advertisements; catalogues free. — SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, CALCEOLARIA CUTTINGS, Golden Gem and Brown Strain, — ELLIOTT BRUSH, Nurseries, Montagu Road, Edmonton, N. 15, Middlesex.

WANTED, COLLERETTE and CACTUS DAMELIA FIBERS, State quantity and price. — W. DOWNES, Lime Ends, Fack Moor, Stock-on-Trent.

WITHERED Chrysanthemum and Asters, robust, Rose petals and the like, wanted in large or small quantities. — WIFE, J. S., Box 25, 41, Wellington Street, Covent Garden, W.C. 2.

BEST Prices given for consignments of Chrysanthemums and other flowers of good quality. — C. J. ELLIS, F.R.H.S., Weybridge, Surrey.

PLANTS, &c., FOR SALE.

100,000 LARGE GARDEN FERNS.

20s. 100; Palms, Begonias, Crotons, Dracaenas, Roses, Ericas, Gloxinias, Lilies, Hydrangeas &c.; catalogues free. — J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

MISCELLANEOUS.

ORCHID PEAT, 7s. 6d. per sack; Rhododendron Peat, free from bacteria, 15s. per sack, 6 to 12 yard trucks, bags 20s. dozen, 100m. Leaf Mould, Silver Sand, in bags and trucks, loads of G.N. Fibre, 6 for 10s. special rates; Special Bull Compost for bowls, 5s. bag. — J. HANDSCOMBE, The Nurseries, Feltham, Middlesex.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipped Tweed; wears like leather; showproof; 7 yards for 17s. 6d. Patterns free. — BRADFORD WOOLLEN CO., 71, Bradford.

LANG'S "IDEAL" MANURE, for Fruit, Flowers, and Vegetables; 12s. 6d. per cwt., £10 10s. per ton, carriage paid. — G. LANG & SONS, LTD., Hounslow, Middlesex.

"PESTITE" destroys all soil pests (wireworms, grub, root, weevil, &c.), and promotes vigorous growth. Price 10s. 6d. per cwt., £3 per ton, carriage paid. — G. LANG & SONS, LTD., Hounslow, Middlesex.

LIGHT, Strong, Wooden FRAMES, suitable for Fruit Trays, Plant Shelters, Temporary Buildings, Summerhouses, Garden Toolsheds, Hand Barrows, Fencing, Trellis, &c. A large quantity for sale at bargain prices to clear. Full particulars from READING WOOD CO., Crane Wharf, Reading.

OILSKINS THAT DO NOT STICK.

Oilskins that will give you good service and stand hard wear. Oilskins that never fail to keep out the hardest rain or sleet — BEACON OILSKINS. Men's Coats from 15s., Leggings from 3s., Southcoaster 18. 9d. Slacks 21s. Deal direct with us and save money. Send a postcard today for our Free Booklet of "Weather Comfort," describing money-back guarantee. Send no money. — J. W. BARRBER, LTD., 65, BEACON BUILDINGS, SOUTH SHIELDS. (5)

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two).
6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient. Gardeners writing to Advertisers of Vacant Situations are recommended to send three copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand. Advertisers are cautioned against having letters addressed to Initials at Post-offices, as all letters so addressed are opened by the Postal Authorities and returned to the sender.

PRIVATE.

WANTED, a MAN to take charge of a small garden and clearing plant at 5000 ft. in Kent, wages 5s. in his own case, and gardeners, Apply, 24 copies of references, to WM. CANN, The Gardens, Clarendon, Taplow, Bucks.

WANTED, HEAD WORKING GARDENER (ineligible for Army) for a Hall in Shropshire, seven other hands kept. Apply, JAS. MARTIN & CO., 6, Bank Street, Lincoln.

WANTED, good WORKING PLEASANT GROUND GARDENER to take charge of all present wages 7s. weekly and cottage, with 200 sq. ft. of cottage and an outbuilding. Write to apply, MR. CAROL BELL, Upper Gorton, Pinner, Bucks.

WANTED, SINGLE HANDED GARDENER (ineligible for military) most thorough and industrious and thorough, 12 years' experience, in Kent, 12 years' experience in glass, married man, wages 5s. 6d. per week and garden, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, good all-round SINGLE HANDED GARDENER for a small house in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, GARDENER (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, GARDENER (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, GARDENER (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, GARDENER (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, GARDENER (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, GARDENER (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, GARDENER (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, GARDENER (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, GARDENER (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, GARDENER (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

GARDENER Wanted, in neighbourhood of Woking, to take in hedge and look after two acres. Apply by letter, stating experience and wages required, to MR. S. H. HAVENLOCK & SQUARREY, 70, Dean's Yard, Westminster, S.W. 1.

WANTED, good GARDENER; Fruit, Vegetables, 60, Thomas, Apple, Brothers, The Elm, Putney, W. 8.

WANTED, GARDENER (Man or Woman), experienced in the field and out, cottage—Write first, Ernest Abbott, 20, Colindale.

WANTED, SECOND GARDENER (ineligible for military) to take in hedge and look after two acres. Apply by letter, stating experience and wages required, to MR. S. H. HAVENLOCK & SQUARREY, 70, Dean's Yard, Westminster, S.W. 1.

WANTED, good SECOND GARDENER; Fruit, Vegetables, 60, Thomas, Apple, Brothers, The Elm, Putney, W. 8.

CORNELIA LADY WIMBORNE, Captain, 111, Westbury, Woking, requires a LADY GARDENER for inside work, must have some knowledge of Fruit and Flower growing, and be able to do all the work of a garden, and experience.

WANTED, GARDENER (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

UNDER GARDENER, experienced, to take charge of a small garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, UNDER GARDENER, to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, ORCHID FOREMAN; large garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, in a Private Establishment, an experienced FOREMAN, to take charge of a large garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, experienced FOREMAN (SINGLE HANDED) to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, FOREMAN and TWO JOU-RNEYMEN for a large garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, FOREMAN; single good experienced, to take charge of a large garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, FOREMAN or good JOUR-NEYMEN for a large garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, experienced LADY GARDENER for inside and out, with some experience, good at immediate, with attend to. Please state age, experience, and wages required to WM. CANN, The Gardens, Clarendon, Taplow, Bucks.

YOUNG LADY required, to assist in the garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, Two LADY UNDER GARDENERS for Vegetable Garden, 10 miles from London by W. Bx. 18, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, Two LADY UNDER GARDENERS for inside and out, with some experience, good at immediate, with attend to. Please state age, experience, and wages required to WM. CANN, The Gardens, Clarendon, Taplow, Bucks.

WANTED, FOREWOMAN, under Head Gardener, in Glass Garden, also to do all the work of a garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, FOREMAN, under Head Gardener, in Glass Garden, also to do all the work of a garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, FOREMAN, under Head Gardener, in Glass Garden, also to do all the work of a garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

WANTED, FOREMAN, under Head Gardener, in Glass Garden, also to do all the work of a garden, in Kent, wages 5s. 6d. per week, no cottage, 24 copies of references, to ARTHUR ARGENT, Esq., 105, Pitt Street, London, E.C. 4.

TRADE.

WANTED at once, a good **GARDENER** and **MANAGER** of Nursery, in connection with a large-class Florist's business; a good house provided—Apply to **SADLER'S NURSERY**, Station Approach, Southampton, S.E.

WANTED, WORKING FOREMAN, for Market Nursery, near Epsom; Cucumbers and Tomatoes; wages 8s. weekly and bonus, according to crops produced. Apply, stating experience, when disengaged, and send copies of references to **W. B. R. B.**, Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, HARDY PLANT FOREMAN, Apply, with full particulars, **BARR & SONS**, Taplow, Bucks.

WANTED, TOMATO and CUCUMBER GROWER (State age and experience, wages required, 8, FAY & SONS, Elm Grove, Southsea.

WANTED, MAN for general Nursery work and help, work small Nurseries, fires, &c.; wages 5s. **CHIFFERFIELD**, Hampton Hill, Middlesex.

WANTED, experienced ASSISTANTS, in our Vegetable Seed Department, good wages to important men. Apply, giving full particulars to **TOO AND SONS**, The King's Seedmen, Southampton.

WANTED, LEDGER and INVOICING Clerk, to take charge of the accounts of the **TOO AND SONS**, The King's Seedmen, Southampton.

SEED TRADE.—Wanted, good **COUNTER HAND** for Vegetable Seed Department.—**COUNTRY GYMNEUM ASSOC. LTD.**, Letchworth.

LADY FLORIST required as **FIRST HAND** in an established West End house; must be experienced in making up floral designs and able to wait upon customers.—Apply stating age, experience, and wages required, to **JAWORSKI**, Box 17, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, NURSERY CARMAN; ineligible for disengaged soldier; permanent place for a man; also a **NURSERY STOKER**—**BEN MATTHEWS**, Whitton Nurseries, Tottenham.

CARMAN Wanted, for Market work.—Apply to **WILKES & SIBBELL**, Royal Exotic Nursery, Old Kent Road, South Kensington.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d for each succeeding eight words or less.

PRIVATE.

GENTLEMAN (50) desires **WORKING MANAGER**, Gardens, Larnsey, Small Estate, in the Home Production, Fruit Growing, Seed Production, Long Crops, Cuttle, Shop, etc. Accounts—**W. B. R. B.**, Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD)—A Gentleman very highly recommends his Head Gardener, where several others are kept, thoroughly experienced in all branches, in excellent present situation, leaving through post on 24th inst., and received November 12, married; 20 years in London, preferred **C. BAILLIE**, The Gardens, Victoria Albert House, Brompton.

GARDENER (HEAD, 3 or more)—Gentleman highly recommends a thoroughly good all-round man, 34 years' experience; active; abstemious; no time; Apply **RICHARDS**, Bookbinder, Garsington, Seven Oaks.

GARDENER (HEAD WORKING), where several others are kept, 20 years Head Gardens, Kent; good references; disengaged, **HENDERSON**, The Gardens, Boxham House, 4, Union, Bristol.

GARDENER (HEAD WORKING) of good (or several hands), 34 years' permanent situation; age 36; married; no family; 10 years' experience; good references; ineligible; now disengaged **GARDNER**, Elmville, Sandgate, Kent.

GARDENER (HEAD WORKING), where two or three others are kept, 20 years' experience; 10 years Fruit and Roses specialty; married (3 children); age 35; finally disengaged **ALING**; **H. WALKER**, Railway Cottage, Morris Street, Hove, Wottonfield, Hants.

GARDENER (HEAD WORKING), where two or three others are kept, 22 years' experience; 10 years Fruit and Roses specialty; married (3 children); age 35; finally disengaged **ALING**; **H. WALKER**, Railway Cottage, Morris Street, Hove, Wottonfield, Hants.

SITUATIONS WANTED continued on page v.

"Bull's"

THE FOOD FOR PLANTS

Write for this FREE BOOKLET and avoid all drainage troubles



with pot plants. It explains also the porosity, root-roominess, and cleanliness of CRET POTS, of importance to all gardeners. FREE SAMPLE CRET pot also on request. Write to-day
 PETER BAILEY & SONS Ltd
 2 Heaton Mersey Pottery,
 near Manchester.

CHEALS' NURSERIES.

ORNAMENTAL TREES, SHRUBS, ROSES, FRUIT TREES, &c., in immense quantities and in the pink of condition.

Send for Catalogue to—
J. CHEAL & SONS, Ltd.,
The Nurseries, Crawley.

✓ SLUGS SLUGS

"SANITAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as **Worms, Rats, Mice, Sparrows, Cats, &c.**

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (for London) of all Chemists, Stores and Nurseriesmen.

THE "SANITAS" CO., Ltd.
 Limehouse, London, E.
 Awarded Medal at Royal Horticultural Exhibition, 1911.

BLACK CURRANT BUD MITE.
 Are your bushes free of this incurable pest? If not Plant "SEABROOK'S BLACK" Currant, the only proved mite resister.
 This variety has also every other good quality, being the heaviest cropper and stoutest grower, producing large, firm berries

Young Bushes 6/- and 8/- per dozen.
W. SEABROOK & SONS,
 Fruit Tree & Rose Nurseries, CHELMSFORD.

SANKEY'S FAMOUS GARDEN POTS
 The BEST and Cheapest.
 (See illustration) Each pot has a drainage hole and a "cushion" (made of peat) in the bottom to prevent the soil from becoming too hard. Write for Price List, Free.
 SPECIAL POTTS of all descriptions. Bulk Orders and Fern Pots from 2s. each.

RICHARD SANKEY & SON, LTP.
 Dulwell Potteries, NOTTINGHAM.

LAXTONS BEDFORD
FRUIT TREES & ROSES
 CATALOGUE & CULTURAL HINTS GRATIS

IMPORTANT: Please write for a Catalogue, as the Paper Commission only allow us to send to those who apply—
LAXTON BROTHERS, BEDFORD.

"This is the rat that ate the wheat."

Thousands of tons of food are destroyed by Rats and Mice in our barns, fields, gardens and pantries.

"LIVERPOOL VIRUS" EXTERMINATES **RATS & MICE**

Harmless to human beings and domestic animals. No disagreeable smells as they come out of their holes to die.

In this ready prepared salt bait for Rats 25 & 6/- for Mice 1/- On all Chemists.

Full particulars from **EVANS SONS LESCHER & WEBB, Ltd.**
 56, Hanover St., Liverpool.

FRUIT IN THE GARDEN.

Root up useless shade trees and unproductive Shrubs, and replace with Fruit in these times, when food is all important.

Specially grown trees of
APPLES, PEARS, PLUMS,
 of fine quality for the Walls, Edging or Vegetable and Flower Borders. Many of fruiting size. Also
FINE STANDARD TREES
 A grand lot of Peaches, Nectarines and Cherries for the House and Garden Walls, also
BUSH FRUIT TREES.
 Catalogue free on request and special quotations given on hearing exact requirements.

STUART LOW CO., BUSH HILL PARK MIDDLESEX

SALE OF SURPLUS STOCK.
 We still hold certain small stocks of
 Garden Seats, Garden Engines and Pumps, also Garden Rollers, Water Carts, Garden Arches and Hand Lights, which we shall be pleased to clear at special prices, subject to being unsold.

Particulars on application.
BOULTON & PAUL, Ltd., ROSE LANE WORKS NORWICH.

ORCHIDS,
 Clean, well-grown and cheap; also
 Many Rare and Choice Varieties
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
 Kindly send for Catalogue.
JAMES CYPHER & SONS,
 Exotic Nurseries, CHELTENHAM.

THOMSON'S CELEBRATED MANURES
 PERFECT PLANT FOODS UNRIVALLED FOR ALL GARDEN CROPS.
 SOLD BY ALL SEEDSMEN OR FROM SOLE MAKERS,
WM THOMSON & SONS, Ld. CLOVENFORDS, N.B.

ROSES FOR AUTUMN PLANTING

ORDER EARLY.
 Beautiful plants of the best possible cultivation, our selection from the finest sorts including:—
 The Brilliant Coloured
"MDME. EDOUARD HERRIOT"
 (Dusky Mail Rose.)
 12/- per doz. bushes, carriage paid.
 Catalogue Free on request.

STUART LOW CO., BUSH HILL PARK, MIDDLESEX.

FRUIT TREES.

SPECIAL OFFER.
 Exceedingly well grown Fruit-bearing Apples and Pears.

Standards, stout stem, fine head	3- & 3 1/2	33- & 40-
Dwarf Trained, very fine	3- & 3 1/2	42- & 48-
Pyramid, very fine	3- & 3 1/2	33- & 40-

ALSO A VERY FINE STOCK OF
Peaches, Apricots, Plums, Cherries, Currants, Gooseberries, Loganberries, Extra Strong Fruiting Vines in variety, 7 6 each.
Catalogue Post Free.

ROSES in all the leading varieties, Climbers, Standards and Dwarfs.
Catalogue Free.

ALFRED A. WALTERS & SON,
 NURSERYMEN and Fruit Tree Growers, BATH.

RIVERS'

Fruit Trees, Roses, Vines, Figs, Oranges, AND Orchard House Trees ARE OF First-class Quality.

A Large and Select Stock always on View.

PRICE LIST POST FREE ON APPLICATION.

THOMAS RIVERS & SON
 Sawbridgeworth, Herts.
 STATION: HARLOW, G.E.R.

GARDENING CHARITIES.
 GARDENERS' ROYAL BENEVOLENT INSTITUTION.
 GEO. J. INGRAM, Sec.,
 92, Victoria Street, S.W.
 Telephone—Victoria 411.



THE

Gardeners' Chronicle

No. 1609.—SATURDAY, OCTOBER 27, 1917.

CONTENTS.

Apple Rev. W. Wilks .. 172	Plant collecting in China .. 165
Bull garden, the .. 167	Plant, the effect of one .. 170
Crocuses, three autumn .. 167	Potato spraying .. 171
New aqueducts .. 167	School gardening at .. 171
Farm, crops and stock on the home .. 174	Shelton .. 171
Food production, on the .. 168	Seeds, shortage of, in .. 171
Cereals .. 168	America .. 171
Eradicating .. 168	Societies—
where sown .. 168	Royal Horticultural .. 172
Onions versus flowers .. 168	National Chrysanthemum .. 171
Poa trichocoma .. 168	Tree varieties at Alphenham .. 171
Potato yields .. 168	Trees and shrubs .. 171
Potatoes at Newark .. 168	Candelabra Sasanqua .. 172
Potatoes immune to wart disease .. 168	Ginkgo biloba .. 166
Fruit registers—	War item .. 171
Billace The Langley .. 167	Wasp's nest in a cloveberry bush .. 172
Fech Leah, Hammerson .. 167	Week's work, the .. 169
Lily, the White Marston .. 172	Flower garden, the .. 169
Marrow Kale .. 171	Fruits under glass .. 169
National seed testing .. 171	Hardy fruit garden, the .. 169
Outwary .. 168	Kitchen garden, the .. 169
Ashworth, E. .. 174	Plants under glass .. 169
Orchid notes and gleanings .. 168	
Apple Ellison's Orange .. 171	
Crocus zonatus .. 167	
Ginkgo biloba at Blaise Castle .. 166	
Wasps' nest in a gooseberry bush .. 172	

ILLUSTRATIONS

PLANT COLLECTING IN CHINA.

Mr. George Forrest, who is still collecting in China, has sent the following letter to the Director of the Royal Horticultural Society's Gardens. It was written at Shienmalata, Tsodjong, Upper Mekong, N.W. Yunnan:

I AM camped in the house of a Tibetan farmer, an old friend of mine of 1905. The house is on a small flat, 4.6 acres, situate in a big bend on the left bank of the Mekong, approx. lat. 28° 25' N. The valley here is a mere gorge, some 2,000 feet in depth, flanks angled to 70°, air stagnation and climate almost tropical. On every side we are enclosed by mountains, the divides rising to about 15,000 feet, with isolated peaks, such as the sacred mountain, Dekor In and Ka-quo-pu, which lie only a few miles to the north of 20,000 feet or even more, snow-capped and glacier clad! It is a difficult and trying country to work in. At our feet runs the Mekong, a raging ever-coloured torrent of 200 yards breadth, with a ten knot current, rising and falling like a gigantic pulse, 16 feet or more, day by day.

Tzkon, the scene of my adventure with the Lunas in 1905, lies a few miles south, whilst to the north, a few hours' journey, is the frontier of Sarong.

Above a certain altitude in this region of the Yunnan province the genus *Rhododendron* is the dominant feature in the scheme of vegetation, and species of that genus will bulk largely in my collections this year. The herbaria I have now in hand number 7,800 species, and in looking over my field book I find fully 20 per cent. of the total numbers represent *Rhododendrons*.

My journey from Lichiang to Atuntze was very successful. Portions of the route, of course, gave little or no result, such as the long descent from the Chungtien plateau to the Yangtze, and from thence to the foothills of the Bei-ma-Shan. There for several days' journey the country is arid to a degree, the strata tip-tilted, clay, slate, and sand formations, which refuse to hold moisture. The character of climate, and consequently flora, is very similar to that portion of the Yangtze Valley crossed on the way from Lichiang to Yangling, on the eastern arm of the big bend. Xerophytic shrubs and forms of hill types, dwarfed and contorted by their environment almost out of recognition, are abundant, with a herbaceous flora equally characteristic, and including *Ipomoea*, *Aroids* and *Composites*.

However, the flora of the higher portion of the Chungtien plateau and that of the Bei-ma-Shan compensated fully for the non-productiveness of other areas, and I secured fully 200 species new to my previous collections, mostly trees and shrubs, for it was too early in the season for the higher Alpine flora, consisting of the most interesting and valuable herbaceous plants. Many of the shrubs should prove of horticultural value. On the list are 4 new *Loniceras*, 2 *Leptodermis*, 2 *Perusis*, 2 *Daphnes*, 3 *Prunuses*, 2 *Abelias*, 2 *Diapensias*, 1 splendid *Fraxinus*, 1 *Poplar*, 1 *Syringa*, several *Enocyanuses*, several good *Berberises*, 3 rare *Caraganas*, and 2 *Ostryopsis*, of all of which I hope to get seed.

Of herbaceous material, I found several *Primulas*, a fine new species of *Solms-Laubachia* with rose-pink flowers, the beautiful *Atenome glauciplylla* Fr., and another with deep purple blooms; a new *Trollius*, a fine new *Astragalus* of compact, prostrate habit, silvery-grey foliage, and exceptionally large flowers of a deep, wine-red colour. But, as I say, it was too early in the season for the flora of the Alps. However, I hope for great things from the Bei-ma-Shan. A party of my men are now there, and will collect for several weeks.

The wealth of *Rhododendrons* is almost incredible, and the number of new species and forms found more than confusing. I have really given up attempting to define the limits of species; each individual seems to have a form, or an affinity, on every range and divide differing essentially from the type. I secured a very great number of these.

In that region *R. Traillianum* seems to be the dominant species. It is so plentiful on the eastern slope of the Bei-ma-Shan that its flowers give a silvery-grey appearance to the range, visible many miles distant. The range of colour is great, from deep rose through shades of pink to pure white. It is one of the most abundant species, as well as one of the finest in N.W. Yunnan, extending from the Tali Range to as far north as I have explored, lat. 28° 10' N.

Forms of the dwarf intricate and fastigiate types were legion and clothed

all the uplands, giving a very home-like touch to all the higher altitudes. Take the moors and hills surrounding the head waters of any of our principal highland streams in the early spring, those in full flood, with patches of snow around; for Heather and Heath imagine mile upon mile of dwarf *Rhododendron*, at that season almost the exact brownish shade of dry Heather, and you have the scenery of the summit of the Bei-ma-Shan, alt. 15,000 feet. The raw, damp wind strengthened the impression for me, and, as I stood there my heart warmed to it, and I could almost imagine myself at home.

On those highlands the dwarf *Rhododendrons* were not then in flower, but, at lower altitudes, the moorlands of the Chungtien plateau were covered with many forms of *R. fastigiatum*, in full flower and in many shades, from the deepest purple-blue through lavenders to bright rose-pink. At those lower altitudes the shrubs seem to thrive best in marshy situations, and some of the boggy flats on the margins of the Pine forests which clothe the surrounding hills were ablaze with the blooms of *R. hippophacoides*, *R. scintillans* and what I took to be the true *R. fastigiatum*. Those flats are generally bordered by Birch saplings, and again the charming combination drove my thoughts homewards for comparisons, reminding me, bar the colour, of just such flats as we have in the highlands where Heather and Birch grow in company. I secured fairly good photographs of some of the scenes.

On the higher portions of the plateau I rode for several days through breadths of *Pavonia lutea*, and after seeing so much of it I am quite of Mr. Gumbleton's opinion that *P. lutea* is only a form of *P. Delavayi*. At least 50 per cent. of the plants I saw bore blooms either blotched deep crimson at base, or more or less flushed with that shade throughout. Yet I did not find the type *P. Delavayi* anywhere. However, form or not, those plants with the pure canary-yellow blossoms are most desirable, if one could be sure of the seed being pure. Previously I had only seen the plant on the Tali Range, where it is much dwarfed in every way. On the Chungtien plateau it attains the same height as *P. Delavayi*, 24 feet, or even more, with correspondingly bold foliage and large flowers.

On the hills towards the north end of the plateau beyond the town of Chungtien, *Daphne aurantiaca* was the dominant shrub, by far eclipsing the very fine display it makes on the Lichiang Range. The masses of golden-orange blooms, swarming the foliage, and visible at quite a considerable distance, gave one the impression of a hillside covered with Gorse. From what I saw I think the species must fruit much more freely than further south.

Further on, in like situations, the place of *D. aurantiaca* was taken by a very fine and most floriferous species of *Caragana* No. 13756, a shrub of 36 feet, flowers golden yellow, with the standard tinged ruddy brown. Another fine shrub found at the same place is a prostrate

species of *Cotoneaster*, with glossy, box-like foliage and deep crimson flowers. The species forms mats several yards in diameter and blooms very freely.

In the lower valley of the plateau I found many shrubs: a *Daphne* sp., a fine shrub of 4-6 feet, with pale yellow, fragrant blooms and scarlet fruits, No. 15,769; a *Fraxinus* sp., a tree of 40-50 feet, with large, deliciously fragrant racemes of creamy-yellow flowers, a very handsome plant, No. 15,797; a new species of *Melicope*, far excelling *M. cuneifolia* in appearance and wealth of bloom.

One of the finest forest shrubs, and also of the open, is *Pyrus* sp., No. 15,844. It is a shrub or tree of 10-35 feet, with large, fragrant, pure white flowers, produced in great abundance.

lighter contrast in colour, the grey limestone background setting off the dazzling vermilion blooms to perfection. This may or may not be *A. Azooi*, as the Kew authorities say, but, if so, it is then a most luxuriant form of it; heads were noted bearing as many as 50-70 blooms.

On marshy land and by streams I saw and photographed what I take to be *Primula fasciculata* Balf. fil. It is a charming little bog plant, of 2-3 inches, with deep rose-pink blooms, which have an orange-coloured eye. It resembles *P. tilotica*, but has no scapes, the flowers arising on solitary pedicels from the axils of the leaves.

In marshy, open glades in Pine forests I saw and also photographed the so-called yellow form of *Primula Cockburniana*. Personally I consider it more closely allied to *P. Bulleyana*. It

From the 1914 collecting we already have the purple and lavender shades, but I marked down many of the rose-coloured forms.

On the descent from the Bei-ma-Shan I came on *Primula minor* in large numbers, and in full flower. It is a shade plant, and very beautiful, nestling in large colonies on dry banks in the shade of *Rhododendron* bushes; the soil is a light vegetable loam. The flowers are a very pleasing soft shade of lavender-rose, with the eye yellow and very fragrant. A new species, akin to *P. lichiangensis*, was also collected there.

On the highest point of the pass, *P. compranthe* Balf. fil., was seen in great quantity but not in full flower. There, also, on moist, stony drift, was found a new species of *Salix* *Lau-bachia*, with beautiful rose-coloured flowers.

But above 12,000 feet the chief feature in all the scenes was *Rhododendrons*, from forests of tree species such as *Rhododendrons Traillianum* and *phacochysum*, to moorlands carpeted by the dwarf species and excluding all other shrubs.

In the more open Pine forests were many species, old friends and new, *R. paralbum*, *R. Wardii*, *R. Bessianum*, *R. pagophilum*, and *R. oestrophes*, all in the perfection of bloom.

One of the finest new species of the *Intricatum* set, a shrub of 12½ feet, has brilliant yellow blooms, produced most lavishly, and was seen in masses, acres in extent, *R. saluense*, flowers deep lake-crimson; *R. acratum*, flowers blue-purple; *R. dianctum*, flowers deep purple; and others, were abundant.

Around Atuntze a week's collecting produced quite a number of novelties, and many fine, though already known, species of *Rhododendrons*, and several new species of the *Cephalanthoides* group were secured. Some excellent *Primulas* were collected, two of which belong to the *Dryadifolia* section, fine "cushion" rock plants; another, new, allied to *P. bella*, with deep lake-coloured flowers; and several of the *Nivalis* section, one of which much resembles *P. Fendleri*.

A most interesting find was a form of *Stellera chamaejasme*, with perfectly white, fragrant flowers. So far, it is unique, as I have not found the type thus far north. There are two species of *Meconopsis*, one of which is, I think, a form of the variable flowered *M. racemosa*; the other a dwarf, with blue flowers, and new to me.

The hills enclosing the Atuntze valley, which is merely a gutter, are very barren and devoid of soil, rising to some 2,000 feet above the level of the town, i.e., 15,000 feet, but the summits and the alpine slopes beyond seemed to me fairly promising, though it was too early in the season to form a definite opinion.

However, according to programme, I pushed on here, and so far I have not been disappointed.

I have very good reports of all the men on the various stations, and I expect to profit much by them, especially those at Tai and Tengyuch. The men at the latter place are working the Shweh Salwin divide, 11,200 feet in height, than which I know no richer in the province.



FIG. 62. GINKGO BILOBA AT BLAISE CASTLE

A good *Crataegus*, No. 15,885, was evident in most open thickets, of good habit, much resembling the common British Thorn, but bolder in every detail, and with a light, ruddy lark.

Populus sp., No. 15,825, is an excellent tree, growing almost to 90 feet, with great girth and spread, and large, fine foliage. It is not abundant, but may be found near many water-courses.

In the dry region beyond the plateau, *Sophora vicifolia*, or a form of that species, was abundant, in full bloom, and exceedingly attractive. The flowers are of fair size, of a pale shade of blue and white, and produced in amazing abundance. In the same region, beyond Tsin-tin, on the dry rocks and open cliffs is found *Androsace Bulleyana*, and I have seldom seen a finer or

is too robust for an ally of *P. Cockburniana*, and, besides, I found the flowers of many specimens flushed in bud the Indian red, typical of *P. Bulleyana*. It flowered last year at Edinburgh and Colchester, from seed collected by me in 1914.

On the Bei-ma-Shan and around Atuntze several species of *Primula* were found. A glorious new form of the *nivalis* section, yet unnamed, first discovered in 1914 on the Chung-tung plateau, was abundant in every meadow. The colour range is great, from deepest violet through every shade of lavender to pale rose. Never, in any form or species of this large and widely-distributed group have I seen such robust plants; some of the clumps bore as many as 35 scapes, each with an umbel of 50-70 blooms.

TREES AND SHRUBS.

GINKGO BILOBA.

I ENCLOSE a photograph (see fig. 62) of *Ginkgo biloba* (Maidenhair Tree) at Blaise Castle, near Bristol, sent to me by Mr. F. D. Harford, brother of Major J. C. Harford, the owner of the place. This specimen, if not quite the largest, is certainly one of the best shaped and most symmetrical in England. When mentioning this tree in *The Trees of Great Britain and Ireland*, Vol. I., p. 61, I gave its height as 72 feet on Miss Harford's authority, but when I afterwards, in 1905, measured it myself, I found it to be 68 feet by 9 feet 3 inches. Now, measured by a theodolite, Mr. Harford tells me that it is 70 feet by 10 feet

5 inches, so it has increased 2 feet in height and one in girth in twelve years.

Other large trees of this species, which is often called *Salsolima adiantifolia*, that I have seen, are as follows.—One at Frozmore, figured on Plate 22 of our work, which in 1904 was 74 feet by 9 feet 5 inches; a tree at Sherborne Castle, Dorsetshire, said to have been 70 feet by 7 feet 7 inches in 1884, but which I found to be 75 feet by 8 feet 10 inches in 1907. At Whitfield Court, Herefordshire, I found in 1906 a very fine tree, then 62 feet by 9 feet 6 inches, which had burrs growing on the trunk, as appears to be usual in China and Japan. A tree recorded in *Flora and Silva*, Vol. II., p. 357, at Melbury, Dorsetshire, was stated to be over 80 feet high, but I could not find this tree when I visited Melbury, and should be glad to know if it now exists, and, if so, what are its correct dimensions. There is also a fine tree at Colham, which in 1905 was 68 feet by 9 feet 4 inches. If anyone knows of others as large as or larger than these, it would be interesting to have them recorded, as the tree is evidently a slow grower when it approaches maturity.

H. J. Elvers, Colshourne

CAMELLIA SASANQUA.

This charming shrub was recently found in bloom here, and it made a welcome addition to late shrubs. Given a place on a wall, it will grow freely. I am told that *C. sasanqua* is common in China and Japan, and that the wild forms are always white. The flowers are semi-double to single, and some are wholly bluish or red, while others are splashed with white. The tree is of a straggling nature, which makes it all the more beautiful when in flower, and quite handsome as a wall plant. It is something like *C. Dondelarii* in colour and markings, but is not so large as that species. W. T. Coul, *Albion's Wood, Godalming.*

BULB GARDEN.

THREE CHEAP AND PRETTY AUTUMN CROCUSES.

IN the first rank we may place the lovely Blue Crocus, *C. speciosus*, which is large, easily grown, and very beautiful. It has hardly a rival in the possession of all these qualities, and can be bought for less than a penny a corm in quantity. It has fine light blue flowers handsomely veined on the outside with deeper markings. It is a good flower for the border or rock garden, and also for planting in grass. It flowers about the end of September. The variety *C. s. Antichorum* is lighter in colour, and is a gem indeed. *C. speciosus* albifl. has white flowers and is more expensive.

THE ZONED CROCUS.

Of dainty charm, *C. zonatus*, see fig. 65) up- preads to us more by its refinement than by its size. It has flowers of a pleasing shade of rose lilac, and its charms are heightened by the orange scarlet zone which decks the base of the interior of the flower. This Crocus is quite easily grown, and is one of the prettiest of the numerous charming flowers of its class.

THE IRIS FLOWERED CROCUS.

Botanical names are not always appropriate, but that of Crocus *iridiflorus* is most apt, as the blooms bear a distinct resemblance to those of an Iris. So much is this the case that a noted botanist recently proposed to found a separate genus called *Crociris* and to separate the subject of this note from the other Crocuses, making it the type of this new genus. The resemblance is due to the outer segments of the flowers being longer than the anterior ones and being also of a different shade. The flowers are of a beautiful rose-lavender, and the charm of the blooms is heightened by the exquisite colouring of the reproductive organs. A little higher in price than the other Crocuses here discussed, it is yet a species of quite reasonable cost and of the highest type of beauty.

These Crocuses should be planted at a depth of 2 inches in light soil, and of 1 inch in heavier ground. They should have a sunny sheltered position. S. Wood.

NERINE APPENDICULATA.

THE Botanic Garden at Montpellier received in 1907 a small number of bulbs of *Nerine appendiculata* from M. Dieterlin, who collected them on the banks of the River Calodon in the Lérise province of Basutoland. The Curator of the Botanic Garden, my friend M. Daxeu, kindly sent me a few bulbs. They have been cultivated here in the open ground, and have lived through several severe winters without injury. They have flowered regularly each year in the second fortnight of September, at the same time as *N. samiensis*. The flowers, of a pretty rose-

plant them out in the open ground, but against a wall which will protect them from north winds. During the winter of 1916-17, which was long and severe, I did not lose a single bulb of *N. appendiculata*; while *N. samiensis* and Hadron this pratensis in the same border had 20 per cent of the bulbs frozen.

I may mention that according to M. Dieterlin the local Basutoland name for *N. appendiculata* is "Beteu." P. Davis, *Babuan les Baits, France.*

FRUIT REGISTER.

BULLACE THE LANGLEY.

This is undoubtedly a very fine addition to our late fruits. I was much impressed with it when



FIG. 65. CROCUS ZONATUS.

pink, are comparatively large, and are raised well above the foliage, which is very narrow for a *Nerine*. Numerous bulbs are produced, which can be used for propagation. I do not understand why the culture of this *Nerine* is considered difficult; I cultivate it in a compost made of half ordinary garden soil, a quarter leaf mould, and a quarter sand. My garden soil is fairly rich in lime, and it is possible the species is a calcicole one.

The *India Keuken-De* gives no locality for the plant. I know of one other, besides the banks of the Calodon River. Mr. Medley Wood sent home some plants which he collected near Boston, Natal, where it flourishes at an altitude of 5,400 feet.

The young bulbs planted in pots grow very slowly; it is probably the best plan to leave them in the pots only for one year, and then to

it first came under my notice, and at once added it to our collection. It is absolutely distinct from anything I am acquainted with; the tree is a strong grower, and very prolific in its young state. The fruits are ready for use after the large majority of stone fruits are past. They are of large size, purple in colour, and attractive in appearance. The flavour is excellent. They are also of the very best for preserving, either for making jam or bottling. B. Beckett

PEACH LADY PALMERSTON.

Of late Peaches none is equal to the variety Lady Palmerston; lasting until the third week in October it is a Peon where late fruit at a minimum cost is desired. Rivers states it was raised from a stone of the Pineapple Nectarine, which accounts for its distinct flavour. In growth and freedom of crop this Peach is all that could be desired. B. M.

* First described in *Gard. Chron.*, Sept. 22, 1884, p. 336.

ORCHID NOTES AND CLEANINGS.

ORCHIDS AT BRYNDIR, ROEHAMPTON.

At Bryndir, Dr. Miguel Lacroze's beautiful residence at Roehampton, on the outskirts of London, Roses and Orchids are especial favourites. The Orchids are grown in a well-appointed block of houses, erected and fitted from Dr. Lacroze's own plans by local tradesmen, and the glass houses are approached by arched walks of Roses running through beds and borders of Roses.

The Orchid growers having left in succession to take up military duties, Dr. Lacroze himself, with the assistance of a skilled lady grower (Miss Robertson), manages the plants. The block of Orchid houses consists of five short ranges, connected at the ends by a corridor-house, in which the older plants of the collection are grown, together with batches of *Odontoglossum grande*, *Lycastes*, and *Cymbidiums*, all the plants being in a thriving condition. Varieties of *Laelia anceps* and other dwarf Mexican *Laelias* are suspended overhead. The plants in the other houses are chiefly hybrid *Cattleyas*, *Laelio-Cattleyas*, *Brasso-Cattleyas*, and *Sophronitis* crosses.

In one division is a fine lot of hybrids approaching flowering size. A second house contains, among other plants, excellent specimens of *Cattleya Folia* and *C. Vulcan*. In a third house are well-grown specimens of a richly-coloured *C. Folia*; *C. Foliata* and *C. Dowiana* of a clear yellow colour, with gold veining in the deep ruby purple lip. This last species thrives remarkably at Bryndir, and small plants flower well. *Brasso-Cattleya Digbyana* Warneri and some *Laelio-Cattleya* were also in bloom in this house.

A fourth house contains a fine set of *Brassavola Digbyana* crosses. Plants in flower included *Cattleya Enid Bryndir* variety, a magnificent flower of great size, with pure white sepals and petals, the broad lip having a violet purple front and clear yellow disc; *C. Pretoria* (*Dowiana aurea* × *Petersii*) with a dark, ruby-red lip having an orange glow from the centre; a plant of the new *Brasso-Cattleya Sifrana*, and some excellent specimens of *B. C. Hene*. Novelties included *Brasso-Cattleya Jolny* (*B. Digbyana* × *C. Comet*), of good, large *Cattleya* shape, but with fringed lip, white tinged and veined with rose, the lip having a yellow centre and gold veining from the base; *Brasso-Cattleya Salta* (*B. C. Digbyana*-*Mossiae* × *C. Dowiana aurea*), of a deep rose-mauve colour; and *Brasso-Laelio-Cattleya Tucman* (*B. L. C. Cooksonii* × *C. Rhoda*), of a copper yellow tint with rose front to the lip, which shows in the fringing and the reddish-orange base the *Brasso-Cattleya* Mrs. M. Gratrix in *B. L. C. Cooksonii*. Other good Orchids noted in flower or bud were *Sophro-Laelio-Cattleya Marthon* and *Laelio-Cattleya Medina*.

A house is devoted entirely to seed-raising, and here the seed from many capsules approaching maturity in the various houses will be tested. One stage is well filled with small seedlings, most of them raised from carefully planned crosses made by Dr. Miguel Lacroze himself. His work is methodical and precise, and when the results are in time worked out, they may throw much valuable light on the question of colour production and other characters. Records are kept of the parents, their pedigree, which parent bore the seed, when the seed matured, when it was sown, when germinated, and when flowered. When possible the cross is made both ways, and the seed bearer recorded, and thus the changes and diversity in colour between the reverse crosses will be noted, and help to solve many problems at present but partly understood. When the plants flower portraits of the blooms are painted, and again when they are mature.

The other side of the seedling-house has cases for small plants, and for "breaking" the back pseudo-bulbs removed from large specimens. These are not potted until the first roots de-

velop after growth commences. A span rooted, cool range stands apart from the main block, and is filled with a vigorous collection of *Odontoglossums*, *Odontodas*, and other Orchids, some of which have won awards at the Royal Horticultural Society's meetings. *Masdevallias* and *Sophronitis grandiflora* are suspended from the roof-rattens, the latter being specially selected varieties for crossing. Already there are well-matured seed capsules, the result of promising crosses, which may be expected to give hybrids of great merit. *B.*

ON INCREASED FOOD PRODUCTION.

YIELD OF POTATOS IMMUNE TO WART DISEASE.

The Royal Horticultural Society has conducted a cropping trial of varieties of Potatos immune to wart or black scab disease in the Wisley gardens. The varieties were those which the Board of Agriculture has found to resist the disease, even when grown in infected soil.

Forty tubers of each variety were planted in April, and the crops were lifted as they became ready. The yield from forty tubers is shown in brackets after each variety:—

EARLY VARIETIES.—A 1 (92 lb. 10 oz.), Resistant Snowdrop (118 lb. 2 oz.), Edzell Blue (155 lb. 4 oz.).

SECOND EARLY VARIETIES.—Conquest (125 lb. 15 oz.), King George (158 lb. 1 oz.), Great Scot (145 lb.), Southampton Wonder (141 lb. 2 oz.), Sir Douglas Haig (156 lb. 15 oz.), The Duchess (144 lb. 14 oz.), The Ally (147 lb. 15 oz.).

LATE OR MAINCROP VARIETIES.—Abundance (146 lb. 14 oz.), Culldees Castle (114 lb. 9 oz.), King Albert (147 lb. 6 oz.), The Provost (92 lb. 1 oz.), Crofter (155 lb. 12 oz.), Jeannie Deans (114 lb.), Favourite (138 lb. 15 oz.), Twentieth Century (129 lb. 2 oz.), The Admiral (81 lb. 9 oz.), Burnhouse Beauty (132 lb. 13 oz.), The Lord (97 lb. 11 oz.), Langworthy (124 lb.), What's Wanted (123 lb. 4 oz.), Golden Wonder (145 lb. 12 oz.), Bob Roy (139 lb. 3 oz.), The Lechar (174 lb. 4 oz.), Heather Bountiful (78 lb. 10 oz.), Leinster Wonder (118 lb. 2 oz.), Kerr's Pink (142 lb. 5 oz.), Irish Queen (121 lb. 9 oz.), Shamrock (125 lb. 14 oz.), White City (95 lb. 5 oz.), St. Malo Kidney (155 lb. 8 oz.), Dominion (146 lb. 7 oz.), Tinswald Perfection (110 lb. 8 oz.).

POTATOS AT NEWARK.

An exhibition of Potatos and other produce grown by local allotment holders was held at Newark recently, in the Town Hall. A cup, presented by Mr. J. Mason for the best crop of Potatos was won by a police-constable, Mr. F. Smith. It was stated that one grower had obtained half a ton of Potatos from three and a half stones of seed tubers, and that others had been almost as successful. Mr. Mason has offered another cup for a similar scheme next year.

POTATO YIELDS.

SOME astonishing yields of single roots of Potatos have been experienced this year, but no single plant in the district of Croxson has approached a root just lifted by Mr. C. Wellstead, gardener to T. Rigby, Esq., Chesterfield, Warham Road, Croxdon.

At the end of March Mr. Wellstead planted one two-ounce tuber of Factor Potato at the end of a Rose bed. Five growths appeared above the ground, and to keep the growths of a slightly appearance he tied them to a stake. Soon he found the stake not long enough, and placed another in position, continuing to tie the haulm as it grew. On September 10 the haulm was measured, and found to be 8 feet high, and at its widest part about 5 feet through. Scraping a little soil from the roots, Mr. Wellstead removed seventeen Potatos of good quality, weighing 6 lb. 1 oz.; the soil was afterwards replaced, and on October 15 he dug the root up, the remaining tubers weighing 4 lb. 10 oz., altogether 10 lb. 11 oz. At the first lifting the tubers were

sound and healthy, and these remain so, but in the latter stage of growth a good deal of disease was apparent, both on the haulm and in the tubers.

One can imagine the soil to be in splendid condition, and such a prodigious yield as this makes one think that the fact of growing the haulm in an upright manner has accounted for the bountiful crop. *Harry Boshier*.

ONIONS VERSUS FLOWERS.

A RECENT visit to the well-managed gardens at Abington, Morpeth, proved not only the keen interest taken by F. Straker, Esq., in the production of vegetable food-stuffs, but also his generosity in contributing large supplies to the Navy and Army. A notable feature was a superb crop of spring-sown Onions, in beds that previous to the war were all aglow with flowers. Very striking was the uniformity, in shape as well as size, of the bulbs, and their aggregate weight for the small amount of space occupied, which was clear evidence of the skill and attention Mr. Cawke, the gardener, had bestowed on them. Many of the bulbs turned the scale at 50 ounces, with a measurement of 16 inches in circumference. The variety grown is *Ailsa Craig*. *J. P. Leadbetter*.

PEA MICHAELMAS.

I HAVE grown the above-mentioned late Pea for two seasons, and it has proved more prolific than the good Pea Autocrat, and a taller grower. The two varieties were sown on June 6, two long rows of each, in well-manured trenches 2 feet wide and 10 feet apart, and the space between the rows planted with Savoys. The trenches were filled nearly to the surface, and the soil made firm and raked over. Two drills were drawn down each trench 10 inches apart, and the seed sown singly about 2 inches apart, and covered in. When the plants were about 2 feet high they were well watered, as the weather was just then dry and sunny, and they were mulched with well-rotted manure. They grew straight away without a check after this, and the tops were pinched out about the end of September. We have been picking every day since. Michaelmas grew about 6 feet high, and Autocrat 5, but much the better crop was carried by the former variety. Late Peas should be given a good, rich soil and plenty of manure, as they have to make their growth in what is often the hottest period of the summer. Another item to bear in mind is to sow timely. *R. W. Thatcher, Carlton Park, Market Harborough*.

BRASSICAS MATURING WHERE SOWN.

I HAVE never practised sowing any of the Brassica tribe where they were to "head" or mature, but it has been proved to me this year that it can be done with success. Owing chiefly to shortage of labour, the surplus stocks of Cabbage, Cauliflower, Broccoli, and Brussels Sprouts were left in the seed rows when they should have been transplanted, and as the season advanced they looked so promising that I decided to leave them where they were. The "heating up" of the Broccoli and Brussels Sprouts still continues; Cabbages have been really good, though smaller than those transplanted; Cauliflowers were likewise smaller. These plants have been left entirely alone; they had no final thinning, no hoeing, nor any assistance whatever since sowing, and the results certainly suggest that Brassicas might be sown and grown without transplanting. *C. T., Amphill Park Gardens*.

ALLOTMENTS.

THREE HUNDRED allotment-holders, representing 30,000 in London and Southern Counties, met at Essex Hall on the 20th inst., under the auspices of the Vacant Land Cultivation Society, and voted in favour of formulating a charter for the purpose of establishing a federation, which will link up with other federations throughout the country, and ultimately merge into a national union of allotment-holders.

The Week's Work.

THE KITCHEN GARDEN

By J. DUNN, Foreman Royal Gardens, Windsor

CAULIFLOWERS.—Cauliflower plants raised from seed sown in the middle of September are ready for transplanting into 4 inch pots. Let there be no delay in this work, for if the seedlings are allowed to become drawn before they are potted they will not give the best results. The soil may consist of three parts loam from an old Melon bed, and one part decayed manure, with a sprinkling of rough sand or sifted lime rubble to render the compost porous. Pot firmly. Place the pots on a bed of ashes in a cool brick pit, which may be kept closed until fresh growth commences, when air should be given in gradually increasing amounts until finally the lights are removed entirely on sunny days. The plants should be hardy and sturdy, but not started from want of water at the roots. Seedlings which are not required for potting should be transplanted into frames, where protection can be given from severe frosts.

CUCUMBERS.—Plants in bearing should be given weak liquid manure from the farmyard on frequent occasions. Top dress the roots lightly with a mixture of bon and leaf-mould in equal parts, and do all that is possible to keep the plants clean and healthy. Warm the soil used for top dressing before applying it to the bed and use only a small quantity at one time. Remove all rough foliage and thin the shoots as usual to prevent over-crowding of the growth. Stop the shoots at the first or second joint beyond the fruit, and remove all fruits beyond what are required to maintain the supply. Successional plants are making good progress, and require regular watering. These plants are intended to furnish fruits throughout January and February, and should not be allowed to get below a night temperature of 70° is suitable on mild weather, but a few degrees lower will suffice in cold weather, as much fire-heat must not be used. Syringe the foliage lightly during sunny weather and damp the walls and floor of the house.

ONIONS.—Examine Onions in the store and remove all loose skins and every bulb which shows the least sign of decay. Place the Onions in single layers where space permits. The inferior bulbs should be selected as far as possible for immediate use. Ventilate the loft freely, and turn the bulbs carefully at least several times during the autumn. The seedling autumn-sown Onions should be kept quite free from weeds. Hoe the growth carefully between the rows and pull up all weeds which the hoe does not remove. We are using good, sound bulbs of Lord Keeper, raised from seeds sown in August, 1916 and which to all appearance will keep throughout the winter. This is a good variety for spring or autumn sowing.

PARSLEY.—This crop has become overgrown in consequence of the recent showery weather, and the plants require to be cut back in order to encourage the growth of stocky leaves which will be able to withstand the winter. Some part of the crop may be left in its present state for immediate use, but that which is intended to furnish a supply from January onwards should have most of the large leaves removed as soon as possible. Overgrown foliage should also be removed from Parsley plants in pots.

FRUITS UNDER GLASS.

By JAS. HENSON, Head Gardener at Ginnery House, Aston, W.

VINEYERIE.—The showery weather has not been favourable to the keeping of late Grapes. Watch constantly for the first symptoms of decay in the bunches, for if affected berries are not removed at once, the decay will spread quickly, and the whole bunch be disfigured. Bunches that continue to show decayed berries should be used forthwith. In examining the Grapes from day to day it is a good plan to tie a piece of raffia

near bunches that need close attention. Large bunches, such as those selected for exhibition, are difficult to keep when any berries tend towards decay. Smaller bunches are much better for keeping, as they are dried in damp weather, when there may be an excess of moisture in the viney. Probably, too, the roof may be leaky, necessitating somewhat more firing to keep the atmosphere dry and congenial for the Grapes' keeping. But an excess of fire heat will result in the berries shrivelling; therefore endeavour to obtain a middle course between too much damp and too much dry heat. Close the house at night and watch the weather for ventilation during the day; never allow the temperature to rise more than a few degrees without venting. When the Grapes are fully ripe, as they should be now, a night temperature for the present of 50° is ample, allowing for a drop of 5° during frosty weather. Do not, on any consideration, allow the Grapes to be valued for late dessert supplies allow any pot plants in the viney. There is a tendency at this season to crowd far too many plants into fruit houses; it is not by any means a good practice to do this in the very smallest degree. If plants must be put into viney, where that has up to now been hanging, then it will be far better to cut the Grapes and place them in bottles in a dry room, but not where Apples and Peas are stored. If only a partial crop is still hanging, cut the bunches and bottle them at once. My remarks, however, have applied particularly to a full crop in the latest house or houses, as in the case of a separate house of Muscats. As soon as the Grapes have been cut in any house, reduce the amount of foliage. In doing the best to move all the green wood and the laterals. The leaves at the ends will after old-time and as soon as they have fallen pruning may be commenced, say, during November. Watch the inside borders and do not allow them to become at all dry, even when the leaves have fallen.

PLANTS UNDER GLASS.

By F. G. WESTON, Gardener to Lady Northcote, Eastwell Park, Kent.

WATERING PLANTS IN AUTUMN AND WINTER.—As the days become shorter the watering of plants will proceed more slowly. Many plants which require considerable supplies of water during the growing season are very pressing to their demand on resting stage. *Calceolias*, *Gloxinias*, *Adiantums* and *Begonias* are examples. It is a common mistake to dry these plants off too quickly, that is, while the foliage is quite fresh. They should be given a gradually decreasing supply of water till the foliage has completely withered, after which should be withheld altogether. The ordinary greenhouse watering should be done in the morning, as soon as the temperature rises. Allow a little time for the plants to drain, and then top the floors thoroughly, so that the atmosphere will be fairly dry before nightfall. When water is required give sufficient to thoroughly moisten the whole of the soil in the pot, and then leave it to get fairly dry again. Overly syringing should be greatly reduced at this season. On fine days syringe and close the house early in order to conserve the sun heat. On dull days very little syringing will be required, except in the hottest houses, and in the ordinary way every effort should be made to reduce the fire heat, only using enough to raise the temperature sufficiently high to keep the plants healthy.

MARGUERITES.—Plants of the *Marguerite* (*Chrysanthemum frutescens*) that have been grown out of doors during the summer with a view to flowering indoors in winter should now be arranged in the greenhouse. They will be found especially adapted for grouping with *Salvia splendens*, *S. azurea*, and other brightly coloured flowers. Plants that have filled their pots with roots require ample supplies of water when standing on a dry stage, and if neglected in this respect will soon show evidence of it, in the loss of freshness in the foliage, which will turn yellow and sickly in appearance. Use a pinch of concentrated fertiliser occasionally. Keep a sharp watch for the leaf-mining maggot,

which increases rapidly under glass. Infested leaves should be picked off and burned. Cuttings strike root readily at almost any season; it is a good plan to have a few young plants in reserve, as young, healthy specimens are of much greater decorative value than less vigorous stock.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbots Wood, Godalming, Surrey.

THE USE OF LIME IN SOILS.—It is generally well known that the presence of lime in soils is very necessary, and more especially for stone-fruits, such as Cherries, Plums, Peaches, Nectarines and Damsons. The amount of lime is subject to loss, owing to carbonic acid, which is as more or less present in rain-water, and also that which is constantly being formed in the soil itself, acting as a solvent to the lime. The loss is also increased by the use of manures containing sulphate of ammonia and low-grade acid superphosphates, but is diminished by the use of nitrate of soda, basic slag, farmyard and stable manure, and ordinary garden refuse from the fire heap. A certain amount of lime in some form should be used when planting stone-fruits, and it may be used in the form of crude lime, leaving it to shake on the ground, and so find its way downwards. Gypsum may be used if lime is not easily obtained, but I should advise looking this up to the soil previous to planting. Many soils containing little carbonate of lime may remain healthy under ordinary cultivation, provided that acid manures or coal ashes are not used.

ROOT-PRUNING.—Proceed with the root pruning of fruit trees as advised on p. 149. The soil, owing to recent rains, is now in splendid condition for working, and still retains much warmth; the sooner this work is accomplished the better will be the result.

PLANTING APPLE TREES.—Orders for the trees should be sent as soon as possible. Early planting is in every way desirable. Obtain a selection of both culinary and dessert varieties that will give fruits over a long season.

THE FLOWER GARDEN.

By W. J. GEISE, Gardener to Mrs. DEANSTON, Keele Hall, Staffs. Leam.

THE ROCK GARDEN.—Bulbs for the rockery need to be planted directly they are available, as they quickly deteriorate if kept out of the soil for any length of time. I refer especially to small bulbs, such as *Crocus*, *Scilla*, *Thunbergia*, *Galanthus*, *Smilacina*, *Erythronium*, *Aconitum*, and *Fritillaria*. Others that should be included are *Husis* in variety, *Narcissus*, *Anemone* double, *Asperula*, *Muscari*, and *Tulipa Custania*. Take advantage of fine weather to complete the planting of Alpines before cold, wet weather sets in. Several species are suitable for massing, such as *Arabis*, *Aubrieta*, *Saxifraga*, *Campanula*, *Veronica*, *Artemisa*, *Dianthus*, and *Cerastium*. The last is difficult to eradicate once it gets thoroughly established. In top-dressing established plants, remove a little of the surface soil and work in the new compost firmly between the plants. Certain Alpines need a little peat mixed with the soil when top-dressing, but farmyard manure should not be used. A small quantity of fertiliser may be incorporated with the soil when dealing with old plants. Where plants have died or become exhausted, the old soil should be removed and replaced with fresh compost. Vacant places may be filled with *Polyanthuses*, *Myosotis*, *Daisies*, or a selection of suitable shrubs.

PLANTS IN TUBS.—The housing of specimen plants in tubs or vases should no longer be delayed. Apart from the danger of frost, there can be no advantage in leaving untidy plants in conspicuous positions. If cool houses are not available for a few weeks, certain plants, such as *Myrtles*, *Hydrangea hortensis*, *Verbenas*, and *Camellias*, will take no harm if they are placed in a sheltered position, where they can be covered withiffany when there are signs of frost. *Pelargoniums*, *Fuchsias*, *Acapanthus*, *Heliotropes*, and similar tender plants should be removed at once to houses, where a little fire-heat can be used during frosty weather.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR NOVEMBER.

TUESDAY, NOVEMBER 6—

Roy. Hort. Soc.'s Com. meet. and National Chrys. Soc. combined show.

WEDNESDAY, NOVEMBER 7—

R.G.A. Executive Com. meet.

TUESDAY, NOVEMBER 20—

Roy. Hort. Soc.'s Com. meet.

THURSDAY, NOVEMBER 22—

Roy. Botanic Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 47.2.

ACTUAL TEMPERATURE.—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, October 25, 10 a.m. Bar, 29.1; temp., 49.5. Weather Bright sunshine.

SALES FOR THE ENSUING WEEK.

MONDAY—

Bulls at 67 and 68, Chesepide, at 1 o'clock, by Protheroe & Morris.

WEDNESDAY—

Trade Sale of Bulls at Protheroe & Morris's rooms at 1 p.m.

FRIDAY—

Bulls at Protheroe & Morris's rooms at 1 o'clock.

As readers of the *Gardeners' Chronicle* are well aware, Mr. Spencer Pickering has for many years devoted himself to the study of the effects of grass on the growth of fruit the other trees. He investigations carried out on the Woburn Experimental Fruit Farms led him to the conclusions that a covering of grass exercises a harmful effect on the growth of trees and that this effect is due to the formation by the roots of the grass of a substance which acts as a poison on the roots of the trees. The former conclusion has been very generally accepted, and it is now recognised by fruit-growers that at all events young trees do better when grown in cultivated ground than when grass is allowed to cover the soil in which they are planted. A striking illustration of this fact is provided by the young plantations of Apples in the Royal Horticultural Society's gardens at Wisley. There, similar trees planted at the same time may be seen, some in cultivated land and some in grass, and the difference between them is so striking as to convince the most sceptical. The latter of Mr. Pickering's conclusions—that the check to growth which occurs when trees are planted in grass is due to a poison emanating from the grass—has not met with such general acceptance.

The series of experiments recently published* by Mr. Pickering will, we think,

prove very difficult of explanation on any grounds other than the "toxic" hypothesis.

The crucial experiment, which is described and illustrated in the paper already referred to, was carried out in the following way:—In each of three pots a Mustard plant is grown. One pot is uncovered, the other two have each resting upon them a tray containing 5 inches of earth, in which the Mustard is sown. In one case the base of the tray is perforated by holes through which water added to the tray may pass to the earth in the pot. In the other the holes are blocked, and hence no water from the tray can pass into the pot below. The result is extraordinary. Whereas the growth in the uncovered pot and in that of the pot covered by an unperforated tray is vigorous and normal, the growth of the Mustard in the pot covered with the perforated tray is puny in the extreme—not more than one-hundredth of that in the other pots.

Nor is this remarkable checking of growth by any means confined to Mustard. Among other plants which have proved to be susceptible are Apples, Pears, Plums, Cherries, six kinds of forest trees, Tobacco, Tomato, Barley, Clover, and two varieties of grasses; and among plants which have been proved to exercise this baleful influence are Apple seedlings, Mustard, Tobacco, Tomato, two varieties of Clover and sixteen varieties of grasses. The adverse influence exercised by one plant on another varies in different cases: the reduction of growth brought about in this way may be so much as 97 per cent. or so little as 5 per cent., and in the field the effect ranges in different cases from a slightly detrimental to one so completely toxic as to bring about the death of the tree. It is curious to note that so far no surface crop has been found which is more toxic than another.

Mr. Pickering points out also that the effect of grass on fruit trees varies considerably in different soils, and yet when these soils are made the subject of experiment all are found to behave alike and to convey the poison equally well.

The toxic substance, which may be of the nature of an excretion, or may be produced by the decomposition of dead parts of the growing root—for example, root hairs which have only a life of a few days, and as they die are replaced continually by another equally evanescent crop of root-hairs. In any case, the toxin is very like that which is produced when soil is heated to a moderate temperature. In either case the poison is easily oxidised, and when oxidised acts apparently as a nutrient substance. Thus if the leachings from the Mustard tray in the experiment already quoted are kept exposed to the air for twenty-four hours and are then added to any of the pot plants, their poisonous effects are found to have disappeared, and they may even act beneficially. Mr. Pickering points out that the harmful effect of cover crop and permanent crop is reciprocal. The Apple which suffers from the grass may and does

retaliate, and he suggests that to this is in part to be attributed the poor growth of grass under trees. It may be so but there are not a few difficulties which prevent us from accepting this view without more evidence.

A subject of importance which may receive some illumination from these experiments is that of spacing of crops. If a crop such as the Potato is planted at certain orthodox distances from plant to plant the individual yields of the plants may be so much as double those obtained by closer planting, and yet the closer planting may actually yield a bigger crop.

What looks like an example of a toxic effect, though usually ascribed to the drying and impoverishment of the soil by the cover crop, is the frequent failure of Privet and Euonymus hedges when grass is allowed to grow close up to the stems. In one case of this kind which came under our notice a hedge of Euonymus languished for six years and made no growth whatsoever until the grass was removed.

Mr. Pickering quotes an interesting example of the beneficial effect which may occur after the toxic substance has had time to undergo change. An Apple orchard, a quarter of an acre in extent and containing fifteen trees twenty years old, was planted with Brussels Sprouts. Under the trees the Sprouts suffered to the extent of 48 per cent. of their growth; but in similar patches on which trees had been cut down the previous winter, the Sprouts did better by 12 per cent. than in any other part of the ground.

Although, as already stated, no marked difference appears to exist between the toxic-producing powers of different plants, it seems to be a fact that a plant is more toxic to another plant of its own kind than to one of another species. It follows from this that the toxin produced by a plant may be injurious to the plant itself. If this prove to be the case, we should have an additional, and, perhaps, chief reason why thinning of crops should be undertaken as early as possible, and perhaps, also, why transplanting is often beneficial. In an interesting experiment carried out by Mr. Pickering it was found that if three seedlings (Mustard) were sown in a pot large enough for six plants, and if when they had germinated another three were sown, the last-sown remained to the extent of 60 to 70 per cent. smaller than the first-sown plants. The pot, be it noted, contained ample soil—over 16 lbs. of loam. The experiment certainly illustrates, as Mr. Pickering points out, the desirability of sowing seed of even germination. Possession would seem to be nineteenth of the law of plant life.

The paper deserves to be read in its entirety. It sheds new light on old problems, and, what is even more important, sets the reader thinking. The subjects discussed in it are of such importance that they deserve wide discussion, and we shall be pleased to offer facilities in these pages for those who are able to contribute to that discussion.

* The Effect of One Plant on Another. Spencer Pickering, F.R.S., *Annals of Botany*, XXXI, No. 12, April, 1917.

NATIONAL CHRYSANTHEMUM SOCIETY.—The National Chrysanthemum Society will hold an exhibition in connection with the Royal Horticultural Society's meeting on November 6, in the Drill Hall, Buckingham Gate, Westminster. The schedule includes twenty-nine classes, divided into three sections, and besides money prizes, several cups and trophies are offered in important classes. Mr. A. A. WITTY having resigned the office of secretary, after a service of 11½ years, the Committee has appointed Mr. CHAS. H. CURTIS as his successor. The Council has decided to present the Gold Medal of the Society to the late secretary, together with an illuminated address, as a mark of its appreciation of his services.

NATIONAL SEED TESTING.—Mr. R. G. STALLETON, M.A., Advisory Botanist to the University College of Wales, Aberystwyth, has been appointed Director of the National Seed Testing Station, established by the Food Production Department at 72, Victoria Street. The station will open early in November.

AN EMPLOYER'S DUTY.—Regulations require employers of labour to make a return of all male employees from 16 years of age on a form, D.R. 17, obtainable at any post office, to the Recruiting Officer of the district in which the man works. A duplicate form should be kept by the employer on the premises, and both should be revised monthly if the occasion arises. Failure to comply with this regulation entails heavy penalties under Defence of Britain Regulation 41a.

WOMEN'S INSTITUTE.—The Women's Institute movement in England has now been taken over by the Women's Branch of the Food Production Department.

SHORTAGE OF SEEDS IN AMERICA.—The *Boston Transcript* for September 19 last urges the utmost importance of conserving seeds. The unusual severity of last winter killed a number of seeds in districts all over the Northern States of America, and the reserve stock usually kept in the country has been exhausted. In normal conditions large quantities of seeds are imported from France, Germany, Holland and England. The most acute shortage is in Beet, Carrot, Turnip and Parsnip seed. Spinach seed, which used to be 25 cents a pound, is now being sold at \$1.25. It is also probable that there will be a shortage of Bean seeds, owing to the frosts having destroyed a large part of the crop in Michigan, one of the largest Bean-producing States. Most of the Cauliflower seed is imported from Denmark, and even in ordinary seasons costs up to \$20 a lb. Now, the Cauliflower industry may be seriously interfered with. Onions, the seed of which was formerly imported in large quantities from France, are now being grown on a large scale in California. The hills are kept over the winter and transplanted in the spring, when they flower and produce seeds very rapidly. The great Cucumber-growing State is Michigan; one concern in this State controls a thousand acres given over to this crop. With the European supply diminishing each year that the war continues, the United States will find itself under the necessity of vastly increasing its acreage, for it is confronted with the problem of feeding the whole world.

SCHOOL GARDENING AT SHERBORNE.—Mr. CHARLES H. BYRON, the head master of the Sherborne (Dorset) County School, sends us a carefully compiled table of the results of Potato growing trials carried out by the boys of his school. The varieties employed were Arran Chief, Dalhousie, and Up-to-date, and the Potatoes were planted and treated in various ways, careful notes being taken of the results. Thus some of the boys planted whole tubers with all the "eyes" left in, some cut out all "eyes" but two, and others cut the tubers in

small pieces. The respective results of different methods of manuring were also observed and noted for future use.

WAR ITEM.—We regret to announce the death in action of Captain DUDLEY WHELFER WALLACE, M.C., West Yorks Regiment, only son of Colonel R. W. WALLACE, surveyor-general, Golders Green. The gallant young officer fell on October 9, while leading his company into action under heavy shell fire. Captain WALLACE was gazetted in July, 1915, to the Yorkshire Territorials. He would have served with one of the Essex battalions, but was refused on account of defective eyesight. Nevertheless, in spite of this handicap, his fine qualities found him rapid promotion, until at the time of his death, at the age of 29, he was holding the comparatively high rank of Captain. He was awarded the Military Cross for a gallant and successful raid carried out under his leadership. On that occasion 89 prisoners were brought in and the rest of the hostile post killed, whilst there was no casualty among the raiders.

ence, with both plants. My best specimen of No. 1, β is now a little tree 10 feet high, while β of both of them are the same age, viz. nine or ten years. So far as No. 2 is concerned, the difference between the two types is that Wilson's lacks the glaucous coloring of the leaves, which are smaller and more turned up at the edges, producing a spoon-like effect. In this case the divergence between the two types is marked, and jumps to the eyes, as our French Allies would say. As regards No. 4, my attention was first called to there being two types by Monsieur Edmond Versin, of St. Jean le Blanc, near Orleans, who specialises in Poplars and Willows. I raised from seed a good many plants of type β introduced by Wilson, and all of them had the distinguishing and attractive features that the underside of the leaves is of a delicate pale-rosyish pink, and that the young wood is red-dish. In type α , which I obtained from Versin, these features are absent. Moreover, the leaves are larger and darker, and the general appearance of the two trees is dissimilar. I have no knowledge as to where M. Versin originally



FIG. 1. POTATO TUBERS. (Magnified 10 times.)
FIG. 2. POTATO TUBERS. (Magnified 10 times.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

MARROW KALE. Can any of your readers tell me how Marrow Kale should be prepared and cooked? I was told to plant it save it till by one whose table taste is beyond question, and who informed me that though grown generally for cattle food, the thick, succulent stems make an excellent table vegetable. The plants have done wonderfully well, and have produced stems of great thickness, but my cook is doubtful how to prepare them for the table.

TREE VARIETIES AT ALDENHAM. There are four main plantations here, of which in each case I possess two types quite sufficiently distinct to justify one of them bearing a distinguishing varietal name. They are:

- 1. Ligustrum Quilfordi, type α .
- 2. Ligustrum Quilfordi (Wilson), type β .
- 3. Ligustrum Dalayayannum, type α .
- 4. Ligustrum Dalayayannum (Wilson), type β .
- 5. Elaeagnus umbellatus, type α .
- 6. Elaeagnus umbellatus (Wilson), type β .
- 7. Populus szechuanica (Wilson), type α .
- 8. Populus szechuanica (Versin), type β .

In the case of 1 and 3, Wilson's β form is introduced in Europe by taking the form of a tree with a single stem instead of being a bush, as has always been the case hitherto, in my experi-

ence, with both plants. My best specimen of No. 1, β is now a little tree 10 feet high, while β of both of them are the same age, viz. nine or ten years. So far as No. 2 is concerned, the difference between the two types is that Wilson's lacks the glaucous coloring of the leaves, which are smaller and more turned up at the edges, producing a spoon-like effect. In this case the divergence between the two types is marked, and jumps to the eyes, as our French Allies would say. As regards No. 4, my attention was first called to there being two types by Monsieur Edmond Versin, of St. Jean le Blanc, near Orleans, who specialises in Poplars and Willows. I raised from seed a good many plants of type β introduced by Wilson, and all of them had the distinguishing and attractive features that the underside of the leaves is of a delicate pale-rosyish pink, and that the young wood is red-dish. In type α , which I obtained from Versin, these features are absent. Moreover, the leaves are larger and darker, and the general appearance of the two trees is dissimilar. I have no knowledge as to where M. Versin originally

found type α , whether it also was introduced by Wilson or came from some other quarter. I do not think that there can be any doubt that it is true to name, but in spite of the fact that type α is without the rosy pigment, and looks superficially more like *P. lasiocarpa* than it does like type β , yet the vening on the leaves of both types is identical. I wish that someone who is more of a botanist than I can pretend to be would examine the above-mentioned plants, and, if he should confirm my view that the different types are sufficiently distinct to deserve that one of them should have a varietal name, I would suggest: 1, type β , arborescens; 2, type β , Wilsoni; 3, type β , arborescens; 4, type α , Versini. I hope this letter will provoke someone else, with better knowledge than myself, who has also observed some of these divergences in type, to give you his views and experience. *George Gable, Aldenham House, near Elstree.*

POTATO SPRAYING.—It is to be hoped that should material for a report on the results of spraying Potatoes this year be collected, it will be done without prejudice. It would not be difficult to collect a great deal of evidence in favour of non-spraying. I have seen Potato crops which were ruined by spraying with Burgundy mixture, others that were not affected one way or the other, and others again which without any spraying yielded good crops of Potatoes, in which there was very little evidence of disease. I have seen also areas which had been once or twice sprayed,

and the haulms had in consequence kept growing longer; but there was no difference in the yield, either with respect to quantity, quality, or the number of diseased tubers. Much of what has been called blight (*Phytophthora*) has been black stem rot, a disease which quickly carries off the haulm, but it does not appear to attack them until the tubers are well advanced, and these, when dug, have been quite sound. My view, based on what I have seen this year, is that spraying has not been worth while. The theory that an attack of aphid lays the Potato haulms open to injury by the copper sulphate in the spraying mixture may be taken to mean that in such a case spraying is harmful. The question that is still awaiting a satisfactory answer is, how does the Potato blight get a start in an entirely new Potato district, and how is it that a bad attack, judged by the behaviour of the haulms, does not, as it certainly does not always, extend to the tubers also? One may waste labour and money in appliances which do not do any good. We require to be certain that the treatment will be remedial, before urging that it should become general. W. W.

— It may be hoped that those who can not see any advantage in spraying will give full details of how the work was carried out, because it may be that the conditions were unfavourable, or that spraying was inefficiently performed. It is to be feared that in some cases spraying was done as mere work, which means that only the upper surface of the haulm was sprayed. Some of the failures may be attributed to the lateness of the spraying. I saw many plots sprayed for the first time when the haulm was 2 feet high. Again, much showery weather was experienced, and the nearest novice understands what undue dilution means to liquid mixtures. I grew several acres of Potatoes this season in various localities, and have not much disease in the tubers, which we seldom experience here in the chalky soils, but the crop is short in bulk, attributable to various reasons. I did not spray owing to press of work in other directions, but I regret now I did not do so. I had ample opportunities during the month of September of forming an opinion as to the value of spraying as against non-spraying, having been engaged in judging farms of from 500 acres to 1,400 in size for the award of a challenge cup given by Lord Portsmouth for the best cultivated farm in this county. On several farms Potatoes are largely grown, and they came under inspection. There was no comparison in the appearance of the plots sprayed and unsprayed. The former were a mass of greenery to the extent of 50 acres in one field, while close by the unsprayed had not a green leaf. I do not say the sprayed had no symptom of disease, but they were less affected than the others. A great point in favour of spraying is the incontestable fact that, when properly done, at least twice in the season, the haulm is longer preserved in a growing condition, and naturally the crop is heavier, owing to the period in which the tubers swell. I am aware we shall be told of heavy crops obtained without spraying, and we all know that good culture produces heavy crops, therefore the risk of a few diseased tubers is not of serious consequence. But I have quite made up my mind that spraying must be done next year in the crops over which I have control. *R. Molyneux.*

APPLE REV. W. WILKS.—An Apple weighing 1 lb. 14½ ozs., and measuring 17½ inches in circumference, was grown in the gardens of the Stoke Poges Club. It is of the Rev. W. Wilks variety, and two other Apples from the same tree weighed nearly 3 lbs., 10 ozs., or 5½ lbs. for three Apples. It would be interesting to know the record weight of three Apples from one tree! *S. P. C.* [Five fruits of the variety Belle du Bois, shown by Mr. Haycock at Hereford in 1891, weighed 5 lbs., 5½ ozs. The heaviest individual Apple of which we have record weighed just over 2 lbs. It was exhibited at the Ledbury Show in 1888 by Mr. Robert Smith, and the variety was Warner's King. Other large fruits of which we have entry in our "Record" book are Peasegood's Nonesuch, 1 lb. 12 ozs.; Emperor Alexander, 1 lb., 10 ozs.; and Gloria Mundi, 1 lb. 7 ozs.—Eds.]

WASPS' NEST IN A GOOSEBERRY BUSH.

I send you a photograph (see fig. 65) of a wasps' nest, which has been formed in my garden at Earham on the branch of a Gooseberry bush. The nest is composed mainly of paper, and the paper was obtained from a Strawberry bed, over which pieces of paper had been suspended at intervals in order to keep birds away. With praise-worthy industry the wasps sawed off minute fragments of the paper and carried them to the Gooseberry bush for the formation of the nest. By the time the nest was finished every one of the pieces of paper was riddled with holes. (*Mrs.) E. M. Goddard, 66, East Street, Parnham.*

THE WHITE MARTAGON LILY.—While I am very glad that my offer of seed of this Lily has been accepted by a very large number of persons, I feel compelled to remind some of those who have applied of the sole condition attached to my offer, namely, the enclosure of a stamped directed envelope. I cannot respond to applications on post



FIG. 65. WASPS' NEST IN A GOOSEBERRY BUSH.

cards, not because I grudge penny stamps, but because I simply cannot undertake the labour of writing addresses. I must therefore beg those who do not receive a packet of seeds shortly to understand that it is because they have not complied with my sole condition. Several correspondents have accompanied their request for seeds with the inquiry how they are to be treated. It is impossible for me to reply to such inquiries separately; but I may do so generally by recommending that the seeds be sown in a cold frame and the seedlings pricked out in the open when they are big enough to handle. They may be sown in rows in the open border, where they will germinate freely; but they are apt to be overgrown with weeds in such a situation. *Robert Maxwell, Monmouth.*

EARLY POTATOS.—In view of the food shortage, early Potatoes will doubtless be of great value next season. Amongst several varieties, Duke of York gave by far the best crop this year. I shall be interested to know the experience of other growers. *T.*

SOCIETIES.

ROYAL HORTICULTURAL

OCTOBER 23.—The fortnightly meetings in the Drill Hall continue to attract numerous exhibitors and good attendances. On Tuesday last fruit and vegetables formed the more important features of the exhibition, and the Fruit and Vegetable Committee awarded two Gold Medals to collections of fruit and of vegetables respectively. The fruit was shown by Messrs. G. BUNYARD and Co., LTD., and comprised 150 dishes of Apples, Pears, Medlars and Quinces. The quality was exceptionally good, and Apples were remarkably well coloured. Culinary Apples, such as Mère de Ménage, Bramley's Seedling, Lane's Prince Albert, Hambling's Seedling and Clark's Seedling, a very long-keeping, solid fruit of Bramley's Seedling type, but dull red all over, were especially fine, and there were equally good dishes of dessert varie-

ties. Of the newer sorts we noticed Coronation, Sir John Thorneycroft, an imposing-looking Apple of excellent quality, and Heussen's Golden Reinette, which is red now, but mellows into a golden shade. It is a flattish fruit not unlike Ben's Red, but of superior quality. Pears were shown well, including Winter Windsor, Doyenné du Comice, Beurré Diel and Beurré Clairgeon. The Gold Medal exhibit of vegetables was staged by Messrs. BARR and SOXS, and was representative of most kinds in season. The quality was good, especially Pricetaker Leeks, Rousham Park Horn, Crimson Globe, and Froxfield Onions; Scarlet Intermediate Carrots, Standard Bearer and Solid Pink Celestis, Christmas Drumhead Cabbage, Covent Garden Favourite Beet, and White Marrow Parsnips. Another splendid exhibit of vegetables was shown by ESTACE PALMER, Esq., Drayton House, Sherfield-on-Loddon, Basingstoke (gr. Mr. H. E. Wallis). Carrots in this collection were splendid, including Early Gem, Champion Scarlet Horn, and New Red Intermediate. Other fine produce were Pricetaker

Leeks, Early Market Tomatos, Blood Red and Ailsa Craig Onions, Scorzoneria, Black Beet, and Matchless Brussels Sprouts. Messrs. SUTTON and SONS showed vegetables raised from seed sown in August, Matchless and Satisfaction Lettuces, Spinach Beet, Early Gem and Fairy Carrots; Red Globe and Early Red Milan Turnips, and large rooted Radishes were the finest kinds. An excellent exhibit of fruit was shown by C. A. CAIX, Esp., The Nods, Welwyn, Hertfordshire (gr. Mr. T. Pateman, both Apples and Pears being of the highest exhibition quality). The PUFFLETT SCHOOL showed vegetables, fruits and Nuts grown on the school garden; there were excellent bunches of Royal Muscadine and Espiran Grapes in this useful exhibit.

Lady Dawson, Cannon Hill, Maidenhead, showed bottled fruits and vegetables, all of very excellent appearance. The Committee recommended a First class Certificate to Apple Ellison's Orange (see fig. 64).

Messrs. LAXTON BROS. showed two promising seedling Apples, both raised from Cox's Orange Pippin crossed with Cellin, named Perfect and Delight respectively. The former is very like Cox's Orange Pippin in shape, the skin being greenish-yellow with a richly flush. Both fruits are of medium size.

An interesting exhibit of Apples was staged by Mr. ALFRED BAYLEY, Revelstoke, Slough, all the varieties being over one hundred years old, gathered from very old trees. Exceptionally fine fruits of Blenheim Pippin, Orange Pippin, C. Ashad, Old English Pearmain, one of the oldest Apples on record, and re-sensibling Mother; Bee Apple and Lisbon, a solid-looking fruit, said to be a long keeper, were included.

The Floral Committee recommended Awards of Merit to a new Berberis from China named B. polyantha, and Vitis betulifolia, also from China. Nine medals were awarded to collections.

The Orchid Committee recommended one First class Certificate and three Awards of Merit to collections.

At the 3 o'clock meeting of the Fellows Mr. Edward White gave a lecture on "Pergolas and their Use."

Floral Committee.

Present: Messrs. H. B. May (chairman), J. W. Barr, J. Hoar, J. Dakson, C. Dixon, W. P. Thomson, C. E. Peatson, J. Green, R. Hooper Pearson, G. Reuther, C. R. Fielder, J. T. Bennett Pore, W. A. Binney, A. Turner, W. J. Bean, R. C. Notcutt, A. G. Jackman, J. Hudson, J. F. McLeod, J. W. Blakey, H. J. Jones, and E. H. Jenkins.

AWARDS OF MERIT.

Berberis polyantha. This plant produces a profusion of coral-red berries, which are developed in small bunches along the arching shoots. It forms a shrub about 3 feet high, and has clusters of small, acute-spinulate leaves with three spines, each about 1/2 inch long. The general appearance is after B. Wilsoniana, but the plant is a much taller grower. From the Society's Gardens, Wisley.

Vitis betulifolia.—This new vine was described briefly in the issue for October 13, p. 155, when it was exhibited in much finer condition than on Tuesday last. The leaves are entire, cordate, about 2 1/2 inches long, prominently veined, and have a stalk 1/4 inch long. The fruits are developed in profusion, forming small bay bunches, the berries being very dark blue almost black, with a paler bluish bloom. The foliage had assumed fine autumn tinting, the brighter colours contrasting well with the sombre looking berries. It is an acquisition for enriching pergolas and trellises out of doors. Shown by Mrs. BURKETT, Spetchley Park, Worcester.

GROUPS.

The following medals were awarded for collections:

Silver Flora Medal to Messrs. H. B. May and Sons, Edmonstone, for Ferns.

Silver Banksian Medals to Messrs. J. CHAM and Sons, Crawley, for autumn foliage and berries; Mr. F. LILLEY, Guernsey, for Nerines;

Messrs. PIPERS, Langley, for berried shrubs, and Mr. E. HIGGS, Twyford, Berkshire, for Roses.

Bronze Banksian Medals to THE ALDER RIVER NURSERY Co. for Lilies and other flowering plants; Messrs. ALLWOOD BROS., Wivelsfield, Haywards Heath, for Perpetual-flowering Carnations; Rev. J. H. PEMBERTON, Havering-atte-Bower, for Roses, and Mr. G. RYLAND, Keston, Kent, for Nerines and rare shrubs.

ORCHID COLLECTIONS.

Present: Sir Jesemiah Colman, Bart. (in the chair), Sir HARRY J. VEITCH, Sir Fred. Moore, Messrs. Jas. O'Brien (hon. secretary), W. Bolton, C. H. CURTIS, W. H. White, Arthur Dye, J. Cypher, J. Charlesworth, Frederick J. Hanbury, Pautia Hall, Fred K. Sander, J. Wilson Putter, R. A. Rolfe, T. Armstrong, and Stuart Low.

The chairman referred to the great loss the Committee had sustained in the death of Mr. Elijah Ashworth, Harfield Hall, Wilmsham, and Mr. O. O. Wrigley, Bridge Hall, Bury, Lancashire, both members of the Committee. On the proposition of the chairman it was decided to send a message of condolence to the members of both families.

AWARDS.

FIRST CLASS CERTIFICATE.

Odontoglossum crispum The Premier, from Messrs. CHARLESWORTH and Co., Haywards Heath. A home-raised seedling with a slender spike of two very large and finely shaped flowers, and probably the finest typical white crispum ever shown. The broad, overlapping sepals and petals are pure white, the large, fringed lip having one large red brown blotch and a band of smaller spots around the light yellow crest.

AWARDS OF MERIT.

Sepha Lachis Cattleya in Buckingham (parentage unrecorded), from Dr. MICHEL LAUROZI, Bryndy, Buckingham. A superb hybrid of intensely rich colour and nearest to S. L. C. blotchley flora, but larger and darker. The flower has a rounded lachis form, is of perfect shape, almost entirely bright chestnut crimson with a slight red shade, three white lines extending from the base to the centre of the lip, with some shorter lines on each side.

Laelia Cattleya St. George, *Bryndy variety* (L. C. St. Gothard x C. Fabian), from Dr. MICHEL LAUROZI. A noble flower, adhering closely to the Cattleya shape, but of greater size. Sepals and petals light rosy mauve; lip purplish crimson with slight lilac margin and gold-yellow disc.

Laelia Cattleya Zeno (L. C. St. Gothard x C. Zeno), a fine flower, with a resemblance to the best form of C. Warneri, light rose in colour, with rich crimson front to the broad well displayed lip.

PRELIMINARY COMMENTARY.

Odontoglossum Adams (hybrid unrecorded x *crispum* Adams), from Messrs. ARMSTRONG and BROWN, Orchidhurst, Farnbridge Wells. A remarkable and highly interesting hybrid, flowering first to the first time, and showing in its clear white flower, with occasional deep ruby red blotch the features of *O. crispum* solum, including the irregularity of the markings.

Odontoglossum Aspinii (MOR. x *Colosseus*), from Messrs. ARMSTRONG and BROWN. A grand flower, equally blotched with clear red on a white ground.

Odontoglossum Nymphaeatum x *Abundant*, from Messrs. CHARLESWORTH and Co. The flower is of good shape, three-fourths of the inner parts of the segments being blotched with clear purple, and the tips tinted rose.

GENERAL EXHIBITS.

Dr. MICHEL LAUROZI showed Cattleya Medal to Octave Doin x Dowiana aurea, resembling an improved C. Dowiana aurea, and C. armata-florosa (Wassermann x Mendelini), a very large flower with the general features of C. Mendelini.

SIR JESSEMAH COLMAN, Bart., Gotton Park (gr. Mr. J. Collier), showed a fine spike of

Cattleya Browinae with sixteen flowers, and a large inflorescence of Odontoglossum coronatum.

Messrs. CHARLESWORTH and Co. were awarded a Silver-gilt Flora Medal for a fine group rich in handsome Brasso-Cattleya and Laelia-Cattleyas. New and choice plants included Cattleya Mira (Rhoda x Dowiana aurea), light sulphur-yellow with a deep crimson lip, and Laelia Cattleya Laura (L. C. Scylla x C. Lord Rothschild), of a delicate apricot-yellow tint with rose-coloured markings on the lip.

Messrs. ARMSTRONG and BROWN were awarded a Silver Flora Medal for an excellent group of pure hybrids, one of the best being the handsome yellow Brasso-Cattleya The Baroness Orchidhurst variety, the bloom being of perfect form and great substance.

Messrs. SANDERS, St. Albans, were awarded a Silver Flora Medal for a good group, consisting principally of fine hybrid Cattleyas, the forms of C. Fabia, both light and dark, being excellent.

Messrs. J. and A. McBEAN, Cooksbridge, were awarded a Silver Banksian Medal for a group in which the forms of Cattleya Enid, C. Fabia, C. Iris, C. Hardyana, and C. Prince John were effective. An interesting novelty was Odontoglossum Nanette (Oncidium incurvum x Odm. Hedydium), with an erect spray of rose-blotched flowers.

Messrs. HUSSALL and Co., Southgate, were awarded a Silver Banksian Medal for a group of fine hybrids, in which the new Brasso-Cattleya Moira (B. C. Digbyano-Warneri x C. Gaskelliana), a good, white variety with a chrome-yellow disc, and Cattleya Hilary (Harrisoniana x Enid), magenta colour with yellow lip having purple markings, were noted.

Messrs. STUART LOW and Co., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for a group, the central plant in which was the new Brasso-Laelia-Cattleya President Wilson (L. C. Lustre x B. C. Mrs. J. Leemann), a fine bold flower, light rose colour with a deep rose-purple lip having a yellow disc.

Messrs. FLORY and BLACK, Slough, sent Laelia-Cattleya Phyllis (L. C. Rubens x C. Dowiana aurea), a pretty and richly coloured flower.

Mr. E. V. Low, Wivelsfield, Sussex, showed a good form of Cattleya Venus, C. Gaskelliana alb., two Dendrobium Phalaenopsis hololeucum, and Laelia Cattleya luminosa aurea.

Fruit and Vegetable Committee.

Present: Messrs. W. Poupard (in the chair), W. Bates, E. Beckett, A. Bullock, A. R. Allan, H. Markham, J. Allgrove, F. Jordan, E. A. Bunyard, G. P. Berry, W. H. Dyers, and W. Wilks.

FIRST CLASS CERTIFICATE.

Apple Ellison's Orange (see fig. 64).—This variety, which gained an Award of Merit on October 10, 1911, was raised by the Rev. C. C. ELLISON, Brockbridge, Lincoln, from Cox's Orange Pippin crossed with Calville Blanc. The fruits are 3 inches in height and rather more through the centre, those illustrated being half natural size. The skin is flushed all over with red on a mellow, yellow ground. The flesh is faintly tinged with yellow and of good flavour. The eye is set in a rather deep cavity and the stalk also, the latter being about 1 inch long. The season is said to be from October to Christmas, but specimens we have seen are already over-ripe (October 24). Shown by Mr. H. MARSHAM, Wrotham Park Gardens, Burnet.

TRIAL OF SPRING SOWN ONIONS.

The following awards have been made to spring sown Onions after trial at Wisley:—

BESTLY COMMENDED. No. 35, A1, sent by Messrs. SUTTON and Sons, Reading; No. 20, Ailsa Craig, sent by Messrs. Dobbie and Co., Edinburgh; No. 12, Bedfordshire Champion, sent by Messrs. SUTTON and Sons, Reading; No. 32, Champion, sent by Messrs. E. W. King and Co., Coggeshall.

COMMENDED. No. 26, Up to Date, sent by Mr. Gray, Sandy, Beds.

CROPS AND STOCK ON THE HOME FARM.

SOWING WHEAT.

Of all crops on the farm, none will be so important next year as the Wheat crop. Every farmer should strive his utmost to produce a maximum crop, whether it be one with 500 acres or the man with but one acre. There are, nowadays, such facilities of obtaining heavy crops by the aid of manures and machinery, that there can be no excuse for failing to provide one's share.

Wheat cannot be sown too early, but ordinary varieties can be sown too late. If it has to be sown late, owing to the land being occupied with other useful crops, there are varieties of Wheat that will succeed when sown late. When I say there are, in passing, upwards of fifty varieties, no one can complain of a want of choice for any kind of soil or situation. Wheat sown in October germinates quickly; the roots obtain a firm hold of the soil, and the plant does not suffer from severe frost like that sown in December; much of this latter may be lifted almost out of the ground by frost, and cannot make such a successful start in the spring.

I have previously written about the preparation for Wheat when dealing with crops to precede the Wheat crop. The point is now to get the seed in as fast as the land is ready to receive it. In some districts where rain has not fallen so regularly as it has in the south during the last month, some may postpone the sowing on account of the land being too dry to germinate the seed quickly. My advice is to sow directly the land is ready; the seed will receive moisture sufficient, especially if the soil is heavy in character, because in soil of that type it is at times difficult to catch a season. In the case of newly broken up grass land, which may need stimulating to obtain a full crop, after the land is ploughed and pressed, sow some approved Wheat Fertiliser, of which there are plenty on the market, at the rate of 4 cwt. per acre. If the soil is heavy, basic slag or superphosphate would answer, to be followed in February with 1 cwt. of sulphate of ammonia per acre. In the case of grass land the advantage of this manurial dressing is that it will induce the plant to grow quickly and thus escape wire-worms, which might otherwise do much harm to the plant in March and April.

In the case of Clover ley, which was not sheeped or given farmyard manure, a similar dressing will have a beneficial effect.

Summer fallows given farmyard manure at the rate of 15 tons per acre should produce full crops. The land under this preparation will require to be heavily pressed at ploughing time, as Wheat requires a firm seed bed, and not too deeply ploughed. In fact, too deep ploughing is harmful in obtaining quality in the grain; an extra crop of straw may result, but Wheat is not grown mainly for its straw.

Choose fine weather if possible for sowing the seed. A good "season" does much to rid germination and subsequent growth. "Muddled in" seed during wet weather cannot succeed nearly so well.

The manner of sowing is much a question of convenience, fashion, and locality. Drilling commits the seed evenly, and is advisable in soil easily managed, but the preparation of the soil beforehand means more labour. In stiff soil the broadcaster is an efficient method of sowing on the ploughed land without extra preparation. Sowing by hand, too, is largely practised on small plots. The Massey Harris cultivator commits the seed regularly to the soil, works the land at the same time, and partly buries the seed, requiring less work in harrowing afterwards. Whatever method be adopted in sowing, harrowing afterwards should be freely done to thoroughly bury the seed, and create a good tilth.

In stiff soil the surface should not be made too smooth for fear of callusing on the surface during the winter. A cloddy surface is an advantage, being a moderation during the winter from winds. The clods, too, crumble in spring by the action of the weather. Such fine soil is beneficial in making firm the plant after harrowing and rolling in March.

The quantity of seed to sow per acre is im-

portant. In October 2½ bushels is ample; afterwards not less than 3 bushels is advisable. Some persons argue that the latter quantity is too much, the plant cannot tiller properly. That may be so, but I think there is safety in numbers; we must allow a little for birds.

Dressing the seed is important as a safeguard against "smut." Prepared dressings are obtainable from chemists which are little trouble and very effective. A solution of sulphate of copper 1 lb. dissolved in one gallon of water for four bushels of seed, is also a good preparation.

An easy way of preparing the seed is to place as much as is required for one day's sowing the day before on a hard floor, pour the liquid over the seed evenly, turning over the seed twice to thoroughly wet every grain. If done on the same day it is not so easy to sow, either by hand or through the drill. *E. Molyneux, Home Farm, Seacroft Park, Hampshire.*

Obituary.

ELIJAH ASHWORTH.—We learn with deep regret of the death, on the 18th inst., of Mr. Elijah Ashworth, Harefield Hall, Wiltshire. An engineer and machine maker by profession, Mr. Ashworth was an old and enthusiastic Orchidist, and for many years his collection has been one of the most complete in the Manchester district. Some eight or nine houses were devoted to Orchids, each section being well represented and the plants (thoroughly well grown. Mr. Ashworth was chairman of the Manchester and North of England Orchid Society from 1906 to 1911, and has been a member of the Orchid Committee of the Royal Horticultural Society for the past 50 or more years. He has also been an occasional exhibitor in London, and more frequently some years ago in Manchester. Among the more notable plants of his collection for which he gained awards were *Cattleya labiata* Mrs. E. Ashworth, *C. Schobleriana* Harefield Hall variety, *C. Trianoae* Ernest Ashworth, *Dendrobium Ashworthianum*, *D. nodosum* Ashworthianum, and *Trevoria chloris*. He also gained awards for many *Ophrys*-like and other rare Orchids, some of which have been illustrated in these pages.

REPLY.

A GOOD MARKET TOMATO.—*L. (See p. 164)* would find Bude's Rebutil an excellent variety to grow for the markets. It produces trusses of very large size that often bear twenty fruits in a cluster. The fruits are smooth and of medium size, deep red in colour, and of excellent flavour. *E. M.*

ANSWERS TO CORRESPONDENTS.

DRAINAGE FOR A VINE BORDER.—*J. W.* If you cannot obtain broken brick, clinker may be used for drainage purposes in a vine border, being the best substitute available. A well-known grower of pot Vines used to drain his pots with broken clinkers, and the roots of the Vines seemed to thrive better in the clinkers than in the broken crocks that are usually employed. It is not necessary to concrete the bottom of vine borders when the subsoil is sandy. Land drain pipes should, however, be used to carry off any undue excess of moisture. Keep the pipes clear at the outlet to prevent the drain becoming blocked. Agricultural drain pipes with no joints, and 4 inches diameter, should be used.

KINDS AND VARIETIES.—*J. W. H.* The term kind is used to denote distinct vegetables, fruits or flowers; thus Peaches, Apples, Plums and Pears are distinct kinds of fruits. Peas, Cabages and Carrots distinct kinds of vegetables. Varieties indicate the sorts. For example, Alexander and Royal George are varieties of Peaches; Beurre Hardy and Conference varieties of Pears; Blenheim Pippin and Cox's Orange Pippin varieties of Apples.

MUSCAT OF ALEXANDRIA GRAPES: *G. Gray.* Muscat Grapes when ripe should be kept in a dry atmosphere. In mild weather a little air should be admitted through the top ventilators at night, but in cooler weather theinery should be kept closed. At this season, if the Grapes are well ripened, a mean temperature of from 45° to 50° is suitable; excessive fire-heat is harmful, and would cause shrivelling in the berries. Keeping the border on the dry side will not cause shrivelling to the extent some growers imagine; in fact, this trouble may arise when the soil is quite moist, as, for instance, when growing in an outside border. Market growers of Muscat Grapes prefer inside borders, as the roots are then more under control. Shrivelling will often occur through the roots being kept too wet. You do not state whether the border is inside or outside theinery. If outside, it will be advisable to cover it with lights, or corrugated iron sheeting, preferably the former. By the first week in January, even if the Grapes are keeping well, it will be advisable for the good of the vines to cut the bunches and bottle them. Keep them in a dry, dark room, but not in the fruit room proper. Another plan to keep them fresh is to shade the glass to prevent an undue rise in the temperature from sunshine.

NAMES OF PLANTS.—*Correspondents not answered in this issue are requested to be so good as to consult the following number.*

F. Clarke. *Gleditsia triacanthos* (Honey Locust).—*J. N. W., Didsbury.* *Crataegus Crus-galli* (Cock's-spur Thorn).

NAMES OF FRUITS.—*In the naming of fruits, we desire to oblige our correspondents as far as we can, but the task would become too costly and too time-consuming were there no restrictions. Correspondents should observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. The fruits should be just approaching ripeness, and they should be properly numbered, and carefully packed in strong boxes; cardboard is often smashed in the post. A leaf or shoot of each variety is helpful, and in the case of Plums, Potatoes and Nectarines, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. By neglecting these precautions, correspondents add greatly to our labour and run the risk of increased delay and incorrect determination. We do not undertake to send answers through the post, or to return fruits. Fruits and flowering plants must not be sent in the same box. Delay in any case is unavoidable.*

P. C. 1, Duchesse d'Angoulême; 2, Louise Bourne of Jersey; 3, Fearn's Pippin; 4, not recognised; 5, Cox's Orange Pippin; 6, Pear Cadillac.—*J. H.* 1, New Bess Pool; 2, Calville St. Sauveur; 4, Peasgood's Nonesuch; 5, Ramon; 6, Tower of Glammis; 3, Horned-pea Peasman.—*F. S.* 1, Queen Caroline; 2, Radford Beauty; 3, Duke of Devonshire; 4, King of the Pippins; 5, Beurre Superfin; 6, Comte de Lamy.—*H. T.* Brown Beurre (syn. Beurre Gris). *R. D.* 1, Flemish Beauty; 2, decayed; 3, Souvenir du Congrès; 4, Beurre d'Avalon; 5, Doyenné Boussoch; 6, Autumn Bergamot; 7, Beurre Diel; 8, Beurre de Jonghe; 9 and 10, not recognised; 11, Vicar of Winkfield; 12, Mère de Ménage.—*J. S.* Ross Nonpareil; 2, Orange Goff; 3, King of the Pippins; 4, Gloria Mundi; 5, Ecklinville Seedling; 6, Lord Burghley.—*F. H.* 1, Shepherd's Fame; 2, Bess Pool; 3, Scarlet Peasman; 4, Margill; 5, Hounslow Wonder; 6, Winter Hawthornden.—*D. McO.* Greenup (syn. Yorkshire Beauty).

RESIDUE FROM GAS REFINING: *W. R. J.* You should get an analysis of the material from the chemist at the gas works where the residue was obtained. Unless you are assured that the material is not harmful to vegetation we would advise you to make use of it only on experimental lines.

Communications Received. *Mr. W. H. J.*—*R. V. U. R. A. M. B. R.*—*Embour.*—*A. W. F.*—*Capitane Sarda.*—*D. S. H.*—*B. E.*—*M. G. P.*—*A. H. E.*—*F. W. G.*—*W. F. C.*—*W. G. H.*—*G. H. M.*—*A. W. G.*—*C. B.*—*E. L. J.*—*J. R.*—*D. G. R.*—*S. W. W.*—*H. G. G.*—*W. G. H.*—*P. T. L.*—*A. T. H.*—*W. B.*—*G. M. M. J. G.*—*E. T. E.*

MARKETS.

COVENT GARDEN, October 25.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots such as Aralia Sieboldii, Asparagus plumosus, and various ferns with their respective prices per dozen.

Fruit: Average Wholesale Prices.

Table listing various fruits including Almonds, Apples, Apricots, and others with prices per cwt and per bushel.

REMARKS: The market continues to be well supplied with Apples and Pears. Most varieties are in good demand...

DEBATING SOCIETIES.

BATH GARDENERS'. At the meeting of this association held on the 23rd inst., the results of the Potato competition were announced...

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers such as Arums, Carnations, and various orchids with their prices per dozen.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage such as Aspidistra, Ferns, and various plants with their prices per dozen.

REMARKS: Cut flowers are in a somewhat short supply of choice varieties, which are a little more plentiful than last week...

Vegetables: Average Wholesale Prices.

Table listing various vegetables including Artichokes, Beans, Beetroot, and others with their prices per dozen.

SITUATIONS WANTED (Continued from page iii.)

GARDENER (HEAD WORKING), who several are kept, life experience in all branches...

FOREMAN of good SECOND; chiefly English, life experience, Fruit, Plants, &c.; age 30...

GARDENER (SECOND OF SINGLE HANDED); experienced in all garden and greenhouse work...

LADY GARDENER requires post under Head Gardener, good practical experience, English and English preferred...

LADY GARDENER, two years' training requires post, Greenhouse work, under Head Gardener...

TRADE.

MANAGER or FOREMAN, American Trade Cartons, requires engagement; life experience...

MANAGER or FOREMAN; age 51; Special Expert Raising and Growing, London's General Plants, Bulbs, good salesman...

MANAGER or FOREMAN desires re-employment; life experience in up-to-date London and Provincial Nurseries...

PLORISTS and FRUITERS.

Young lady seeks re-employment, 12 years' high class experience; good designer and decorator...

YOUNG LADY requires re-employment shortly as FIRST HAND in Florists' and Seedsman's Business...

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Table showing rates for advertisements: Ordinary Positions, Facing matter and Back Page, 4 line space not exceeding 20 words, etc.

Front page (no display allowed) 1/6 per line space. (Headline counted as two lines.)

SITUATIONS WANTED.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM ... 19 6 per annum. ABROAD ... 22 "

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

GARDENING APPOINTMENTS.

Mr. Charles Shayley, for the past 7 years Gardener of the Royal Parks, Epsom, and previously at St. Albans...

CATALOGUES RECEIVED.

Mr. AMOS PERRY, Enfield, Middlesex, Nov and Dec. Alpines and Bonsais. YOKOHAMA NURSERY Co., Ltd., Craven House, Kingston, London, Japanese miniature gardens.

THE ROCK GARDEN

A practical work on the cultivation and management of Rock Gardens, written by Reginald Farrer. One of the best and most popular works on the subject.

By Special Appointment to



His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

Horticultural Directory and Year Book, 1918.

This Directory is

NOW BEING THOROUGHLY REVISED

in preparation for the new issue, which will be published early in December. Revision Forms have been sent to those whose names appear in

ANY LIST

and every page is being corrected to date. Besides this, many new names are being added. Will those who have not yet sent back their forms kindly do so **AT ONCE**, otherwise it will be too late to make any emendations.

This Directory forms a

FIRST-CLASS MEDIUM FOR ADVERTISEMENTS.

Those who have not yet booked a page in this widely-read publication should send at once for a list of prices.

THE EDITOR, Horticultural Directory, 41, Wellington Street, W.C. 2

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 4010

No. 1610. VOL. LXII. {THIRD SERIES} SATURDAY, NOVEMBER 3, 1917. {Registered as a Newspaper.} {PRICE 4d. POST-FREE, 4d.}

Subscription—Inland, 19 6; Foreign, 22 s per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 175

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

NOW IS THE TIME TO PLANT.

KELWAY & SON,
The Royal Hort. almshouse,
LANGFORD, SOMERSET.
are now holding orders for their Choice Hardy Perennial Plants, Plant a Colour Border this Autumn, and you will be able to enjoy the display for many years without any additional expense of trouble.
Send measurements of your Borders.
Roses, Delphiniums, Phloxes, Galliards, and other beautiful flowers, included in their Colour Schemes, which provide flowers from early Spring to late Autumn.

WRITE NOW to the RETAIL PLANT DEPARTMENT for Reduced Prices List.

GISHURST COMPOUND has over half a century's reputation for its success in protecting and destroying Red Spider, Scale, Mealy Bug, Thrip, Amaryllid Beetle, Green and Brown Fly, and Soft Scale on Lily, Holly, and Laurus, on flowers in Garden, Sundries, Wholesale. **FRICES PATENT CANDLE CO., LTD.**, Battersea, London, S.W. II.

WM. DUNCAN TUCKER & SONS,
LTD., Levenson Road, South Tottenham, N. 17.
Conservatories, Winter Gardens, Amateurs, Panchouses, Portable Buildings, &c. Catalogue gratis.

BARR'S May-flowering **TULIPS**, the finest and most beautiful of spring plants, now in complete list free. **BARR & SONS**, King Street, Covent Garden, W.C. 2.

KING'S ACRE FRUIT TREES have produced the finest and most remarkable Apples and Pears in the world. 500 trees of Choice Fruits, to select from. Please see our Illustrated Catalogue, free by post, before ordering elsewhere. **KING'S ACRE NURSERY**, Epsom, Surrey.

KING'S ACRE ROSES and **FOREST** and **ORNAMENTAL TREES** and **SHRUBS**, of finest quality. Catalogues free by post. **KING'S ACRE NURSERY**, LTD., Hereford.

HOBBISS, LIMITED, Norfolk Nurseries, BERKHAM, send the free Catalogue, post free.

DOBBIE'S Autumn List of Bulbs, Sweet Peas, Roses, Carnations, Seedling and Vegetable Plants, &c., post free. **DOBBIE & CO.**, Royal Fountains, Edinburgh.

GREENHOUSE PAINTING & GLAZING in Colours. Superior to White Lead Paint. "Plastic" waterproof putty. Full particulars from **M. CARSON & SONS**, Grove Works, Battersea. Agents throughout the country.

SUTTON'S BULBS.

FORCING TULIPS from Holland.
2s. 6d. per doz., fine bulbs.

RELEASED by Order of the Admiralty (Messrs. Bell, Watson, Christodou, Contractor of Contracts, The Admiralty, Portsmouth, Lymington, Ly. Ferry, &c.) and the Admiralty, Royal Dockyard, Portsmouth, the following: **THEIR MAJESTIES' VESSELS**, *Blonde, Yellow Prince, and others.* Prices on application.

SUTTON & SONS, the King's Seedsmen, READING.

BUNYARD'S FRUIT TREES.
No. 10, 11, & 12, Eastcheap, and will be sent free on receipt of order.
GEORGE BUNYARD & CO., LTD.,
Royal Nurseries, MAIDSTONE.

THE DIFFERENCE between a good advertisement and a bad one is a frequent subject of discussion among those who are determined to get the most use out of the money they spend on publicity. But, in the end, it resolves itself into the difference between costly failures and poor ones. Those who are advertising cheap goods naturally turn to a journal with an enormous circulation, even though it may be composed of people of indifferent means. But those who supply the demand and the necessities of a good garden know that such a garden presupposes a man or woman of means as the owner, who can afford to buy the garden itself, but a staff of permanent gardeners to tend it. To such a salesman, a journal which reaches to the tens of thousands, or even millions, is small pay, is next to useless. He should turn rather to a journal, such as the "Gardeners' Chronicle," which reaches the right people, the keen professional gardener and the well-to-do amateur. The response of such readers to a well-written advertisement is immediate and satisfactory.

J. GRAY, LTD., Builder of Conservatories, Heating Engineers, 201, Western, London, W. 1. Telephone 201, Western.

BUNYARD'S STRAWBERRIES.
Our new double fruit is now ready, and will be sent on receipt of order.
ALFRED STRAWBERRIES a specialty.
GEORGE BUNYARD & CO., LTD., Royal Nurseries, Maidstone.

SURPLUS FRUIT.—Have you any? If so, write to **H. J. JONES**, Royal Nurseries, Devonham, S.E. 17.

ROSES—ALLEN'S GOLD MEDAL.
NEWBOLD has our new description, price 10s. each. Write today. **A. J. & C. ALLEN**, Rose Growers, Norwich (for over 50 years).

TO the Nobility and Gentry. Fine collection of 8 and 10 ft. Figures, Vases, &c., suitable for all sizes of gardens. **J. GRAY**, 43, Newcom, Road, Bath.

LIGHT Strong, Wooden **FRAMES**, suitable for Fruit Trays, Plant Shelters, Temporary Buildings, Summer-houses, Garden Trolley, Hand Barrows, Farming, Tralls, &c. A large quantity for sale at bargain prices, to clear. Full particulars from **READING WOOD CO.**, Crane Wharf, Reading.

For Advertisement Charges see page v.

WATERER'S ALPINES and **HERBACEOUS PLANTS.**—New Catalogue now ready.

WATERER'S BRITISH GROWN BULBS.—New Catalogue now ready.

WATERER'S WARGRAVE ROSES.—Catalogue and Supplementary List of new and choice varieties now ready.

WATERER'S RHODODENDRONS and **CHOICE SHRUBS.**—Catalogue free. All or any of the above Catalogues forwarded post free on receipt of name and address.
JOHN WATERER, SONS & CRISP, LIMITED.
The Nurseries, Bagshot, Surrey, and Twyford, Berks.

SANDERS, Orchid Growers, 81, Albans.

BATH'S ROSES and **PAEONIES.**—New illustrated catalogue, containing full cultural notes of the best new and standard varieties, is now ready, and will be sent post free on application.—Dept. A, R. H. BATH, LTD., The Floral Farms, Wobech.

BATH'S HOME-GROWN BULBS.—New illustrated catalogue of the finest Narcissi, Tulips, &c., as supplied in the Royal Parks and Gardens, with full cultural directions, is now ready, and will be sent post free on application.—Dept. A, R. H. BATH, LTD., The Floral Farms, Wobech.

BRITISH-GROWN BULBS.
WEBBS' MAY FLOWERING TULIPS.
Finest mixed, 1s. 6d. dozen, 8s. 6d. per 100.

WEBBS' DARWIN TULIPS. Mixed, in choice variety, 1s. 6d., 7s. 6d. per 100.

WEBBS' NARCISSI or **DAFFODILS.**—Choice mixture of double varieties. 1s. per dozen, 7s. per 100. Mixed, all classes, 8s. 6d. per 100.

WEBB & SONS, LTD., The King's Seedsmen, STONBRIDGE.

ARMY BOOTS (reconstructed). Cost Government 22s. 6d., selling now at a bargain price. Specially selected, without a blindish, as good as new, unsupposed for gardening, farming, husbandry, and other work. Single pairs, post free 10s. 6d. (one quality only the best, State size. Money returned if dissatisfied). Special quotations for quantities. **THE THAMES TRADING CO., LTD.** (Army Boots Dept.), 6, Eldon Street, London, E.C. 2.

ARMY BOOTS (reconstructed). A word of advice. Though prices for boots have advanced considerably, we are still supplying at same price and quality. Buy now. **THE THAMES TRADING CO., LTD.**, 6, Eldon Street, London, E.C. 2.

ORCHID PEAT, 7s. 6d. per sack; Rhododendron Peat, free from bracken, 15s. per yard, in 20 yard trucks, bags 20s. dozen, Loam, Leaf Mould, Silver Sand, in bags and truck loads; bags of O.N. Fibre, in four lbs., special prices; special Bulb Compost for bulbs, 8s. bag. **J. HANDSCOMBE**, The Nurseries, Felton, Middlesex.

SALES BY AUCTION.

SHORTLANDS, KENT.

18th Annual Sale

Of exceptionally clean and well-grown Nursery Stock by order of Mr. J. R. Protheroe, who requires the land for replanting.

MESSRS. PROTHEROE & MORRIS will sell by Auction at

The Shortlands Nursery, Ravensbourne Avenue, Shortlands, Kent,
On Wednesday, November 7th, 1917,
at 11 o'clock,

- 3,000 Border Shrubs
- 2,000 Fruit Trees and Bushes
- 2,000 Golden Privet
- 500 Standard and Bush Roses
- 1,000 Ornamental Trees

And quantities of Climbers, Shrublets in Pots, Flowering Shrubs, Alpines, &c.

On view Catalogue 8.10 on premises, at Mr. Bryant's Home Nursery (opposite station), and at the Auctioneers, 67 and 68, Cheapside, E.C. 2.

THE AMERICAN NURSERIES, MILFORD, SURREY.

Clearance Sale by order of the Trustees.

MESSRS. PROTHEROE & MORRIS will sell by Auction on the premises the above.

On Monday, November 12th, at 12 o'clock,
4,000 Rhododendrons, named varieties, 6,000 Potanium, 1 to 5 ft., and 500 Lycopodium seedlings, 7,000 Hardy Heaths, in variety, 350 Hybrid Penstemons, 2,000 oval-leaved Privet, 2 to 4 ft., and 5,000 Quercus, 1 1/2 to 3 ft.
Catalogue can be had on the premises, of Mr. L. R. Russell, The Nurseries, Richmond, Surrey, P. Mason, Esq., 64, Grosvenor Street, E.C. 2, and of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

TUNBRIDGE WELLS.

Expiration of Tenancy. By order of the Trustees. Three days' clearance sale of the well-known stock of Mr. J. R. Protheroe.

MESSRS. PROTHEROE & MORRIS will sell by Auction on the premises.

The Nurseries, Bayham Road, Tunbridge Wells,
In November,

5,000 Japanese Maples, in variety, a special feature at these nurseries; 1,000 Arancaria nigrata, 500 Hamamelis, 3,000 named Rhododendrons, 2 to 4 ft., 3,000 Laurels, 2 to 5 ft., 400 Golden Privet, 2,000 Purple Beech and varieties, 10,000 Common Bees, 1,000 Potted Astragalus, 3 to 4 ft., 1,500 Filberts and Cobnuts, 1,000 Thuja Lobbi, 3,000 Skimmias, 1 to 2 ft., Ornamental and Flowering Shrubs, &c.

May be viewed, Catalogue has to do on the premises, at the Nurseries, Richmond, Surrey, of P. Mason, Esq., Trustee, 64, Grosvenor Street, E.C. 2, or at the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

THE COAL EXCHANGE, MARKET PLACE, MANCHESTER.

Opposite Victoria Hall, Market Place.

MESSRS. PROTHEROE & MORRIS have been instructed by the Revd. J. Cromie-Inch to sell by Auction at the above place,

On Friday, November 16th, 1917,
ABOUT

1,200 CHOICE CYPRIPEDIUMS,

embracing a choice selection of certified and duplicate plants from this well-known collection. The whole are in a fine healthy condition, many being either in flower or buds, giving purchasers a profusion of flowers for immediate effect.

On view morning of sale. Catalogue can be had at the Coal Exchange, also at the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C. 1.

HOME-GROWN BULBS.

GREAT TRADE SALE.

Wednesday Next, November 7th, at 1 o'clock.

upwards of 2,000,000 Bulbs, including Narcissus, in all the best-known varieties for forcing or planting out. Polyanthus Narcissus of sorts, in stocks as received. Early Darwin (many of which will force) and Max-flowering Tulips; many thousands of Snowdrops, Frezias, Scillas, Anemones, Acunites, English and Spanish Iris, early flowering Gladioli, Bearded Iris. Also 75,000 Seeds. Kottia Belariviana and Forsythia, in grand condition.

MESSRS. PROTHEROE & MORRIS will sell the above by Auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2. Catalogues forwarded on application.

BULBS.

MESSRS. PROTHEROE & MORRIS are holding Sales of Bulbs every Monday, Wednesday, and Friday. Sixpence in stamps will ensure a supply of Twelve Catalogues. Commissions excellent. AUCTION ROOMS, 67 and 68, Cheapside, London.

SALE BY AUCTION OF

ROSES ROSES ROSES

Thursday, November 8th, 1917,
and subsequent Thursdays.

MESSRS. PROTHEROE & MORRIS will sell on the premises, at Mr. Bryant's Home Nursery, 67 and 68, Cheapside, E.C. 2.

This sale will comprise six catalogues.

BUSINESSES WANTED.

WANTED, about 20 ACRES good Land, for early and late Vegetable culture, inside 20 mile radius of London; to rent or purchase, grass, arable, or existing small holding much suit. Patterns for Box 822, c/o Smiths, 10, High Holborn, W.C. 1.

WANTED to Rent, NURSERY, suitable for Tomato growing, or would entertain partnership - SPENCER, Vineries, Rayne, Essex

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORISTS' AND SEED BUSINESSES to be Let or Sold, Published by

MESSRS. PROTHEROE & MORRIS every month. Copies may be obtained post free on application. - Estate Offices, 67 and 68 Cheapside, London, E.C.

CAPITAL FRUIT OR MARKET GARDENING, with good small horse, for sale, near Reading; high ground, good markets. Price £1,500. RUSSELL BUTLERS, Reading.

BUSINESS CARD.

BRITISH CORRESPONDENCE SCHOOL OF HORTICULTURE, PENNINGTONS, 254, Oxford Road, Manchester. Complete courses for R.H.S. Senior, Junior, Teachers', and National Diploma of Horticultural Examinations. Fees moderate. - Write, SECRETARY.

BOOK WANTED.

WANTED TO PURCHASE second-hand copies of **NICHOLSON'S "DICTIONARY OF GARDENING."** State Price. "X. Y. Z." Box 21, 41, WELLINGTON STREET, COVENT GARDEN, W.C. 2.

PLANTS, &c., FOR SALE.

ASH, Common, 4-5 ft., 40s.; Beech, Common, 1 1/2 ft., 22s.; Larch, Common, 2 1/2 ft., 20s.; Larch, Common, 3 1/2 ft., 25s.; Larch, Japanese, 4-5 ft., 55s.; Elm, Wych, 4-5 ft., 25s.; Sycamore, Common, 3 1/2 ft., 40s.; Scotch Fir, Native, 1 1/2 ft., 25s.; Scotch Fir, Native, 2 1/2 ft., 30s.; Scotch Fir, Native, 3 1/2 ft., 40s.; Spruce Fir, Norway, 1 1/2 ft., 30s.; Hazel, Common, 3 1/2 ft., 35s.; Oak, English, 2 1/2 ft., 35s.; Rhododendrons, 2 1/2 ft., 140s.; Hardy Heaths in 20 var., our selection, 45 10s. The above all per 1,000. Other Nursery Stock. Catalogue on application. - HENRY DERRYSHIRE & SONS, Darley Hillside Nurseries, near Mallow.

FERNS! FERNS! !-Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, catalogues free. J. F. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

DAFFODILS and large Trumpet Narcissus for grass, shrubbery, and Wild Gardening, 15s. and 21s. 1,800; selected for forcing, 25s. 1,000, as dug, 12s. per basket (2,000), 3s. 6d. per peck (500 bulbs) J. HANDSCOMB, F.R.H.S., Feltham Nurseries, Middlesex.

VIOLA MAGGIE MOTT; quantity cuttings and ready cuttings for disposal. Write offer HARRIS, Kent House, Stipies Road, Loughton, Essex

CHEAP. - HAILSHAM BERRY, ripe canes, fine type, 2s. 5d. doz., 26s. 100, on rail. F. ANTHONY, Rochester, Wickham Market, Suffolk

DUTCH BULBS, MORLE & CO. can be offered first-hand, in large quantities, early Tulips, Scilla sibirica, &c.; stock limited, early application requested. -150-156, Finchley Road, N.W.

RHUBARB ROOTS. The true "Champion" bright scarlet, very productive, planting 15s., 6s. per 100, 50s. per 1,000; roots, with 2 eyes or over, 10s. per 100, 80s. per 1,000; larger roots, 40s. per 100; early planting strongly recommended, on rails, packing free for c.o. HARRISON & SONS, Seed Merchants, Loughbor.

100,000 LARGE GARDEN FERNS, 20s. 100; Polaris, Begonias, Crotons, Dracaenas, Roses, Eucos, Gloxinias, Lilies, Hydrangeas, &c., catalogues free. - J. F. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

PLANTS, &c., WANTED.

WANTED for Cash, ONIONS, Shallots, Apples, Tomatos, Carrots, Jerusalem Artichokes, State Price, free on rail, and quantity, with samples. - THOS. DAVIES & CO., Seed Merchants, Waverley, Liverpool.

WANTED, 1,000 Large ASPIDISTRAS, old plants, suitable for stock; cash or exchange. See other advertisements; catalogues free. - SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

WANTED, 500 square feet WOOD LATH BLINDS for outside shading; near London. - Write, A. R., Box 22, 41, Wellington Street, Covent Garden, W.C. 2.

MISCELLANEOUS.

THEY NEVER FAIL TO KEEP YOU DRY.

If you write to-day for the "Beacon Booklet," you are on the way to weather comfort. It shows many different styles in BEACON OHSKINS, and it will show you the coat that you want. Children's Coats 10s. 6d. uppers, Men's from 10s. 6d., Ladies' Smart Ohskins, 21s. Long Leggings from 5s. Sou'westers from 1s. 9d. They always keep out the wet. Send p.c. to-day for our Free Booklet of "Weather Build," describing money-back guarantee. - Send now before your target - to BARKBOYS, LTD., 65, BEACON BUILDINGS, SOUTH SHIELDS. (4)

LANG'S "IDEAL" MANURE for Fruit, Flowers, and Vegetables, 12s. 6d. per cwt., £10 10s. per ton, cartage paid. - G. LANG & SONS, LTD., Hounslow, Middlesex.

"PESTITE" destroys all soil pests (wireworms, grub-rot, wart disease, &c.) and promotes vigorous growth. Price 10s. 6d. per cwt., £5 per ton, cartage paid. - G. LANG & SONS, LTD., Hounslow, Middlesex.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipcord Twines, secures like leather; sheep-proof; 7 yards for 17s. 6d. Patterns free. BRADFORD WOOLLEN CO., 74, Bradford.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line. Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient. Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand. Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

HEAD GARDENER. APPLICATIONS are invited for the position of Head Gardener to the Eastbourne Corporation. Salary, £2 12s. per week, plus 10s. wa bonus. Particulars of duties, &c., to be obtained from the office of the Borough Engineer, Town Hall, Eastbourne, to whom applications must be sent by Wednesday, the 21st day of November, 1917.

WANTED at once, **WORKING HEAD GARDENER**, where three or four are kept; must be thoroughly experienced and have first-rate references; good wages and excellent lodging, coal and vegetables. - Apply, first by letter, MRS. REID, The Oaks, Walton Heath, Tadworth, Surrey.

WANTED, HEAD WORKING GARDENER, thoroughly practical and well up in all branches of Gardening; free man and boy kept; wages 50s to 55s per week, cottage, &c. - Apply, fully stating if wife can help in house occasionally, and number of children, W. D., Box 10, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, good all-round SINGLE-HANDED GARDENER for Somerset; must be intelligible. - Write, D. A., Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, a GARDENER (SINGLE) - Inside and out, good wages. Apply in writing with references, to E. OSBORN, Gardeners, 100, Shaftesbury.

WANTED, GARDENER, for Vegetables in Fruit and Outdoor Gardens, one man under, good wages and garden. - H. M. POWELL, Esq., Wincley Park, Epsom.

WANTED, a WORKING GARDENER; - Glass and 1 one of Kitchen Garden; cottage, State wages and 1 experience. - MABLEE, Buntingford, Beds.

WANTED, a GARDENER. - Apply, with particulars, to the House, 104, Southgate, N. 14.

GROOM-GARDENER required shortly; change of duties; position and assist in outside, main or common, must be experienced in stable duties. MISS MEADE WALTON, Hovey, Kent.

WANTED, good SECOND GARDENER, - these four or five are kept, must be well up in heavy work, single man position, no large available on estate. Write full particulars to W. A. J. ROBERTSON, Court, near Dover (4 miles).

WANTED, a good practical MAN to assist in all kinds of Horticulture, salary 25s. per week and house. State full particulars to JACKSON & ROBINSON, The King's Schoolman, Manchester.

WANTED, elderly MAN, as Second GARDENER, inside and out, in house and garden and garden. Apply, state age and wages, to SKINNER, Court House, Colgate, Rippon, Yorkshire.

WANTED, a MAN for Outside Garden work, able to take duty. State age, full particulars, particulars of experience. - H. RIMM, Priory Gardens, Reigate.

WANTED, MAN, single, ineligible, for Kitchen Garden work and out, in steady terms, light to moderate wages. - H. H. DENNIS, Leighton Park Gardens, Wotton.

WANTED, experienced SECOND GARDENER, one side only, inside and out, wages and stage given to suitable man. Apply, to JOHN THE LODGE, Fardon Road, Bishops.

WANTED at once, UNDER GARDENER, single, ineligible, aged 30 to 35, experienced, and wages paid to SHAW, Shortland Estate Office, Mayfield, Sussex.

WANTED, UNDER GARDENER; experienced, wages, Mrs. ARHAM, 10, St. George, W. 11, Hill, Middlesex.

WANTED, UNDER GARDENER; ineligible, if married, but not preferred, aged 40 to 45, work. Apply, RISE, 10, St. George, W. 11, Hill, London, W. 11.

WANTED, FOREMAN (INSIDE); ineligible, if married, but not preferred, wages, Mrs. ARHAM, 10, St. George, W. 11, Hill, Middlesex.

WANTED, FOREMAN; single, good experience, in all kinds of Horticulture, also full REYNARD, 10, St. George, W. 11, Hill, Middlesex, to C. EARL, 8, Mansfield Road, London, W. 1.

WANTED, ORCHID FOREMAN; large establishment, single, ineligible. Write, state age, experience, wages required, to Mrs. J. H. C. B. Box 2, 41, Wellington Street, Covent Garden, W. 2.

WANTED, GENERAL FOREMAN; ineligible, if married, but not preferred, wages, Mrs. J. H. C. B. Box 2, 41, Wellington Street, Covent Garden, W. 2.

WANTED, JOURNEYMAN (ineligible) or strong IMPROVER; for Inside and out, wages 25s. per week and both, day and night part. H. A. PAGE, The Gardens, Balize Court, Hampstead, N.W. 3.

WANTED, TWO JOURNEYMEN; - Plant and Fruit Houses, disengaged or ineligible, with good experience, in all kinds of Horticulture, inside and out, wages, Mrs. J. H. C. B. Box 2, 41, Wellington Street, Covent Garden, W. 2.

WANTED, IMPROVER; Inside Houses; aged 16, wages 15s. weekly, with both, vegetables, fruit. E. WILKIN, Wisland Hall Gardens, near Hull.

WANTED, FOREWOMAN; take charge of House, assist in all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

WANTED, LADY thoroughly up in Horticulture, to assist in all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

LADY GARDENER required; Single-handed; help for rough work, empty cottage or rooms, provided, good wages, full particulars. Mrs. ROBINSON, The Cottage, East Hampstead, Wokingham, Berks.

WANTED, LADY GARDENER; experienced Inside and Out, day and night part, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

WANTED, TWO LADY GARDENERS; for Inside, under Fruit trees, Berks and wages 15s. per week, aged 30 to 40. Full particulars to M. NICHOLS, The Gardens, St. Clare, Kensing, near Sevenoaks, Kent.

WANTED, TWO LADY UNDER GARDENERS; with some experience, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

WANTED, TWO LADY GARDENERS; for Inside, under Fruit trees, Berks and wages 15s. per week, aged 30 to 40. Full particulars to M. NICHOLS, The Gardens, St. Clare, Kensing, near Sevenoaks, Kent.

LADY GARDENERS Wanted; all suited for all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

LADY UNDER GARDENER required for all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

WANTED, TWO LADY UNDER GARDENERS; for Inside, under Fruit trees, Berks and wages 15s. per week, aged 30 to 40. Full particulars to M. NICHOLS, The Gardens, St. Clare, Kensing, near Sevenoaks, Kent.

LADY SCOTT requires responsible CARE; for all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

WANTED, middle-aged LABOURER; for all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

TRADE.

WANTED, CHARGE HAND, under all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

WANTED at once, an ineligible, practical, and experienced MAN, in charge of Nurseries, Propagation, and all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

WANTED, a MAN used to Potting and all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

WANTED, MAN, quiet, at Potting (Fruit and all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny).

WANTED, a capable MAN, for Market Nurseries, in all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

WANTED, experienced ASSISTANTS, in all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

WANTED, LADY FLORIST; take charge of all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

FLORIST. - Young LADY required for all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

SITUATIONS WANTED.

Twenty-six words for 1/8, and 6d. for each succeeding eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. (On account should they enter into communication with unknown correspondents who require a fee beforehand.)

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

A GENTLEMAN wishes to recommend his HEAD GARDENER and BALLIFF, his experience in all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

GARDENER (HEAD), BALLIFF, or all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

GARDENER (HEAD). - A Gentleman very highly recommended, in all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

HEAD GARDENER requires permanent position in well established and well equipped establishment, in all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

HEAD GARDENER, where several are kept, 25 years' experience in good establishments, in all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

GARDENER (HEAD) desires Re-engagement in good establishment, age 35; thorough knowledge of all branches. Please state wages and full particulars to W. EAST, 17, Brunswick Road, Edgware, London, W. 11.

ADVERTISER seeks Situation as HEAD in charge of Gardens or Estate; private or public; of all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

HEAD WORKING GARDENER seeks re-engagement where several are employed; 24 years' practical experience, in all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

GARDENER (HEAD WORKING), where several are kept, all round experience, married, in all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

GARDENER (HEAD WORKING) requires re-engagement. His experience, 10 years as Head, in all kinds of Horticulture, in all kinds of Horticulture, and applications to T. E. DOWLING, Debenhams, Tottenham, Co. Kilkenny.

SITUATIONS WANTED continued on page 112.

"Bull's"

THE FOOD FOR PLANTS

ROSES FOR AUTUMN PLANTING

ORDER EARLY.

Beautiful plants of the best possible cultivation, our selection from the finest sorts including:—
The Brilliant Coloured

"MDME. EDOUARD HERRIOT"
(Daily Mail Rose.)

12/- per doz. bushes, carriage paid.

Catalogue Free on request.

STUART LOW CO., BUSH HILL PARK,
MIDDLESEX.

FRUIT TREES.

SPECIAL OFFER.

Exceedingly well grown Fruit-bearing
Apples and Pears.

Standards, stout stem, fine head	Each	Dozen
Dwarf Trained, very fine	3/- & 3/6	33/- & 40/-
Pyramid, very fine	3/6	42/-
	3/- & 3/6	33/- & 40/-

ALSO A VERY FINE STOCK OF

Peaches, Apricots, Plums, Cherries,
Currants, Gooseberries, Loganberries,
Extra Strong Fruiting Vines in variety, 7/6 each.

Catalogues Post Free.

ROSES in all the leading varieties. Climbers,
Standards and Dwarfs.

Catalogue Free.

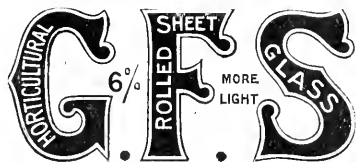
ALFRED A. WALTERS & SON,
NURSERYMEN and Fruit Tree Growers, BATH.

H. WOOLMAN'S

Chrysanthemum Catalogue.

Now Ready. Post Free.

From SANDY HILL NURSERY,
SHIRLEY, near BIRMINGHAM.



A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/8 in. (or equal to stout 21 oz.) in thickness. Can be supplied to buyers' size, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of

GENUINE
WHITE LEAD
PAINT.

"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cases.

AND
BEST
LINED OIL
PUTTY.

Complete Price List of

Paints, Colours, Varnishes, &c., on application.



GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.

LAXTONS BEDFORD FRUIT TREES & ROSES

CATALOGUE & CULTURAL
HINTS GRATIS

IMPORTANT: Please write for a Catalogue,
and the Paper Commissioned only
allow us to send to those who apply—
LAXTON BROTHERS, BEDFORD.

TURF LOAM.

Very Fibrous Yellow Turf Loam

For FINE BORDERS, CARNATIONS,
ROSES, MELONS, CHRYSANTHEMUMS,
FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid or Delivered.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.

Write for this
FREE BOOKLET
and avoid all drainage troubles



with pot plants. It explains also the porosity, root-roomsness, and cleanliness of CRET POTS, of importance to all gardeners. FREE SAMPLE CRET pot also on request. Write to—
PETER BAILEY & SONS Ltd
2 Heaton Mersey Pottery,
near Manchester.

AUCUBA JAPONICA.

RHODODENDRON PONTICUM.
RHODODENDRON PINK PEARL.
(Finest Named Hybrids.)

All the above 3ft. to 4ft. bushy, good plants for Coverd Planting. Must be sold, cheap, to make room for potatoes. If not disposed of must be burned.—A BARGAIN!

Particulars from—

R. MANSON, Nurseryman, Gateacre,
LIVERPOOL.

RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges,
AND
Orchard House Trees
ARE OF
First-class Quality.

A Large and Select Stock always on View.

PRICE LIST POST FREE ON
APPLICATION.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.

FRUIT IN THE GARDEN.

Root up useless shade trees and unproductive Shrubs, and replace with Fruit in these times, when food is all important.

Specially grown trees of

APPLES, PEARS, PLUMS,

of fine quality for the Walls, Edging or Vegetable and Flower Borders. Many of fruiting size. Also

FINE STANDARD TREES

A grand lot of Peaches, Nectarines and Cherries for the House and Garden Walls, also

BUSH FRUIT TREES.

Catalogue free on request and special quotations given on hearing exact requirements.

STUART LOW CO., BUSH HILL PARK,
MIDDLESEX.

SUBSTITUTE FOR RUSSIA MATS. "FRIGI" DOMO CANVAS.

Made from prepared Hair and Wool

A good non-conductor.
2yds., 3yds., and 4yds. wide.

Price and pattern from—

BENJAMIN EDGINGTON'S,
DUKE ST., LONDON BRIDGE, S.E.

BLACK CURRANT BUD MITE.

Are your bushes free of this incurable pest? If not Plant "SEABROOK'S BLACK" Currant, the only proved mite resister. This variety has also every other good quality, being the heaviest cropper and stoutest grower, producing large, firm berries

Young Bushes 6/- and 8/- per dozen.
W. SEABROOK & SONS,

Fruit Tree & Rose Nurseries, CHELMSFORD.

SANKEY'S FAMOUS GARDEN POTS

The BEST and Cheapest.

*Large quantities of each size required are handled. Delivery made on condition ("carriage") conveniently amounts to half value of goods. Write for Price List, free of charge. All sizes of all descriptions. Globe Pots and Fern Pots from 2d. each.

RICHARD SANKEY & SON, LTD.
Bulwell Potteries, NOTTINGHAM.

CHEALS' NURSERIES.

ORNAMENTAL TREES, SHRUBS,
ROSES, FRUIT TREES, &c., in
immense quantities and in the pink
of condition.

Send for Catalogue to—

J. CHEAL & SONS, Ltd.,
The Nurseries, Crawley.

SALE OF SURPLUS STOCK.

We still hold certain small stocks of
Garden Seats, Garden Engines and Pumps, also
Garden Rollers, Water Carts, Garden Arches
and Hand Lights,
which we shall be pleased to clear at special prices, subject
to being unsold.

Particulars on application,
BOULTON & PAUL, Ltd., ROSE LANE WORKS
NORWICH.

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties.

STOVE and GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

THE
Gardeners' Chronicle
No. 1610.—SATURDAY, NOVEMBER 3, 1917

CONTENTS.

Actinidia arguta fruiting	142	Orchid notes—con.:	
Alpine garden, the—		Sophro-Laelio-atlaya	
Bianthus lindavii	177	Marion	176
Apple, the heaviest	182	Peach, the double	
Apples and Pears, old varieties of	182	Bowered..	181
Aspidistra horticulture	181	Plant-for carpeting brick	175
Farm, crops and stock on the home	183	Public	182
Food production, on increased—		Potatoes, Black Leg disease of—	182
Allotments in Belfast	175	Potatoes, early	182
Gardeners as vegetable cooks	178	Robins in Monmouthshire	182
Potato blight, effect on crop of removing	178	Rose American Pillar, origin of	182
Potatoes, a second crop of	178	Societies—	
Gaul, Mr. Alfred, retirement of	182	Manchester and North of England Orchard	182
Harris, Mr. Frank	181	Royal Horticultural (Scientific Committee)	182
Letters from soldier-gardeners	177	Royal Hort. of Aberdeen	183
Marrow Kale, to cook	182	Week's work, the—	
Outwary		Flower garden, the	179
Smith, Worthington G., 180		Fruits under glass	179
Orchid notes and gleanings—		Hardy fruit garden, the	178
Laelio-cattleya Battle-Fournier	176	Kitchen garden, the	178
		Orchid houses, the	179
		Plants under glass	179
		Wheat, supplies of seed	184

ILLUSTRATIONS.

Berberis polyantha, fruiting spray of	182
Pergola	174, 177
Smith, the late Worthington G., portrait of	180
Smith, the late Worthington G., sketching under difficulties	181

PERGOLAS,*

THE pergola was evolved as a matter of necessity in the blazing gardens of the East; the shade giving grape vine being a perfect means to hand. It is evident that the vine played the chief part in the origin of the pergola, but how long ago no one can tell. China has ancient records bearing on the matter, but for sheer antiquity it is hard to beat the representations in Egyptian hieroglyphics, which suggest with some accuracy the form of the pergola of today. What is in effect the cross section of a vine-clad pergola occurs as a decorative idea in many places. Notable examples are furnished on friezes unearthed from the ruins of Pompeii and Herculaneum.

Trellises of fruit trees and vines were employed to temper the sunshine in Roman gardens, while later, but centuries before the general adoption of decorative gardens in this country, pergolas and pavilions, tunnels and arched hedges, were de vogue in Italy.

Mr. Imigo Tricci, in one of his excellent books, quotes Crescenzi, the Italian garden designer of the 15th century, who wrote of his pergola of vines as follows: "As in trees of this kind shade is sought rather than the fruit, they must not be too thick, and care should be taken that the trees be neither too many nor grow too thickly, because the shutting off of the air corrupts the health of the place, also because the garden requires a free current of air."

That was written nearly 700 years ago. In the Renaissance gardens of Italy, a century or so later, pergolas attained the zenith of extravagant elaboration.

The history of the pergola in England is linked up with that of trellis arbours, galler walls, pleached alleys, and the like, which from early Tudor days onwards have been familiar features in fine gardens. The one and as far as I know the only book in England devoted to this particular subject, is *Smicason's Book of Pergolas*, published early in the 17th century. The word pergola was formerly used chiefly in the significance of the Latin "pergula," meaning a shelter or covering, rather than to describe the hairy garden arbour which now monopolises the term. The expression pergola is noticeably absent from John Evelyn's outline of the magnanimous plan of a garden art which he projected but did not write. Every other convey-

able detail seems to be named in the summary he prepared.

The great revolution which overwhelmed gardeners in the 18th century would have been scarcely practicable if shade had been in imperative condition in the enjoyment of an English garden. The climate, however, did not avail to save any of the shade giving features which favoured formal design. The system of gardening which succeeded and remained in vogue for a century or so, in which straight lines found no place, offered little use for the pergola. An important outcome of informal landscape gardening, however, was the stimulus given to the production

of a pergola which is a straight, exposed, and frequented thoroughfare. A pergola enclosure should be in an accessible part of the garden convenient as a resort. A pergola should not be placed where it is of little use from the practical standpoint.

However charming it may be, and however liberal its wealth of flowers, it does not follow that the addition of a pergola to the large garden pictures is necessarily good. It may be quite otherwise unless it forms part of a considered composition. If it is true in respect of an entirely new garden it is clear that the addition of

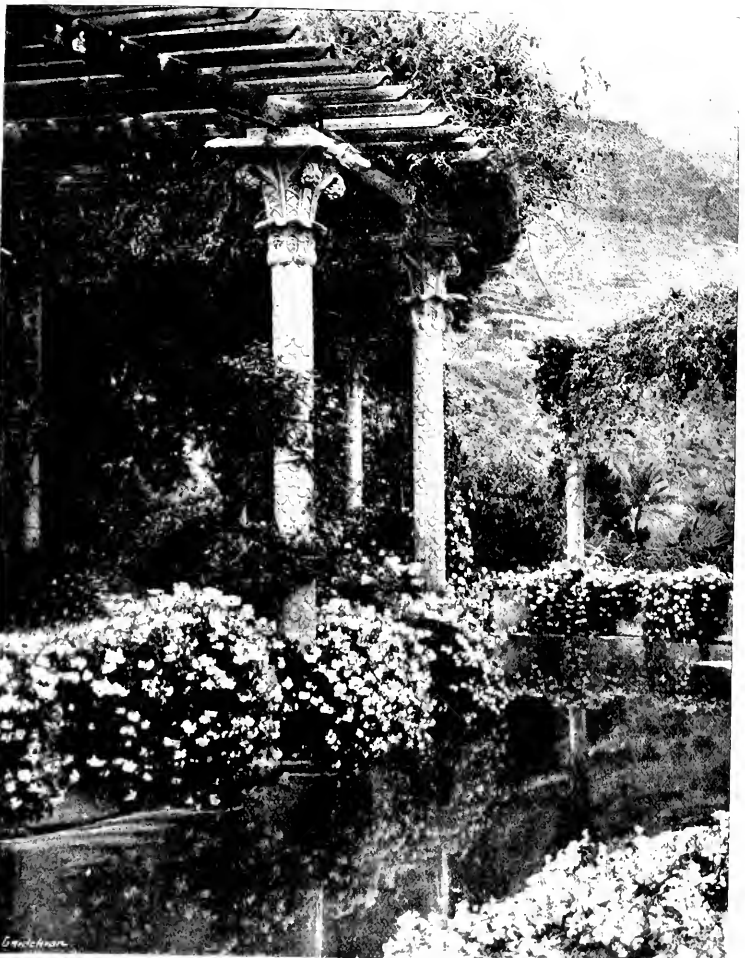


FIG. 66.—PART OF AN ITALIAN PERGOLA.

and discovery of new trees and shrubs, and the interest developed in individual plants. These naturally included many fine climbing plants which need some convenient support.

The requirement has been met in the type of garden architecture evolved during the last quarter century, in which the pergola has been so justified that it is now as securely established in English garden design as if the shade it gives were an indispensable necessity.

But it should be remembered that the raison d'être of a pergola is to provide a shady walk, or, at all events, to afford shade where desired, and it should consequently be placed where this pur-

pose is best served in the scheme of the garden.

The most obvious position is a straight, exposed, and frequented thoroughfare. A pergola enclosure should be in an accessible part of the garden convenient as a resort. A pergola should not be placed where it is of little use from the practical standpoint. However charming it may be, and however liberal its wealth of flowers, it does not follow that the addition of a pergola to the large garden pictures is necessarily good. It may be quite otherwise unless it forms part of a considered composition. If it is true in respect of an entirely new garden it is clear that the addition of

* Lecture by Mr. Edward White at a meeting of the Royal Horticultural Society, October 23, 1917.

part of it. The material used for the latter should therefore be carefully chosen in order that it may appear to bind the piers together, and so assist the sense of unity and repose.

The appearance should be substantial and comfortably permanent in effect, but the grace of some pergolas is sometimes compromised by too heavy piers. Seclusion and quietness are desirable for pergolas intended to be used as arbours. A pergola should not unnecessarily monopolise the garden landscape, although it is sometimes a useful device for masking the poverty of an outlook.

When a pergola is placed on the central axis of a garden view the garden is cut in half, and this should not be done without full justification.

The effect of colonnading has an artistic value which is unique in architecture, and is independent of style. Partially clothed columns of a pergola with beams overhead bearing masses of foliage of varying density lend themselves to mending experiment in perspective, and in the play of light and shade. These are factors of too much value to be left to chance. Those who get great enjoyment in a garden by discovering every picture it has to offer, will always pause on the threshold of a well-made pergola in anticipation of the pleasing effects of the lights and shadows. The management of these effects is a difficult art, but the material with which one has to deal—the branches of the plants and the foliage—is amenable to discipline.

One understands and appreciates the importance of perspective effects in the corridors of a house. A pergola offers opportunities of equal value, which, rightly used, dispose of a not uncommon suggestion that it is chiefly worth seeing from the outside.

From an architectural standpoint the pergola is often invaluable as an aid to composition and a means for giving variety in outline, continuity, connection, and other special qualities which it is desired to accentuate. It is specially important as a means of unifying the house and garden.

In fixing a position for a pergola, therefore, one has to consider its practical utility as a shady walk, its relation to the house, and its influence upon the principal garden pictures.

A garden which is well planned generally offers a natural site for a pergola. The most common opportunity lies in the extension of a terrace walk terminating in a garden house or arbour, or working up to some climax at a change of axis.

Excellent effects may be obtained in the fashion of the old gallery walks, by completely enclosing the sides of a formal garden, a Rose garden, or croquet lawn, or some such symmetrical feature. A tennis lawn should not be so enclosed, as the light is spoiled for playing. An ugly wall may often be transformed by building a pergola against it. Conventional situations are easily recognised and are generally available, and wider opportunities may be created with the aid of a little imagination.

A pergola is too rarely associated with water, in which the reflection gives such delightful results. Instances may be quoted of a straight canal flanked by pergolas and connected at the head by a bridge pavilion, of a large pond encircled by a pergola with a fine fountain in the centre, of a square pond with arbours at the corners linked together by pergolas. A charming view is presented by a pergola on the north side of a large pond sheltered by a wood and leading up to a boathouse.

At Marden Park, Surrey, where the slope of a hill was retained by means of a high brick wall, a potential eyesore was transformed into a thing of beauty by the addition of a pergola. A balustrade which protected a walk at the top made an unusual and effective addition.

A pergola is generally well placed where it overlooks a wide view at the summit of a series of terraces. A note of character is given to a pergola from which the ground falls on one side, affording opportunities for steps or dry walling.

A pergola of considerable length is generally improved by variation in what one may call the

roof lines, by a domed section, for instance, over a part arranged for seats.

When the situation of the feature and its relation to the garden scheme are decided, one has to consider the design and details of construction, and subsequently the important question of planting. If the pergola is associated with the house or some other building the design and materials should be in architectural agreement. Timber work is at times quite appropriate to such conditions.

A special essay would be necessary to deal fully with the architectural possibilities and problems of the question. I will not attempt more than a few general remarks on the subject.

The degree of refined workmanship is decided by the style of the house, but the material may be more roughly worked. Columns may be built of many kinds of material, building stone, bricks, roofing-tiles, concrete, and so forth, in addition to wood. Ironwork is not altogether desirable, but it is possible to counteract the effects of contact between the metal and stems of plants by tying on wooden fenders. The occasional practice of haying marble or other such columns from a dismantled mansion for use in a garden is not to be recommended, except for very unusual circumstances. I know three people who have such sets, bought on impulse, and proved useless.

Roughly sawn Oak and Teak are the most suitable timbers for columns. Larch of sufficient sizes is good for rustic work. Scots Fir and Spruce are not lasting. Those pergolas which collapse as soon as the plants which clothe it are arriving at perfection prove a great disappointment, as is one which has to be painted at intervals, and needs stripping for the operation.

It is not worth while to elaborate the architectural details of stone or brickwork intended largely to be covered with foliage. As, however, the columns should be left exposed to an appreciable extent, the colour and texture of the material are important considerations. Needless to say, they must be handled in a craftsman-like manner.

Common stock bricks are ugly in shape and size and very often in tone, and their unnecessary use has often given to a well-planned pergola a commonplace appearance. The pleasant tone which is so much admired in old Tudor bricks may be reproduced by employing selected hand-made English bricks of small size. These are procurable in a soft red colour, which tones well with a warm purple brick, skilfully blended. Delightful effects of light and shade are given by such bricks and accentuated by building with wide mortar joints.

In districts in which building stone can be obtained local material is generally used. Excellent effects are produced by thin laminated stone with rough edges and surfaces, built with the mortar joints well set back, after the fashion of dry walling. A good deal of ingenuity is sometimes expended in making pathwork of local material, bricks, stones, tiles, concrete and such like. Such work needs to be done by a craftsman, with a sense of unity and complete mastery of material, otherwise a laboured and affected appearance results, which is exactly the opposite of the intention. Good work may be done with concrete (sometimes rough casted and tinted), with roofing tiles, fused red and purple brick burrs, and various other building material.

The piers of a pergola are required to sustain the combined burden of the wooden beams and the planting. The business of the beams is to tie together and strengthen the piers, as well as to carry the planting. The piers and timbers must be strong enough for their work, but if they are disproportionately large they will look clumsy. Heavy work is occasionally needed for architectural effect, and it may also be justified by the considerable length of a pergola. Otherwise the effect is more graceful if the material appears just comfortably strong, and no more. This is especially the case in respect of circular piers. One must, of course, concede something

to the semblance of weight in a great mass of foliage.

The following dimensions may be taken as a working average:—

Brickwork piers, 14 inches square; stone piers, 13 inches, varying with quality and size of stone; solid circular stone columns, 12 inches diameter; Oak or Teak uprights, 11 inches square. These are calculated to carry 10-inch by 8-inch longitudinal timbers, and 7-inch by 5-inch transverse beams. The piers are assumed to be 12 feet apart lengthways, 8 feet 6 inches high, and 10 feet from centre to centre in the width of the pergola. These are suggested as minimum dimensions where considerable strength and permanency are desired. The size of the timber may perhaps be increased to advantage so far as appearance is concerned.

The importance of sufficient width cannot be overrated—it makes the whole difference to the comfort and consequent enjoyment of the pergola.

It should be taken as a rule that the breadth should exceed the height, and the distance of the piers lengthwise be greater than the width. The length of the pergola naturally affects the proportions throughout.

Needless to say, the piers must rest on firm foundations. Timber uprights should be charred or treated with preservative. The longitudinal beams may be built into the top of the piers, and the cross pieces should project a foot or so over the sides. It is also better to cut the latter with an upward curve in the middle, as straight transverse beams seen in perspective have the appearance of sagging in the centre.

(To be concluded.)

ORCHID NOTES AND CLEANINGS.

LÆLIO CUTTLEYA BERTHE FOURNIER.

ON August 15, 1899, Mons. Chas. Maron received the R.H.S. Award of Merit for a hybrid under the above name, the record given being *L.C. elegans* × *C. Dowiana aurea*. The record was provisionally accepted, and the picture marked "Probably *L.C. Schilleriana* × *C. Dowiana aurea*," that natural hybrid being formerly confounded in gardens with *L.C. elegans*. The correctness of the supposition was proved when in 1905 and subsequently Lieut. Col. Sir. Geo. L. Holford, K.C.V.O., showed specimens, and received Certificates for the cross raised in his collection between *L.C. elegans* and *C. Dowiana aurea*. The Westonbirt hybrids were quite different from the plant first shown by Mons. Maron, which now comes under *L.C. Lucilia* (*L.C. Schilleriana* × *C. Dowiana aurea*), for which Messrs. Jas. Veitch and Sons received an Award of Merit, June 13, 1899. A very interesting plant, part of Mons. Maron's original specimen, purchased from the late Mr. Tracy's collection, is in flower with Dr. Miguel Lacroze, Bynndir, Rochampton. The flower is over 7 inches across, silver-white tinged with rose, and the lip has a primrose-yellow centre and light purple front.

SOPHIRO LÆLIO CUTTLEYA MARION.

ERNEST R. ASHTON, Esq., Broadlands, Camden Park, Tunbridge Wells, sends us a two-flowered inflorescence of this very brightly coloured new hybrid from Sophiro-Cuttleya Thwaitesii (*C. Mendelii* × *S. grandiflora*) and Lælio-Cuttleya eximia (*C. Warneri* × *L. purpurata*). The flowers are 4 inches across, the petals being 1 inch wide, and in shape nearest to the *Laelia* parent. The sepals and petals are deep rosy-nauve, with an underlying shade of scarlet and a slight violet tint. The lip has a tubular base, and is coloured sulphur yellow, with thin, purple lines extending into the front, which, with the front part of the side lobes, is dark ruby red, the contrast between the front and the base being very striking. The column, which is very fleshy, is white with a purple band on the upper surface.

LETTERS FROM SOLDIER-GARDENERS.

WHAT WE CAN LEARN FROM FRANCE.

FROM the French cottage gardener I have gleaned many useful hints in intensive cultivation, but what I wish now to point out is where gardeners may learn much from the Army, though there is also the other side, that we, as gardeners and organisers of labour, could teach the Army a good deal in economic management, as we could also teach French gardeners much of value in horticulture. I say this without insular prejudice, from which I am, I believe, comparatively free.

Take the matter of dug outs, for example. We might easily make use of this method for providing a store-house for roots, and even, I think, for fruit, while such places would provide a certain amount of natural warmth for a Mushroom house or a forcing cellar for Rhubarb, Sea-kale, and Chicory; also for putting bulbs in pots or boxes, which, I imagine, would be quite as well as plunging them in ashes. Such a dug-out would also, I think, serve for retarding many flowering plants. If the entrance were sloped we might easily construct a small bogey running on wooden rails similar to that the Royal Engineers use for bringing out the bags of chalk. This would make the labour of moving plants, roots, and other products a simple one. Of course, most of the ideas I now give must of necessity be merely suggestive, for so far I have had no means of testing their utility or practicability.

The system we have out here of nanking beds of wire netting would do well for fruit storage if the netting were covered with canvas or felt, or even with straw. The beds consist merely of frameworks of rough wood, over which is tightly stretched wire netting, and they are often made in tiers of two or three. I can vouch for their being effective as beds, for I have slept as soundly on them as on any feather bed.

Another thing which might prove useful in a garden is the canvas shed, such as is frequently used for latrines. It is merely a skeleton house of wood covered with corrugated iron, and the walls formed by stretching canvas round the woodwork. These would be very useful as shelters during rainy weather, and, being portable or easily erected, they could be used for potting Strawberries and Chrysanthemums on the spot, for making cuttings, pot washing, storing soil, and for general use in wet weather, or in winter for partial protection for plants in tubs. Then there are the corrugated huts, or what are known as French dug-outs, or when covered with sand-bags as "white elephants." These French dug-outs are formed of two pieces of thick corrugated iron, the corrugations being about 6 inches deep. Each piece forms 3/4 of an absolute of a cylinder, I believe, I am right in describing as a quadrant. The two when set together and joined at the top form a semi-circle, the height in the centre being about 7 feet. They are set on a strong angle-iron, which in turn rests solidly on a thick padding of wood. They are neatly coupled together at the top so as to be perfectly watertight, and when white-washed give a fair amount of light. One end is provided with a doorway, and at the other there is a ventilation shaft, which usually serves the purpose of an opening for the chimney of a stove. For obvious reasons they have no window, and are heavily sand-bagged. A dry wooden flooring can easily be arranged. They are easily set up and taken down, and given a good board flooring provide a very good office. It seems so to me when I see these white elephants that we could here happily combine the useful and the beautiful. I picture to myself a dug-out of this description set up and then covered with rock stones so as to combine a wall garden and rock garden, so that only the door at one end and window at the other are visible, the rest being a miniature rock and wall garden. I can imagine the rock garden artist of the future wishing to form a mound of some height. He

would first of all put in his French dug-out, and then cover it with soil and rocks, leaving an entrance and wind-up space. The rock garden enthusiast could then use this for a store-house or study, or as a cool retreat in summer, practically amidst his beautiful rock plants. It could be made quite non-descriptive, and would form a quiet haunt or a nice summer tea house.

A structure of rock we may call it, would serve for a cheap yet clean and healthy loby. I know one of this description which is roughly 12 feet long and about 9 feet wide, where two officers are quite happy and contented. Each

THE ALPINE GARDEN.

DIANTHUS LINDSAYI

IT is a little surprising to observe from the latest issue of the R.H.S. *Journal* that the hybrid Pink raised by the late Mr. Robert Lindsay, of Kaimies Lodge, Edinburgh, proves so difficult to keep through the winter at Wisley. It is troublesome in this way in the West of Scotland, doing much better in the East, where there is considerably less humidity, but one would have expected

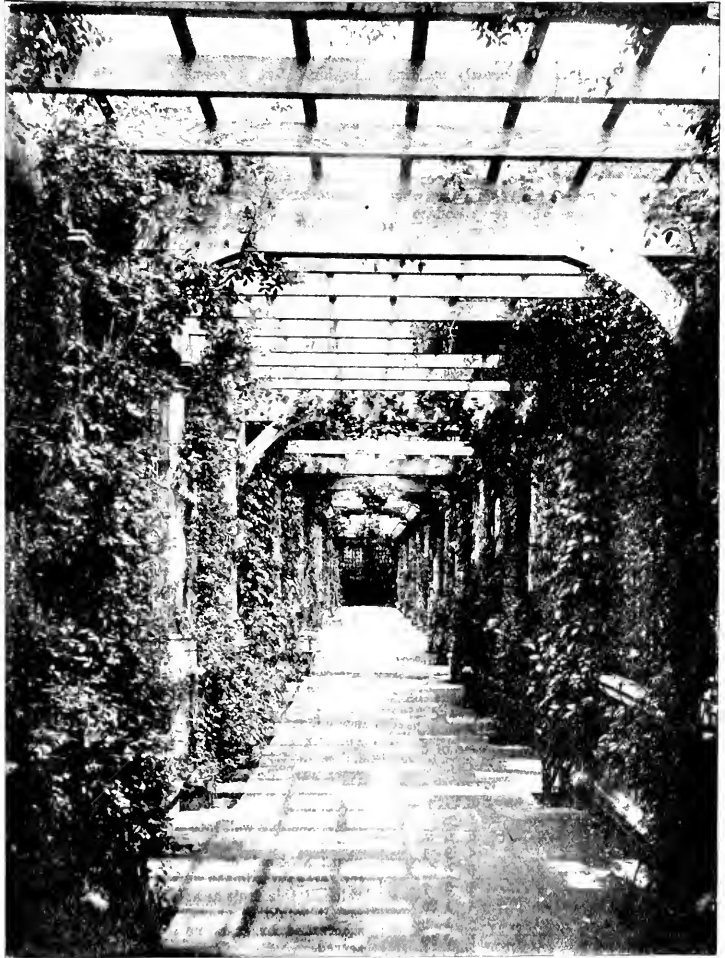


FIG. 67. PERGOLA OF STONE COLUMNS AND OAK BEAMS. (See p. 175.)

has a simple wire bed and a combined wash-and-windrobe made by myself out of bully-hoof boxes. There are also two tables, three chairs, a cupboard, a stove. I can imagine myself and a congenial mate being quite happy in such a place in my booby days. Or the wooden hut might serve the same purpose. I feel sure the men who return will have quite different ideas of housing. The war and the experience it gives alters greatly our ideas of values. We learn to see that many things which we regard as necessities are in reality only luxuries, and sometimes useless ones at that. *William F. Bowles.*

that the climate of Surrey would have suited it well. However, it is a plant worth keeping by those who are fond of Dianthus, its 4 to 6 inch stems carrying the good Tyrian Rose flowers above the greyish foliage. It owes most of its character to one of its parents—*D. neglectus*. But the "blood" of *D. plumarius* blended with *neglectus* seems to have introduced an unexpected liability to injury from damp, although we see this present in some of the finer plumarius varieties at one time so largely grown for exhibition purposes. *S. Vaucliff, Sunningwell, Dumfries.*

ON INCREASED FOOD PRODUCTION.

ALLOTMENTS IN BELFAST.

A REPORT drawn up by Mr. G. H. Oliver, Instructor in Horticulture, Municipal Technical Institute, Belfast—and now serving in France—is on the progress of allotment gardening in Belfast. Allotments were started on a small scale in 1907, and progress was at first slow. From 25 plots in 1907 the allotments grew to 200 in 1911. By 1914 there were 400 allotments, in 1915, 530, covering about 50 acres, but at the end of 1915 there was a very extensive development, and some thousands of additional plots were brought under cultivation. The plots vary in size from 300-400 square yards, and the average value of the produce from each plot is estimated at £5. The ground is mostly building land awaiting development, and the Garden Plots Association which has organised the movement has the same uncertainty with respect to tenure as that which confronts so many allotment-holders in this country. The cultivators are drawn from the most varied classes of the community, and it is asserted—though on what ground we do not know—that the standard of cultivation is higher than in England.

It is estimated (in a subsequent report†) that enough vegetables are grown on an average plot, 30 feet by 90 feet, to keep a family of five persons supplied with green vegetables for the whole year and with Potatoes for six months. Whilst we recognise to the full the great value and potentiality of the allotment, we are of opinion that this estimate errs on the sanguine side—unless the requirements of an Irish family in the way of fresh vegetables is much lower than it should be. But whether the estimate be too high or not, the fact remains that the allotment is a great food producing auxiliary, and we wish that allotments may not only continue to flourish but that they will also increase and multiply.

EFFECT OF REMOVING BLOSSOM ON YIELD OF POTATOS.

Among the experiments carried out during the present year by Messrs. Sutton and Sons at Reading, those relating to the effect of the removal of the blossoms on the yield of Potatoes are of special interest.

The following table gives the results in detail, and from it will be seen that in five out of seven plots experimented upon picking of the blossom resulted in an increased yield, and that the average increase was by no means negligible—amounting to 215 lbs. or an increase of 5 per cent. —

BLOSSOMS PICKED V. NOT PICKED.

	Picked.		Not Picked	
	c. qr. lbs.	c. qr. lbs.	c. qr. lbs.	c. qr. lbs.
Plot 2	4 2 4	5 0 3	4 2 1	5 0 3
Plot 4	5 2 10	4 2 1	5 2 10	4 2 1
Plot 6	5 3 0	5 0 20	5 3 0	5 0 20
Plot 8	5 2 9	5 0 7	5 2 9	5 0 7
Plot 10	4 2 20	4 1 26	4 2 20	4 1 26
Plot 12	5 2 20	5 1 8	5 2 20	5 1 8
Plot 14	4 3 4	5 0 10	4 3 4	5 0 10

36 2 11 34 2 19

	c. qr. lbs.
Picked	36 2 11
Not picked	34 2 19

Increase over not picked 1 3 19

A SECOND CROP OF POTATOS

MR. R. WILSON, Dumfries, who has in former years been successful in raising a second crop of Potatoes on the same plot, has again lifted a second crop of Up-to-Dates. The second crop was planted on July 8 and raised on October 9.

The tubers were of good table size. Seven sets of British Queen, planted on May 19, gave 4 lbs. of Potatoes, from which the seed size was again planted and has given small-sized tubers. *Correspondent.*

GARDENERS AS VEGETABLE COOKS.

WITH so much writing and talking about making the most of vegetables, one may urge the need for more precise knowledge of cooking among working gardeners. Two defects are common—the ordinary methods of cooking vegetables are wasteful, and the most appetising and attractive qualities are either destroyed or they are not developed. During the war there has been some casual condemnation of boiling vegetables as against the simpler and better methods of steaming and baking. But it seems that gardeners do not know, and professed cooks do not know, and will not be told, which vegetables should be kept away from water or receive no more than may be converted into steam.

The Potato is not, or should not be, accepted for good and all as the only tuber or root to be grown and stored in bulk. For food, and family need for family need, the Parsnip is as sure, safe, nourishing, and can be served in as many forms as the Potato, and it would be more grown if the real value of this root, and how to cook it, were better understood. The Parsnip is spoiled by boiling; it is excellent if steamed; it is nourishing when baked dry or with fat or gravy, and sliced or clipped and fried it surpasses any Potato in downright flavour. Parsnips also make satisfying fritters, with or without bread crumbs or batter, and with the complement of Lemon juice cannot be distinguished from the best of Apple or Banana. In frying Parsnips they should be divided into two parts, as they are of two distinct qualities, the inner core, which is fit for soups and stews only, and the outer flesh, which should be cut lengthwise to form fillets or slices, for either baking, roasting, or frying.

Last year the present writer lifted about half a ton of Parsnips from less than four rods of ground. This crop was used in October till May, practically superseding the Potato, and formed the principal solid and mealy vegetable during the late winter and spring months.

Next to Parsnips gourds of various kinds should form substantial winter fare, as they do where their cooking is understood. Rippe Marrow and Pumpkin should never be boiled; it may be steamed till flowery, as a Potato, but it is far more attractive to the palate, and more nourishing, when cut into chunks or slices and baked or fried. Last season eighty large Marrows and fifty large Pumpkins. They will serve as a substantial winter and spring vegetable, keeping well into May. In these days the money value of this crop of gourds is at least a penny a pound, or say £6.5s., but, of course, the real gain is in the nutrient and the appetising value of this fruit as an extra winter vegetable, and it would be grown, dried, and used everywhere and by everyone if properly cooked and served.

Another valuable though neglected vegetable is the tuberosus Artichoke. Many people say they do not like it. They may bear telling that they have never tasted it at its best, but have been offended by the sloppy stuff which commonly appears on the table. Artichokes may be steamed, baked, roasted, clipped and fried, or grated to form a base for a purée, soup, or blended with bread crumbs, served en gratin, or fried dry after the manner of fish cakes. Allowing for the consistent cropping of the Artichoke, its soundness, keeping qualities, highly nutrient value, and the various ways in which it may be cooked, it is one of the best all-round vegetables for British gardens, small or large; but it will not have its full share in our economy till gardeners give proof that they understand the best methods of cooking it, and other crops they raise. A. C.



THE KITCHEN GARDEN

By J. DUNN, Foreman, Royal Gardens, Windsor.

TOMATOS.—Young Tomato plants intended to furnish ripe fruits early in spring are ready for shifting into 3-inch pots. The soil should consist of two thirds loam and one third leaf-mould, with sufficient sifted lime-rubble to keep the compost porous. After they are potted, grow the plants in a house having a temperature of 60°, and place them close to the root-glass. Keep the house closed until the plants begin to make fresh growth, but afterwards open the ventilators a little to cause the plants to grow stocky and short-jointed. Pot them again as soon as the roots have filled the small pots, and never allow the shoots to become drawn for want of ventilation. Plants in flower that will furnish ripe fruits in December and January should be grown in a house sufficiently ventilated to keep the atmosphere buoyant. Give the plants liberal supplies of liquid manure from the farmyard, and top-dress the roots with fine loam and a sprinkling of bone-meal, making the top-dressing firm by pressing with the hands as it is applied. Allow the plants plenty of room, and remove all decaying leaves and most of the side shoots, but retain sufficient growth to promote active growth at the roots. A temperature of 60° is suitable; open the ventilators a little in mild weather.

MUSHROOMS.—If fresh beds were spawned early in September there should now be a full supply of Mushrooms. Keep the temperature of the house as near 55° as possible, and maintain a moist atmosphere by damping the floor and walls daily with clear, soft water. Very little direct watering of the beds should be necessary, but if the surface should become too dry, rain-water may be applied through a can having a fine rose. Cold draughts must not be permitted, as these have a tendency to produce a dry atmosphere, which is detrimental to the crop. Continue to collect and prepare materials for the making of successional beds.

CELERY.—The final earthing up of this crop should be accomplished as soon as possible. Select dry days for the purpose, and make the soil as fine as possible previous to placing it round the plants with the hands, taking care to keep the centre of the plants quite free from soil and exposed to the air.

TURNSIPS.—All Turnips which are of sufficient size for use should be lifted and placed in a cool situation for use during the winter. Those which are intended for succession and are not far advanced may be allowed to remain in the ground until frost sets in, whilst those intended for consumption in the spring should be allowed to remain in the rows throughout the winter.

GROUND OPERATIONS.—Take the first opportunity when the soil is dry to wheel manure and other materials for enriching vacant land to sites where it will be used. Push on with the digging and trenching, so that as much of this work as possible may be completed in time for the soil to receive the benefits resulting from exposure to frosts. Heavy land which was manured for a previous crop should receive a heavy dressing of lime, soot, or burnt garden refuse, rather than another application of manure, especially if root crops are to follow. Ground intended for Parsnips, Carrots, and Onions will be benefited by a good dressing of soot applied now. The soil should be stirred deeply and the surface left as rough as possible.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbeots Wood, Godalming, Surrey.

FRUIT-GATHERING.—The majority of the Apples are ready for gathering and storing, but late Pears should be left until the stalk parts readily from the spur. Medlars are not, as a rule, ready for gathering before November, but one has to be guided to a great extent

† Dept. of Agric. Ireland.

† *Journal of Dept. of Agric.*, XVI, No. 2.

be the weather. These fruits should be harvested on a dry day, and laid thinly on stages. Place the "eye" downward, so that the stalks can be readily noticed, as decay always begins at the region of the stalk. Quinces are ready for storing, and the fruits should be handled carefully. They are used mostly for making jellies and marmalade. Late Plums should be gathered by this time. Cox's Golden Drop can be kept for some time to come; the fruits are delicious when kept till they shrivel. Place them in small, clean or new seed trays on a layer of tissue paper, and then stand the boxes one on the other. They will keep good in a dry room for several weeks.

INSECT PESTS. It may be that many Apples have fallen to the ground owing to injury caused by the grub of the codlin moth (*Carpocapsa pomonella*). Such fruits have a small hole near to the "eye," which leads to the pips or seeds. The marauder may have escaped by another hole near the stalk. After the damage is done, the grubs generally pass into the chrysalis form in the soil at the base of the tree till the next season, when the perfect moth emerges, to commence the cycle anew. The plan of placing grease bands around the trees is one of the best preventives of the winter moth, and banding is useful also in the case of the moth under notice if haybands or pieces of rough cloth are placed round the stems in July. Grease bands to catch the female winter moth should now be placed in position around the stems, if it was not done in October, and smeared well with a greasy substance that insects of the kind cannot cross. The soil under the trees should be dressed with gas lime, if procurable, or with quacklime. Sprays of alkali wash during winter do much to keep these pests under. The Apple sucker (*Psylla mali*) sucks the juices of the flower buds, causing the flowers to drop. The insects are very busy in October, when they may be seen pumping from leaf to leaf. They deposit their eggs in the crotches in the bark. Trees affected should have a thorough washing with petroleum emulsion as soon as the fruits have been collected. Plums, Currants, and Gooseberries will all be the better for a good wash with an insecticide applied on a fine, calm day. All kinds of ties which have done duty for the past year should be removed and dipped in a strong insecticide. When fixing new paper bands, they must be fitted quite tight to the stem, so that the pest cannot crawl under them.

FRUITS UNDER GLASS.

By I. S. HIRSH, Head Gardener at Ginnerybury House, Aston, W.

YOUNG VINES. Newly planted vines, of this, or the previous year or two, should be resting. There is often a tendency in these young and vigorous vines to make late growth; this is not desirable, and should be discouraged. Reduce the sappy wood in these instances, but proceed no further at present. Do not yet make any attempt at shortening the main rods on young vines; rather defer all this work until the leaves have fallen. Young vines in pots that are intended for earliest forcing and there is no better system should be well exposed for a few more weeks—say, until the end of November. During that time let them be pruned as the leaves fade and fall. Then, by early December, it will be safe enough to start them steadily in a moderate temperature with a view to obtaining ripe Grapes early in June.

THE COLD ORCHARD HOUSE.—Where the trees are of different kinds and planted in borders pruning may be commenced, with the exception of Peaches and Nectarines. Trees that have borne good crops of fruit will not need root-pruning, but this should be done in the case of those that have made gross growth and given little fruit, as soon as the top-pruning is finished. After root-pruning do not add rich soil, but a quantity of fine lime rubble, or crushed mortar, and use these materials only if a top-dressing is necessary. After the soil has been made firm water it copiously. Syringe the trees with a reliable winter insecticide. When the work is finished give the trees abundant ventilation.

VINES IN COLD HOUSES.—Even such late Grapes as Black Alicante should now be

cut, as presumably there will not be means of counteracting superfluous atmospheric moisture. Cut the bunches be cut and the stems placed in bottles filled with water. Keep them in a cool, dry room, and watch for deepening berries. Reduce the leaf-growth on the vines somewhat by removing all green, sappy shoots. Open the ventilators fully unless other plants are grown in the house. Let the remaining growth become well ripened and, as soon as the leaves drop, do the final pruning. After that apply a top-dressing, first giving a good soaking of water if the border is inside theinery, and then, if the vines have borne a good crop and need feeding, add a dressing of vine manure. Later on the rods should be cleared of loose bark and dressed with an insecticide.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

CLEANING THE HOUSES.—After the necessary repotting has been carried out advantage should be taken of any spare time to thoroughly cleanse the houses and plants, washing the glass both inside and outside. Before commencing the work, if it is convenient to do so, the plants should be moved to an adjacent compartment, to prevent the foliage from becoming soiled with the dirty water. Where this cannot be done, the house should be washed in sections and the plants protected with shading material suspended next to them. Soft soap should be mixed with tepid rain water, but not in sufficient quantity to damage the point. The soapy water should be syringed from the woodwork with clean water after the scrubbing is finished. The stage and walls should be scrubbed, also the pots. Before restating the plants should be cleaned of scale and other insect pests, and all diseased pseudo-bulbs and leaves removed. Any young growths that need support should be neatly tied to stakes; but not so tightly as to hinder the future development of the pseudo-bulbs or young growths.

EPIDENDRUM. Epidendrums of the radiosa type are suitable for cultivating in pots, and, when properly grown, their scendent growths will flower in a comparatively dwarf state, making the plants extremely useful for decorative purposes. Plants that have grown to an desirable length may have the top cut off the young growths about 2 feet in length, and eight or ten cuttings may be potted together in receptacles 7 or 8 inches in diameter. Place the stems about 6 inches deep in the pot, with as many of the aerial roots as possible. During the growing season train the new roots into the compost, which should consist of a mixture of peat or Osunda fibre and an equal proportion of Sphagnum moss. Grow the plants in the Cattleya or intermediate house near the roof glass. Give one copious watering after the plants are placed in the house; afterwards, direct waterings will not be necessary, as by frequently syringing the growths and aerial roots the compost will be kept sufficiently moist.

AERIDES.—Plants of Aerides that flowered early in the year may have the supply of water at the roots reduced gradually. Although these Orchids never entirely cease making leaf growth, it is important that they should have a short period of rest. If all through the summer the moss on the surface of the pots has kept fresh and green through frequent waterings, from now on through the winter the moss should be allowed to become a whitish green colour before water is again applied, giving only just sufficient to prevent loss of foliage. Aerides of the cooler-growing section, such as A. Schröderi, A. crassifolium, and A. Warneri, are still growing, and should be kept moderately moist at the roots for some time to come.

THE FLOWER GARDEN.

By W. J. GUISE, Gardener to Mrs. DEMESTRIE, Keele Hall, Staffordshire.

HOUSING TENDER PLANTS.—It may be advisable to retain most of the old specimen plants that were knocked out of their pots for bedding purposes. These should be lifted carefully, repotted, and placed in a close atmosphere for a

short time before removing them to cooler quarters. Tuberos-rooted Begonias should be lifted with plenty of soil, placed in boxes, and allowed to dry gradually. The soil must not be disturbed until they are required next spring. Winter the tubers under the plant stages in cool houses, in company with *Salvia patens*, Camass, and Fuchsias. See that drip from plants overhead does not reach them. *Lobelia cardinalis*, *Verbena venosa*, and *Echeveria* may be packed in boxes or shallow frames. The succulent *Echeveria* resents a close atmosphere, and air should be admitted during mild weather. The best of the Pelargonium plants lifted at once from the beds, short-rooted, packed in boxes in sandy soil, and placed in cool houses, will make fine plants for tubs, vases, or the centre of beds next summer.

SPRING BEDDING PLANTS.—The flower beds should be cleared of the summer bedding plants and prepared for the spring bedding plants. If the ground is dug thoroughly and a liberal amount of well-rotted manure and leaf-mould incorporated with the soil in equal proportions, it should not be necessary to manure the ground for the summer plants. Many effective schemes may be devised by the use of Wall-flowers, Polyanthuses, Arabis, Myosotis, Alys-sum, Aubrietias, Daisies and Pansies. Early Tulips, Snowdrops, Scillas, Juncquils, and late flowering Tulips may be associated with Myosotis, Polyanthus, Arabis, Aubrieta, and similar dwarf plants. Bulbs that show signs of rooting should be planted at once. Firm planting is necessary for all these plants, and the work should be done when the soil is in a friable condition.

GLADIOLUS AND OTHER BULBOSUS FLOWERS.—In cold, wet districts it is advisable to lift certain bulbous plants, or they may be injured by frost. Gladioli, Montbretias, Tigridias, and Galtonias should be lifted at once and placed in a cool frame to dry before storing them to the winter. Lifting may not be necessary near the sea coast or in light, warm soils, but some protection should be afforded the plants in cold weather by placing leaf-mould or stable litter over them.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHCOLE, Eastwell Park, Kent.

THE PROPAGATING PIT.—As the season advances, many plants that have been grown in the conservatory during summer will have become rough and shabby. These old plants, if kept through the winter, require a considerable amount of room, and in view of this it is a good plan to propagate fresh stock from them, and discard the old plants. The finely coloured varieties of *Coleus* are still largely grown for summer decoration. Suitable shoots should now be inserted as cuttings in light, sandy soil, and placed in the warmest house. They will quickly form roots, and when sufficient have been struck the old plants may be thrown away. Pot the young plants into 60 size pots, using very light, open soil. Place them in a warm house, on a shelf in full exposure to sunshine. These small plants may be occasionally used for decoration. They will not stand cold, and must be returned to the warm house without undue delay. Other worn-out plants used for the edging of stages—such as *Isobea gracilis*, the variegated *Panicum*, *Pilea* in variety, *Tradescantias*, and *Selaginellas* may all be treated in the same manner, making sure that the young plants are well established before discarding the old ones.

STOVE CLIMBERS.—Give less water to *Allamandas*, *Gloriosas*, and *Clerodendron Balfouri*, reducing the amount gradually until, when the foliage has withered, it is withheld almost entirely. The soil in a border usually retains sufficient moisture during the winter to keep the wood from shrivelling, but plants growing in moderate-sized pots or tubs need an occasional light watering. Other warm-house climbers, such as *Stephanotis floribunda*, *Thunbergia*, *Clerodendron splendens*, *Heysa* and *Rondeletia speciosa* major, should also be watered very sparingly. As a general rule all climbers benefit by a rest during the winter.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.
 Editors and Publisher. — Our correspondents would oblige delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.
 Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, NOVEMBER 6—

Roy. Hort. Soc.'s Coms. meet. and National Clays Soc. combined show.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 45.7.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, November 1, 10 a.m.: Bar, 29.5; temp., 49.6°. Weather, Dull.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY, and FRIDAY—

Bills at 67 and 68, Cheap-side, at 1 o'clock, by Protheroe & Morris.

It is with the deepest regret that we record the death on the 27th ult. of Mr. Worthington G. Smith.

Worthington G. Smith, whose valued services to this journal are so well known to our older readers. Almost half a century has passed since this clever draughtsman first undertook the work of illustrating new and noteworthy plants for the *Gardeners' Chronicle*. The late Dr. Maxwell Masters had accidentally come across some of Smith's drawings of abnormal growths that had been prepared for illustrating Goethe's *Metamorphosis of Plants*. Dr. Masters' judgment in matters of this kind was uncommonly good, and he at once discerned the stroke of the master hand in Smith's early sketches. Smith's later work proved beyond doubt that he had no rival after the death of Walter Fitch, also a contributor to these columns. Beauty and firmness of outline, secured by long practice as an engraver, and accuracy of detail, rather than impressionist effect, characterised his work, and thus his drawings were far more valuable for practical purposes than those which aim at general and often fleeting effect. For many years Smith's drawings in the *Chronicle* constituted one of its most attractive features. If the reader will look at any of the numbers issued between 1875 and 1910 and examine carefully the illustrations of Orchids and other plants that the paper owed exclusively to Smith's skillful work, he will be struck by their wonderful accuracy. Being a careful and skilled botanist, he was able to sort out the essential organs, including pollen grains, and show them so magnified that the ordinary reader could form a perfectly correct idea of their

form and character. Many a time has the present writer sent the poorest possible specimens of a new plant of unusual value or novelty to Dunstable, with the request that Smith would prepare an illustration for these pages. No other material being available, it was that or nothing, and Smith, with his great knowledge of plants, was quick to appreciate the importance of making the best of them. He would place the specimens in water, fix together broken portions, and coax them by all means possible to again show some vitality. Seldom, indeed, did he say that he was unable to do what was asked of him. He could determine even from fragments what a plant had been like, and would

numberless researches into manners and customs, the weapons and tools of prehistoric man; indeed, his position as an archaeologist was a high one, and his published works on these subjects are permanent assets in the library of the student.

A marked and pleasant feature of Mr. Smith's character was his great sense of humour. It showed itself in almost everything he touched, and with his facile pencil he could convey it to paper. He was of too genial a disposition to use it often in any but a jocular vein, but in cases where it was employed to defeat an adversary its effect was extraordinary. We remember to have seen some political

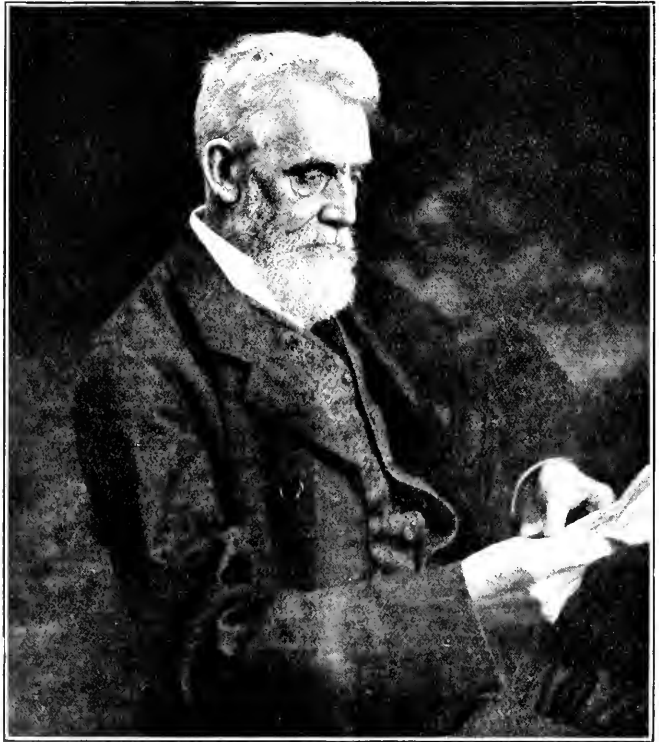


FIG. 68.—THE LATE WORTHINGTON G. SMITH.

build it up as an anatomist would a damaged skeleton; but Smith excelled the anatomist, for he was able to make his plants "live" in their portraits. We do not remember a case where the effect was what artists term lifeless and dull.

His great pride in his work, and his consistent loyalty to the paper that he worked for and admired, will be always gratefully remembered by those who had the best opportunities of measuring his zeal.

Our late colleague was exceedingly versatile. He studied fungi with his usual thoroughness, and in the Natural History Museum are many of his drawings. He was a great antiquarian, and made

sketches prepared for election periods, sketches that well revealed his great ingenuity and fine humour. As an instance of the latter we reproduce in fig. 69 one of his drawings in which he represents himself as sketching for the *Chronicle* in conditions of some difficulty. It may be said that it is scarcely overdrawn, for he had sometimes to visit hot and moist houses and perform his work in temperatures as disagreeable as they were unfamiliar.

Worthington G. Smith was born on March 23, 1835. His first intention was to follow the profession of architecture, but in 1858 he abandoned architecture in favour of book illustration by wood engraving and lithography.

His published works include those following:—*Diseases of Field and Garden Crops* (1884), illustrated with 143 wood engravings; a supplementary volume to Berkeley's *Outlines of British Fungi* (1891); *Guide to Sowerby's Models of British Fungi*, 1891; *Man, the Primal Savage*, with 242 new illustrations; *Early Man in Bedfordshire*, contributed to the *Victorian History of the Counties of England; Dunstable and its Surroundings*, written for the Homeland Association, and *Synopsis of British Basidiomycetes*, containing 145 new illustrations. Deceased also prepared many water-coloured drawings of fungi and descriptive letterpress for various authorities, including the British Museum.

Naturally, Smith's great services to the public were acknowledged from time to time by the receipt of well-deserved honours. As early as 1865 he obtained from the Royal Horticultural Society a gold medal for coloured drawings of plants; in 1873 the Royal Horticultural Society of Ireland awarded him a silver medal; in 1874 he was presented with a box of silver plate by the Woolhope Club, Hereford, and in 1875 the Royal Horticultural Society's Knightian Medal in gold for his researches into the life-history of the Potato fungus, *Phytophthora infestans*. In connection with his studies of the Potato disease, it will be remembered that he claimed to have discovered the resting spores of *Phytophthora infestans* (see *Gard. Chron.*, July 10, 1875, pp. 35, 41), and the atheridium by whose contact it was fertilised, but the claim was contested by de Bary, a German botanist of the highest standing. In 1903 Mr. Smith was elected president of the British Mycological Society, and in the same year he became the first freeman of Dunstable; whilst in 1907 he was awarded the Voitch Memorial Medal in gold. He was awarded a Civil List pension in 1902 of £50 in consideration of his "services to archaeology and botanical illustration." Death took place at Dunstable, where he had lived since 1881, when he was compelled to leave London owing to heart trouble. He leaves two sons and one daughter; his sons are artists, and their business is the preparation of press photographs.

BELGIAN HORTICULTURE.—In an article by Professor LEPLEAE and Mr. VAN ONSOVEN the following methods of cropping are described as being practised in the market garden districts of Malines and Louvain, where the soil is light enough not to pack hard by treading: 1. Early Cabbage or Cauliflower inter-sown with Spinach or Cabbage Lettuce or with Radishes and Lettuces; 2. Carrots inter-planted with Cabbage Lettuce or Scorzoneria; 3. Early Potatoes inter-sown with Radishes, which are pulled before the Potatoes are earthed up; 4. Late Cabbage inter-planted with an early variety and marketed before the main crop is full grown. In general all vegetables which occupy the ground for some time are inter-cropped with Spinach, Early Carrots, Radishes, Chervil or Lettuce. Carrots are sown among

rows of Early Peas. Peas are often planted in every third or fourth row of a Potato crop. A single Pea seed is put in the centre of each Potato plant. The Pea and Potato grow up together, and the Peas are pulled out bodily on harvesting for using dry. The practice is not recommended where the Peas are to be used green, as picking would involve too much treading of the ground. Cabbage or Brussels Sprouts are often planted between the rows of all but very late varieties of Potatoes.

SUPPLIES OF SEED WHEAT.—The Food Production Department is offering farmers a

Seed Wheats will be ordered forward by the Food Production Department immediately on receipt of an order, and accompanied by a cheque for the requisite amount, provided that supplies are still available. Should the purchaser desire to have a sample of the Wheat the Department will send one, but this must necessarily involve some delay in the delivery of the seed.

THE DOUBLE-FLOWERED PEACHES.—It is worth while placing on record how abundantly the so-called double-flowered forms of *Prunus persica* have fruited this year. When the blossoms



FIG. 69.—THE LATE MR. WORTHINGTON. SMITH SKETCHING UNDER LIFTED PEAS.

special selection of Seed Wheat of the varieties known as Wilhelmina, Little Joss, Victor, and Brownk. The seed has been selected and cleaned with great care, and the percentage of purity is in no case less than 99. The selection was undertaken by a special committee under the direction of Professor BRYEN. Standing crops were inspected by these experts in all the English Wheat growing districts in order that only crops of outstanding quality might be chosen for the Department's Seed Wheat orders. The price of this selected seed is 9s. per quarter of 480 lbs. f.o.b., including new, non-returnable sacks. Supplies of these

soms escape the late frosts in spring. Fruits are occasionally seen, the most notable being the variety *foliis aureis*. This year, in common with most other fruits, the crop has been exceptionally good, the variety *flora-carnea* (syn. *rosea plena*) being the best. Quite tasty to eat raw, they are very nice stewed, and make an excellent jam, preserved at the rate of 1 lb. of fruit to 2 lb. of sugar.

MR. FRANK HARRIS, Superintendent of the Stockport Parks, has undergone an operation in the Manchester Royal Infirmary for an internal complaint. The latest report states that he is making satisfactory progress.

* *Journal of the Board of Agriculture*, XXIV, No. 6, sept. 1917.

ROSE AMERICAN PILLAR.—In respect to the remarks of Mr. EASTON on this Rose (see *Gard. Chron.*, September 3, 1917, p. 95), our old colleague, Mr. LEONARD BARROS, Editor of the *New York Garden Magazine*, sends us an interesting letter from Dr. W. VAN FLEET, the fortunate raiser of this popular Rose. Dr. FLEET states that "the variety was raised in 1893 from seed of a *Wichuraiana-Setigera* cross pollinated with a bright red Remontant Rose seedling, that had a touch of *Polyantha*, or, rather, *Rosa multiflora*, in its make-up. It thus contains the blood of four Rose species, but I regard it as essentially a *Wichuraiana-Setigera* hybrid. This variety appears to succeed under very diverse conditions."

ACTINIDIA AROUTA.—This vigorous growing climber is ripening fruits this autumn. They are green in colour, suggesting in size and shape a small Walnut. It is a fleshy, many-seeded fruit, juicy, and quite pleasing in flavour, emelling and tasting not unlike a second-rate Melon. Travelers tell us that the fruits are eaten in Japan and China, of which countries and the Amur region *A. arguta* is a native.

RETIREMENT OF MR. ALFRED GAUT.—We are informed that Mr. ALFRED GAUT, for many years lecturer on horticulture at the Leeds University, retires this week owing to failing health. Mr. GAUT, who has been an occasional contributor to these pages, is removing to Laburnum Cottage, Leigh Linton, Worcester, where he will be near to his son, who is Agricultural Organiser for Worcestershire.

THE HEAVIEST APPLE.—In regard to records of large Apple fruits and our instance quoted last week of a fruit, exceeding 2 lbs., Mr. G. M. TAYLOR reminds us that a fruit of Rev. W. WILKS variety, grown in the nurseries of Mr. GEORGE PYNE, Topsham, Devon, and picked on September 17, 1914, weighed 3½ ounces. But we have since been shown a still larger fruit by Mr. G. W. BYSON, The Brunds, Hild, Sussex. This was of Peasegood's Nonchuck; it weighed 2 lbs. 4 ozs., and measured 18 inches over eye and stalk and 17½ inches in circumference. We believe the fruit is to be shown on Tuesday next at the R.H.S. meeting.

BLACK LEG OF POTATOS.—The disease of Potatos known as Blackleg or Black Stem Rot is caused by bacteria. The symptoms appear in mid-June. The diseased plants are somewhat stunted and are rendered conspicuous by their pale green or yellow foliage. The upper leaves are apt to remain small, stiff and erect, and the margins of the leaflets are generally rolled inwards. The stems of affected plants are very easily pulled up, and are rotten and juicy black at the base. The bacteria (*Bacillus ptyophorum* or allied species) attacks the wood, and the disease may be recognised at an early stage by cutting across the stem and observing three brown spots—the woody spots of the vascular tissues—which show by their brownness that the disease is present in the plant. The leaves of affected plants turn brown, and the leaf-stalks die. If tubers form they will be found to be infected, and such tubers should on no account be used as seed. The diseased tubers are soft and discoloured, especially at the heel end; the flesh is brown and ultimately becomes wet and rotten. Tubers slightly infected at lift do not develop the disease in store, and may communicate it to sound neighbouring tubers. The disease is propagated by the use of infected seed, and the risk of this is heightened by the fact that slightly diseased tubers may appear on the surface to be quite sound. Experiments made in America show that diseased tubers may be disinfected by means of formalin. It is stated that the soil, once infected, may reinfect Potatos planted the following year.

* See *Journal of Board of Agriculture*, XXIV, No. 6, Sept., 1917.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

ROBINS IN MONMOUTHSHIRE AND AN ALBINO SPARROW.—The interesting note on the absence of small birds in a Surrey garden by A. N., on p. 145, reminds me of a somewhat similar case in Monmouthshire. A few weeks ago the local gardens were remarkably free of most birds. But there were large numbers of robins seen (and heard) everywhere. It has been said that robins suffered more than most birds from the severity of last winter. Then what can be the explanation? They would commence their warbling in the morning whilst we were still in bed, and would continue it all day; in the smallest cottage garden three or four could be heard at the same time. To find some of the other birds I turned to the fields where harvest operations were in progress, and there many could be seen in flocks, such as starlings, chaff finches, sparrows, and about any thistle ground where seed was ripening, numerous goldfinches would rise up as one approached them. So other birds had left the gardens almost entirely to the robins, and, according to custom, had become gleaners on the farms. The tiny village, situated about seven miles north of Abergavenny, under the shadows of the Skirrid, Sugarloaf, and Black Mountains, is extremely isolated, and the few houses are gathered round an exceedingly old church and yard, that at night serves as a playground for the numerous and particularly noisy owls. In the evening, almost before the robins had ceased their fussy, though low pitched warbling, the owls would fly around the church making the night audible with their weird cries. Since returning home I find that in our London garden two robins are daily visitors, also a light dove coloured cock sparrow. I suppose it may be regarded as an albino, but it is curious that the only really white feathers are about the head, where the normal male sparrow is coloured darker than elsewhere. *R. H. P.*

PLANTS FOR CARPETING BRICK RUBBLE.—Permit me to supplement the advice given to *Antonia* on p. 164. The best Sedums for the purpose and there are no better plants if a close carpet is required are *S. acre*, *S. anglicum* album, and *S. lydium*. For uniform distribution and the effective carpeting of the whole I know of no method to equal the following: Take a number of plants of either of the species named, carefully strip the fleshy leaves from their stems, and, after mixing them with soil, sow the mixture thinly broadcast over the area to be clothed. Should the interspaces between the rubble particles be large or rather deep a first sowing of soil alone should be given, which, while raising the level and preventing loss of water, will also provide ground for the young plants to root into. The Sedums named, like other members of the Crassulaceae, reproduce themselves from the bases of their leaves when these are detached intact from the stem; hence, the result of an hour or two of careful work may be expected to give rise to large numbers of plants. On occasion I have lightly rubbed the Sedums through a sieve, though I find stripping by hand a more satisfactory method. In the case of the *Aubrietia*, seeds mixed with soil would constitute the better way, and, indeed, the work had been anticipated, and quantities of cuttings had been rooted for the purpose. *E. H. Jenkins.*

MIRROW KALE (see p. 171). In reply to the inquiry by N. in your last issue, the outer covering of the fleshy part of the stems should be removed and the inner, narrower part cooked in the same way as Kohl Rabi or Turnips of any kind. This Kale and the new Superlative and Magnificent Swedes are valuable additions to the list of winter vegetables. *G. P. M.*

EARLY POTATOS In reply to T. (p. 172), I find the best early P.C.s for growing in pots, frames, and open borders, is Star of Reading. The stems are dwarf, and the variety gives a large crop on a small space. I consider it superior to Duke of York. *F. J. F., Bourne, Lincolnshire.*

APPLES AND PEARS GROWN IN 1779.—I am afraid that to quote, as I suggested in the *Gardener's Chronicle* of October 20, all the varieties of fruit mentioned in James Clarke's "Catalogue" of 1779, would take up more room than the Editors would care to allow. Perhaps, however, space can be found for the different varieties of Apples and Pears. I give the names *verb. et lit.*: Apples: Janting, Margaret, Red-streak, Codlin, Summer Scarlet Pearmain, Golden Pippin, Kentish Pippin, Nonchuck, 110-lan Pippin, Nonpareil, Royal Russet, Wheeler's Russet, Golden Russet, Ribston Pippin, Cat's Head, Golden Fennel, French Pippin, Winter Pearmain, Loam's Pearmain, Scarlet Pearmain, Lemon Pippin, Winter Greening, Aromatic Russet, Quince, Yorkshire Greening, Kitchen Renet, Prusse Worthy, "with many other sorts." Pears: Little Muscat, Green Chissel, Catherine, Jargonell, Chasse Madam, Windsor, Grosse Blonquette, Burree le Roy, Winter or Gray Burree, Autumn Muscat, Orange Bergamot, Harnden's Bergamot, Autumn Bergamot, Russett, Bonereton, Cresson, St. Germain, Swan's Egg, Chamoisville, Vergobuse, Black Worcester, Parkinson's Warden, Cadillac—the last three were baking Pears. I wonder how many of these varieties are still in cultivation? *J. Roberts, 18, King's Avenue, Clapham Park, London.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee

OCTOBER 25.—Present: Mr. E. A. Bowles, M.A. (in the chair), Dr. W. Bateson, Messrs. E. J. Allard, W. Hales, R. Hooper Pearson, J. Foster, E. M. Holmes, and F. J. Chittenden (hon. sec.).

Fruit of Trachycarpus ardens.—Mr. J. Fraser showed the immature fruits of this Palm from a tree in the open at Holland House, and remarked upon the distribution of male, female and hermaphrodite flowers, the fruits having developed from the last form of flower. Mr. Bowles said he usually found the last flowers to open were female, as they are in *Begonia* and *Aegle separaria*.

Vernon plants.—Mr. Bowles showed the fruit of *Lomera Hildebrandtii* from a cold green house at Earlham—a very large fruit for a member of this genus, measuring over an inch in diameter; *Rhodota his argentea*, with stalked heads of flowers; *Aklaria lobata* fruit, from Mr. Howard Baker's garden near Bristol; fruits of *Actinidia chinensis*, from Mr. P. W. Williams' garden at Lameth, Cornwall; fruits of the deep-flowered form of *Cyclonia Maulei*, to draw attention to their strong and pleasant perfume; fruits of *Arum italicum*, with the foliage, appearing this year unusually early; *Arum hydroclalum*, from the Holy Land; and that of a robust form of *Arum Dracontium*, all from Middleton House Gardens, where also came ripe fruits of the double red Peach, which has from 2 to 4 ovaries, and which bears twin fruits, of the purple leaved Peach, of the variegated form of *Cornus Mas*, and of the yellow fruited Yew.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 4. *Committee present:* The Rev. J. Combeholme (in the chair), Messrs. R. Ashwood, D. A. Cowan, J. C. Cowan, J. Cypher, A. G. Ellwood, J. Evans, P. Foster, A. R. Handley, J. Howes, A. Keeling, D. McLeod, J. McNab, W. Shackleton, H. Thorpe, and H. Arthur (secretary).

AWARDS.

FIRST CLASS CERTIFICATES.

Loelia Cattleya Queen Marie ashlandensis (J. C. Walter, Gott's C. *avoca*), and *Cattleya Evansianae* (Coburns, both from R. ABEWORTH, Esq.

Cattleya Princess Royal var. Fair King (C. Fallon, C. Hardwood), from W. E. LEE, Esq.
C. Hindall var. Drapery Blue (*Gaskelliana albina* var. *Form Marlow* Bagnall), from Mrs. S. GREAVES.

AWARDS OF MERIT.

Loesia Cattleya Sappano (R. C. Mrs. Leaman C. *indusens*), and *Cypripedium Atherton*

Walker (*aurum Surprise* × *Gaston Balleché*), from Mrs. GRAVIER.

Cattleya talca sica (*Golden Oval*), *var. rosea*, and *C. Atrium albatensis* (*Harrietiana alba*), *var. David's* (*India*), from S. GRAVIER, Esq.

C. Fehaulti (*Fabia*), *var. Portia*, and *C. Fehaulti* *var. Champion*, from J. J. BOLTON, Esq.
C. Sghol nungwen, from R. ASHWORTH, Esq.

Laelio-Cattleya Adrienne (*L. C. Juno*), *L. C. St. Gothard*, from Dr. CRAVEN MOORE.

AWARDS OF ABERDEEN.

Odontoglossum cravenii (*alba*), 1st Class), and *O. amabile* (*ashlandensis*) (2nd Class), from R. ASHWORTH, Esq.

OCTOBER 13.—*Committee present*: The Rev. J. Crombieholme (in the chair), Messrs. R. Ashworth, D. A. Cowan, J. C. Cowan, J. Callaghan, A. G. Ellwood, A. Hainger, F. Houghton, J. Howes, A. Keeling, D. McLeod, J. McNair, H. Thorp, and H. Arthur (secretary).

C. Hoeryana Bohiana, and *C. Naida* *var. superba*, from R. ASHWORTH, Esq.

Trichocattleya Lawsonia (*The Knobel*), *var. (L. trichocoma Walton Group)* *var. C. aurea*, and *L. C. Alce* *var. Golden Beauty* (*L. postiana*), *C. aurea*, from JOHN HARTLEY, Esq.

Cattleya Hoeryana Houghton's *var.*, from F. HOUGHTON, Esq.

Cypripedium Macul (*emithystrum*), from R. W. RICHARDS, Esq.

Bassia-Cattleya Lisette (*B. C. Merion*), *C. aurea*, from Messrs. J. & A. McBRIDE.

CULTURAL CERTIFICATES.

To Mr. S. FINDLOW, for a specimen of *Odontoglossum* (*var.*), having more than 70 flowers in Silver Medal also being awarded), and *Cypripedium* (*Charlesworthi* *Merle Dene* *var.*).

To Mr. C. BRANCH, for *Odontoglossum* (*Queen Maatke*).

GROUPS.

The following Medals were awarded to collectors: *Gold Medal* to W. R. LEE, Esq., Hey-

CROPS AND STOCK ON THE HOME FARM.

VARIETIES OF WHEAT.

THE selection of seed Wheat is an important factor. A change of seed from one class of soil to another will generally produce a larger yield than will seed from several grown on the same soil. Some types of Wheat which are successful in certain districts are failures in another. Therefore, the beginner would do well to ascertain the result of certain varieties in his locality, and act accordingly.

Clean seed Wheat is one of the most important of details. Some persons are content to sow any cheap Wheat as coming direct from the threshing machine rather than pay more for a clean sample. The cheaply purchased seed too often contains seeds of weeds and tacks in particular, which produce an after effect on the land not thought of at the time of sowing.

I do not propose in the present article to name nearly all the varieties of Wheat grown, but rather select a few suitable sorts for various purposes. Seedsmen publish in their catalogues en-



FIG. 10. BILBERIES, POLYANTHA, A NEW SPECIES FROM CHINA, WITH CRIMSON RED BERRIES (RHS. *Vegetable Month*, October 27, 1917, Sec. p. 103)

AWARDS

FIRST CLASS CERTIFICATES.

Cattleya Thora *var. Lavina* (*St. Mrs. Pitt*), *C. Empress Frederick*, *C. Fehaulti* *var. Prince of Wales*, and *Odontoglossum Queen Maatke*, from W. R. LEE, Esq.

Laelio-Cattleya Battoniana *var. Heliconia*, *Cypripis F. M. Bequest*, *L. C. Cambaniana*, *L. C. Mia* (*L. Fabia*), *L. C. Golden Oval*, *Cattleya Lavina*, *M. var. Wespary*, *var. tertia* (*alba*), from S. GRAVIER, Esq.

Cattleya pumila (*alba*), and *C. Veana* *var. Cyclops*, from R. ASHWORTH, Esq.

Cypripedium Charlesworthi (*Merle Dene* *var.*), and *Cattleya Marston* (*Abraham*), *C. Empress Frederick*, from A. J. OAKSHILL, Esq.

Cattleya Douglasii *var. superba* (*Fabia* × *gypsis*), and *Laelio-Cattleya Marston* *var. David* (*night*), from P. SMITH, Esq.

Odontoglossum Juno *var. Cromart*, from Dr. CRAVEN MOORE.

AWARDS OF MERIT.

Cattleya Sghol aurea, and *C. Boeringiana nungwen*, from J. J. BOLTON, Esq.

wood (to Mr. C. Branch), *Louise Silver Medal* to R. ASHWORTH, Esq., Newchurch (to Mr. Davenport), *Silver Medal* to J. J. BOLTON, Esq., Puddleton (to Mr. J. LAW), A. J. OAKSHILL, Esq., Bolton (to Mr. FINDLOW); Messrs. CYRIL AND SOSS, Cheltenham; and Messrs. SANDER AND SOSS, St. Albans.

ROYAL HORTICULTURAL OF ABERDEEN

The annual meeting of the members of this Society was held in the Music Hall Buildings, Aberdeen, on the 27th ult. Councillor Simpson presided. The balance sheet showed that the income for the year amounted to £17 7s., and the expenditures had been £15 3s. 5d. The surplus, when added to the balance of last year's accounts made a sum of £119 2s. 7d. to be carried forward. Great was expressed that no show had been held this year. Other bearers were elected as follows: Chairman, Colonel Gull of Dalchely; vice-chairman, Councillor Simpson; auditors, Messrs. W. Reid and W. Whyte; secretary and treasurer, Mr. J. B. Bennet. All the other nine bearers were re-elected.

gravings of certain varieties, which are a guide to the inexperienced as to which sorts to grow. One of the most complete lists that I know is that published by Messrs. Dunn, of Bournemouth, who show photographs of some eighteen varieties and give many interesting notes about each.

Food Standard meets the general requirements of a good miller's Wheat, with stiff, good straw, not so liable to be laid by wind and rain as some varieties. The colour of the grain is red, especially "strong" in well grown samples, and this is highly appreciated by millers. The variety was introduced by Messrs. E. Welsh and Sons, and will succeed on almost any soil. Square Head Masters is another popular Wheat for any soil, supposed to have been a cross of Scholey's Square Head and Golden Drop, selected by Mr. Teverson; thus it gets the name of "Teverson's Square Head." Broude, a white chaff red Wheat, of strong growth, originated and introduced by Messrs. Girden; this is an exceptionally good heavy yielding milling Wheat, which does well on most soils, but especially so on rich land. I shall never forget the sight of 12 acres of this Wheat in September last, on a farm which I inspected in the sea in this county.

Little Joss is a cross between Square Head Masters and Indian Ghurka, introduced by Professor Effen, who has done much to improve the breed of Wheats. This Wheat yields heavy crops of great strength of grain, and thus it is a most desirable variety to grow. Essex Conqueror, introduced by Messrs. J. K. King and Sons, is a popular red Wheat, yielding heavily from all soils. Universal is Messrs. E. Webb and Sons' latest introduction, which I grew this year, and from which I had 1½ sacks per acre, which, in an out-of-the-ordinary season like that of 1917, must be considered exceptionally good.

Yeoman is the latest of Professor Biffen's Wheats raised on the Mendelian system; it is said to be an exceptionally heavy yielder of red grain, and suitable for all soils.

Before the advent of roller mills white Wheats were popular in some districts, but owing to their not being generally so "strong" in the grain which roller milling requires more than other systems, they lost much of their value. A fault, too, in some varieties is that they have the habit of "sprouting" in the ear if there is much wet weather during the harvest, especially if the fields are "shut in" by woods, trees and high hedges.

Some of the newer varieties, I hear, are less liable to this defect, notably Benefactor (Messrs. Garton's), owing to the form formation of the grain covering. This is a strong-growing variety, yielding heavy crops, and is very popular. Victor is another of Messrs. Garton's introductions; gives heavy crops, while early cutting is said to be a deterrent against sprouting.

Andros Standup, introduced by Mr. Cole Ambrose, is a popular Wheat for sowing in January no less than in autumn. Carter's Standup yields heavily. I had 15 sacks per acre some few years ago. Burgess Fife produces especially "strong" grain, and can be sown quite late in the spring, perhaps with better results than when sown in the autumn. E. Malvern.

EDUCATIONAL FARMING.

The development that is now taking place in farming, and the changes in objects and methods that the present food situation is forcing upon the agriculturist, furnish good reasons for providing farm institutions and schools where young folks may obtain both practical and scientific education.

The ambitions of the Food Production Department in regard to the increase of acreage for grain and root crops will render necessary much more labour than was formerly employed. This labour will be paid higher wages than farm workers in these islands have enjoyed, and farmers will naturally expect in return better service than they have obtained heretofore. The sort of institution we have in our mind is that of a model farm, where mixed farming and dairying are carried out, and means provided for instructing students in the principles which govern the growth of plants, diseases, insects that affect their well-being, the value of deep cultivation, of irrigation, drainage, manuring, the comparative values of different manures and soils, also similar teaching in the management of cattle, sheep, pigs, and poultry, the making of butter and cheese, and last, but not of least importance, the buying and selling of live stock and crops.

A few weeks ago we inspected an institution farm at Usk, in Monmouthshire, that it is hoped will supply some at least of these requirements. The farm comprises 260 acres, of which 140 acres are pasture, 60 acres arable, and the remaining portion woods and copices. It was founded in 1915, under the provision of the Monmouthshire Intermediate and Technical Education Scheme, and is maintained from a legacy known as the William Jones' Foundation. The chairman of the Governors is Sir Henry Mather Jackson, Bart., one of the best known men in the county, and the principal manager is Mr. J. C. Newsham, who for some years successfully managed a similar institution in Hampshire.

Like most other institutions, this scheme of the Board of Education has suffered greatly from the war, as labour is scarce, and students of more than seventeen years cannot now be expected.

Accidentally, whilst the farm itself has been improved in many ways, and animal stocks have

been acquired that will be most suitable for the purpose the farm is to serve, other matters, including the building of a residential institution, have to be postponed indefinitely. For the present students occupy a roomy building with a fine lawn, which is bounded by the river Usk. Farm buildings have been erected which provide the best accommodation possible for stall-fed cattle, dairy cows, and pigs. The farm has a peculiar interest to gardeners because it is specially designed for the benefit of those who desire to unite with their farming more or less of gardening; hence its name, "Agricultural and Horticultural Institution." Ten acres have been laid out to furnish examples of vegetable cropping for the purpose of serving the market, also flower and fruit growing. In this garden manual experiments, rotation cropping, and other details of cultivation, together with comparative trials of the different varieties, are carried out. The soil is of the very best, and numerous young Apple trees prove by their wonderful crops of fruits, remarkable for their size, form, and colour. When times and things again become normal this farm should prove of very great value locally, and it may be hoped that similar ones may be established in other counties.

ANSWERS TO CORRESPONDENTS.

FUMIGATING A PLANT STOVE: *Correspondent.*

The best results are obtained when the houses are fumigated at dusk and opened on the following morning. The measurements of the house should be very carefully made and the exact amount of each ingredient should be used. The cyanide should be dropped into the acid direct by means of a suitable apparatus, and in no circumstances should it be enclosed in paper, which renders the process more than usually dangerous; nor, if sulphuric acid be employed, should it be enclosed in any metallic covering, which in the process of solution might assist reduction. In large houses several bowls should be used to ensure as even distribution as possible. The house should be tightly closed after the fumigation, and warning notices against entry should be placed on the doors. If sodium cyanide is used, the following proportions will be found satisfactory:—For green aphids: Sodium cyanide, ¼ oz.; phosphoric acid, ¼ oz.; water, ½ oz. for each 1,000 cubic feet. This will not search any plant. One application is sufficient. For black or white aphids, thrips and scale: Sodium cyanide, ½ oz.; phosphoric acid, ¼ oz.; water, 1 oz. for each 1,000 cubic feet. This will not search mature plants. One application is sufficient. For mealy bug and red spider in house of mixed plants: Sodium cyanide, 1 oz.; phosphoric acid, 1 oz.; water, 4 oz. for each 1,000 cubic feet. Some low young shoots may be affected at this strength, but to a very slight extent only. The following plants are the most susceptible to injury by the gas:—Adiantum cuneatum, Asparagus plumosus, Asparagus Sprengeri, Begonia Clavata, Begonia, Bromelia, Colchus thersifolius, Cyclamen in flower, Heliotrope, Mimosa pudica, Abachya bella, Marguerites, Salvia Bellifolia, Tacsonia, Cologynia cristata, and Odontoglossums.

GLASSES SURVEILLING: *H. G.* See reply to *G. Gray* in the last issue, p. 174, also Mr. Hudson's remarks on the subject in "Fruits Under Glass," p. 169.

NAMES OF FRUITS. In the naming of fruits, we desire to oblige our correspondents as far as we can, but the task would become too costly and too time-consuming were there no restrictions. Correspondents should observe the rule that NOT MORE THAN SIX VARIETIES be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. The fruits should be just approaching ripeness, and they should be properly numbered, and carefully packed in strong boxes; cardboard is often crushed in the post. Leaf or shoot of each variety is helpful, and in the case of Plants, Peaches and Nectarines, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. By neglecting these precautions, correspondents add greatly to our labour and run the risk of increased delay and incorrect determination. We do not undertake to send answers through the post, or to return

fruits. Fruits and flowering plants must not be sent in the same box. Delay in any case is unavoidable.

H. G. Winter Hawthornden.—*M. S. P.* 1, Madame Treve; 2 and 3, Marie Louise; 4, Beurre Diel; 5, not recognised; 6, Huyshe's Prince Consort; 7, Vicar of Winkfield.—*J. S.* 1, White Nonpareil; 3, Orange Pippin; 4, Roundway's Magnum Bonum; 6, Cornish Aromatic; 7, Sam Young; 8, Lord Derby.—*J. C.* 1, Beurré Capiaumont; 2, send fresh specimens later; 3, Beurré Clairgave.—*E. F.* 1, Mother; 2, D'Arcy Spice; 3, Cornish Aromatic; 4, Braddick's Nonpareil; 5, Cox's Orange Pippin; 6, White Nonpareil; 7, Green Blenheim.—*G. B.* Pear, Marie Louise; Apple, Winter Quarrenden.—*Dr. P. P.* 1, Calville St. Sauveur; 2, Early Nonpareil.—*F. J. H.* 1, Mere de Menage; 2, Stirling Castle; 3, Bramley's Seedling; 4, Lady Heniker; 5, Lady Lennox; 6, Ben's Red.—*P. B.* 1, Cellini; 2, Beauty of Kent, Wyken Pippin.—*J. H. B.* 1, Lady Lennox; 2, Beurré Superfin; 3, Beauty of Kent; 4, 5, 6, Dumelow's Seedling (syn. Wellington).—*H. C.* 1, Decayed; 2, Marie Benoist; 3, Marie Louise; 4, Glou Morecan; 5, decayed; 6, Madame Treve.—*J. G. D.* 1, Emperor Alexander; 2, Maik's Collin; 3, Northern Greening; 4, Beurré Rance.—*H. S. K.* 1, Worcester Pearmain; 2, Summer Strawberry; 3, Nonesuch; 4, Golden Knob; 5, Hambleton Deax Amis; 6, Fearn's Pippin.—*T. C.* 1, Sandringham; 2, Melon Apple; 3, Hanwell Searing; 4, Stirling Castle; 5, Jolly Beggar; 6, Anne Elizabeth.—*J. R. B.* Pear, Pitmanston Duchess.

NAMES OF PLANTS.—*Correspondents not answered in this issue are requested to be so good as to consult the following number.*
E. S., Beigate. Ginkgo biloba, a member of the Coniferae, and not a Tree Fern.

PEAR WITH SPOTS: *J. H. B.* The fruits are attacked by scab disease, caused by the fungus *Venturia pirina*. Spray the trees with Bordeaux mixture at half the usual strength, when the buds are beginning to open, repeating the operation when the petals are falling from the flowers, and again when the young fruits have attained the size of Peas.

POTATO: *J. H. E.* Potatoes cannot often be named from single tubers. It is necessary to know the habit of growth, colour of flower, season of ripening, and other details which only the grower can determine.

REMOVAL EXPENSES: *H. H.* In accepting the sum of £10 towards the expenses of removal you agreed to stay with your employer if things were satisfactory. Now, at the end of two months, you wish to leave him, and the employer expects you to forfeit the ten pounds be advanced to you. So far as the legal point of view is concerned, we imagine you would have to be in a position to prove that things were not reasonably satisfactory and that in consequence your promise to stay in the service is no longer binding. Whether you are in such a position we are not able to judge. It may be assumed, however, that in private service the employer would be given the last judgment on whether certain operations in the garden were necessary or not, although his decisions were not what most people would consider appropriate to present circumstances.

TALLY OF CABBAGES: *Smith.* A tally of Cabbages is sixty heads.

WEED ON A LAWN: *A. T. H.* The Creeping Buttercup, *Ranunculus repens*, is one of the most difficult weeds to eradicate. It increases by runners, forming offsets, and has a very vigorous root-system, making it a difficult matter to destroy the plant by hand-weeding. The application of a nitrogenous manure in the spring, such as sulphate of ammonia, would cause the grass to grow luxuriantly at the expense of the weed. Afterwards rigorous hand-weeding, marking out the lawn in squares, and weeding each square separately, should effect a clearance of the pest.

Communications Received: *J. E. C., G. B. W., W. H. J. Mrs. W. J. W. F., H. C. J., T. M. S. A., E. H. K., A. S. C. T. H. B., J. L. R. A. P. M., C. L. C. R., J. D. W. R. D., J. B. F. Miss M., F. D. C. H. C. S. A., Sir H. M., G. S., D. S., H. B., T. B., P. A., P. E. M.*

MARKETS.

COVENT GARDEN, October 31.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots and their prices, including Aralia, Asparagus, Aspidistra, Cacti, and various ferns.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers and their prices, including Arums, Carnations, Chrysanthemums, and various lilies.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage and their prices, including Aspidistra, Camellia, and various ferns.

REMARKS.—Chrysanthemums are a growing crop, but prices are still high. Asparagus is in good supply, but prices are still high. Various other vegetables are also in good supply.

Vegetables: Average Wholesale Prices.

Table listing vegetables and their prices, including Beans, Broccoli, Cabbage, Carrots, Cauliflowers, Celery, and various other vegetables.

Fruit: Average Wholesale Prices.

Table listing fruits and their prices, including Apples, Grapes, and various other fruits.

REMARKS.—Apples are fairly plentiful and in demand, there being no imported fruit. The market is also well supplied with pears, and especially fruits of Doyenne du Comice. Apples are numerous, and good. Medians are offered for sale. Grapes are plentiful and reasonable in price. A few prime Plums are still available. A consignment of Italian Figs has arrived. Nuts of all kinds are in the market. Apples and especially fruits of Doyenne du Comice are numerous, and good. Medians are offered for sale. Grapes are plentiful and reasonable in price. A few prime Plums are still available. A consignment of Italian Figs has arrived. Nuts of all kinds are in the market.

COVENT GARDEN MARKET, October 31, 1917.

GARDENING APPOINTMENTS.

Mr. Jas T Irvine, previously a school teacher, is now at Leighton Gardens, Warwick, B. 9, and is also at Sherborne Castle Gardens, Sherborne, Dorset, and at Leighton Gardens, Warwick, B. 9. Mr. B. R. Kent, formerly a school teacher, is now at Leighton Gardens, Warwick, B. 9, and is also at Sherborne Castle Gardens, Sherborne, Dorset, and at Leighton Gardens, Warwick, B. 9. Mr. A. Newman, formerly a school teacher, is now at Leighton Gardens, Warwick, B. 9, and is also at Sherborne Castle Gardens, Sherborne, Dorset, and at Leighton Gardens, Warwick, B. 9.

The Gardeners' Chronicle

SCALE OF CHARGES FOR ADVERTISEMENTS.

Table showing the scale of charges for advertisements, including Ordinary Positions, Facing matter and Back Page, and Half and quarter pages.

Front page (no display allowed) 1/ per line space (Headline counted as two lines) For discounts apply to address below.

SITUATIONS WANTED. 26 words 1s. 6d., and 6d. for every additional 8 words or fewer. These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

THE UNITED KINGDOM ... 19 6 per annum. ABROAD ... 22 .. " CHARGES AND P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD. 41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2. Telegrams—"GARDINOR, RAND, LONDON." Telephone—"1543 GERRARD."

SITUATIONS WANTED (Continued from page 14)

GARDENER (SINGLE HANDED), with cottage, experience in Fruit, Veg. &c. s. Berks. age 47, 17 yrs. and 10 yrs. exp. good character, see in hand. W. 8111 GOS, 9, Post-Office Place, Milton Road, H. 10, 10.

GENTLEMAN (50) desires WORKING MANAGEMENT, in Fruit, Land, Small Estate, Planting, Food, Poultry, &c. (Gardening, Intensive Gardening, Fencing, Cattle, Sheep, Pigs, Accounts, &c.). Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER seeks Situation; Inside premises, experience in Fruit and Veg., discharged from Army, aged 41, F. STAFF, Chippinham, Wiltshire, Wilts.

GARDENER seeks Situation as good Second, also some experience, age 50, fine old garden, 1000 sq. ft. and 1000 sq. ft. all branches good references from previous employers, married one child, 4 months—Apply, W. COOK, Dean Road, Milton, near Guildford, Surrey.

OLD Public School Man and his Wife seek a position of trust, he thorough knowledge of English, French, Italian, and Gardening, well educated, best references. KOEHLER, 35, Hun Road, Wokingham.

LADY GARDENER seeks Post in Somerset, Devon, Cornwall, or elsewhere, all branches, Fruit, Glass, and Pottery. H. M. Box 3, 41, Wellington Street, Covent Garden, W.C. 2.

LADY GARDENER seeks Post under Horticulture, 12 months' training, 18 months' experience, Horticulture, all branches, French, FRANCES COLE, Box 1, Bideford, Devon, southampton.

TRADE.

MANAGER, Nursery; life experience with British and other Fruit, Roses, general stocks of growing plants, fruit, and all other things, 1000 sq. ft. and 1000 sq. ft. all branches, W. A. Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

FLORIST, as MANAGERESS or FIRST HAND in high class business, experience in all branches, W. A. Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

MANAGER or FOREMAN; life experience in all branches, including design and supply, 1000 sq. ft. and 1000 sq. ft. all branches, W. A. Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

MANAGER or FOREMAN, American Florist, 1000 sq. ft. and 1000 sq. ft. all branches, including design and supply, 1000 sq. ft. and 1000 sq. ft. all branches, W. A. Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

INSIDE FOREMAN; reliable man; 45; married, 1000 sq. ft. and 1000 sq. ft. all branches, including design and supply, 1000 sq. ft. and 1000 sq. ft. all branches, W. A. Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

ADVERTISER, with English and American experience, 1000 sq. ft. and 1000 sq. ft. all branches, including design and supply, 1000 sq. ft. and 1000 sq. ft. all branches, W. A. Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

FLORIST—YOUNG LADY seeks Re-employment, 1000 sq. ft. and 1000 sq. ft. all branches, including design and supply, 1000 sq. ft. and 1000 sq. ft. all branches, W. A. Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

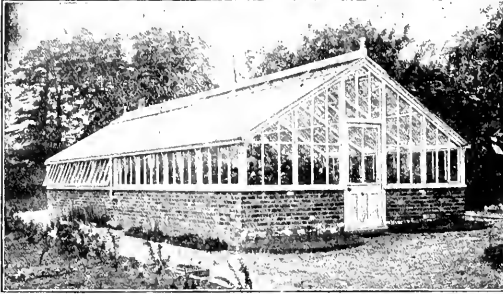
THE ROCK GARDEN

A practical work on the cultivation and management of Rock Gardens, written by Reginald Farrer. One of the best and most popular works on the subject. Contains 50 plates in colour. Price 1/10 post free THE PUBLISHERS, The Gardeners' Chronicle, Ltd., 41, Wellington Street, Covent Garden, London, W.C. 2.

GARDENING CHARITIES.

GARDENERS' ROYAL BENEVOLENT INSTITUTION. GEO. J. INGRAM, Sec., 92, Victoria Street, S.W. Telephone—Victoria 514.

W. RICHARDSON & CO., DARLINGTON.



**HORTICULTURAL BUILDERS
and HEATING ENGINEERS.**

PLANS and ESTIMATES prepared free of cost.

REPRESENTATIVES sent to any part of the Kingdom to advise and take particulars.

LARGE CATALOGUE of photographic views of Horticultural Buildings free on application.

GARDEN FRAMES, GARDEN SEATS, &c., supplied from stock.

LONDON OFFICE: ALBERT MANSIONS, 92, VICTORIA STREET, S.W. 1

**EVERY
GARDENER
KNOWS
THAT**

Clay's gets there and makes the Garden gay all the year round

Sold everywhere in TINS at 6d., 1 1s., and in BRANDED & SEALED BAGS: 7 lbs. 2s. 6d., 14 lbs. 4s. 6d., 28 lbs. 7s. 6d., 56 lbs. 12s. 6d., 112 lbs. 20s. Or direct from the Works. Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS).

CLAY & SON, Manure Mills & Bone Crushers, STRATFORD, LONDON, E.

CLAY'S LONDON FERTILIZER
TRADE MARK
EVERY GENUINE TIN, BAG & SEAL BEARS THIS TRADE MARK.

**IT IS THE
STANDARD
FOOD FOR
PLANTS.**

Horticultural Directory and Year Book, 1918.

This Directory is

NOW BEING THOROUGHLY REVISED

in preparation for the new issue, which will be published early in December. Revision Forms have been sent to those whose names appear in

ANY LIST

and every page is being corrected to date. Besides this, many new names are being added. Will those who have not yet sent back their forms kindly do so **AT ONCE**, otherwise it will be too late to make any emendations.

This Directory forms a

FIRST-CLASS MEDIUM FOR ADVERTISEMENTS.

Those who have not yet booked a page in this widely-read publication should send at once for a list of prices.

THE EDITOR, Horticultural Directory, 41, Wellington Street, W.C. 2

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 4011

No. 1611. VOL. LXII. {THIRD SERIES} SATURDAY, 1917. {Registered as a Newspaper, {PRICE 4d. POST-FREE, 3d.

Subscription—Inland, 19/6; Foreign, 22/- per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 185.

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

WATERER'S ALPINES AND HERBACEOUS PLANTS

New Catalogue to hand.

WATERER'S BRITISH GROWN BULBS

New Catalogue now ready.

WATERER'S WARGRAVE ROSES

Catalogue and Supplementary List of new and choice varieties now ready.

WATERER'S RHODODENDRONS AND CHOICE SHRUBS

Catalogue free.

All or any of the above Catalogues forwarded free on receipt of name and address.

JOHN WATERER, SONS & CRISP, LIMITED,

The Nurseries, Bagshot, Surrey, and Twyford, Berks.

ROSES—ALLEN'S GOLD MEDAL

NORWICH ROSES. Our new descriptive price list, with hints on how to grow Roses, now ready, post free. Write today. J. & C. ALLEN, Rose Growers, Norwich (for over 50 years).

BUNYARD'S STRAWBERRIES

Our new descriptive list is now ready, and will be sent on receipt of card.

ALPINE STRAWBERRIES a speciality. GEO. BUNYARD & CO. LTD., Royal Nurseries, Maidstone.

J. GRAY, LTD., Builder of Conservatories,

Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wray, 301, Western, London, Telephone 291, Western.

MACKENZIE and MONIER, Limited,

Hebhouse Builders and Heating Engineers, London, Edinburgh and Glasgow. By special Appointment to H.M. the King, London Office 8, Camden Road, N.W.

BUNYARD'S FRUIT TREES

New Price List now ready, and will be sent free by return of post.

GEORGE BUNYARD & CO., LTD., Royal Nurseries, MAIDSTONE.

BATHS ROSES and PAEONIES.—New

illustrated catalogue, containing full coloured lists of the best new and standard varieties, is now ready, and will be sent free on application. Dept. A, R. H. BATH, LTD., The Floral Farms, Wisbech.

GREENHOUSE PAINTING & GLAZING

"Vitreolite," superior to White Lead Paint. Plastic "superdese" putty. Full particulars from W. GARDNER & SONS, Glass Works, Battersea. Agents throughout the country.

SUTTON'S BULBS.

FORCING TULIPS from Holland.

Single Tulip, five bulbs.

RELEASED by Order of the Admiralty (Mushal, Belle Adrienne, Chrysolora, Couleur de Cardinal, Impulse de France, Prof. Moore, La Reine, Prince of Austria, Prescience, Rose Gris de Lutz, Thomas Moore, Vermilion, Brilliant, Yellow Prince, and others. Prices on application.

SUTTON & SONS, the King's Seedsmen,

READING.

GISHURST COMPOUND.—Insecticide and Fungicide. Over 50 years' reputation; highly Commended, R.H.S. Scientifically-controlled Trials at Wisley, 1914-15. Sold by dealers in Garden Sundries. Wholesale PRICES, PATENT CANDLE CO., LTD., Tottenham, London, S.W. 11.

THE GARDENERS' CHRONICLE occupies a position in the world of horticulture which is absolutely unique. Founded in 1841, in the very dawn of the horticultural era, it has advanced step by step with the gradual development of horticulture in the country. Its pages were men of high distinction. Sir Joseph Paxton, the greatest gardener of his day, Dr. Lindley, the brilliant botanist, the late Sir Charles Barry, with his superb English house of gardens, these are among the little group of men who launched the "Gardeners' Chronicle" on a long and prosperous voyage. The paper has a fine and inspiring tradition to maintain, and has progressed from the first progress reported by the first issue of the "Gardeners' Chronicle" to the confidence of its readers, and the confidence it still enjoys.

SANDERS, Orchid Growers,

St. Albans.

WM. DUNCAN TUCKER & SONS,

LTD., Rosemary Field, South Tottenham, N. 15. Conservatories, Winter Gardens, Vineries, Peach-houses, Potable Buildings, &c. Catalogues gratis.

KING'S ACRE ROSES and FOREST and ORNAMENTAL TREES and SHRUBS

of finest quality. Catalogues free by post. KING'S ACRE NURSERIES, LTD., Hereford.

BARR'S May-flowering TULIPS,

the best named flowers of spring; plant now. Descriptive list free. BARR & SONS, King Street, Covent Garden, W.C. 2.

KING'S ACRE FRUIT TREES

have produced the finest and most remarkable Apples and Pears on record. 50 acres of Choice Fruit to select from. Please see our Illustrated Catalogue, free by post, before ordering elsewhere.—KING'S ACRE NURSERIES, LTD., Hereford.

DOBBIES Autumn List of Bulbs, Sweet

Peas, Beans, Carnations, Seedling and Vegetable Plant, &c., post free. DOBBIE & CO., Royal Edinburgh.

LIGHT, Strong, Wooden FRAMES,

suitable for Fruit Trays, Plant Shelters, Temporary Buildings, Summer-houses, Garden Trolleys, Hand Barrows, Bowling, Trolleys, &c. A large quantity for sale at bargain prices to clear.—Full particulars from READING WOOD CO., Crane Wharf, Reading.

For Advertisement Charges see page v.

NOW IS THE TIME TO PLANT. KELWAY & SON,

The Royal Horticulturists, LANGPORT, SOMERSET.

are now looking orders for their Choice Hardy Perennial Plants, Plant a Colour Border this Autumn, and you will be able to enjoy its exquisite beauty for many years without any additional expense or trouble.

Send measurements of your Borders. Passies, Delphiniums, Phloxes, Anemones, and other beautiful flowers, included in their Colour Schemes, which provide blooms from early Spring to late Autumn. WRITE NOW to the RETAIL PLANT DEPARTMENT for Reduced Price List.

HOBBIES, LIMITED, Norfolk Nurseries,

DERHAM. Send for Rose Catalogue, post free.

ORCHID PEAT, 7s. 6d. per sack; Rhododendron Peat, free from bracken, 18s. per yard, 6 to 18 yard trucks, bags 50s. dozen; Loam, leaf-mould, Silver Sand, in bags and truck loads; bags of C.N. Fertilizer for 10s., special rates; special Bulb Compost for boxes. See list—J. HANDSCOMBE, The Nurseries, Feltham, Middlesex.

ORCHIDS.—For Sale, collection of

Cattleyas, Cypripediums, Ophrys crataegi, Ombidnum lowii, and various others; about 600.—GAR DENHURST, Broken Hall, Bedford.

DAFFODILS and large Trumpet Narcissus for Grass, Strabright's, and Wild Gardening, 15s. and 21s.; 1,000; selected for forcing, 25s. 1,000, as good, 12s. per bushel (2,000), 5s. 6d. per peck (500 bulbs).—J. HANDSCOMBE, F.R.H.S., Feltham Nurseries, Middlesex.

WALLFLOWER, dark and yellow, 3s. 100; Abyssus saxatilis, 2s. dozen; Aubrieta and Miles, Lloyd's Edwards' Wallflower, 3s. 6d. dozen. Gemma pilosa stricta, new Bloom. Catalogue Alpine plants.—W. H. SPANFIELD, Kew, Southport.

DUTCH BULBS.—MORLE & CO. can

now offer fine named Hyacinths, early Tulips, Scilla sibuyan, &c.; stock limited; early application requested. 150-156, Finchley Road, N.W.

RHUBARB ROOTS.—The true "Cham-pagne" bright scarlet, very productive, planting 2s.; 6s. per 100; 50s. per 1,000; roots with 2 eyes or over, 10s. per 100, 80s. per 1,000; larger roots, 40s. per 100, early planting strongly recommended; on rails, packing free for c.w.o.—HARRISON & ROSS, 501, North Street, Leicester.

FERN'S 'FICKS'—Tree Ferns, Climbing

Ferns, Basket Ferns, Stone and Greenhouse Ferns, Hardy Garden Ferns, catalogues free.—J. E. SMITH, London Fern Nursery, Longbrough Junction, London, S.W.

FOR SALE, 1 Nectarine Lord Napier, 12lb. by 9; 1 Rivers' Early Orange, 12 by 9; 1 Peach Sea Eagle, 8 by 6. Young, dwarfed trained trees. T. FURNESS, Quakers Hill Nursery, Sevenoaks.

SPORTSMEN, Farmers, Horsemen, try our splendid Yorkshire Whipped Trowel; made like leather; showproof, 7 yards for 17s. 6d. Patterns free. BRADFORD WOOLLEN CO., 71, Bradford.

SALES BY AUCTION.

THE COAL EXCHANGE, MARKET PLACE, MANCHESTER.

Messrs. PROTHEROE & MORRIS have been instructed by the Royal J. Cromb... to sell by Auction at the above place.

On Friday, November 16th, 1917, ABOUT

1,200 CHOICE CYPRIPEDIUMS, embracing a choice selection of certificated and duplicate plants from this well-known collection.

On view morning of sale. Catalogues can be had at the Coal Exchange also of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C. 2.

THE AMERICAN NURSERIES, MILFORD, SURREY.

Clearance Sale by order of the Trustee. Messrs. PROTHEROE & MORRIS will sell by Auction on the premises as above.

On Monday, November 12th, at 12 o'clock, 4,000 Rhododendrons, named varieties; 5,000 Ponticum, 12 to 5ft., and 500 Hybrid Seedlings; 7,000 Hardy Heaths...

Catalogues can be had on the premises; of Mr. L. R. Russell, The Nurseries, Richmond, Surrey; of P. Mason, Esq., 64, Grosvenor Street, E.C. 2; and of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

TUNBRIDGE WELLS.

Expiration of Tenancy. By order of the Trustee, Three days' clearance sale of the well-known stock of Mr. L. R. Russell.

Messrs. PROTHEROE & MORRIS will sell by Auction on the premises.

The Nurseries, Bayham Road, Tunbridge Wells.

On Monday, November 19th, an 1/2 following day, at 12 o'clock each day.

3,000 Japanese Maples, in variety, a special feature at these nurseries; 1,000 Arancaria umbicata; 500 Hamamelis; 3,000 named Rhododendrons, 2 to 4ft.; 3,000 Laurels, 3 to 6ft.; 4,000 calceolaved Privets; 2,000 Purple Beech and varieties; 10,000 Common Beech; 1,000 Prunus avestracae, 3 1/2 to 4ft.; 1,500 Filberts and Cobnuts; 1,000 Thuja Lobbii, 3,000 Skimmias, 1 to 2ft.; Ornamental and flowering Shrubs, &c.

May be viewed. Catalogues had on the premises; at the Nurseries, Richmond, Surrey; of P. Mason, Esq., Trustee, 64, Grosvenor Street E.C. 2; of the Auctioneers, 67 and 68, Cheapside, London, E.C. 2.

HOME-GROWN BULBS, GREAT TRADE SALE.

Wednesday Next, November 14th, at 12 o'clock.

Upwards of 2,040,000 Bulbs, including Narcissus in all the best-known varieties for forcing or planting out; Polyanthus Narcissus of sorts, in sacks as received; Early, Harvest variety of which well known; and Max... Early-flowering Gladioli, Bearded Iris, also 75,000 Stock, Keiria Bellmanea and Forsythiana, in grand condition.

Messrs. PROTHEROE & MORRIS will sell the above by Auction at their General Sale Rooms, 67 and 68, Cheapside, London, E.C. 2. Catalogues forwarded on application.

SALE BY AUCTION OF

ROSES,

Herbaceous and Rock Plants, Rhododendrons, Carnations, Fruit Trees, Golden Privet, &c.

BULBS in variety.

100 20-lb. Baskets of APPLES.

Wednesday, November 14th, 1917, at 12 noon.

Messrs. PROTHEROE & MORRIS, 67 and 68, CHEAPSIDE, E.C. 2.

Notice in Stamps will ensure Twelve Catalogues.

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORISTS' AND SEED BUSINESSES to be let or sold. Published by...

Messrs. PROTHEROE & MORRIS every month. Copies may be obtained post free on application. Estate Offices, 67 and 68, Cheapside, London, E.C.

CAPITAL FRUIT OR MARKET GARDEN, with good small house, for sale, near Reading, high growing crops. Price, 21,500.—118-S. BELL BUTLER'S, Reading.

BUSINESS WANTED.

WANTED to Rent, NURSERY, suitable for forcing growing, or would entertain partner ship.—SPENCER, Vines, Rayne, Essex.

PARTNERSHIP.

WANTED, a Gentleman open to Invest £1,000 in a flourishing Fruit, Flower, and Vegetable Business, or any special, someone in touch with Fruit and Flower growers preferred. Weekly return as interest on the money will be over £4. Write, T. H., Box 15, 41, Wellington Street, Covent Garden, W.C. 2.

BOOK WANTED.

WANTED TO PURCHASE

a second-hand copy of

NICHOLSON'S

"DICTIONARY OF GARDENING."

State Price.

"X. Y. Z." Box 21, 41, WELLINGTON STREET, COVENT GARDEN, W.C. 2.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, and plants, for sale, or to be exchanged. See other advertisements, Catalogues free. SMITH, London Fern Nursery, Longbridge Road, London, S.W.

WANTED for Cash, ONIONS, Shallots, Apples, Lemons, Grapes, Jerusalem Artichokes, Scotch Peas, Free and paid, and other veg., with sample. LLOYD, PATLIS & CO., Seed Merchants, Waverley, Liverpool.

WANTED, LILUM TIGRINUM, in different varieties. Price per 100 to STEWART & CO., 13, South St. Andrew Street, Edinburgh.

WANTED to Buy, CYPRIPEDIUM IN-SIGNE, State price, and quantities to suit. "X. Y. Z." Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, a firm to supply and plant out 500 Large Trees, during November. POMER, Leam, Chesham, Bucks.

PLANTS, &c., FOR SALE.

100,000 LARGE GARDEN FERNS, in 100 20-lb. Baskets. Begonias, Crotons, Daphnias, Rosas, Lilies, Camellias, Lilacs, Hydrangeas, and other Catalogues free. SMITH, London Fern Nursery, Longbridge Road, London, S.W.

MISCELLANEOUS.

BUY YOUR OILSKINS

DIRECT FROM US.

We not only save you money, but we get you better quality than offered by any other firm. Beason and Sons are made with the patent finish, and are always soft and pliable. They never crack or stick, and they never fail to keep out the heaviest storms. Don't buy inferior Oilskins. Send your order to us, and if you are not convinced that BEASON OILSKINS are the finest value you have ever seen, you can send them back and have your money returned in full. Children's Coats from 10s. and Men's 15s. and upwards. Ladies' Smart Oilskins 12s. Leggings from 5s. Non-wetters from 1s. 8d. Sold by the free Oilskin Dealer—BARBORS, LTD., 66, BEACON FIELDS, SOUTH SHIELDS.

LANG'S "IDEAL" MANURE, for Fruit, Flowers, and Vegetables, 12s 6d per cwt., £10 10s per ton, running price—G. LANG & SONS, LTD., Hounslow, Middlesex.

"PESTITE" destroys all soil pests (Anthrax, blight, wart disease, &c.) and promotes vigorous growth. Price 10s. 6d per cwt., £8 per ton, carriage paid. G. LANG & SONS, LTD., Hounslow, Middlesex.

THE HORTICULTURAL DIRECTORY AND YEAR BOOK is now being prepared, enlarged and brought up to date. This work, the copyright of which was purchased last year by the Gardeners' Chronicle, Ltd., was then thoroughly purged of all out-of-date and useless names, but during the past year there has been so many changes among Gardeners, many of whom have joined the Army, it is therefore again being subjected to a thorough revision, besides which large numbers of fresh names are being added. All who desire a full up-to-date guide to the horticultural world will do well to write to 41, Wellington Street, W.C. 2, at a once. The new edition will be ready in December, price 15s. 4d. post free.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

WANTED, HEAD WORKING GARDENER, three others kept, with wife to assist with household duties preferred, live in. Write, stating wages, full particulars, and references, to J. S. DOIG, Northton Lodge, Castor, Lincs.

WANTED, WORKING HEAD GARDENER, wages two are kept, good wages and cottage, must be experienced and have good references.—Apply, A., The Limes, Southwood Lane, Highgate, N. 6.

WANTED, a GARDENER (SINGLE-HANDED), with lad, good wages.—Apply in writing, with references, to S. OSBORN, Grimfield, near Sheffield.

WANTED, good all-round SINGLE-HANDED GARDENER for Somerset; must be intelligible. Write, D. A., Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, GARDENER (SINGLE-HANDED), for Stoke Poges neighbourhood; Flowers and Vegetables, small glasshouse; boy and occasional help; married man (no family) preferred; knowledge of electric light plant, cottage, 30s. a week.—Apply, MAJOR BARLEY, 127, Piccadilly, London, W. 1.

WANTED, experienced WORKING GARDENER, assistance given by pumping petrol engine, good house and coal found, over military age; good character.—Apply, stating wage, COLONEL TILLOTSON, Brookbank, Gosham, Hants.

WANTED, GARDENER; a good man for General Garden work; intelligible for severe; wages of (married) 30s. per week, and modern cottage free; must have first-class character. Apply, with full particulars, to HEAD GARDENER, Gaston Manor, near Watford, Herts.

GOOD all-round GARDENER wanted; able to milk a cow, had kept for help in Garden, wages 37s. 6d. per week. State age, experience, when discharged, with copies of references, to A. 84, Crossbrook Street, Waltham Cross, Herts.

WANTED, good all-round MAN for Houses, and help with Fruit Trees outside if required, single, intelligible.—State experience and wages required, with Botby and vegetables, to HEAD GARDENER, The Gardening, Friarham House, Yattendon, Newbury, Berks.

WANTED, good SECOND GARDENER, able to do four or five are kept; must be well up in Indoor work, single man preferred, as no cottage available on estate. Write full particulars to W. A. J., Kearsney Court, near Dover (2 miles).

WANTED, good SECOND GARDENER, to take entire charge for war duration; good wages and permanent place.—Apply, in first instance, to W. P. Botby & SON, 112 and 114, Station Road, Redhill.

WANTED, good SECOND GARDENER; wages 30s.—G. SMITH, Kingshead, Roydon, Essex.

WANTED, UNDER GARDENER; alter- nate duty, good cottage and garden.—Apply, stating age, particulars of experience, wages required, FARRS, Sanderstead Court Gardens, Sanderstead, near Croydon.

WANTED, UNDER GARDENER; man or woman, comfortable place; good wages.—Apply, GARDENER, The Chase, Slades Hill, Enfield.

WANTED, ORCHID FOREMAN; large collection; single; intelligible.—Write, state age, experience, wages required, copies of references, to C. H., Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, FOREMAN (INSIDE), experienced, also OUTSIDE LEAD and OUTSIDE ASSISTANTS—Wants giving full particulars as to experience, wages expected, &c., to D. MATHEWS, The Gardens, Paddockhurst, Worth, Sussex.

WANTED, an experienced FOREMAN of the Flower Garden and Pleasure Grounds, able to teach students—Apply, with references, at the salary expected, to the GLEADOW SUPERINTENDENT, The Horticultural College, Swanley, Kent.

WANTED, FOREMAN or good JOURNEYMAN, Inside, Ages 30s, Bolly, &c.—E. BRISTON, Leppard Gardens, Brommidge, Tunbridge Wells.

WANTED, WORKING FOREMAN and WOODMAN, with some knowledge of Forestry, for an estate in North Wales, good wages, with bonus, cottage, and garden. Apply, with references, to ESTATE OFFICE, Talacre, Prestatyn.

WANTED, FOREMAN (ineligible) or discharged soldier, age 30s, Bolly, with attendance, 8, POPE, Home-wood Gardens, Langton Green, Tunbridge Wells.

WANTED, JOURNEYMAN (ineligible) or IMPROVER, under 15, Inside, good wages and Bolly given—State age, with particulars, to J. AINSWORTH, The Gardens, Heston-on-Bottom, Tamworth.

WANTED, TWO JOURNEYMEN, Plant and Fruit Houses, discharged or ineligible men, with good experience, 20s per week, Bolly and vegetables, duty paid extra—WILLIAM LLOYD, Red Lion Hill Gardens, Reigate.

WANTED, in good Garden, a well-experienced IMPROVER for Inside, age 15, 20s all weekly, with Bolly, &c., to do duty every third or fourth week, 5d per hour overtime, 10d loss Saturdays. Apply, H. LLOYD, Town Water Gardens, Swanley, Kent.

WANTED, IMPROVER for the Houses, age 16-17, wages 15s, with Bolly and vegetables, duty paid extra, W. L. BASTIN, Buscot Gardens, Faringdon, Berks.

WANTED, YOUTHS, 16 to 17; Inside and Out, wages 15s, &c., according to experience, with Bolly, &c., duty paid extra—GARRATT, Cannon Hill Gardens, Sutton Coldfield, Birmingham.

WANTED, responsible LADY GARDENER for House, good training and some post experience essential, Houses, Vines, Kitchen Garden, &c.—Write, B. S., Box 12, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, LADY GARDENER, trained; Inside and Outside, live in—State Ages, qualifications, references, to MISS D. HAYSELL, Dacre Lodge, Farnham.

LADY GARDENERS Wanted; all suited entirely free of charge. Food and Lodger for 10 Herts.; 30s; good accommodation and attendance, and vegetables. (2) Cheshire, about 40s; must be trained for Vines, Potatoes, and Kitchen Gardens. Funders for (1) Dressing, Head Man and girl to help, under-plant Vines, Potatoes, Carrots, and Buns; excellent Head Man, labourer, and boy kept; must be trained. (3) Near Wether, good Head kept, under-plant Glass and Roses, Single-holed, with help. (4) Canterbury; good furnished cottage, milk, and vegetables. (5) Sussex; 25s, 30s; resident in house, 3 acres, small Greenhouse. MISS HUNT, LTD., 90, High Street, Margate, W. 1.

WANTED, LADY GARDENERS; partially trained or fresh from training for private grounds.—H. C., Box 17, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, TWO LADY GARDENERS, for Inside work; house food, dirt, alternate work, state wages—Apply, GIBSON, Affleck Park, Derbyshire.

WANTED, FOREWOMAN, under Head Gardener in Glass Department, also to decorate, Sunday duty paid. Also WOMEN GARDENERS for outside work, good wages and cottage near Guildford. Pine Hill, Cobham, Surrey.

LADY SCOTT requires responsible CARE-TAKER, with some knowledge of Gardening, no Glass during war; boy kept and extra help given, married man; good wages and cottage near Guildford.—Reply, by letter first, to MR W. KELLER SNOW, F.S.A.A., 55, Quarry Street, Guildford.

WANTED, GARDEN LABOURER, to work under Head Gardener, married or single; if married, cottage given at BRINS, Southcliff Park, Banbury.

WANTED, ineligible GARDEN LABOURER; discharged soldier or sailor preferred; wages 26s.—ROUSADA, Siedmore, Milton, Yorks.

WANTED, HANDYMAN for Country House, must be able to run electric light plant and attend to motor-car, married; discharged soldier preferred; comfortable cottage—State wages.—COFFMAN, Cliveden, Stedfield.

TRADE.

WANTED, Man as WORKING FOREMAN, on small Nuts and Raspberry Farm, 25 acres. Apply, stating wages expected, EDWARD CANNAM, Seed Merchant, York.

WANTED, SECOND CHARGE HAND, experienced in Tomatoes, &c., used by amateur men. Apply, stating age, wages, &c., A. W. SMITH, Fitcham, Middlesex.

WANTED, several good MEN for planting young Forest Trees on estates in Surrey, Beds, and Oxon; some experienced men, others useful spade hands—State wages to S. O., Box 3, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, experienced ASSISTANTS, in our Vegetable Seed Department, good wages to competent men. Apply, giving full particulars to TOO GOOD & SONS, The King's Seed-land, Southampton.

FLORIST—Young LADY required, for good class shop, light or air, with, stating experience, &c., A. J. BORMAN, Bokerham.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Names and addresses alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE

A GENTLEMAN wishes to recommend his HEAD GARDENER and BAILIFF, life experience, &c., all branches, 30 years in present situation, &c., at Heath, &c., Burton-on-Trent, and 30 years such at Droppin Park and Besenote, age 39, married (no children, &c., &c.). Apply, in next instance, C. FROST, Weydon Springs, Stoke Poges, Bucks.

GARDENER (HEAD) seeks engagement in a good establishment, where several scholas are kept, life experience in all branches, highly recommended by present employer, A. W. Gilmour, Esq., after 11 years service, leaving through peace being sold, married, age 44, near London preferred. Apply, F. BARKER, The Gardens, Avery Alberts House, Brickford.

HEAD GARDENER, where several are kept, 27 years' experience in good establishments, excellent references, 11 years' Head, no children, discharged, C. REED, 170, Stanley Road, Tootingdon, Middlesex.

GARDENER (HEAD) desires re-engagement in good establishment, age 33, thoroughly experienced in all branches of the profession; good references, 6 years' Head, no children—State wages and full particulars to W. EAST, Upper Hill Gardens, Tottenham, Herts, N. 20.

SIR HARRY NORTH, Lemon Well, Fitcham, Kent, highly recommends a first-class HEAD GARDENER, practical expert in every branch of Horticulture and capable to any extent, at liberty.

GARDENER (HEAD), in good establishment, large and varied experience in all branches, 10 years in present situation, age 43; married, G. B., Box 4, 41, Wellington Street, Covent Garden, W.C. 2.

SITUATION required as GARDENER, Head or Single-hand, experienced, good testimonials—GARDENER, Stoke Cottage, Green, Tonbury Walk, Singapore.

GARDENER (HEAD WORKING, where one or more are kept), thoroughly experienced all round, Inside and Out, married (no family), age 33, good references—State wages, T. W. SUTTON, Hill Lodge, Pitt grates Way, Westcliff, Kent.

GARDENER (HEAD WORKING); life experience in all branches, good references, 21 years present place, age 50, GEORGE BEALE, The Knowle, Virginia Water, Surrey.

ORCHID GROWER and WORKING HEAD GARDENER desires re-engagement, 32 years present situation, good all-round experience, over military age—State wages, &c., to CONINGSBY, Adocks Leigh, Bristol.

GARDENER (HEAD WORKING or good SINGLE-HANDED), life experience in all branches, age 51, married (no family), BICKER, The Cottage, Church Mead, Fribright, Surrey.

GENTLEMAN (50) desires WORKING MANAGEMENT, Farmery, Gardens, Small Estate, Food Production, Fruit, Vegetables, Tomatoes, Forge Crops, Cattle, Sheep, Higs, Boring, Sewing, Accounts, excellent references, B. Box 36, 41, Wellington Street, Covent Garden, W.C. 2.

SITUATION required in Pleasure Grounds and Kitchen Garden, where one or two are kept, age 48; single—A. HOLLAMBY, 42, Wellfield Road, Stratford, S.W.

DISCHARGED Soldier seeks situation; experienced Inside and Out, married (no family); Single-handed or otherwise.—Apply, F. CORDERY, 1, Rothern Road, Catford, S.E.

JOURNEYMAN (INSIDE) seeks Situation in good place, age 22, discharged from Army; experienced in Fruit and Plants, excellent references.—Apply, F. WILLIAMS, Eaton Bishop, Herefordshire.

HEAD GARDENER (Lady) requires re-engagement; highly trained, England and France, 10 years' experience, thorough knowledge all branches; accustomed to management of large establishments.—C. M., Box 11, 41, Wellington Street, Covent Garden, W.C. 2.

LADY GARDENER seeks Post; college trained and experienced, Vegetables, Fruit, Glass, non-resident, alone or with others, A., Box 14, 41, Wellington Street, Covent Garden, W.C. 2.

TWO LADY GARDENERS desire post together, one as Head, with 11 years' experience, Stanley Diploma, first-class, R.H.S., Dairy, Poultry, Bees, the other as Under, with 8 months' training on Market Garden, some Glass, F. F., Box 12, 41, Wellington Street, Covent Garden, W.C. 2.

UNDER GARDENER—Lady, taking short course, horticultural training, seeks Post under experienced Head, Vegetables for market or in station preferred.—Address V., Horticultural College, Chester.

TRADE.

MANAGER for large Market Garden or Nursery; Outside, chiefly Vegetables and Hardy Fruits, Inside, Grapes, Cucumbers, Tomatoes, &c., highly efficient and capable; Midlands preferred.—"PRODUCE," Box 13, 41, Wellington Street, Covent Garden, W.C. 2.

SEED and FLORAL TRADE.—Advertiser seeks situation as MANAGER, HEAD SHOWMAN or MARKET SHOWMAN, 22 years' thorough practical experience in all branches; 13 years' last situation; age 39, married, discharged from H.M. Forces; London preferred, J. N. PEARCE, 36, Kellerton Road, Lee, S.E.

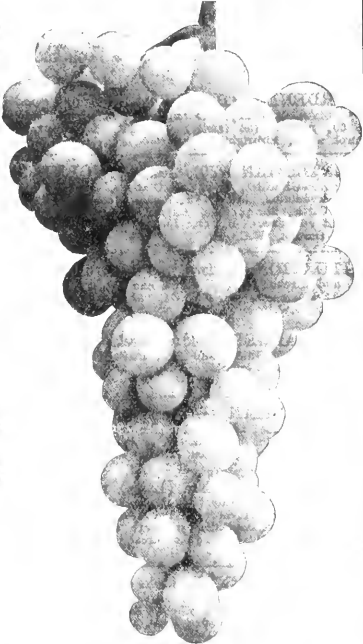
TOMATO and CUCUMBER GROWER seeks situation as FOCUMAN; 15 years' experience with leading growers in London district, ineligible for Army, age 39.—C. ANDERSON, 62, Newmarket Road, Cambridge.

LADY GARDENER, aged 23, with practical experience seeks appointment, Market Nursery in Home Counties preferred, or under good Head in private place for Vegetables and Fruits under Glass. Apply, E. L., Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

FLORIST, having for a considerable time been employed of first-class West-End business, used to buying, seeks situation at a shop or hotel, or as sub-station.—W. S., Box 6, 41, Wellington Street, Covent Garden, W.C. 2.

FLORIST—LADY seeks re-engagement as MANAGER or FIRST HAND, first-class references, H. M., 34, Albert Road, Hylle, Kent.

BULL'S FOOD FOR PLANTS, FRUIT & VEGETABLES.



CANNON HALL MUSCAT

Grown with Bull's Food for Plants
at Menpes Fruit Farm.

MENPES FRUIT FARM, LTD.

Dear Sirs,
For many years we have exclusively
used your Food for Plants for our
Vines, and the results have invariably
been all that could be desired.
Please repeat our last season's order
and oblige,

Yours faithfully,
For Menpes Fruit Farm, Limited,

J. E. Peters
Manager.

Sole Manufacturers:

BULL'S PLANT FOOD CO.,
536, King's Rd., Chelsea, London

ROSES FOR AUTUMN PLANTING

ORDER EARLY.

Beautiful plants of the best possible cultivation,
our selection from the finest sorts including:—
The Brilliant Coloured

"MDME. EDOUARD HERRIOT"
(Daisy Mail Rose.)

12/- per doz. bushes, carriage paid.

Catalogue Free on request.

STUART LOW CO., BUSH HILL PARK,
MIDDLESEX.



Sample CRET Pot
FREE with Booklet
will convince you that the
Drainage Porosity, Healthful-
ness of CRETS would help
your plants. Write.
PETER BAILEY & SONS, Ltd.
2 Heaton Mersey Pottery,
near MANCHESTER.

LAXTONS BEDFORD

FRUIT TREES
&
ROSES

CATALOGUE & CULTURAL
HINTS GRATIS

IMPORTANT: Please write for a Catalogue,
allow us to send to those who apply—
LAXTON BROTHERS, BEDFORD.



A menace
to our
Food.

THE "nibbling" of the millions
of Rats and Mice means in the
aggregate a huge food wastage.
It is a patriotic duty to kill them.

"LIVERPOOL"
VIRUS
EXTERMINATES
RATS AND MICE

Safe and sure. Harmless to human beings
and domestic animals. No risk of unhealthy
disagreeable smells for the pests come out
of their holes to die.
In this ready prepared with bait: for Rats
26 & 6/-; for Mice 1 G. Of all Chemists.
Full particulars from
EVANS, SONS, LEICHER, WEBB LIMITED
56, Hanover St., Liverpool.

FRUIT IN THE GARDEN.

Root up useless shade trees and unproductive
Shrubs, and replace with Fruit in these times,
when food is all important.

Specialty grown trees of

APPLES, PEARS, PLUMS,

of fine quality for the Walls, Edging or Vegetable
and Flower Borders. Many of fruiting size. Also

FINE STANDARD TREES

A grand lot of Peaches, Nectarines and Cherries
for the House and Garden Walls, also

BUSH FRUIT TREES.

Catalogue free on request and special quotations
given on hearing exact requirements.

STUART LOW CO., BUSH HILL PARK,
MIDDLESEX.

H. WOOLMAN'S

Chrysanthemum Catalogue.

Now Ready. Post Free.

From SANDY HILL NURSERY,
SHIRLEY, near BIRMINGHAM.

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

THOMSON'S CELEBRATED MANURES

PERFECT PLANT FOODS
UNRIVALLED FOR
ALL GARDEN CROPS.

SOLD BY ALL SEEDSMEN
OR FROM SOLE MAKERS.

WM THOMSON & SONS, Ld.
CLOVENFORDS, N.B.

AUGUBA JAPONICA.

RHODODENDRON PONTICUM.
RHODODENDRON PINK PEARL.
(Finest Named Hybrids.)

All the above 3ft. to 4ft. bushy, good plants for Covert
Planting. Must be sold, cheap, to make room for potatoes
If not disposed of must be burned.—A. BARGAIN!

Particulars from

R. MANSON, Nurseryman, Gateacre
LIVERPOOL.



✓ SLUGS
SLUGS

"SANITAS" POWDER

will rid your Garden of Slugs and
protect your Seeds and Plants from
other pests such as Worms, Rats,
Mice, Sparrows, Cats, &c.

Leaflet and Free Sample
with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (or, London)
of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
Limehouse, London, E.

Awarded Medal at Royal Horticultural
Exhibition, 1911.

SANKEY'S FAMOUS GARDEN POTS

The BEST and Cheapest.
Largest quantity of each size required and have "carriage paid"
condition ("carriage" frequently amounts to half value of
goods) or write for Price List free.
SPECIAL PRICES of all descriptions. Dutch Bowls and Fern
Pots from 2d. each.
RICHARD SANKEY & SON, LTD.
Dulwell Potteries, NOTTINGHAM.

RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges,

AND
Orchard House Trees

ARE OF
First-class Quality.

A Large and Select Stock always on View.

PRICE LIST POST FREE ON
APPLICATION.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.

THE

Gardeners' Chronicle

No. 1611—SATURDAY, NOVEMBER 10, 1917.

CONTENTS.

Encalyptus, the genus .. 190	Plum (Orpington Prolific) .. 191
Farm, crops and stock on the home .. 193	Potato, a large .. 189
Food production, on increased .. 193	Potatoes, French reserves of .. 191
Potatos at Ald-ham .. 191	Rowan, utility and romance of the .. 192
Potatos spraying .. 191	Scottish Seed Trade Association, a new .. 190
Galloway garden, notes from a .. 185	Societies—Chrysanthemum .. 192
Grass land, the breaking up of .. 190	Royal Horticultural .. 192
Hibiscus syriacus .. 192	Week's work, the—
Letters from soldier-gardeners .. 188	Flower garden, the .. 189
Linum perenne and rabbits .. 192	Fruit under glass .. 189
Market fruit garden, the .. 186	Hardy fruit garden, the .. 189
Pergolas .. 187	Kitchen garden, the .. 188
Phellodendron sachalinense .. 186	Orchid houses, the .. 189
	Plants under glass .. 189
	Wythop Woods .. 191

ILLUSTRATIONS.

Ficus stipulata, fruit of .. 191
Pergola furnished with Gordon Pear trees .. 187
Phellodendron sachalinense, fruiting branch of .. 186
Plum (Orpington Prolific) .. 191

NOTES FROM A GALLOWAY GARDEN.—XIII.*

I HAVE read with pleasure Mr. Edwin Beckett's praise of *Hibiscus syriacus* (p. 157). There is, indeed, no more beautiful late-flowering shrub than some of its varieties; but Mr. Beckett's statement that it will succeed "in almost any soil or locality" must be accepted with reserve, for, alas! it delays its display too late for the generality of Scottish gardens. It may be coaxed forward by training it against a sunny brick wall; but that is almost an indignity for a plant that is as hardy as a Box bush. It is one of the peculiarities of our north-western coast climate that, although growth is often more forward in February and March than it is in the southern and midland counties, it invariably lags behind them after midsummer, as much as three weeks or a month. This is not owing to want of sunshine; during the summer of 1917 we enjoyed far more bright sunshine in Galloway than was vouchsafed to Kent and Surrey; but our sunshine differs in quality, owing, I suppose, to the greater humidity of the atmosphere of the Scottish west coast. In bygone years, when the House of Commons prolonged its dreary sitting through and beyond the dog days, many a time I used to repair to Chyne Walk, Chelsea, to refresh my eyes with the sight of a great bush of the Syrian *Hibiscus* the variety with white flowers and a maroon purple blotch—growing and blooming profusely in the forecourt of one of the houses near the east end of that delightful row. And when, at length, I got back to Scotland, the flower buds on our bushes were hardly showing colour, except on the wall of Mr. Wallace's house of Lochruan, trained against which was a fine *Hibiscus* with violet flowers, worth going all the way to see in September. In some gardens, our own, to wit, wall space is hard to come by, all avail-

able exposure being already occupied by things which one cannot make up one's mind to displace. So we have to forgo several shrubs and herbs which brighten more southerly borders—*Hibiscus* in all its charming varieties, *Caryopteris Mastacanthus*, *Tourneria frutescens*, *Perovskia atriplicifolia*, and, among humbler growths, the goblin gold of *Sternbergia* and the flames of *Lobelia Cavanillesii*. To the other side of the account may be set the preference shown for our climate by Himalayan and Chinese *Rhododendrons* and many beautiful Chilian plants, besides the longer duration of blossom, owing to the sunshine being less scorching than in a drier atmosphere.

If Mr. Reginald Farrer had sent home no spoils from his Chinese expedition other than the *Gentian* which bears his name, he would have earned the enduring gratitude of stay-at-home amateurs, for it is the lordliest of all the autumn-flowering species of that genus. It is a glorified *G. ornata*, excelling that species in vigour and the size of its flowers, which are sky-blue, of the same celestial quality as that distinguishing the best forms of *Meconopsis latifolia*. The interior of the throat is shell white, the outside palest buff, vividly striped with dark blue, almost black, lines, like the waistcoats worn by footmen in undress livery, before they all went off to join the Colours. Its requirements seem to be simple. We placed a small plant which came here last spring at the edge of a bed occupied by Lilies and Asiatic *Rhododendrons*, giving it a berth of sharp loam with a little peat, surfaced rather thickly with small gravel. It has made excellent growth, and bore two flowers in October.

Mr. Arnott's timely note on Autumn Crocuses (p. 167) comes to remind one how little use is made of these pretty flowers. One may perambulate fifty gardens with out being cheered by the sight of any of them; *Colchicums* in plenty, with their six stamens, but no Crocuses, distinguished by having only three. I fancy the reason for this unmerited neglect is that most people order their bulbs in autumn, after these Crocuses have started growth, which continues throughout the winter months. The only season when the corms will suffer transport without injury is in summer, after the foliage has died down. But that is just the time when nobody has a thought for Crocuses.

At this season, late October, the glistening flower-buds and growth buds of *Rhododendron barbatum* are thickly covered with the corpses of flies of various kinds. I wish someone skilled in the use of the microscope (which I am not) would hold an inquest upon the dead, in order, if possible, to ascertain whether the slaughter is purposeless or to the advantage of the plant. Some years ago I propounded the question to a high authority on vegetable physiology, and received in reply an assurance that the analogy between the capture of flies by this *Rhododendron* and by such plants as *Drosera*, *Pinguicula*, and others, was merely superficial; that the strong bristles on the petioles (which certainly hinder the insect's

efforts to get free) were not glandular, and therefore incapable of conveying nutrition to the plant. He referred me to the shining, glutinous buds of the Horse Chestnut as truly analogous to those of the bearded *Rhododendron*, and unfruitively functionless. Against this it might be argued that Horse Chestnut buds do not get sticky nor shine in a manner to attract insects until the leaves have fallen and few flies are about, whereas those of the Bearded *Rhododendron* are sticky and shine from the moment they appear. Moreover, I have never seen insects caught on the buds of the Horse Chestnut. Wherefore this morning, when I stood before a thirty-year old bush of *R. barbatum*, 9 feet high and 10 feet through, with every one of its flower and growth buds thickly plastered with dead flies and here and there a dead spider, the ejaculation of the disciples about the alabaster pot of ointment rose to my lips—"To what purpose is this waste?" It is difficult to believe that the plant derives no benefit from such a holocaust. Some other species of *Rhododendron* catch flies, but not so systematically as *R. barbatum*. I have seen a considerable number of insects adhering to the young shoots of *R. Griffithianum* (Aucklandii) in early summer. A kind friend whose attention I invited to this problem sent me a plant of the Chinese *R. habrotrichum*, whereof the young growth and leaf-stalks are densely covered with hairs; but it is not so sticky as *R. barbatum*, its hairs are softer, so it has succeeded in capturing only a few insects.

We were afflicted on October 21 with a very heavy gale, which, being accompanied by a pretty severe frost, has wrought a lamentable change on the landscape. In the woodland, Oaks have suffered most, for they were still carrying full sail. Many have been uprooted, and more have lost limbs. When I left home on October 15 there was a finer promise than usual of autumnal colour; when I returned on the 26th, much of the foliage had been stripped off, and much of what was left had been scoured into ashen brown by the combinations of violent wind, sea spray and frost. In the garden, which I left gay with *H. T. Roses*, *Cherodendron triebotomum*, *Hypericum patulum* and *Hookeri anum*, scarlet and carmine *Lobelias*, white *Cimicifuga simplex*, *Salvia patens*, *Aconitum Fischeri*, and a rigidly select sprinkling of Asters, almost the only things that remained bright and cheerful were *Berberidopsis corallina*, *Abutilon megapotanicum*, and a few *Hydrangeas* in sheltered nooks.

Chief source of disappointment was missing the annual display of *Cercoidiphyl-lum japonicum*, which the frost had stripped of leaves just as they were beginning to turn. The plant on a wall at Kew gives no idea of what the species is capable. Ten or twelve years ago I received a packet of seed from a friend, which produced some thousands of plants. In the second autumn the seed-bed resembled a luminous carmine carpet. We know nothing about the status of the thing, nor of its requirements; wherefore, in virtue of

* Previous articles appeared in the issues for Jan. 13, Feb. 7, Mar. 10, April 14, April 28, June 2, June 30, July 21, Aug. 18, Sept. 8, Sept. 29, and Oct. 20, 1917.

its wonderful autumnal colour, we treated it as a shrub, disposing it at the back of flower borders and along woodland paths. Nor was my ignorance of its true nature dispelled till I happened to read in *Traveler's Notes*, by the late Mr. James H. Veitch, that he found a tree of *Cercidiphyllum* near Sapporo, in the north of Japan, measuring 21 feet in circumference of stem! Meanwhile, the plants remaining in the nursery had become drawn and ill-rooted. We endeavoured to establish them under forest conditions, but at least fifty per cent.

PHELLODENDRON SACHALINENSE.

Four species of *Phellodendron* are in cultivation: *P. amurense*, a native of Amurland and Manchuria; *P. chinense*, introduced from W. China by Mr. E. H. Wilson, both fruiting freely this year; *P. japonicum*, a species from China and Japan; and *P. sachalinense*, a native of Japan, Corea, and Saghalien. The behaviour of *P. sachalinense* suggests that it is the most

and smooth beneath, while those of *P. japonica* are very downy on the underside.

P. sachalinense appears to have been first introduced to Britain from the Arnold Arboretum in 1899. Seeds provide the best method of propagation. The trees thrive best in a good holding, loamy soil. A. O.

THE MARKET FRUIT GARDEN.

In October only eight days of twenty-four hours were entirely free from rain, though on one the quantity was under one-hundredth of an inch, and therefore classed as unmeasurable. There were 22 rain days at my place, the total fall being 4.29 inches. The total was not as great as that of October, 1916, when 21 rain days gave 5.47 inches. The frequency of the rainfall was more unfortunate than the quantity, as the land was kept constantly wet, and unfit for cultivating or hoeing, and the rampant weeds continued to flourish. Moreover, the gathering of the later portion of the Apple crop was delayed to great disadvantage, so that when we came to pick a great crop of Lane's Prince Albert in the last orchard to be cleared, fully two-thirds of the Apples were on the ground.

SLUGS EATING APPLES.

A great number of Apples which were blown or fell off the trees had small holes eaten in them by slugs. This damage, never before noticed to any considerable extent, was due to the wet and weedy condition of the orchards.

A SEASON OF WASTE.

My memory does not recall any previous season in which the waste of fruit grown has been nearly as great as it has been this year. First the tremendous gales of August 24 and 27 blew down tons of Plums, Apples, and Pears, mostly immature, and therefore saleable only, if at all, at very low prices. Afterwards, occasional strong winds did further damage, and later still the delay in the gathering of Apples due to the almost constantly wet weather of October, already alluded to, added to the great proportion of "drops." Even when Apples fall upon soft ground or grass, many of them are bruised by hitting branches when falling, and others are injured by various pests, or gnawed by rabbits. My pickers are instructed to keep "drops" separate from gathered fruit, as far as possible, and the former are marketed first. If not soon disposed of, the waste in rotting is very serious, and this year the proportion of "drops" was so tremendous that many weeks elapsed before all could be packed, so that the proportion of unmarketable fruit was very large. Adding to this misfortune the unprecedented attack of caterpillars in the blossoming season, which prevented the formation of fruit to an enormous extent, it must be concluded that the season has brought forth an uncommon series of misfortunes. There is no doubt that, but for the caterpillar attack, the crop of Apples would have been one of the greatest ever known. As it was, and in spite of all mishaps, the yield turned out surprisingly large. There were some tremendous crops in some varieties, notably in Royal Jubilee and Lane's Prince Albert, and the extra size of the fruit in varieties that did not bear thickly, partly compensated for the reduction in number. Nearly all the gatherings gave results above expectations, and when prices rose after the glut of "drops" had been sold, the returns of the Apple crop became satisfactory.

SOME RESULTS OF A WET SEASON.

While the extra size of Apples may be attributed partly to the wetness of the season, though the thinning of the crop by the misfortunes alluded to above must also be taken into account, there were also disadvantages due to the former condition. One of these was the coarsening of the quality of such choice varieties



(Photograph by E. J. Wallis.)

FIG. 71.—FRUITING BRANCH OF PHELLODENDRON SACHALINENSE.

succumbed. Of the rest, I shall be older than it is pleasant to contemplate before being able to report one, not 21 feet, but 21 inches in circumference! Besides the gorgeous display *Cercidiphyllum* makes in ordinary autumns, it is very attractive in spring, the young foliage being of a bright, rosy-fawn colour.

Among the things uprooted by the gale is a common Spindle tree (*Euonymus europaeus*), of the unusual height of 27 feet. Seldom has *E. latifolius* borne such a profusion of its bright fruit as this year. *Herbert Maxwell, Monzieith, Scotland.*

amenable of the four species to cultivation in this country. It is a deciduous tree, presumably of moderate height; the specimen from which the spray illustrated in fig. 71 was taken is about 20 feet. As a pleasure-ground tree it has attractive foliage, the leaves, consisting of 7 to 12 or more leaflets, up to about 1 foot in length. The panicles of greenish-yellow flowers are not showy, but in autumn, quantities of black fruits, $\frac{3}{4}$ inch in diameter, give the tree an attractive and interesting character. From its nearest ally, *P. japonicum*, it is readily distinguished by its leaflets, which are narrower

as Cox's Orange Pippin and a few other sorts. Another was the development of scab, particularly in Cox's Orange Pippin.

The most characteristic result of the wet season, however, is the extraordinary prevalence of sooty blotch on Apples, and particularly on Cox's Orange Pippin, a large proportion of which is disfigured by the black fungus. The sooty blotch can be rubbed off with a rough duster.

RECORD WEIGHT OF AN APPLE.

The greatest weight of an Apple of which I have read is 2 lb. 5½ oz., reported of a Gloria Mundi sold in Covent Garden by Messrs. Garcia, Jacobs and Co., on October 27, 1915, at the probably record price of sixteen guineas. There were six specimens, but only one was put up to auction, the five others being presented to the purchasers, Messrs. Adams and Co., Bond Street, London. The Apple was grown at Ten-Terden, Kent. The grower's name is not mentioned in the paragraph from which I quote, cut from the *Fruit Trades' Journal* of November 1, 1915.

THE TOXIC THEORY.

Judging from the account of the experiments carried out by Mr. Spencer Pickering, given on p. 170 last week, one very important test of the supposed toxic effect of one plant upon the same or another plant was lacking. The drainage from a tray containing Mustard, for example, into a pot in which a Mustard plant was growing, injured the latter; but, as there was no trial of the effect of drainage from a tray containing soil only, the evidence of the toxic effect of drainage from the Mustard tray is not conclusive, as there is nothing to show that the same injurious effect upon the plant in the pot would not have been caused by drainage from bare soil. As to the idea that grass under trees suffers from the toxic effect of the roots of the trees upon it, a much more simple and probable explanation is available, namely, that of the shading effect of the branches and foliage, together with the competition of the roots of the trees with the grass for the nutritive constituents of the soil. Conversely, the corresponding competition of the grass with the roots of the trees for the elements of nutrition may account in great measure for the failure of trees in grass to grow as vigorously as trees in arable land. The toxic theory seems to me to be equally forced by concluding that it accounts for the inferior growth of three Mustard seedlings planted in a pot containing three established Mustard plants. The latter had spread their rootlets over a good part of the soil, and so were able to take the lion's share of the nutritive ingredients. Similarly, when trees are planted in an established orchard to fill up gaps where older trees had died, they seldom flourish, although care has been taken not to plant the new trees in the precise sites of the old ones. The new ones have a very poor chance of proper nutriment when the roots of the old ones are all over the ground, or nearly so. The result is the same when fruit bushes are planted in an established orchard, even when the trees are only a few years old. I have an orchard in which Gooseberries were planted at the same time as Cobnuts and Plums. They grew and fruited well for a few years, and then were attacked by collar rot, and had to be grubbed up. They were replaced with Black Currants, which never grew even tolerably, as the roots of the trees had almost complete possession of the soil. Lastly, as to the supposed toxic effect of a plant being greater upon a plant of the same kind than upon one of a different species. Here the more simple and reasonable explanation is that plants of the same kind are competing against each other for precisely the same proportion of the several elements of soil fertility, whereas plants of different kinds do not compete with each other to the same exhaustive extent. The late Mr. Mechi, of Tiptree fame, when advocating the thin sowing of Wheat, used to point out that one Wheat plant was a keener competitor of another than any other plant would be. *Southern Grower.*

PERGOLAS.

(Continued from page 176.)

I SHOULD feel inclined to disregard the well-discussed question of planting if it would not savour too much of "Hamlet" without the Prince.

In addition to the great number of climbing plants available, many shrubs of pliant habit are quite suitable for use on a pergola. The field of choice is therefore so large as to be confusing unless some clear principle of arrangement is followed. Most climbing plants when really happy make up in luxuriance what they lack in backbone. Over-crowding leads to a muddled effect, and it is better to exercise restraint in planting.

limit its reign of glory to a comparatively short burst of Rose bloom. If other plants are also introduced in which the tints and texture of the foliage are considered, the sum of the season's enjoyment is considerably increased. Density of foliage at calculated points is important in producing effects of perspective, and the flecks of sunlight and bars of shade on the pergola floor give character to the interior. A heavy evergreen at the entrance will make an inviting contrast with the outside glare, or a good result follows the planting of a rampant climber, such as a vine, which will sprawl over the first arch and clutch also at some architectural feature to which the pergola is keyed. Planting which helps to unify a pergola with its surroundings serves a good purpose.



FIG. 72. PERGOLA FURNISHED WITH CORDON PEAR TREES

Many climbers are so pliant that with proper care they can be trained almost at will, and the form of the pergola can either be defined or a massed effect produced where the composition of a picture so requires.

Every pergola has some individuality of its own, but its first duty is to play its part in the larger views of the garden. If it can simultaneously secure some good side effects in conjunction with neighbouring planting details, so much the better. The interior of the pergola belongs to itself, and if happily treated will quite dispose of the fallacy that a pergola is only worth looking at from the outside.

The desire for great masses of colour is rather overdue. I think it is a mistake when a pergola occupies a prominent position to

I remember an instance in a Devonshire garden where a sturdy Fuchsia was growing on a pier and looked as if it had strayed from a large adjoining group of these shrubs to shake hands with the pergola. Through the arches of the latter one saw a bank of Heather sloping to the foot of the piers. The pergola was planted almost entirely with claret-leaved vine and reddish-purple Clematis. A pink Rose or two and the large mass of Fuchsias close by gave the whole thing a very warm and comfortable effect.

It is scarcely necessary for me to enumerate the many plants which are so often recommended. The most favoured are perhaps the varieties of vine, Roses, Clematis, and Wistaria.

Vines are most useful when shade is required for its own sake, and everyone knows the beauty

of the autumn tints of such species as *Vitis Thunbergii*, *Coignetiae*, *Henryi*, and others. *Clematis* is, I think, almost my favourite plant for pergolas. The more rampant species, such as *montana*, *flammula*, and *vitifolia* are such honest hard workers and the habit is so graceful. Other beautiful sorts are insufficiently used. I give below a selection kindly furnished me by Mr. A. Jackman.

Roses for the pergola have already furnished material for many a chapter, and I need not enter upon this big subject. I give a list of Roses Mr. G. Paul is good enough to recommend.

The *Wistaria* at its best is unbeatable. The graceful foliage, beautiful flowers, vigorous growth, and picturesque stems, make it perhaps the most striking of all plants for a pergola.

An unusual advantage of the *Wistaria* is that the interior of a pergola gets the benefit of a good share of the blossom. The white-flowering varieties show up extremely well, and a combination of mauve *Wistaria* and *Laburnum* is very effective. The vigour of *Wistaria* is astonishing. There was, and no doubt still is, at Cold East, in Hampshire, a great plant entirely monopolising a pergola crossing the whole width of the kitchen garden.

Fragrance must not be forgotten, nor the virtues of *Honeysuckle* and *Jessamine* in this respect.

I conclude with a reminder concerning fruit trees for pergolas, and give below a list of Apple and Pear trees recommended by Mr. Allgrove as most suitable:—

FRUIT TREES FOR PERGOLAS.

Desert Apples.

Beauty of Bath.	Cox's Orange Pippin
Langley Pippin.	Adam's Pearmain
James Grieve.	Albington Pippin.
Lady Sudeley.	Wesley.
Worcester Pearmain.	King of the Pippins.
Christmas Pearmain	Fearn's Pippin.
Cooking Apples, possessing size, colour, and Quality.	The Queen.
Empress Alexander.	Lord Derby.
Bismarck.	Warner's King.
Colombi Pippin	Newton Wonder.
Cox's Pomona.	Bramley's Seedling
Lane's Prince Albert.	Rev. W. Walks.
Peasegood's Nonesuch.	

Pears.

Williams' Bon Christian	Maria Louise.
Clapp's Favourite.	Pitaston Duchess.
Marguerite Marriault.	American's.
Louise Bonne of Jersey.	Dominé du Comice.
Conference.	Emile d'Rey.
Triomphe de Vienne.	

ROSES FOR PERGOLAS.

Autumn-Flowering Noisettes.

Alistair Stella Gray.	Mrs. Cochet
Aimée Vibert.	Réve d'Or.

Hybrid Noisettes.

Paul's Single White	Zephyrin Drouin.
---------------------	------------------

Climbing Hybrid Perpetuals

Climbing Fran Karl	Climbing Rodolamachi
Druschki.	

Climbing Hybrid Teas.

Climbing Richmond.	Climbing Mrs. W. G.
Climbing Caroline Testout.	Grant.
Climbing La France.	

Cluster Roses, Wichuriana's, &c.	
Shower of Gold.	François Guillot.
Paul Transon.	Gerbe Rose.
Albéric Barbier.	Paradis.
François Jumeville.	American Pillar.
René André.	Tox Rambler.
Louisa Gertraise.	Bush Rambler

For Foliage, Single Flowers, rubrifolia.	Brunonis.
Reine Olga de Wurtemberg.	Himalayensis.

CLEMATIS RECOMMENDED BY MR. A. JACKMAN.	
Spring—	
Miss Bateman.	Sir Garnet Wolseley
The Queen.	Robert Harbary.

Summer—

Beauty of Worcester.	Lord Neville.
Fair Queen.	Maria Brisseler.
Henry.	Mrs. Hope.
Lady C. Neville	Nelly Moser.

Autumn—

Comtesse de Bouchard.	Mrs. Cholmondeley
Gipsy Queen.	Star of India
Jackmanii	Ville de Lyon.

Small-Flowered—

montana rubra.	Admiration.
montana superba.	Comtesse of Onslow.
<i>Vitisella albo variegata</i>	Duchess of Albany
<i>V. Kerriouana.</i>	

LETTERS FROM SOLDIER-GARDENERS.

GOOD GARDEN PLANTS IN GREECE.

I AM writing a few notes which may be of interest to the readers of your old and esteemed paper, of which I was a constant reader for twenty years before joining the Army. Before leaving England I was head gardener to His Grace the Duke of Wellington, at Ewhurst Park, Basingstoke, Hampshire, and a member of the Royal Horticultural Society. Some of the plants I have noticed in Macedonia are well known in good gardens in England. The Snake's Head Lily, *Fritillaria Meleagris*, which is found in the Water Meadows at Swallowfield always under water, may be seen here on dry banks facing south, and flowering magnificently; again, *Cyclamen Comm.* at the time of writing, is flowering in thousands on the slopes of a dry nullah facing south-west. This, to my mind, is the prettiest sight in the Balkans, and worthy of a visit from anyone in peace time. Other things growing in luxuriance are *Heliotropes*, *Salvia nemorosa*, *Salvia Pneumonanthe*, *Clematis recta*, a lovely blue *Phlox* of the *decussata* type, *Faturas*, the annual white and violet-coloured varieties; *Linum flavum*, *Hypericum*, *Dianthus barbatus*, *Achusa italica*, and the *Dryopteris* variety, which provides a sheet of blue for miles; *Linum marbonense*, which is met everywhere, and amongst the rocks by the Vardar River *Lilium caudense* is to be seen in abundance, whilst the spathes of *L. palestinum* show purple and black all along the valleys. *Celsia cretica* and *C. arcturus* make fine sights carpeted with *Anagallis*, *Ajugas*, *Ceraniums*, with the Alpine Strawberry make a riot of colours. A lovely sight in the spring is *Anemone peninina*, also *Jasminum nudiflorum*, and *Myosotis palustris*. Christmas-Roses abound, also *Cypripedium* spectabile and a perennial Pea a foot in height, which I do not know, is a mass of flowers. Poppies have a splendid effect as they are cultivated in fields; *Muscari*, *Omphalodes*, *Leontopodium*, *Oenothera*, and *Scabious* are found everywhere; *Verbena venusta* grows to perfection, and *Erigonum* in variety. Peppermint in the nullahs stands 3 feet high, and the scent is very pungent. A gem is a small *Aconitum* 12 inches high and of a lovely shade of violet. *Gypsophila* with white and pink flowers are fairly common; the old-fashioned *Clary* (*Salvia Sclarea*), *Rodanthus*, and *Moring* Glory lend a beautiful touch of colour to this remarkable country. One thing noticeable is the absence of bees and wasps, and the flowers have but little or no perfume. Fruit exists in variety. Of the Mulberry, the white variety is grown largely. The system of growing the Mulberry is entirely different from that practised in Britain, as the natives grow and fruit the trees on the cut-back principle, the fruit being all produced on the young wood, similar to our own Cob and Filbert Nuts. I am in a convalescent camp at present. I expect to take up gardening again when I return home. All good wishes for the good old *Chronicle*; I hope soon to be reading its notes again. *Pte. M. Dorsett, Salonica Forces, Greece.*

FAMILIAR FLOWERS IN THE BALKANS.

It may be of some interest to *Chronicle* readers to record the fact that many of our most useful herbaceous and Alpine plants grow and thrive in a wild state out here. Also, there are various dwarf-growing plants to be found, principally on the sides of the ravines among the foothills, which, in my opinion, if they could be successfully grown in England, would be of great value in the rock or woodland garden. Of the latter, one which has impressed me is a low-growing, glaucous foliaged deciduous shrub bearing large, pale-mauve flowers, somewhat similar in shape to the well-known *Helleborus niger*; it thrives in hard, sandy soil, and appears to revel in drought and sunshine. Another and smaller plant, bearing small

racemes of sweetly-scented flowers, reminds me much of a miniature *Genista*, while a second yellow-flowered Alpine resembles a *Mesembryanthemum* more than anything else, while yet another, bearing large, deep-blue inflorescences, appears to be closely allied to the *Gentian* family.

Among the well-known English flowers to be seen in a wild state, I have noticed on several occasions, usually on or near the sea-shore, well-flowered clumps of *Statice latifolia*, a somewhat coarse type of *Myosotis*, fine specimens of *Galega officinalis*, and more than one variety of the shrubby *Veronicas*.

One notices quantities of *Eryngium*, mostly *E. glaucum*, though I have also seen isolated specimens of *E. amethystinum*, and there is also a very large and handsome *Thistle*, which I have been unable to identify.

In swampy places one finds another very ornamental plant, not unlike a small *Buddleia variabilis*, either in flower or foliage, but this also I cannot fit a name to thus far.

Early in the year there were any number of *Crocus* flowers to be found on the hills, in every shade of colour, but with little or no foliage, and I have also, on more than one occasion, found clumps of a miniature *Hyacinthus*, presumably a forerunner of the familiar *H. Muscari* of the woodland gardens at home.

When I first came out here, more than a year ago, I thought this a singularly uninteresting country from a horticulturist's point of view, but since passing through the growing season, which extends roughly from January to May, I have changed my opinion, and were the distance only less, or the transport quicker, I should certainly be tempted to try my luck with some members of the flora of Macedonia at home in England, in those longed for days "after the war." *G. E. Palmer, Lt.-Col., R.L.M.C. (formerly of Tilstone Gardens, Turpoley, Cheshire).*



THE KITCHEN GARDEN.

By J. DESS, Foreman, Royal Gardens, Windsor

FRENCH BEANS.—Plants of French Beans which are growing in slightly heated pits should be given the benefit of a free circulation of air in sunny weather. Maintain the temperature at 55°. Examine the roots, and if the soil is dry give one good soaking with weak liquid manure. Syringe the foliage only when the weather is mild and bright, as the plants are more liable to be injured by damp than those grown in pots in a warmer house or pit. If pods are in demand during the winter make sowings in 7-inch pots every eight days to maintain the supply. Crock the pots carefully and use light, rich soil, which should be pressed moderately firm. Place 6 or 7 seeds in each pot and cover them with 1 inch of the finest soil. Apply water sparingly until the young plants are 2 inches high, when more moisture is necessary. A temperature of 60° is suitable. Syringe the foliage lightly on fine, sunny days. As growth advances the plants must be kept upright, and there is no better means of supporting them than a few small twigs placed in each pot.

ASPARAGUS.—The beds should be divested of all decaying foliage, the surface soil broken lightly with a fork, and a dressing of decayed horse-manure applied if necessary. Some of the surface soil may be carefully removed before the manure is applied. The alleys may then be dug up as roughly as possible to expose the soil to the frost and weather.

GLOBE ARTICHOKES.—The plants should be afforded protection by placing a quantity of straw around the clumps. Leave the centre of the plants open and exposed to the light, or decay may result. The soil between the rows

should be dug, and, if sharp frosts occur, a few inches of long manure may be spread over the surface.

RHUBARS.—Suitable roots should be dug up and exposed to the weather for a fortnight before placing them in warmth. Crowns which have been in their present position for two or three years are large enough for forcing, which may be done in a Mushroom-house or other building having a temperature of 55°. At Frogmore we use a slightly heated pit for the purpose and place the roots on a very gentle hobbed, which is composed of leaves trodden tightly together and covered with a few inches of rich soil. The roots should be placed as closely together as possible, and the space between them filled with finely sifted soil. Daw's Champion is a suitable variety for early forcing.

CAULIFLOWER.—Plants of Cauliflowers in the open garden should be examined at least twice weekly, as a few degrees of frost may soon ruin a valuable crop if protection is not afforded to all heads which are formed, but not of sufficient size for cutting. Protection from a few degrees of frost may be afforded by placing a few spare green leaves over the crown and drawing the outer leaves up in such a manner as to protect the crown until it is ready for cutting. When the season is further advanced and more protection is necessary the plants which have formed small crowns should be lifted carefully with a good ball of soil to each and placed close together in trenches, which should be made as the plants are placed in position. The stems of the plants should be placed deeply in the soil as the work of digging the trenches proceeds. The plants should be divested of all decaying leaves as they are lifted, and placed in convenient batches quite close together, where they may be protected by spare lights and covered with fern or other dry material in case of severe frosts.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Hon. Arthur J. DAVY, Abbots Wood, G. Halming, Surrey.

PLANTING GOOSEBERRY BUSHES. It is a suitable time to plant Gooseberry bushes. The ground should be dug deeply or trenched, plenty of lime incorporated with it, and if the soil is light in texture and poor in quantity, a little bone meal employed. The plants should possess fairly long stems to keep the branches clear of the ground. A few desirer varieties should be grown as double or triple cordons, training them to four strands of wire stretched across the plot. The first wire should be a foot and the top one 6 feet from the ground level, with two intermediate ones. The main or outside post must be firmly set, to keep the wires in position. In a short time the stems will reach the top wire, and subsequently bear heavy crops on spurs. By this system of training the fruits are easily protected and gathered, whilst cordoned trees are quick in giving good returns, especially when trained to tall stakes. Place one stake in the centre and one at each corner of a square 2 feet or 3 feet wide if a cross-growing variety. The following is a list of select varieties: Langley Beauty, yellow; Langley Gate, white; Yellow Champagne, Whinham's Industry, Dan's Mistake, Whitesmith, Crown Bob, Keepsake, Trumpeter, and Pittsnot Green-gage.

PEACH AND NECTARINE TREES. Proceed with the planting of Peach and Nectarine trees in the soil that has been prepared for their reception. If young trees are to take the place of old ones it will be advisable to plant them in whole or at least one half of fresh soil. The best soil is moderately heavy loam which has been stacked for at least six months. Loam freshly cut from good pasture land can be used as a bottom layer, turning the grass side downwards. A small quantity of half-inch bones and some rubble should be mixed with the soil that the roots are actually planted in. If the trees are to be trained against south walls they should be planted about 18 feet apart, one at every 9 feet. Later the trees may be thinned, and those removed used for fur-

nishing Peach houses. In this way good trees are always available for planting. Trees that were not pruned last season will be in a suitable condition for removing, and, if carefully moved, should bear crops next season. In moving trees of this kind take a trench deep and wide enough for the operator to work right under the ball of roots, when it can be lifted out on a strong mat and the tree taken away. Make the soil firm as planting proceeds by continual ramming around the roots. Firm planting results in short-jointed growth of a firm texture. Should the soil be dry give it a heavy soaking before planting the tree, or the soil will break away, destroying many roots. Good varieties of Peaches for outside culture are Waterloo, Hale's Early, Goshawk, Grosse Mignonne, Hy-mond, Peregrine, Stirling Castle, Barrington, and Sea Eagle. This selection will furnish ripe fruits from the middle of July to the end of October. Nectarines Rivers' Early, Cardinal, Lord Napier, Pine Apple and Humboldt are all excellent sorts.

FRUITS UNDER GLASS.

By JES. HUNSON, Head Gardener at Gunnersbury House, Acton, W.

STRAWBERRIES IN POTS.—Strawberries in pots have made good weather. Runners were not very plentiful this season in some localities, the reason for which seems to be somewhat obscure. Because of this shortage many growers were late in potting their stock. Late plants should be placed in cold frames, and the lights kept on except in dry, sunny weather. I prefer to store the plants in frames, but this is not always convenient. The next best plan is to arrange them closely on the flat and cover the pots with ashes. See that the drainage is clear. Pull out all weeds and remove small runners that may have developed, but do not take off any leaves.

LATE PLUMS IN POTS. Late Plums have furnished useful fruits during the past six weeks or more, and I still have fruits of Cox's Golden Drop, and its red variety, Tokeworth Imperatrice. These late Plums have been gathered for about three weeks and kept in a dry room.

LATE FIGS. Our late Figs in pots are dropping their leaves freely, and as the crop, which has been a most abundant one, is practically over, we shall now stand the plants more closely together. The temperature will be reduced to the normal for the winter, but we shall safeguard the plants from frost. The amount of water at the roots should be reduced gradually, but never entirely withheld. Figs are most accommodating as to the room they require in the resting season. The plants at Gunnersbury House are often stood out to rot, and in this way more room is available for other pot plants during the next few months. To destroy brown scale we dress the back of each tree on with liquid Fishers Compound. This needs to be done down to the soil level. Where scale is present collect the leaves as they fall and burn them.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH CORRY, Bart. Carlton Park, Belgate.

CYMBIDIUM.—Plants of C. Lowianum, C. Tracvanum, and many of their fine hybrids, are developing flower spikes, and should be well supplied with water at the roots, whilst others that are backward in this respect should still be kept on the dry side, otherwise new growth will commence and the plants fail to bloom. C. grandiflorum has also finished its growth, and flower spikes are developing from the pseudo-bulbs of the previous year. To ensure success in flowering this species, the plants should be placed in a cool, light position, and the roots kept on the dry side during the winter.

WATERING.—This is always an important factor in Orchid culture, and especially at this season. Plants that have finished their growth should be allowed to dry out between each application of water at the roots, giving them just enough to keep the pseudo-bulbs in a plump and rigid condition. Plants that are growing and others that are pushing up their flower-scapes should be afforded more frequent supplies.

THE FLOWER GARDEN.

By W. J. GUISSE, Gardener to Mrs. DEMPISTER, Keele Hall, Staffs-shire.

PLANTING ROSES.—The soil in which Roses are planted should be well drained. The most suitable soil is a deep, rich loam of a greasy, retentive nature, and, as the trees usually occupy the ground for a number of years, it should be prepared thoroughly. Light soils may be improved by the addition of stiff loam, or, better still, old turf that has been cut and stacked for some considerable time. Loose, sandy soil is unsuitable. In choosing the site, select an open situation, sheltered from cold winds, but not close to large trees or shrubs, the roots of which would exhaust the soil. Trench the ground at least 18 in. in depth, incorporating with it a heavy dressing of well-rotted manure. The soil should be allowed to settle to its former level before planting. See that the roots are spread out to their fullest extent, and trim with a sharp knife any that are damaged. The point of union between stock and scion should be placed just below the surface of the soil. Plant firmly. The following hybrid-perpetual varieties are suitable for planting singly in beds:—Fran Karl Druschki (white), Mrs. J. Laing (pink), Hugh Dickson (crimson), A. K. Williams (crimson red), Louis Van Houtte (deep maroon), and Her Majesty (bright rose). Good hybrid Teas suitable for the same purpose are:—Mme. A. Chatenay, Antoine Rivoire, Caroline Testout, Madame Ravary, William Shann, Gustave Regis, Liberty, Lady Ashton, Sunburst, Dorothy Page Roberts, and Mme. M. Souperet.

DAHLIAS AND OBELIA CARDINALIS.—In lifting Dahlias do not damage the tubers. The roots should be kept in a plump condition, and not dried off too quickly. Label each variety and place the roots in a cool house under the stage or in a cold frame to complete the drying before storing them in a cool, dry, frost-proof shed for the winter. *Obelia cardinalis*, lifted, and planted in boxes filled with a sandy compost, will winter quite safely in a cool frame, provided extra protection is given during frosty weather. Admit air to the frames on all favourable occasions.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHCOLE, Eastwell Park, Kent.

SALVIA. *Salvia splendens grandiflora* is far superior to the ordinary variety. Whether the plants have been grown entirely in pots, or planted out in prepared borders, and afterwards lifted and potted, matters very little. They do exceedingly well either way. Grow them in a light house or pit, and let them have plenty of space to make sturdy, sturdy specimens. *S. azurea grandiflora* (syn. Pitcher) is another excellent perennial for pot culture, and is at its best in the early autumn. The elegant spikes of azure-blue flowers are very ornamental, and when used with a white or pale yellow ground work, shows to good effect. The plants need plenty of water, and those developing their flower spikes should be given weak manure water. Plants of later blooming species, such as *S. rutilans*, *S. Bethellii*, and *S. gesneriflora*, may be left in the cold frame for the present, the damp bottom being much more conducive to healthy foliage than dry stages. If of necessity they are growing on a dry stage, give the plants a good syringing on bright days.

GREENHOUSE CLIMBERS. Reduce the growth of indoor climbers, according to the requirements of each individual plant. Certain climbers, such as *Cobaea scandens*, *Passiflora*, *Dignonia*, *Tacsonia* and *Mandevilla sycoculosa*, are rampant growers, and need to be kept within bounds. Other climbers, including *Plumbago capensis*, *Swainsonia*, *Habrothamnus* and *Streptosolen Jamesonii*, do not need such severe thinning, but all superfluous growths that have finished flowering should be removed. When the work of thinning and tying is completed, thoroughly wash the plants before rearranging the house. Fumigate the house on an evening or two afterwards. Reduce the amount of water at the roots, but do not withhold moisture entirely.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to general matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors any notices of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41 Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 33.5.

ACTUAL TEMPERATURE:—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. Thursday, November 8, 1917. Bar. 29.4; temp. 45°. Weather—Dull.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—Bulbs at 67 and 68, Cheap-side, at 1 o'clock, by Protheroe & Morris.

The Breaking up of Grass Land.

Everyone in this country who takes the trouble to be conversant with public events is aware that great efforts are being made to encourage the breaking up of grass land. But not everyone, even among those who have been most vocal in opposing this policy, has understood the reason why it has been urged. That reason may be starkly stated as dire necessity. There is a shortage in the world's supply of food. It is common knowledge, moreover, that the tonnage of the world is not equal to all the carrying tasks which are required of it, and that if tonnage has to be used for the carriage of food it cannot be used for other things which, from the point of view of the successful prosecution of the war, are no less essential than food. To give but one example of many which might be given. Fertilisers are essential to production, and not all fertilisers are made at home. Some must be imported. A cargo of an indispensable fertiliser means a much larger potential addition to our food supply than that which would be obtained if Wheat were carried instead of the fertiliser.

Hence the determination of this country to grow more food. Nothing is more vital to the security of the nation. This is not open to question—it is a fact, one of the fundamental and dominating facts of the present situation. It is the plain duty of every man who possesses ground capable of producing food crops to put them to this use. Every yard of garden ground avail-

able should be used for this purpose, and every man capable of working on the land and possessed of leisure should see that he does all that his time and strength allow to produce more food.

But when all this is done, though, as this year has shown, it is no negligible contribution to the food supply, a great task remains for the farmer to perform. There are two courses open to the farmer, and both need to be followed. The one consists in getting the largest production from his existing arable land; the other consists in utilising the great reserve of fertility which exists in his grass land. As is pointed out by Mr. Middleton, Deputy Director-General of the Food Production Department, in his most able report on the breaking up of grass land,* the first of these courses cannot possibly be sufficient to meet and surmount the present shortage of food. The resources of the farmer in labour and in fertilisers are less than in peace time, and high farming requires plenty of labour and large and varied supplies of fertilisers. Hence, although there are farms not a few which might be made to produce more, it is not merely by increasing the production from existing arable land that the necessary increase of food can be made.

There remains, therefore, one resource, and one only—the bringing of more land under arable cultivation. Of land available for this purpose and capable of giving good returns, there is only that now under grass.

After having demonstrated the fact that the food shortage can only be met by this means, Mr. Middleton proceeds to consider the question: "How the grass which must be broken up must be dealt with."

With the object of assisting those engaged in converting grass land into arable the Food Production Department addressed inquiries to a large number of farmers who have gained experience in this work during the past season.

Over 300 replies were received from 55 counties. The replies demonstrate that the results which have been secured this year are satisfactory. Of crops which were mentioned as having given satisfaction are Oats, Wheat, Barley, Peas, Beans, Potatoes, Mangolds, Turnips, and others. The experience gained in 1917 demonstrates conclusively that it is possible to add largely to the food supply by converting pasture into arable.

There were failures, chiefly in the South and East, but elsewhere failures were rare. In most cases the failure was attributed to wireworm, but in not a few cases this noxious pest was not the cause of the failure attributed to it. Damage ascribed to wireworm was often due to the drying out of the newly ploughed land—much was ploughed in the New Year between mid-February and the end of April. In the South the frit fly caused a considerable part of the damage.

Wireworm does most damage in loose, open soils; in a firm soil plants, even

though attacked, have a good chance of re-establishing themselves.

The report considers carefully the time suitable for ploughing, whilst recognising that weather and labour often leave little choice. Poor, heavy clay land in dry districts should be broken in summer, to allow of a partial fallow.

In the case of medium or light land infested with wireworm, many farmers found that Oats did better on late-ploughed and late-sown land than on land broken earlier. Thus in light soils in the South, March ploughing gave better results than December ploughing.

In all cases a firm seed-bed is important. The roller is useful not only for this, but also for checking wireworm. Whereas good pasture land should produce good crops without the aid of fertilisers, it was found that in many clay soils in the South and East which had "tumbled down" to grass a generation ago, had already at that time become exhausted of phosphates. In such soils dressings of superphosphate 2.3 cwt., or of basic slag, are beneficial. For Oats on poor, matted turf sulphate of ammonia and superphosphate are recommended.

The Report, which should be read in its entirety, concludes with advice as to the mode of treatment of different types of soil, and with summaries of the replies received from farmers to the inquiries addressed to them by the Food Production Department.

A GIANT POTATO.—A Potato grown on the farm of the King's Royal Rifle Corps at Sheerness, when lifted weighed nearly 4 lbs. 12 ozs., with a length of 11 inches and a girth of 15½ inches. The tuber was of good shape and normal in every respect, excepting size and weight.

NEW SCOTTISH SEED TRADE ASSOCIATION.—A meeting of the representatives of the seed trade of Scotland was held in the Corn Exchange, Edinburgh, on October 31, to consider the position of the trade as affected by Government orders. Mr. D. BELL, of Messrs. BELL AND BIEBERSTEDT, Leith, presided. The business was conducted in private, but we understand that it was agreed to form a Seed Trade Association to voice the views of the trade and protect its interests. A committee of seven members was appointed to approach the Government should it become necessary. The question of guarantee is one of importance at present, and the general feeling of the meeting was to the effect that, while standards of purity and germination were likely to be valuable, the time was inopportune for giving effect to new regulations for securing them.

THE GENUS EUCALYPTUS.—The first part of the fourth volume of MAIDEN'S *Critical Revision of the Genus Eucalyptus* is devoted to *E. tereticornis*, Smith, and its allies *E. Bancroftii*, Maiden, and *E. amplifolia*, Naudin. *E. tereticornis* is a very complex and variable species, but on this point MAIDEN says: "In a few years I confidently expect that the determination of a species of *Eucalyptus* from a twig of juvenile foliage will present no difficulty." Perhaps not, with the author's complete state of saturation in *Eucalyptus*, but how about others who have not so intimate a knowledge of the genus? The three species now described and figured belong to a group having long, narrow flower-buds and small seed-vessels, and they are all restricted to Eastern Australia (one extending to New

* Abstracted in *Journal of Board of Agriculture*, XIV. No. 6, Sept., 1917.

Guinea), ranging from Victoria to Queensland. *E. tereticornis* and *E. amplifolia* have both been in cultivation in the Mediterranean region for many years, and the latter was founded on cultivated specimens some twenty-five years ago. MAIDEN succeeded in matching original specimens with native materials. *E. tereticornis* is one of the very few Eucalypti known to inhabit New Guinea. The number of species hitherto described and figured by MAIDEN is 160, so that we may expect the total to exceed 200.

FRENCH RESERVES OF POTATOS.—*Le Journal* states: "If the crop of Potatos is abundant, notably superior to that of last year, the disease has, nevertheless, caused serious losses. These have been particularly heavy in certain localities. The sites for storing the tubers should be powdered over with quicklime, each layer of tubers of a thickness of 8 to 10 centimetres, must have a fresh sprinkling, and another must be given to the surface of the heap."

POPULAR WOOD TO BE FELLED.—Wythop Woods, at Peil Wyke, stretching for three miles on the western side of Bassenthwaite Lake, one of the most popular tourist resorts in the Lake Country, has been bought by the Government from Sir HENRY VASE's trustees, and is to be felled for its timber, which is largely Oak.

PUBLICATIONS RECEIVED.—*The Small Garden.* By Mary Hampden. (London: Herbert Jenkins.) Price 5s. net.—*The Potatos Order, 1917.* By J. L. Anderson, Solicitor and Town Clerk, Cupar. (Edinburgh: William Hodge and Co.) Price 1s. net.

PLUM ORPINGTON PROLIFIC.

The new late Gage Plum illustrated in fig. 73 has been shown on several occasions this autumn by Mr. H. Close, Orpington, Kent, who obtained the R.H.S. Award of Merit for the variety on October 24, 1916. The fruits in the illustration are reproduced natural size, and it will be seen that they are not so round as in the old Green Gage variety, and slightly smaller. The colour is dull, greenish-yellow, and the appearance generally does not suggest a Plum of high quality, but the flavour is excellent. The variety is one of the latest to ripen, the season being the end of October.

ON INCREASED FOOD PRODUCTION.

POTATOS ON GRASS LAND AT ALDENHAM

MANY are the experiences of growing Potatos on newly ploughed grass land this year, and the majority no doubt have been successful. One of the most successful results that have come under my notice is the fifteen acres of park grass ploughed up at Aldenham House, Elstree. Having seen the plot at various times, I am in a position to note the results, the recording of which may encourage others to do likewise next year. The sward was formerly infested with huge tussocks of grass. These were grubbed up and burned, and the ashes made a valuable stimulant for the Potatos, being scattered in the rows with the sets. In January the plot was ploughed some 5 inches deep, and again cross ploughed, harrowed, and rolled several times, with a view to disintegrating the soil from the turf as much as possible.

Planting was done by the aid of a hauling plough; the rows were 23 inches apart and the sets 15 to 18 inches apart, thus allowing ample space for the development of haulm. The seed was mainly Scotch grown tubers of last year. At planting time five tons of London manure was added to the ashes and garden refuse for the 15

acres and spread in the rows with the seed; a dressing of soot was given before the earthing up was done, but little result of the application of soot was noted, and therefore it will not be repeated. The soil between the rows before earthing was frequently stirred with the hauling plough.

The crop realised some seven tons per acre, the tubers coming out quite clean and singularly free from wireworm. Slugs were slightly troublesome, boring some few of the tubers. There was very little disease, although no spraying carried out. The haulm remained green quite late in the season as compared to some other plots, which may not have received the same cultural attention. The varieties grown were Iron Duke, which was a distinct success in crop, evenness of tuber, cleanness of skin, and, what is important, its undoubted quality when cooked. King Edward was very successful in crop and quality. I saw 5½ tons lifted from barely three quarters of an acre, with only a few diseased tubers. Great Scot was a fair crop; Factor poor. An experiment was tried as to the value of sprouting the seed tubers by boxing as against keeping them in heaps until planting. It was interesting to note the great advantage gained by the sprouting. The growth from these was earlier and stronger, producing a much heavier crop with no disease. The present in-

at a time by placing the finger against the nozzle of an ordinary large syringe, in using which there was no such thing as clogging, as there is when a rose or a self-acting sprayer is used. The Potatos were lifted in the first week of September, when there was not a speck of murrain on the haulms or the tubers, although they were only separated from a badly diseased plot by a narrow walk, and the tubers have remained perfectly sound. No Potatos had been grown on or near the two plots indicated for 15 years, *etc.*, the one where the disease appeared and where it was absent—and the seed in each case was, as far as could be seen, perfectly free from the *Phytophthora*.

My conclusions are that the mixture should be used as soon as it is dissolved, which takes three or four hours; that the first application, in the warmer parts of the kingdom, should be made not later than the middle of June, and if applied at that time and followed up at fortnightly intervals, it is only necessary to spray the upper surfaces of the leaves. That a very fine spray should be applied to every portion of the upper surfaces, only as much being used as will remain on the leaves in the form of dew, for if it runs off, the edges of the leaves are liable to become scorched.

Another time a less quantity of soda will be used. It is found that sulphate of copper dis-

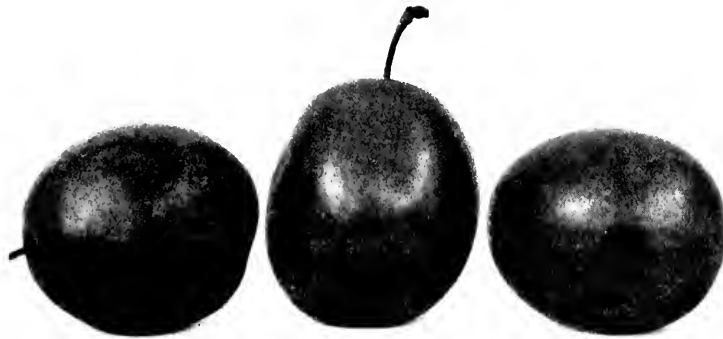


FIG. 73—PLUM ORPINGTON PROLIFIC: A LATE GAGE VARIETY.

tion is to grow Potatos again next year on the same site. After burning the haulm, the land will be deeply ploughed, exposing it to winter rains and frost, with a view to pulverising the fibrous portions. *E. Molyneux.*

SPRAYING POTATOS

So many growers have failed to see any good results from spraying Potatos, some even thinking more harm than good was done, that it is advisable to look into the causes of the failures. In a case immediately under my observation, spraying was commenced in the middle of June, when there was no appearance of disease, and two of the varieties grown, viz., British Queen and Arran Chief, were sprayed five times at intervals of ten or twelve days. The first three sprayings were with prepared mixtures of different brands, bought at the shops, and after the first shower there was very little of the material to be seen. A homemade mixture, consisting of 2 oz. each of sulphate of copper and common soda, was next applied, and although heavy rain fell immediately after the first application, very little of the stuff was washed off. It was found that it was impracticable to spray all the under surfaces of the leaves with the instruments at hand, so, after the first trial, the attempt was given up, and the spraying was done across three or four rows

solved by itself mixes thoroughly with the water and is kept in suspension, but immediately soda or lime is added the sulphate is precipitated, more or less, according to the quantity of the other materials used. The sulphate, of course, is the active ingredient, but used alone at the strength mentioned it burns the leaves. A ½ oz. to the gallon did not scorch the leaves of Runner Beans, but double that strength did scorch them. As the season when this experiment was made was too late for Potatos, I cannot say what the result would be of trying a weak solution of copper by itself, but it seems probable that the soda or lime may have a neutralising effect on the copper, and it would be interesting to know whether exhaustive experiments have been made in this direction.

But why grow late varieties of Potatos where the space is limited, and where it would be an advantage to have succession crops if the ground could be cleared in July? Will some of your correspondents inform me the best early or mid-season varieties to keep through the winter and spring? Good flavour is required quite as much as good appearance, and good habit of growth not more than 13 inches in length. The best flavoured Potato I have tasted this season has been Eclipse, which is a good cropper, but my experience has been very limited. *Wm. Taylor, Bath.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

LINUM PERENNE AND RABBITS.—Some time ago there was brought under my notice an example of the great difficulty which may be experienced in connection with the consideration of what may be called "rabbit-proof" plants. In a certain bay on the Kirkcubrightshire coast there is a wonderfully beautiful "colony" of *Linum perenne*. This is simply fascinating in its season, and gives the portion of the coast on which it grows a feature reminding one of the haze of blue shown in many a woodland and meadow by the flowers of the Bluebell (*Scilla festalis*, or mutants). It has formed one of the prominent features in some of the pictures of a famous Scottish artist, and has elicited many expressions of admiration. But *veronens a nos moutons*. In this bay rabbits abound, yet the Flax is never touched by these pests. A proprietor on the opposite side of the inlet of the Solway, in practically the same conditions, and who is a keen gardener, desired to establish a similar feature on his property, and removed plants and sowed seeds as well. Result—every plant was exterminated by the rabbits! They evidently had discovered that the Flax presented a new edible to them, while the rabbits on the other coast had their appetites cloyed by the plentiful supply. S. ARNOTT.

UTILITY AND ROMANCE OF THE ROWAN.—At p. 155, Sir Isebert Maxwell makes some very pertinent remarks regarding the beauty of the Rowan tree and its golden-fruited variety, but says nothing of the utility of the berries, though it may be well known to him. In the South it is grown solely for ornamental purposes, so far as I can learn; but in the North, many years ago, I enjoyed very much a jelly made from the berries. They were partly boiled, then strained to take out the seeds and skins, sugar was added, and the richly coloured juice still further boiled till it attained the consistency of Red Currant jelly. It was rich in colour and pleasantly acidulated, with a flavour distinct from all other jellies I have ever tasted. The tree grows wild and abundantly on the hills and lower mountains of the Highlands, and is planted in and around gardens further north, where there is no aboriginal arboreal vegetation, and fruits splendidly from the time it gets 6 feet to 10 feet high. There were large trees of the golden-fruited variety, *Pyrus Aucuparia fructu luteo*, around a village garden in Aberdeenshire, in the early sixties of last century, and the naked holes of the trees were so tall that the village boys were never able to raid the trees. They called the berries "Barley Roldans." I presume from the Rowan or Mountain Ash is *Luisroon*, or drink-charm. In 1772, Lightfoot recorded that the Highlanders used to distil a very good spirit from the berries, and that any part of the tree carried about on the person was a sovereign charm against enchantment or witchcraft. I have seen two very old trees planted, one on each side of the approach to an ancient family seat in Kincardineshire, to keep away witches. Their potency, or rather, their want of it for this purpose was well known in the seventies, but out of curiosity the old trees were roned with iron hoops to keep them together, as they were falling to pieces. Just then and for long years previously, many an old house contained a "rantry" or "rante tree" for suspending pots over the fire, though the inhabitants had long lost the knowledge that the word was derived from Rowan tree, and that it was intended to prevent witches from exercising their evil spells in the pot. J. F.

HIBISCUS SYRIACUS (see p. 157).—Unfortunately, in many northern gardens *Hibiscus syriacus* fails to flower, or blooms only occasionally when the seasons are milder than usual. I do, however, know of a few Scottish gardens in which it is a success. I have in my mind's eye one specially good old plant of H. s. Totus albus, which blooms almost every year. It is against a low wall, and partially trained over a slate roof, where it receives the benefit of the heat stored in the stone and slate during the day. J.

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 6.—The fortnightly meeting in the Drill Hall on Tuesday last gained in importance from the fact that the National Chrysanthemum Society held its annual exhibition in connection with it. Chrysanthemums were by far the most important feature of the show.

Several good groups of Orchids were, however, contributed. Novelties submitted for award gained one First-class Certificate and three Awards of Merit.

The Floral Committee gave four Awards of Merit to Chrysanthemums and five Medals to collections.

There was one important exhibit in the fruit and vegetable section, viz., an exhibit of sixty varieties of hardy fruits, shown by Messrs. H. Cammell and Sons. Several seedling Apples were presented for award, but none received recognition.

At the three o'clock meeting of the Fellows, Mr. E. A. BOWLES delivered an address entitled "Useful Books for an Amateur Gardener's Library."

Floral Committee.

Present: Messrs. H. B. May (chairman), J. Green, J. W. Barr, W. J. Bean, J. F. McLeod, W. H. Morter, C. Dixon, J. Hindson, C. E. Pearson, J. Heal, A. Turner, C. E. Shea, E. F. Hazleton, W. P. Thomson, E. H. Jenkins, T. Stevenson, G. Reuthe, H. Cowley, J. T. Bennett, P. R. Hooper Pearson, E. A. Bowles, and John Jennings.

AWARDS OF MERIT.

Chrysanthemum General Pattern.—A large Japanese variety of a beautiful shade of soft pink as seen from a short distance, but close inspection proves that many of the long, broad florets have a white ground and are faintly mottled and shaded with light purplish pink. The blooms shown were of the largest exhibition size. This variety was exhibited last year under the name of Edward Stanton.

C. Donald.—A Single Chrysanthemum of the Mensa type. The blooms are carried on good stems, and possess three rows of florets. The colour is a deep shade of mauve-rose, with a faint salmon flush. Both these were shown by Messrs. W. WELLS and Co.

C. Crusader.—A medium-sized Japanese variety with particularly substantial and rather broad, short, and stiff florets, which are pure white, with a creamy centre. The stems and foliage are robust, and the bloom remains fresh over an unusually long period, qualities that render the variety valuable for market purposes. Shown by Messrs. LOWE and SHAWYER.

C. Mrs. Hutton.—This new, large Japanese variety is of a rich golden yellow. The florets are narrow, drooping, and graceful, forming an elegant, as well as a large bloom of fine colour. Shown by Messrs. H. J. JONES, LTD.

GROUPS.

The following medals were awarded to collections:—

Silver Flora Medal to Messrs. ALLWOOD BROS., Wivelsfield, for Perpetual-flowering Carnations. A new variety, named Marion Wilson, was shown for the first time. It is a promising flower, of pale buff colour, with distinct stripings of vermillion.

Silver Banksian Medal to Messrs. H. B. MAY and SON, Edmonton, for indoor Ferns and Begonias of the Gloire de Lorraine and large winter-flowering types, of which *Optima*, *Emita*, and *Mrs. Heal* were remarkably good; Mr. G. REUTHE, Keston, Kent, for a varied collection of *Neines*, *Alpinos* and sprays of choice shrubs in flower; Messrs. PETERS, Bayswater, for ornamental shrubs in small pots, some of which were in berry.

Bronze Flora Medal to Messrs. STUART LOW and CO., Bush Hill Park, for Perpetual-flowering Carnations.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart (in the chair), Sir Harry J. Veitch, Jas. O'Brien (hon. secretary), W. Bolton, J. Charlesworth, R. A. Rolfe, J. Wilson Potter, Fred K. Sander, J. E.

Shill, Pantia Ralli, E. R. Ashton, Frederick J. Hanbury, T. Armstrong, S. W. Flory, Gurney Wilson, Stuart Low, Walter Cobb, and R. G. Phwaites.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Astron, The Dell variety (Harrisoniana alba × Dusseldorfiae Undine). Shown by Mr. J. E. SHILL, The Dell Gardens, Englefield Green. The plant bore a fine spike of six pure white flowers with sulphur-yellow disc to the lip. The original form was given an Award of Merit on November 3, 1914. The present variety has rather larger and better shaped flowers.

AWARDS OF MERIT.

Sophro-Laetia Cattleya Bryndir (S.-L.-C. Sandhage × L.-C. Golden Oriole), from Dr. MIGUEL LACROZE, Bryndir, Reohampton. A fine hybrid of good size and very rich colour; the size and form of the flower are derived from the several large-flowered *Cattleyas* in its composition. The sepals and petals are deep port-wine colour or dark ruby-red with a slight gold tint, and small, pure white bases to the mid-ribs. The lip is dark claret-red with gold veining extending from the base to the orange-coloured centre.

Brasso-Cattleya Dietrichiana, Ansaldo's variety (B.-C. Mrs. J. Leemann × C. Fabia), from J. ANSALDO, Esq., Rose Bank, Mumbles, Glamorganshire. A noble flower of large size and with an extraordinarily large lip; the sepals and petals are cream colour tinged with lilac; the lip is much crimped and fringed, coloured bright rose lilac in front, the centre being chrome-yellow with yellow lines extending to the base.

Miltonia Venus var. Fascinator (vexillaria × Phalenopsis), from Messrs. CHARLESWORTH and Co., Haywards Heath. *M. vexillaria* was the seed-parent, and the hybrid is nearest to that species in form and general characters. The flowers are tinged with rose colour, the lip having a greenish-yellow base, from which radiate numerous spotted lines of dark crimson colour.

GROUPS.

Sir JEREMIAH COLMAN, Bart., Gatton Park (gr. Mr. Collier), showed a fine plant of *Cattleya Portia Lorna Fielden*, raised at Gatton, with a spike of nine flowers. These flowers are equal to the best form of *C. Portia*, but with the lateral sepals broadened, deflected, and joined at the bases, each showing the purple colouring of the lip. *C. labiata Lorna Fielden* also showed traces of the lip on the lower sepals, and most of the batch of *C. Portia* of this cross which have yet flowered show the same peculiarity; *Odontoglossum splendens* album, with pure white flowers, following the albinos from which it was raised; a good hybrid *Odontoglossum*, and *Cattleya Gatton Ruby* (*Amabilis × Hardyana*) were included in the group.

Dr. MIGUEL LACROZE, Reohampton, exhibited the very handsome and finely coloured *Cattleya Titrus* var. *Bryndir* (*Octave Doix × Enid*), with four flowers on a spike.

Mr. J. E. SHILL, The Dell Gardens, Egham, showed flowers of *Laetia Cattleya Sunbeam* (C. Maggie Raphael alba × L.C. yellow hybrid), with bright yellow flowers and ruby-red lip with orange centre; and L.-C. Hardybel (C. Hardyana × L.-C. Sevilla).

Messrs. ARMSTRONG and BROWN, Orchidhurst, Tunbridge Wells, were awarded a Silver Flora Medal for a group, in which were several very handsome seedling *Odontoglossums*. Among *Laetia-Cattleyas* was L.-C. Pathan var. *Domitian* (L.-C. *Dominiana* × C. *Dowiana aurea*), a very handsome and finely coloured flower. The new *Cattleya Archimedes* (*Armstrongiae* × *Fabia*), a compact and good flower; *Sophro-Cattleya Atalanta* (S.-C. *Ariadne* × C. *Fabia*), rose red flowers with a golden tint and ruby-purple lip; *Cattleya Dowiana aurea albens*, an interesting, imported form, and the first, probably, with nearly white sepals and petals, were shown well.

Messrs. CHARLESWORTH and Co., Haywards Heath, were awarded a Silver Banksian Medal for a group composed principally of varieties of *Cattleya Dowiana aurea*.

Messrs. SANDERS, St. Albans, were awarded a Silver Banks Medal for a group in which the best novelties were *Cattleya Una* (Lord Rothschild × Cooksonii), the large milk-white flowers having a slight lavender tint, and lilac-marked lip; *L.-C. Flame* (*L.-C. Elektra* × *C. Dowiana aurea*), yellow with a rose tint, and claret-coloured lip; and *Cypripedium Stadium* (Dreadnought × *Ville de Paris*).

Mr. C. F. WALTERS, Deanlouis Nurseries, Balcombe, showed an effective group of *Cattleyas* and *Laelio-Cattleyas*, for which a Silver Banksian Medal was awarded.

Messrs. STUART LOW and Co., Jarvisbrook, Sussex, showed *Cattleya Baron Delbecq* (*Pittiana* × *Dowiana aurea*), yellow with purple markings on the lip, which is shaped like *C. Pittiana*, and showing the *C. granubsea* in that hybrid; and *Cattleya armadillovilliersensis* grando.

Fruit and Vegetable Committee.

Present: Messrs. W. Pountney (in the chair), E. Beckett, Owen Thomas, W. H. Invers, W. Bates, A. W. Metcalfe, W. Pope, F. Jordan, J. Harrison, W. Wilks, A. Ballock, E. A. Banyard, and A. R. Allan.

A *Silver-gilt Knightian Medal* was an odd lot to Messrs. H. CANNELL and SONS, Eynsford, Kent, for a splendid exhibit of Apples, comprising sixty distinct varieties, together with a few Pears. The Apples were of fine size, and the colour was particularly well developed. A place of honour was given to immense fruits of Peasgood's Nonesuch, and other well-known culinary sorts were Lord Derby, Bramley's Seedling, Norfolk Beauty, and Edward VII., the last a solid, late-keeping variety of the Anna-Elizabeth type. There were choice fruits of Cox's Orange Pippin, Adams's Pearmain, Smart's Prince Arthur, Mother, Compton, Allington Pippin, Tom Putt, Hoary Morning, and Ribbury. This last is an attractive, round, red-skinned variety, of medium size.

The ALLIANCE VEGETABLE Co. was awarded a Silver Knightian Medal for desiccated Potatoes shown in the form of meal.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 6. — It was only to be expected that the annual show of the National Chrysanthemum Socy, which was held last Tuesday in the London Scottish Drill Hall, in conjunction with the fortnightly meeting of the R.H.S., should be of less importance than usual. It was therefore all the more gratifying to note that the majority of the classes were represented by exhibits, and taking the quality generally, it was of good average standard. The schedule was reduced to 29 classes, divided into three sections, viz. Open Classes, Decorative Classes, and Amateurs' Classes. There was no entry in the class for 36 Japanese blooms distinct, but there were good exhibits in the classes for 24, 12, and six Japanese blooms respectively. Competition was limited in a number of classes to two or three entries.

AWARDS

FIRST CLASS CERTIFICATE

Mrs. Georgy Monro, Leeds. — A Japanese variety of exhibition size, and one which will, in all probability, become popular as a market variety. The flower is graceful, the fairly broad florets drooping regularly a considerable depth. The colour is brilliant crimson, with bronze reverse, and when illuminated by sunshine or bright artificial light it is particularly attractive. Shown by Mr. NORMAN DAVIS.

CARDS OF COMMENDATION.

C. Lustre. — A handsome decorative Japanese variety of suitable size and form for market use. The graceful flowers are borne on long stems, and the twisting of an occasional floret exhibits the golden reverse colour, which enhances the rich chestnut hue of the blooms. Shown by Messrs. H. J. JONES, LEEDS.

C. Alice Harvey (see p. 192).

The Committee expressed a wish to see again the variety Brilliant. It is a Japanese variety of the decorative or market type, with flowers

of medium size and velvety crimson shade with golden-bronze reverse.

COMPETITIVE CLASSES.

Japanese Blooms Shown on Boards. — The President, Lt. Col. Sir Albert Rollit, offered a Silver Cup for the best collection of 24 Japanese blooms distinct. Four competed, and the trophy was won by Mrs. HAMILTON FELLOWS, Tangle Park, Worslesdon, Guilford (gr. W. J. Smith). The blooms were very nice, fresh, and brightly coloured. Notable varieties were Mrs. R. C. Pulling, Mrs. A. E. Tickle, F. Green (fine colour), Louisa Pockett, Mrs. Lloyd Wigg, and H. E. Converse; 2nd, Mr. A. SMITH, Convent Garden, Roehampton, with smaller blooms, of which H. E. Converse and Mrs. Drabble were noteworthy.

The similar class for 24 blooms distinct was one of the best contested; there were six exhibits in all. The 1st Prize was won by W. H. ALLEN, Esq., Broadham House, Bedford (gr. H. Blake-way), with choice blooms of Mrs. Pulling, Mrs. J. Gilson, Bob Pulling, His Majesty, Mrs. Drabble, Miss Elsie Davis, and others; 2nd, the LORD WANDSWORTH INSTITUTION, Long Sutton, Winchfield (gr. L. Barnard), with Mrs. R. LAYFORD, James Stredwick, and Mrs. R. C. Pulling as his best specimens; 2nd, Mrs. HAMILTON FELLOWS.

Mrs. HAMILTON FELLOWS well merited the 1st Prize in the class for a collection of 6 blooms distinct, in which she showed splendid flowers of R. C. Pulling, W. Farmer, Lady Talbot, Mrs. A. E. Tickle, Mrs. H. E. Converse, and Mrs. Jones; 2nd, Mr. W. H. ALLEN (gr. H. Blake-way); 3rd, Mr. A. SMITH.

Blooms Shown in Vases. — These classes showed a very distinct falling off from those of previous years. Only one exhibit was forthcoming in a class for a vase of a white variety; it was shown by Mr. A. SMITH, to whom the 1st Prize was awarded. The variety employed was Queen Mary. For a vase of a yellow variety there were two competitors; the 1st and 2nd Prizes were won by Mr. W. J. SMITH and Mr. W. H. ALLEN respectively, who both showed Mrs. R. C. Pulling.

Incurved varieties. Although the competition in the three classes for incurved blooms was limited to two growers, both showed in a manner worthy of the traditions of these exhibitions. In all three classes the 1st Prize was won by Mrs. CHRYMERS, Furants, Bockley (gr. A. B. Hudd), and the 2nd by H. BRISSETT, Esq. (gr. E. Leave). Both competitors showed much the same varieties, among which were included Edin' Thome white, Clara Wells, J. Wayne, very delicate oak, Godfrey's Eclipse, Calypso, and Master C. Hall.

Pompons and Singles. There was a class for six vases of Pompons in three varieties, and another for six vases of the same shown as sprays without disbanding. F. J. JARROW, Esq., St. John's Wood (gr. A. Robertson), was the only exhibitor in the former class, and was awarded the 1st Prize for admirable specimens of Mrs. Ellis, Dordan, W. Sabey, Prince of Orange, and Black Douglas. Mr. H. RUSCHEMAN, Wandstead, was awarded the 1st Prize for sprays of Pompons.

The exhibits of Single Chrysanthemums were exceedingly meritorious, and Mr. RUSCHEMAN, with a fine collection, carried off the 1st Prize for a display arranged on a table 8 feet by 5 feet. His blooms were not large, but they were of model shape, and very finely coloured. *Jessica* (orange), Orlando (yellow), Monsa (white), Metta (cinnon red), and Mrs. Leo Thompson (lemon yellow), were the best; 2nd, Mrs. CHRYMERS, with larger blooms. This lady exhibited in the class for six vases of flowers of larger varieties, six flowers in each vase.

Affiliated Societies' Class. — The Finchley Chrysanthemum Society showed the only exhibit in the class for twelve vases of cut blooms, representing the Japanese, Incurved, Single, Anemone, and Pompon sections, and was awarded the 1st Prize.

Amateurs' Classes. The LORD WANDSWORTH INSTITUTION was placed 1st for (a) 12 Japanese blooms, distinct, (b) 6 Japanese blooms, distinct, and (c) 6 Japanese blooms, three varieties. The Institution was also placed 2nd in the class for 3 vases of Singles, in which Mr. J. CLAYTON, Addlestone, won the 1st Prize.

Decorative Classes. — The best table, decorated with Chrysanthemums, was arranged by Mr. D. B. CRASE, Wood View, Higgiate. He employed yellow and bronze Singles, with a few sprays of bronze Pompons, relieved by Croton foliage and trails of *Asparagus plumosus*. Mr. JARROW showed the best vase of Single Chrysanthemums and the best vase of Large Exhibition Blooms, and was awarded the 1st Prizes. Mr. CRASE showed the best basket of Chrysanthemums.

Trade Exhibits. — Mr. NORMAN DAVIS was awarded the Gold Medal offered by Messrs. Clay and Son for the best miscellaneous exhibit, also the Society's Silver gilt Medal. His group contained fine blooms of Mrs. Geo. Monro, Junr., Edith Cavell, Mrs. Algernon Davis, and Market Bronze. A Silver Medal was awarded to Messrs. W. WELLS and Co., LTD., Merstham, for a group of Single and decorative varieties.

CROPS AND STOCKS ON THE HOME FARM.

BASIC SLAG ON DOWN LAND.

SOME years ago I carried out experiments with a view to testing the value of basic slag on down grass land. It is generally considered by those who have not tested the matter themselves that basic slag has no beneficial effect on chalky soils, or even where the subsoil is chalk. But I know of no manure that produces such a marked improvement in the quantity and quality of grass, and none that has such a lasting effect, not even farmyard manure.

Five years ago I dressed a portion of the Downs at an altitude of 400 feet, which had previously grown more Thistles than grass. A marked improvement in the colour of the grass was apparent the first season after the application, and the difficulty has been ever since to keep the sheep away from that part when out grazing and exercising.

Even now, although none has been added since, the straight line of colour in the grass is discernible at a mile away. Surely such proof ought to convince the most sceptical of the value of this manure.

The depth of soil is but 3 inches in places before the chalk is reached; in the valleys, of course, it is more. Many who see the increase in growth wonder where the Clover comes from, as none was visible beforehand. I presume this is a question of the seed lying inert in the soil until the constituent is applied that induces germination. When we consider, too, the ease with which basic slag can be applied as compared with the labour involved with farmyard manure, the wonder is it is not used universally. But many apply it too late. They do not sow it until April, and then, because of its slow solvency, it has no time to influence the crop, and the slag is blamed as useless. November is the best month to apply basic slag. The winter rains then aid in washing the particles slowly down to the roots of the grass, the effect being noticeable the first year in the growth of Clovers especially.

Some writers advocate the use of 8 cwt. to 10 cwt. of slag per acre. Personally, I would rather apply this quantity in two dressings, with a two years' interval, as I think 10 cwt. at one application is too much for effective absorption. A second dressing of 4 cwt. at the end of two years would give a further fillip, and would show a marked improvement in the growth, quality, and colour of the grass, making it sweeter for the sheep to browse upon.

When we consider how useful these downs are, their low rent, and how little they are cared for, it would appear that those who neglect them have much to learn.

A thorough scratching of the surface with iron harrows before the slag is applied would aid the proper distribution of the particles. If it were possible to roll the land during the early spring months it would assist in consolidating the grassy surface after harrowing.

While it is possible to sow basic slag by hand in small quantities, it is much more evenly spread by the aid of a distributor. I use one of Ben Reid's basic slag machines, with which any amount per acre can be applied, and being distributed evenly and within a few inches of the

surface, there is no waste from wind. Cattle of any kind should not be allowed to graze the grass for quite three months after the slag is sown, as some time must elapse before the manure disappears.

CATTLE IN THE YARDS.

WITH so much rain and little sun, the grass in the meadows has been for a long time very soft and not nearly so beneficial to the animals as when with drier weather it is more hearty. In the case of young animals of pure-bred Jersey or Guernsey cattle, it is unwise to allow them to remain in the open too long, as they are liable to catch cold, which may develop tuberculosis if neglected; one cannot be too careful in this precaution. In the case of Shorthorns or crosses from Shorthorns, the animals are generally hardier, and may remain outside longer.

If a yard has a meadow attached to it that the animals can run out by day and sleep in the yard at night, the conditions are the best possible. Sweet Oat straw, or rough Hay, will be an advantage even to those animals which have the run of the meadow by day. In the case of those wholly in the yard, Oat straw with Cabbage or Maize will provide a good food. If it were possible to give to the younger animals a few pounds of cotton cake per week they would thrive all the better for such attention. *E. Malynur, Swanmore Park, Bishops Waltham.*

ANSWERS TO CORRESPONDENTS.

APPLES: *J. H. B.* In the Report of the Apple Congress held at Chiswick in 1883, Lady Lennox is described as being a small, flat Apple, streaked with yellow. It ripens late, and is very acid in taste—suitable only for culinary purposes.

BISULPHIDE OF CARBON: *T. B. A. 1.* For treating soils and composts, you might use one ounce for the cubic foot. 2. The soil will not be rendered injurious to plant roots, as the fumes are harmless to the root tissues; the liquid, however, will damage roots that come into direct contact with it. 3. This fumigant may be used for plants in pots in the form of 1 ounce injections, or less for small plants.

CORRECTION.—A First-class Certificate was awarded *Berberis polyantha*, illustrated in the last issue, fig. 70, p. 183—not an Award of Merit, as stated.

CUCUMBERS FOR SEED: *T. G.* Leave the fruits on the plants until they are perfectly ripe, then cut them, split them, and take out the seeds with as much of the pulp as possible. Lay the mass of seeds out on sheets of brown paper to dry; when almost dry, mix with some fine, dry sand, which will absorb the last remaining traces of moisture. Then pass the seeds over a fine sieve, rubbing all the sand and other small refuse through, and leaving on the top the cleaned seeds. Keep in a dry place until required.

ENGAGEMENT OF GARDENERS: *J. B.* Write to the National Service Department, Hotel Windsor, Victoria Street, S.W. 1.

FICUS STIPULATA MINIMA FRUITING: *A. P. N.* Your plant is the variety *F. stipulata minima*. The species has also been named *F. repens* and *F. pumila* in gardens, but the last-named is a different species. *F. minima* is a small-leaved variety of *F. stipulata*. When this species reaches the fruiting or adult stage it produces large leaves of quite a different type from the creeping juvenile stage, just as in the case of the Ivy. Many years ago a plant in the Nymphaea house at the Botanic Gardens, Oxford, reached the adult stage, and a shoot of it was taken off and rooted as a cutting. This was planted out in another house and trained to a wall. In 1890 the cutting had grown to a height of 8 feet to 10 feet, retaining its arborescent character, though it had numerous long branches, and the leathery, netted leaves were almost as large as those of a Camellia. This was the typical form, *F. stipulata*. Your plant, being the variety *F. s. minima*, has smaller leaves in the adult, or fruiting stage. A fruit of the typical form is illustrated in fig. 74. A fruit of *Ficus stipulata* (repens) was shown at a meeting of the Fruit and Vegetable

Committee of the Royal Horticultural Society on October 11, 1898, by Mr. John Williams, Whitbourne Hall Gardens, Worcester. Creeping and fruiting shoots of the typical form were shown at a meeting of the Scientific Committee of the Royal Horticultural Society on October 22, 1912, from Blackheath, Kent, but no fruits.

MUSK MELONS: *D. S.* *Cucurbita moschata*, of Nicholson's *Dictionary of Gardening*, is merely a form of *C. Melo*, of which species the Musk Melons of America and Canada are varieties. Bailey, in the *Standard Book of American Horticulture*, states that the modern cultivated varieties of Musk Melon are supposed to have been derived from the wild types native to Asia and Africa. Cantaloup Melons are certainly more hardy than ordinary English hothouse Melons, and are grown in great numbers in frames by the market gardeners of Paris. The Water-Melon belongs to a different genus, namely, *Citrullus* (*C. vulgaris*), native of Africa. It furnishes one of the important crops of the United States. The value of the crop for one year given in



FIG. 74.—FRUIT OF *FICUS STIPULATA*.

the census returns for 1910 was nearly \$4,500,000. There are six other vegetable crops of even greater value in the States, and we state them in their order of importance: Potatoes, Sweet Potatoes, Tomatoes, Cabbages, Onions, and Sweet Corn. It is not at all likely that the Water-Melon would succeed generally in this country as an outdoor crop.

PEAR LEAVES WITH BLISTERS: *A. S.* *Henteyon-Thames.* The leaves are infested with the Pear Leaf blister mite (*Eriophyes pyri*). Spray with lime sulphite (full strength) in winter, and if necessary with paraffin emulsion in spring or early summer.

PEARS DISEASED: *A. and H.* The Pears are attacked by "scab." Spray the trees with Bordeaux mixture just after the fruit is set, and again three weeks later. Use a fine, misty spray, and take pains to spray the under-sides of the leaves, as it is there where this fungus forms its spores, which infect the fruit.

PLANTS FOR WALL AND ROCKERY: *Mrs. W.* One of the most suitable plants for a wall is the Cheddar Pink (*Dianthus caesius*). You can also use many sorts of Saxifraga, Dianthus,

Sempervivum, Aubrietia, Arabis, Linaria, and Cerastium. The rougher and more rugged the wall the better will the plants establish themselves. For a shady rockery the following will be suitable: Saxifraga granulata, Aster alpinus, Epimedium in variety, Omphalodes verna, Primula acaulis, Anemone alpina, Hepaticas, rose, white and blue, dwarf Irises, and Tharella cordifolia. If sufficiently cool you might try a few hardy ferns, such as Asplenium angustifolium, Lastrea cristata, Polystichum acrostichoides, and Scolopendrium vulgare, or Hart's Tongue.

PROPAGATING RHODODENDRONS: *W. P.* Rhododendrons may be increased by seeds, cuttings, layering, and grafting. By seeds.—These are best sown in early spring in well-drained, peaty soil, in shallow pans or boxes and placed in a warm greenhouse, or they may be sown in frames out-of-doors, taking care to only just cover the seeds with very finely sifted soil, which should be watered through a fine rose water-pot. If hot, dry weather ensues it will be advisable to cover the glass or seed-bed with tiffany or any similar material.

When the seedlings are large enough to handle they should be picked off, and later on transferred to nursery rows out-of-doors. By cuttings.—The best time to take cuttings is just as the wood is getting firm. The cuttings should be made quite firm in the soil, placed in a warm, moist, close case, sprinkled occasionally, and protected from the sun. By layering.—This is very satisfactory, but certain hybrids are rather slow in forming roots. The well-ripened shoots should be tongued (as in Carnations), but in the case of varieties whose wood is very brittle it will be safer to scratch the bark only and then peg into the soil, which should be kept moist. By grafting.—Grafting is practised mostly in the case of hybrids. It is a quick method, but we prefer plants on their own roots. *R. ponticum* and *R. catawbiense* are the species generally used as stocks for the evergreen varieties, and saddle-whip or tongue grafting are the best methods to adopt. The stocks, which should be strong, healthy, 2-3-year-old seedlings, should be semi-established in pots before grafting, which may be carried out any time between October and March. The pots should be plunged in tan or stood in a close case with a temperature of about 60°, taking care to shade on bright days. An occasional syringing overhead is advisable, and after a union is effected air should be admitted and each plant secured to a neat stake to prevent accident.

RAILWAY FARES FOR LAND WORKERS: *M. M. K.* Women enrolled in the Land Army receive free railway passes to the places where they are sent, but occasionally workers are allowed, in certain cases, a rebate on fares by which they can get a return ticket to the place where they are to work for the price of single fare and a quarter. If you are going to work on the land, and wish to avail yourself of such a privilege, you should apply to Miss Tenant, Employment Exchange, Trowbridge, Wilts, giving her all particulars. No reduction is allowed for any other purpose, such as for a holiday.

COMMUNICATIONS RECEIVED: *E. M. W. Lewis*—*Jun. E.* Puzzled—*W. E. B. C. N. C. F. F. D.*—*H. G. H. M. Helsh—H. G. A. J. H. B. G. Y.*—*Esquiper—J. C. F. H. E. C. H. J. D. J. G. R.*—*H. S. K. R. D. P. M. M. P. W. France—C. F. E. M. R. G. W. E. D. M. H. J. B. W. B.*—*G. H. C. E. C. D. W. P.*

MARKETS.

Table listing market prices for various plants in pots and cut flowers, including Aralia Sieboldii, Asparagus plumosus, and various carnations.

Table listing market prices for various fruits, including Almonds, Apples, Apricots, and various berries.

Advertisement for 'FRIGI DOMO' CANVAS, a substitute for Russia mats, made from prepared hair and wool.

Advertisement for CHEALS' NURSERIES, featuring ornamental trees, shrubs, roses, and fruit trees.

REMARKS: Supplies of Apples are much larger, and there is a slower demand. Large supplies of Pears have also been reached...

Table listing market prices for cut flowers, including Arums, Camellias, Carnations, and Chrysanthemums.

THE WEATHER.

THE WEATHER IN SCOTLAND. On 10th Nov. was a cold month, as the mean temperature being 42.5. There were no frost nights...

Advertisement for BLACK CURRANT BUD MITE, a pest control product for currant bushes.

Advertisement for THE ROCK GARDEN, a practical work on cultivation and management of rock gardens.

Table listing market prices for cut foliage, including Aspidistra, Ferns, and various leafy greens.

GARDENING APPOINTMENTS.

Mr. A. Parry is Gardener to Capt. H. C. Hawthorpe, 10th Horse, Bourne End, Buckinghamshire.

REMARKS: The conditions of trade are similar to last week. Chrysanthemums are still increasing in price...

Table listing average wholesale prices for various vegetables, including Beans, Beetroot, Broccoli, and various cabbages.

The Gardeners' Chronicle SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table showing rates for advertisements, including ordinary positions, facing matter, and half and quarter pages.

GARDENING CHARITIES.

GARDENERS' ROYAL BENEVOLENT INSTITUTION. GEO. J. INGRAM, Secy., 92, Victoria Street, S.W.

Front page (no display allowed) 1/- per line space. For discounts applied to address below. SITUATIONS WANTED.

THE HORTICULTURAL DIRECTORY

AND YEAR BOOK, 1918,

IS NOW BEING THOROUGHLY REVISED

in preparation for the new issue, which will be published early in December. Every page is being corrected to date, and many new names are being added. This Directory forms a

FIRST-CLASS MEDIUM FOR ADVERTISEMENTS.

Those who have not yet booked a page in this widely-read publication should send their copy **AT ONCE**, as it is shortly going to press.

ORDER FORM FOR ADVERTISEMENT.

Please insert my Advertisement, as copy herewith, in the **HORTICULTURAL DIRECTORY FOR 1918**, in the space named below :

(Strike out all lines not required).

Back Cover	price	£5	5	0
Inside Front or Back Cover ... ..	..	4	4	0
Whole page, facing matter ... ..	..	3	3	0
Whole page, ordinary position ... ..	..	2	2	0
Half page .. ..	..	1	10	0
Quarter page .. ..	..	1	0	0

(Signed) Name.....

Address.....

THE EDITOR, Horticultural Directory, 41, Wellington Street, W.C. 2

SALES BY AUCTION.

**HOME-GROWN BULBS.
GREAT TRADE SALE.**

Wednesday Next, November 21st, at 3 o'clock.
Upwards of 2,000,000 Bulbs, including Narcissus, in all the best-known varieties for forcing or planting out; Polyanthus Narcissus of sorts, in sacks as received; Early, Dutch (many of which will force) and May-flowering Tulips; many thousands of Snowdrops, Frezias, Scillas, Anemones, Aconites, English and Spanish Iris, including the Gladish, Bordered Iris.

MESSRS. PROTHEROE & MORRIS
will sell the above by Auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2. Catalogues forwarded on application.

**SALE BY AUCTION OF
ROSES,**

**Herbaceous and Rock Plants,
Rhododendrons, Carnations,
Fruit Trees, Golden Privet, &c.**

BULBS in variety,

100 20-lb. Baskets of APPLES.

Wednesday, November 21st, 1917, at 12 noon.

MESSRS. PROTHEROE & MORRIS,
67 and 68, CHEAPSIDE, E.C. 2

Specimen in Stamps will ensure Twelve Catalogues

RICHMOND, SURREY.

By order of the Trustee, First portion, Important clearance of the stock-in-trade of
Mr. L. R. RUSSELL.

MESSRS. PROTHEROE & MORRIS
will sell by Auction on the premises,

The Common Nurseries, Richmond, S.W.,
On Tuesday, December 4th, and two following days, at 12 each day.

- 1,700 Good and Silver Hollies, 2 to 5 ft.
- 2,700 Green Hollies, 3 to 6 ft.
- 500 English and Irish Yews, 3 to 7 ft.
- 2,000 Hawthorn and Gold Box.
- 700 Hardy Azaleas.
- 3,500 well-shopped Gold Privet, 5 to 7 ft.
- 250 Spionnon Planes, splendid trees.
- 1,400 Tree Limes.
- Chopped Yews, fine examples.
- 1,500 ornamental specimens 3 to 5 ft.
- 1,200 Evergreens and Conifers, in borders.
- 4,000 Flowering Shrubs.
- 5,000 large Azaleas and Laurels, for planting or cutting.

Fine Standard Ornamental Trees and large quantities of other stock. May be viewed. Catalogues had at the Nurseries, Richmond, of C. Butcher, 284, St. John's, 32, Grosvenor Street, E.C. 2; P. Mason, Esq., the Trustee, 64, Grosvenor Street, E.C. 2; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C. 2.

BUSINESSES FOR SALE.

PROTHEROE & MORRIS, HORTICULTURAL MARKET GARDEN, and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Lexington, E. Monthly Horticultural Register had on application.

BUSINESS CARD.

BRITISH CORRESPONDENCE SCHOOL OF HORTICULTURE, BEXINGTTONS, 265, Oxford Road, Manchester. — Complete courses for E.F.S. Senior, Junior, Teachers', and National Diploma of Horticultural Examinations. Fees moderate.—Write, SECRETARY.

BOOK WANTED.

WANTED TO PURCHASE

A second-hand copy of **Dr. HOGG'S "FRUIT MANUAL"** (Fifth Edition.)

WHAT OFFERS?
'Amateur,' Box 27, 41, WELLINGTON STREET, COVENT GARDEN, W.C. 2.

PLANTS, &c., WANTED.

WANTED, 1,000 large ASPIDISTRAS, old plants, suitable for stock; cash or exchange. See other advertisements; catalogues free. — SMITH, London Fern Nursery, Longhorn Junction, London, S.W.

WANTED to Buy, CYPRIPEDIUM IN- SIGNED State paper, size, and quantity to "Essex," Box 19, 31, Wellington Street, Covent Garden, W.C. 2.

MISCELLANEOUS.

**IF YOU'VE NEVER WORN
BEACON OILSKINS**

You've yet to learn the bodily comfort that they afford in wet and stormy weather. They are proof against the hardest storms, and have no disagreeable greasiness. We sell them on the understanding that you may have your money returned if BEACON OILSKINS don't satisfy you—there's no risk in dealing with us. We specialise in Oilskins, Men's Black Coats from 10s., Ladies' Jackets from 3s., Suit covers from 1s. 9d., Children's Oilskins 10s. 6d. upwards, Ladies' Smart Oilskins from 21s. Send p.c. for Free-Beacon Booklet, and choose the style that suits your purpose.—BARBOURS', LTD., 66, BEACON BUILDINGS, SOUTH SHIELDS 6.

LANG'S "IDEAL" MANURE, for Fruit, Flower, and Vegetables: 12s. 6d. per cwt. £10 10s. per ton, carriage paid. — G. LANG & SONS, LTD., Hounslow, Middlesex.

"PESTITE" destroys all soil pests (worms, grubs, chafers, etc.), and promotes vigorous growth. Price 10s. 6d. per cwt. £8 per ton, carriage paid.—G. LANG & SONS, LTD., Hounslow, Middlesex.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

COUNTY BOROUGH OF SOUTHEND-ON-SEA.

APPOINTMENT OF HEAD GARDENER.

THE Corporation invite applications for the appointment of HEAD GARDENER; wages £5 per week, rising by annual increments of 2s. 6d. per week to £5 10s. per week. Candidates must not be over 50 years of age. Form of application and lists of duties may be obtained upon application to Mr. E. J. Elford, Borough Surveyor, Municipal Buildings, Clarence Road, Southend-on-Sea, and the same must be returned, duly filled in, not later than Monday, November 26, 1917.

II J. WORWOOD,

Municipal Buildings, Southend-on-Sea, November 6, 1917.

HEAD GARDENER required for Gentleman's place where 12 (pre-war) are kept, Wroham, Kent; house, vegetables.—Write, stating wages, to GARDENER, Box 23, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, HEAD GARDENER; only experienced man need apply. — MRS. J. EBERSTEIN, The Chase, Slades Hill, Enfield.

FORMER OUTSIDE FOREMAN wanted as head of hand crew in best place of a good comfortable house and generous wages.—HENDESON, Oregon, Uttington, Kent.

WANTED, HEAD WORKING GARDENER at once where 3 or 4 are kept; wages 30s. to 35s., according to experience and capabilities, cottage and coal.—MRS. REID, The Oaks, Walton Heath, Surrey.

WANTED, GARDENER (HEAD WORKING); no glass; man and boy assisting.—A. J. BURROWS, Ashford, Kent.

WANTED, A SINGLE-HANDED GARDENER; help given, understands Kitchen and Flower Gardening, wages with 1000s, 20s., or without, £1 15s. per week. MRS. RICE MILLER, West Wall, Birch Grove, near East Grinstead, Sussex.

WANTED, GARDENER (SINGLE-HANDED), chiefly Kitchen Garden and Lawns, no glass; also good MAN, Inside and Out; single-handed; good wages.—Apply, HURN, Landscape Gardener, Battenberg Avenue, Leicester.

WANTED, GARDENER (SINGLE-HANDED), for Stoke Poges neighbourhood; Flowers and Vegetables; small Glasshouse; boy and occasional help; married man (no family) preferred; knowledge of forcing light plants, cottage, 30s. a week.—Apply, MAJOR DARLEY, 127, Piccadilly, London, W. 1.

WANTED, SINGLE-HANDED GARDENER; must be thoroughly competent and willing to look after a pony.—Apply, stating full particulars and wages required, with cottage, to E. S. WEBB, Wilkwood Lodge, North End, Hampstead, N.W. 3.

WANTED, good all-round SINGLE-HANDED GARDENER for Somerset; must be ineligible.—Write, D. A., Box 6, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, GARDENER (SINGLE-HANDED), chiefly for Vegetables, some Glass; small cottage.—Apply, P. BURGESS, Willenhall House near Coventry.

WANTED, A GARDENER (SINGLE-HANDED), with lad; good wages. — Apply in writing, with references, to S. OSBORN, Grandford, near Sheffield.

WANTED, in a private establishment, an expert Fruit Grower, to take charge of a number of Fruit Houses, with Peaches, Pears, Nectarines, Apricots, Cherries, and Strawberries; wages 30s. and Bolly if single; 30s.; cottage, 4 tons of coal a year, vegetables, and milk if married; must have unexceptional references.—Reply by letter, M. C., Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, experienced WORKING GARDENER; assistance given by pumping engine; good house and coal found; over military age; good character.—Apply, stating wage, COLONEL TILLOTSON, Brookbank, Cudnam, Hants.

WANTED, good all-round GARDENER, with help; must be ineligible or discharged soldier; wages 30s. per week and cottage.—Apply, MRS. R. P. MORGAN, Brynhyfryd, Neath, South Wales.

WANTED, good all-round GARDENER; knowledge of Greenhouse Plants, Melons, Peaches, and Pruning of Fruit Trees required; help given; good cottage, with garden.—MRS EVANS, Stoke Court, Tenbury, Worcs.

WANTED, good all-round MAN for Houses, and help with Fruit Trees outside if required; single, ineligible.—State experience and wages required, with Botley and vegetables, to HEAD GARDENER, The Gardens, Frisham House, Yattendon, Newbury, Berks.

GARDENER wanted, well up in all branches; no cottage.—C. Haling Cottage, Brighton Road, South Croxson.

WANTED, a good all-round MAN for Garden. State wages.—S. THATCHER, Manor Gardens, West Lavington, Wilts.

WANTED, experienced MAN, for the Kitchen Garden; wages 50s. per week, with small lodge.—Apply, A. ROBBINS, Canons, Edgware, Middlesex.

WANTED, MAN, single, ineligible, for Kitchen Garden work and attend to stoking, rooms, light, vegetables; good wages.—H. H. JONES, Foleston Park Gardens, Windsor.

WANTED, good SECOND GARDENER, where four or five are kept; must be well up in Indoor work, single man preferred, as no cottage available on estate.—Write full particulars to W. A. J., Kearsney Court, near Dover (4 miles).

WANTED, good SECOND GARDENER, experienced Indoor work; single man preferred; lodgings on estate.—MCALPINE, Fairmile Court, Cobham.

UNDER GARDENER wanted; alternate duty; good cottage and garden.—Apply, stating wages required, particulars of experience, to FAIRS, Sanderstead Court Gardens, Sanderstead, near Croydon.

WANTED, UNDER GARDENER; woman preferred.—Apply, MRS. J. EBERSTEIN, The Chase, Slades Hill, Enfield.

WANTED, ORCHID FOREMAN; large collection; single; ineligible.—Write, state age, experience, wages required, copies of references, to C. H. Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, FOREMAN (INSIDE); wages 50s.; Bolly, &c.; 1 o'clock Saturdays.—E. BRIS TOW, Leywood Gardens, Greenbridge, Tunbridge Wells.

WANTED, FOREMAN or good JOURNEYMAN, to take charge of Glass; excellent wages to good man.—State age and particulars to A. BENNETT, Seelston Hall Gardens, Ashbourne, Derbyshire.

WANTED, JOURNEMEN or IM-PROVERS with Inside experience.—State wages expected to E. MATTHEWS, Strathfieldsaye Gardens, Mortimer, Berks.

WANTED, TWO JOURNEMEN; Plant and Fruit Houses; discharged or menial men, with good experience, 20s. per week, Bothy and vegetables; duty paid extra.—WILLIAM LLOYD, Rush-ton Hall Gardens, Weymouth.

WANTED, IMPROVER; Inside Houses; age 19; wage £1 weekly, with Bothy, vegetables, milk.—E. MORRAN, Walsand Hill Gardens, near Hull.

WANTED, IMPROVERS, 16 to 17; wages 1s. 6d. to 2s., according to experience; with Bothy, &c.; duty paid extra.—C. GARRATT, Canwell Hall Garden, Sutton Coldfield, Birmingham.

WANTED, TWO LADY GARDENERS, for Inside work; house found; duty alternate weeks, state wages.—Apply, GIBSON, Alfreton Park, Derbyshire.

WANTED, THREE LADY GAR-DENERS, with some experience of Out-door work; 25s. per week, with cottage and vegetables; also IMPROVER for the Houses, 19s. per week, Bothy, &c.—C. MOORE, Wargrave Manor Gardens, Wargrave, Berks.

WANTED, GARDEN LABOURER (im-prover), to work under Head, single, 2nd hand-icraft man for both in or Garden; wages 20s. per week. Apply by letter to MAXWELL, Great Camp, Boreholt Green, Kent.

LADY SCOTT requires responsible CARE-TAKER, with some knowledge of Gardening, to glass during war, low kept and extra high given married man; good wages and cottage near Guildford.—Reply by letter first, to MR W. KELLER SNOW, F.S.A.A., 55, Quarry Street, Guildford.

TRADE.

WANTED immediately, experienced GAR-DENER for greenhouse Department. Age 25 to 30, experience, wages required, to JAMES CARTER & CO, The Nurseries, Houston Road, Forest Hill, London, S.E. 25.

WANTED, WORKING FOREMAN, for Branch Nursery, Fruit and Flower Trees, houses and garden provided, must be energetic for time. Apply, with references and full particulars, to JOHN PECKINS & SON, 52, Market Square, Southampton.

WANTED, MEN for general Plant Growing, Palms, Ferns, greenhouse Plants, &c.—Apply, WILLS & SEGAR, The Royal Exotic Nursery, Ouslow Crescent, South Kensington, London, S.W.

WANTED, MAN for Nursery; Second; experienced, not needed, 80s. 6d. weekly, &c.—Apply, HOPWOODS, 65, High Street, Cheltenham.

WANTED, LEADING HAND in Florists Shop; must have good Making up know-ledge, able to manage staff, and be of good address with customers.—Apply, stating past experience, salary, &c., to WILLS & SEGAR, Royal Exotic Nursery, Ouslow Crescent, South Kensington.

SEED TRADE.—Wanted, ASSISTANT FOREMAN in Vegetable Seed Department.—Apply by letter, with full particulars, BARR & SONS (Private), 12 and 15, King Street, Covent Garden, London.

SEED TRADE. Wanted, for a Dublin Seed Establishment, an experienced SHOEMAN having a good knowledge of the business in all its branches and used to a smart Counter Trade. Permanent and progressive situation for the right man.—Apply at once, stating terms, to M. ROWAN & CO, The Ideal Seed Specialists, 51 and 52, Capel Street, Dublin.

WANTED, SEED ASSISTANT; intelligible, must give particulars of experience and salary required, to JOHN PERD & SON, Seedsmen, West Norwood, S.E. 27.

WANTED, experienced ASSISTANTS, in our Vegetable Seed Department, good wages to competent men.—Apply, giving full particulars to THOMAS & SONS, The King's Seedsmen, Southampton.

WANTED, LADY GARDENERS, for Resuscitating under Glass, knowledge of Pruning preferred, or quick at learning; state wages, with or without board and lodging.—FRED STEVENS, Rose Grower, Chesham.

WANTED, FEMALE GARDENER, for the London Furnishing Business, also MEN used to the same work.—Apply, stating age, experience, and wages required, to WILLS & SEGAR, Royal Exotic Nursery, Ouslow Crescent, South Kensington.

FLORIST.—YOUNG LADY required for good-class shop, live in or out.—Write, stating ex-perience, salary, &c., HORSMAN, Beckenham.

WANTED, HANDYMAN on Nursery; Carpentering, Painting, Glazing, and Repairs Permanent work.—Apply, WILLS & SEGAR, Royal Exotic Nursery, Ouslow Crescent, South Kensington.

SITUATIONS WANTED.
Twenty-six words for 1/6, and 6d for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown corre-spondents who require a fee before hand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

GARDENER (Head) seeks engagement in good establishment, where several others are kept. Experience in all branches, highly recommended by late employer, W. W. Gilmour, Esq., after 11 years' ser-vice, left through illness being sick, married, age 49. Apply, C. BAKER, 36, Malvern Road, Balham, London, S.W.

APPLICANT (ineligible, single) requires Situation as HEAD, good references.—State particulars to H. A., Box 18, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (Head), in good establish-ment, large and varied experience in all branches, 10 years in present situation, age 33; married—B. B., Box 4, 41, Wellington Street, Covent Garden, W.C. 2.

ORCHID GROWER and WORKING HEAD GARDENER desires re-engagement. Care present situation, and all former experience in all branches, state a few particulars, to GUNNINGBY, Abbeots Leigh, Bristol.

HEAD WORKING GARDENER seeks re-engagement, after several years' employ-ment, 25 years' practical experience, good first-class all-round, and well used in all departments of the profes-sion, 10 years' out-of-door, Apply, J. SCHENIA, Fern-Field, near Mersfield, North.

GENTLEMAN recommends HEAD WORKING GARDENER where two or more are kept, experienced inside and out; married, age 48; permanent situation. C. DUNN, Quarter way Lane, Trowbridge.

GARDENER (Head Working of good SINGLE HANDED) with helpful, practical and experi-ence in private garden, married, age 41, intelligent, highly recommended, reliable and trustworthy. BARR, BETT, Hatfield Heath, Hatfield.

GARDENER (Head Working); in place of man aged up, age 37, strong and active, life experience in Vegetable and Fruit and Plant Culture; good wages required.—Apply, A. RUSSELL, Batsford Gardens, Merton in Marsh, Glouc.

GARDENER (HEAD WORKING); life ex-perience in all branches, good references, by years present place; age 50. GEORGE BEALE, The Knolls, Virginia Water, Surrey.

GARDENER (Head Working of good SINGLE HANDED), life experience in all branches, age 50; married (no family). DICKER, The Cottage, Church Road, Parnright, Surrey.

GENTLEMAN (50) desires WORKING MANAGEMENT, Mixed Farming, Private or Market Gardens, all Farm and Horticultural Produce, Dairy Work, Milk-keeping, Sheep, Pigs, Buying, Selling, Ac-curate, Advertising circulars ignored.—B., 12, Aubrey Road, Bourne, Lincs.

GARDENER (SINGLE-HANDED, or other-wise), life experience; married; age 37, small family, good refs. E., Douglas Cottage, Orchard Grove, Good Hill, Bucks.

GARDENER (SINGLE-HANDED, or other-wise), good with Vegetables, Fruit, &c.; undertake 2 to 3 crocs, pigs, and poultry; married (2 children), age 51; good worker. State wages, with cottage and coal.—A. B., 11, New Town, Uckfield, Sussex.

EMPLOYMENT required at once for YOUTH, to July 1st, in Private Garden or Nursery; live in; comfortable home more than wages.—All par-ticulars to E. W., Box 23, 41, Wellington Street, Covent Garden, W.C. 2.

LADY GARDENER seeks temporary or permanent work, any capacity; Fruit, Vegetables, Pruning, work of patriotic nature essential; college trained, 5 months' experience.—Apply, X., Box 25, 41, Wellington Street, Covent Garden, W.C. 2.

WOMAN GARDENER (20) requires re-engagement (Inside), 2 years' general experience in large Private Garden, including Vines, Peaches, Carna-tions, Chrysanthemums, &c.; Bothy; Millands pierced. PARKROFT, Enville Gardens, Stourbridge.

TWO LADY GARDENERS desire post-together; one as Head, with 10 years' experience; Stanley Diploma, first-class R.H.S.; Dairy, Poultry, Bees; the other as Under, with 8 months' training on Market Garden, some Glass.—F. P., Box 14, 41, Well-ington Street, Covent Garden, W.C. 2.

TRADE.

NURSERY MANAGER; Fruits, Roses, Flower Trees and Shrubs, good propagator and salesman, fair knowledge of Landscape work, thoroughly capable to take entire charge, accustomed to exhibiting and the general routine of a good business; 15 years' excellent experience as manager, age 47. State wages and particulars, MANAGER, Alder River Nursery, Iwer Heath, Bucks.

TWO NURSERYMEN.—MANAGER or OUTSIDE FOREMAN; some knowledge of Inside; 11 years in present position as Nursery Foreman; in-eligible; life experience.—POMONA, Box 17, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER, single, seeks situation In-side, understands Melons, Grapes, Greenhouse, Bedding Plants, Chrysanthemums, could manage small Nursery, Cucumbers, Tomatoes, Fruits.—SAVING, 19, Berke-ley Road, West Norwood.

HEAD CLERK; life experience in Nur-series, good knowledge book-keeping, packing shed, orders, and labour in, over military age; good refer-ences. State wages offered.—ENERGETIC, 183, Oulton Park Road, Brockley, S.E.

FLORIST.—LADY seeks re-engagement as MANAGERESS or FIRST HAND, first-class refer-ences and testimonials.—G., Box 22, 41, Wellington Street, Covent Garden, W.C. 2.

The Gardeners' Chronicle
SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Ordinary Positions	per page	£	s.	d.
Facing matter and Back Page	10	10	0	0
	12	12	0	0
Half and quarter pages, column and half column spaces, pro rata.				
		£	s.	d.
4 line space not exceeding 50 words	...	7	0	0
Per inch, single column	...	7	0	0
Per inch, across 2 columns	...	14	0	0
Per inch, across 3 columns	...	1	1	0

Front page (no display allowed) 1/- per line space. (Headline counted as two lines).

For discounts apply to address below.

SITUATIONS WANTED.

26 words in 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM ... 19 6 per annum.
ABROAD ... 22 " " "

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.
Telegrams: "GARDENERS, LONDON."
Telephone: 1648 GERRARD.

BULL'S Food for Plants, Fruit & Vegetables.

THE NATIONAL FERTILISER

Supplied by all Seedsmen and Nurserymen
throughout the United Kingdom.

Per cwt. 24/-; 56 lbs., 13/6; 28 lbs., 7/6; 14 lbs., 4/6.

Also in Tins, 6d., 1/- and 2/6.



Photo by Gambier Reeks.

A SINGLE DAY'S CONSIGNMENT.

SOLE MANUFACTURERS—

BULL'S PLANT FOOD CO.,
536, KING'S ROAD, CHELSEA, LONDON, S.W. 10.

THE
Gardeners' Chronicle
No. 1612.—SATURDAY, NOVEMBER 17, 1917.

CONTENTS.

Books, notices of—	Obituary—
Burmah Beches, the Botany of .. 200	Marshall, William .. 202
The Grasses of the West Indies .. 195	Russell, Henry .. 205
Catalogue, an eighteenth-century .. 201	Scott, Daniel .. 202
Critical remarks .. 201	Orchid notes and gleanings .. 195
Farm, crops and stock on the home .. 203	Potato show at Trimsirk .. 202
Food production, on a crossed .. 197, 198	Rosary, the .. 201
Gardening in India .. 200	Rose American Pillar 196
German prisoners on the land .. 201	Smith, the late Mr. W. G. 200
Ground operations .. 200	Societies .. 201
Horticulture and the Bench .. 200	Linnean .. 201
	Royal Hort. (Scientific Committee) .. 201
	Stoking, economical .. 195
	Tomatoes for market growers .. 201
	War items .. 201
	Week's work, the .. 198, 199

ILLUSTRATIONS.

Chrysanthemum Crusler	.. 201
Marshall, the late William, portrait of .. 202	In his garden at "Aghimraith," Bexley .. 193
Rose American Pillar .. 197	

ECONOMICAL STOKING.

WITH the approach of winter, the subject of the scarcity of fuel of all kinds becomes of increasing interest, not only to householders, but also to those whose duty it is to provide the necessary warmth for delicate and valuable plants in the hot-houses. The problem is how to maintain the maximum of heat with the minimum of fuel; and in this matter the choice of the boiler is of importance. Probably, from this point of view, the tubular horizontal boiler is the best, as it can be used with a shallower stoke-hole than is required for most other kinds. The tubular boiler will burn almost anything—stems of trees, brushwood, and much rubbish which would otherwise be wasted. The boiler should be set on a brickwork bed, with a rise of at least half an inch per foot run, from front to back, where the flow-pipe connecting with the main pipes in the house should be fixed. Thus a horizontal tubular boiler of nine feet in length should have a rise of four and a half inches from the furnace door to the back. Do not allow too much space between the top pipes, or the dome of the boiler, and the fireproof tiles or brick arch covering the boiler—a clear space of four inches is quite enough. The damper for regulating the draught in the chimney should be fixed immediately above the point where the flue enters the chimney. If the furnace house is in the open air, and not too near any trees or buildings, the chimney stack should be from 12 to 15 feet high, so as to ensure a good draught, especially if anthracite coal is the fuel used.

Most readers of the *Gardeners' Chronicle* have more or less experience in stoking, but for the benefit of others who are pressed into work of this kind for the first time a few simple directions will not be out of place. To light the fire, make a small heap of loosely placed paper and shavings, then place over the pyramid some small, and then larger, pieces of wood, interspersed with dry chips, straw or shavings. Over this, lay a quantity of coal and coke broken small, and then light the paper,

etc., in the centre, continually adding coal and coke until a good, glowing fire is steadily burning. Press this burning mass to the back of the furnace bars with the fire hoe, and go on adding fresh fuel until the water in the boiler is at the desired heat. When starting the fire afresh in the morning, draw out the damper to secure a vigorous draught, but when the fire is established it should be pushed back three-quarters of its possible extent. Before applying more fuel, push the clinker bar under the fire the full width of the furnace base, removing any clinkers which may have formed during the previous hour or two, push the fire to the back part of the furnace, and again add more fuel in front. From the early morning onwards the fire should be attended to at short intervals until it is finally banked up at night. Do not open the furnace door in order to maintain a steady heat; this should be done by careful regulation of the damper, the exact working of which can be easily ascertained by careful and intelligent observation. Again, it is a great mistake to put on more fuel than is actually needed to maintain the desired temperature. Such action leads to waste of fuel and overheating, and makes it very difficult to prevent the boilers from boiling over, especially in the case of large installations, intended to heat three or four houses.

In making up the fire for the night, extract the clinkers and add more fuel as described above. In addition to this, when the furnace is half-filled, throw in a few shovelfuls of ashes, then some more coke, then some more ashes, and so on until the furnace is almost full, finishing off with a coating of ashes over the top and front of the glowing mass. Then push the chimney damper almost home, leaving only a space of about an inch for the passage of the smoke. If this is carefully done, it is probable that in the morning it will only be necessary to clear out the clinkers, increase the draught, and add a little more fuel, to start the fire for the day. If not, it will show that too much draught has been allowed, and much fuel used in proportion to the ashes, which can be remedied the following night. It will be necessary in the morning to clear out the clinkers very thoroughly, and also to remove the ashes from the sides of the boiler by using the clinker bar energetically between the bottom of the boiler and the side pipes and flues of the furnace. This operation should be repeated once in the afternoon, and again in the evening, allowing the fire to burn somewhat low in order to make it easier. The flues should be thoroughly cleaned out three times a week during the winter and early spring, beginning with the top central flue, cleaning the pipes or dome (in the case of a saddle-boiler) with a small hoe and brush worked well in among the top and side pipes. Afterwards draw the ashes and soot out of the bottom flues on either side of the base of the furnace, and clear the base of the boiler in the furnace. The tools necessary for the proper stoking and cleaning of the furnace consist of a shovel hoe, about 7 inches wide

and 5 inches deep, with a long, stout iron handle, for pushing the fire back in the furnace, and drawing the ashes from underneath; a hoe about 2 inches wide and 1 inch deep, attached to a light iron handle, for cleaning the flues; and a poker and clinker-bar combined, which must be strongly made, to stand the strain of removing and breaking the clinkers in the furnace.

With regard to fuel, there is no doubt that anthracite coal is the best; but as the heat is generated quicker with coke, the best plan is to start the fire with coke in the morning, and afterwards use the anthracite. If the fire is made up at ten p.m., there will be a clear fire eight or nine hours later, and the houses will be well heated. Anthracite is very hard coal; ordinary coal burns away much more quickly, and is therefore not only less economical, but requires more frequent stoking.

Stoking is an art which can be acquired by anyone of ordinary intelligence, and the satisfactory working of the boiler depends to a very great extent on how it is performed. The greater number of boiler troubles may be prevented by good and careful stoking. *M. E.*

ORCHID NOTES AND GLEANINGS.

LAELIO CATTLEYA HONORIA.

A NEW cross between *Cattleya Mantinii* (Bowringiana × *Dowiana aurea*) and *Laelio Cattleya* (Geo. Woodhams (C. Hardyana × *L. purpurata*)) is sent us by Messrs. Armstrong and Brown. With four species of *Cattleya* in its composition to one of *Laelia*, it naturally takes the large-flowered *Cattleya* shape and character to a great degree. The flower, which is 6 inches across, has silver-white sepals tinged and slightly veined with mauve, and broad, rosy-mauve petals, waxy at the margin. The lip, which resembles that of *C. Mantinii*, but is broader and more openly displayed, is rose colour at the base, ruby-red in the middle area, and light violet in front. The centre has a fine veining of bright yellow.

CYPRIPEDIUM MURIEL VAR. AMETHYST.

A MASSIVE flower of this fine cross between *C. Hera Euryades* (Boxallii × *Leeanum*), and *C. Cynthia* (mitsis-Leeanum × *Charlesworthii*) is sent us by R. Windsor Rickards, Esq., Usk Priory, Monmouthshire. The flower is of very thick substance, the dorsal sepal amethyst purple with an olive green tint at the base and clear white margin and apex. The broad petals are honey-yellow lined and veined with mahogany-red. The lower sepals, which are together nearly as broad as the upper sepal, have the central half coloured emerald green the two sides, extended wing-like, white with amethyst-purple markings, as on the upper sepal. Such an arrangement is considered abnormal, but the character is known to be fixed in some varieties. It would be interesting to know whether it proves so in this case. The name Muriel has also been given to the cross between *C. Chamberlainium* and *C. tonsum*, both raised in Sir Geo. Holford's gardens. The R.H.S. list recognises the cross now noted.

CATTLEYA TARENTINO ALBA

A FLOWER of a cross between *Cattleya Warneri* alba and *C. Dusseldorf* alba is sent by J. Ansaldo, Esq., Rosebank, Mumfles, Glamorganshire. It is a very good addition to a class of crosses of the *C. labiata* section, and which, while bearing a resemblance

to each other, are all good, and have the merit of flowering at different seasons, determined by the flowering time of the parent used. *C. Warneri* always has a good effect on size and form in its descendants, and the present flower follows the albino form of that species closely, the *C. Dusseldorfæ* alba (Undine), which resulted from crossing *C. intermedia* alba and *C. Mossiae*, Wagner) appearing chiefly in the narrower and more crimped front of the labellum. The flower is white with a slight sulphur yellow tinge in the tip, the disc of which is bright orange colour.

THE ROSARY.

ROSE AMERICAN PILLAR AND ITS ORIGIN.

The interesting account of the origin of this Rose as given by the raiser on p. 132 will appeal to all Rosarians, and especially those engaged in the raising of new Rambler and climbing varie-

Léon Simon and *Pierre Cochet*, issued so far back as 1899, but supplemented with the parentage so far as known of the varieties catalogued. This work contains some 10,394 names. To compile such a catalogue would be a great task, but the National Rose Society might well collaborate with, say, the American Rose Society for the carrying out of the work.

America is in advance of this country in the matter of trial gardens, and I have before me an application from the Mayor of Portland, Oregon, to send novelties of my raising to their new National Test Garden, to be conducted under the direction of the Bureau of Parks of that city.

Catalogues giving the parentage of Roses are of valuable assistance to the Rose breeder. From one before me of Peter Lambert's, I find that the parentage of that very fine climber *Marie Henriette Gräfin* (Hotell) is given as Rambler *The Farquhar* × *Richmond*. This is a very fine climber, and reminds me much of Paul's Scarlet Climber in growth, although it is quite distinct in blossom. The flowers are a delightful scarlet-

NOTICES OF BOOKS.

THE GRASSES OF THE WEST INDIES.*

A COMPENDIUM of the grasses of the West Indies is a welcome addition to botanical literature, and if the work before us does not satisfy all requirements it goes a long way towards doing so. It is the joint work of the agrostologists of Washington and the result of upwards of 25 years' investigations and study, aided by numerous American botanists and the British botanists on the spot. The compilation is based primarily upon the study of collections in the United States National Herbarium, and it comprises 455 species belonging to 110 genera, including a number of naturalised kinds. Prominent among the British contributors are Messrs. W. Harris, W. G. Freeman, J. Hart and W. E. Broadway, and the Trinidad Herbarium. The total number of specimens dealt with is nearly 7,000, and these are de-

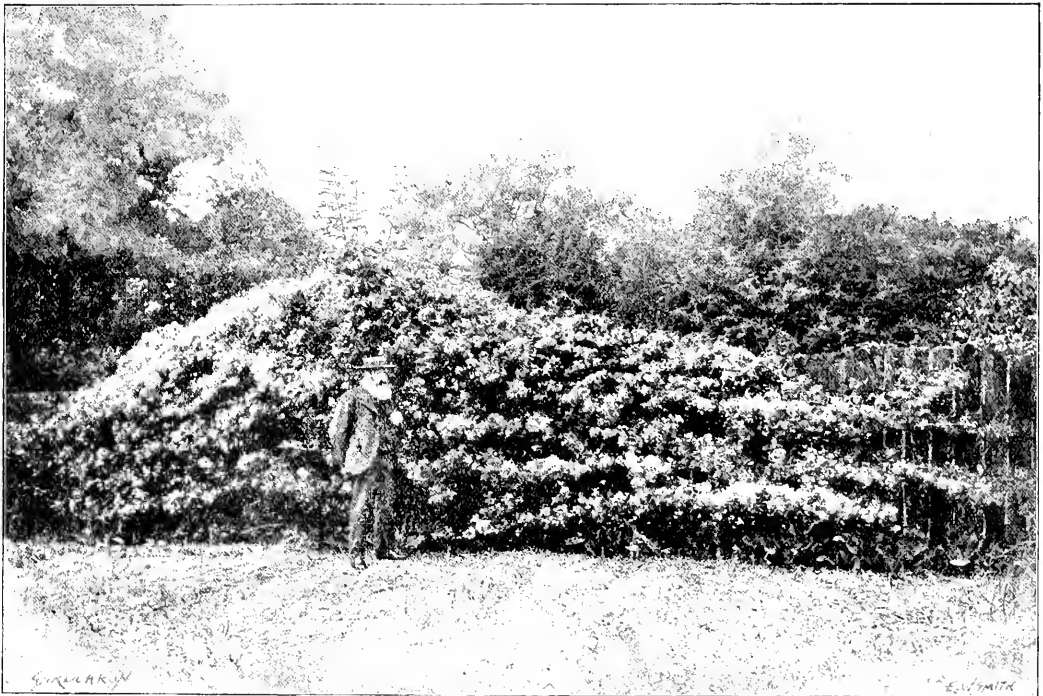


FIG. 75.—THE LATE MR. WILLIAM MARSHALL, V.M.H., IN HIS GARDEN AT "AUCHINRAITH," BEXLEY.
(The plant in flower is Rose *Crimson Rambler*.)

ties. Hybridisers have long been aware of the great possibilities accruing from a mingling of the different species and by intercrossing several times with various objects in view. Gruss an Teplitz resulted from a blending of several varieties, and that king of sturdy Roses, *Conrad F. Meyer*, was produced from a hybrid (*Gloire de Dijon* × *Duc de Rohan*) × with *Rosa rugosa germanica*. Messrs. A. Dickson and Sons adopt these methods with well known results, and Mr. M. Grady showed me one seedling, itself a cross with *La France* that had already produced for him several Gold Medal Roses.

It seems to me that the work of producing new types of Roses would be vastly assisted were there some authoritative work giving the origin of all known Roses, or so far as such knowledge is available—a catalogue of all introductions to date on the lines of that gigantic work of Messrs.

red and of good size and form. I can strongly recommend it. But we want Ramblers that will give us good autumnal displays, and to this end I suggest we choose parents from the perpetual-flowering kinds. Why not utilise such fine climbers as *Climbing Cramoisi Supérieure* as seed parents? This splendid climber is flowering with me now (November 5) quite profusely, and it gives a very brilliant touch of colour to the Rose garden. From the useful work of Messrs. Simon and Cochet already referred to, I find it is synonymous with *James Sprague*. May I be permitted to express the hope that our botanical societies, both at home and abroad, will continue to give us some good crosses with various species, so that the Rose breeder may have good material to work upon, in order to evolve other fine Roses of the American Pillar type? *Walter Easton, Farnwood, Leigh-on-Sea.*

published in the U.S. National Herbarium. "To facilitate the use of the work as a manual the detailed citation of specimens under each species is omitted. Appended to the paper, however, is a list of all the numbered specimens of West Indian grasses in the U.S. Herbarium." This list runs to 66 pages, and it will be of great service to other establishments possessing sets of the same series, such as those of C. Wright, Sintenis, Eggers, and others. The whole of the text is in English, and the descriptive part is a system of keys to the tribes, genera and species, followed by brief descriptions. All useful synonyms are cited, as well as generally accepted English names, and current vernacular

* *Contributions from the United States National Herbarium*. Vol. XVIII., Part 7. Pp. 261-471 + xviii. "Grasses of the West Indies." By A. S. Hitchcock and Agnes Chase. Washington: Government Printing Office, 1915.

names are also given. A full index of some 1,500 names and synonyms completes this work. *Panicum* and *Paspalum* number about sixty species each. The *Bambuseae* (*Bambosaeae* of the authors) are represented by four genera and sixteen species, twelve of which belong to the climbing genus *Arthrostylidium*.

ON INCREASED FOOD PRODUCTION.

WINTER PARSLEY.

To obtain a good supply of Parsley in winter plants should be lifted and planted in cold frames, skeleton pits, or at the foot of south walls. Choose the latest sown plants for this purpose and they will produce leaves all through the winter and spring. Where small plants are not available older specimens should be lifted and treated in the same way, cutting off the larger leaves. At the time of planting thoroughly water the roots, and give the soil a good dressing of soot. Seed may also be sown thinly in boxes, germinated in gentle warmth, and the seedlings grown on in cool houses.

EARLY PEAS AND BROAD BEANS.

EVERY effort should be made to produce pods of Peas and Beans as early as possible during the coming year. It is the common practice of many to sow early varieties on warm borders in the open during the autumn. In many parts of the country this often proves to be a very precarious method, due to the weather and various kinds of vermin. A much safer and more reliable plan is to sow the seed thinly in well-drained boxes about 4½ inches in depth, and germinate them either in cold frames or cool houses, planting the seedlings on well-prepared land, in the spring. Both early Peas and Broad Beans do much better when treated in this way than sowing out-of-doors. The seeds germinate better, the young plants are easily kept under control, and when carefully planted they suffer little or no check, and give far better returns than when sown in the open.

Good varieties for present sowing are, Peas: Early Giant, Edwin Beckett, Early Morn, and Duke of Albany. These sorts are much to be preferred to round-seeded varieties, as they give heavier crops of far better quality, and are only a few days later. Of Broad Beans, Aquaduke and Leviathan are two good and reliable sorts. *E. Beckett*.

ITEMS IN STORE FOR WINTER.

BESIDES the more ordinary store vegetables, such as Beets, Carrots, Swedes, Turnips, Choux, cabbages, Sugar Parsley, Parsnips, and bottled fruits, such as Plums and Pears, it may be of interest to note other items.

Pumpkins.—Some of these failed to mature, and the juicy stalk was certain to mildew, so the stumps have been rubbed with sulphur and soaked with "lime sulphur," previous attempts at sealing with resin, etc., not having been a success.

Crosses have been a failure; they are best started by putting one to three corms in small pots sunk in the ground and planting out when well started. Owing to my absence from home last spring, this was not done.

Chinese Yam only amounts to a few pounds, as last year's remaining tubers were mostly given over to new tubercle production for next season. I may note that those left in the open ground stood the severity of the winter (three successive nights about 0° Fahr.), whilst those in a cold greenhouse bed were destroyed.

Beans.—A ten-yard row of four varieties of Runner Beans has yielded just over 4 lbs. of ripe seeds after supplying green Beans and a dish or two of flageolet; Dwarf Beans for dried ripe Beans have not yet been threshed out. The plants were sown in Rose beds, vacant places on the rockery, and other available nooks; a few remain, too, from last year. Some have been bottled in the flageolet state, as amongst other ends they

are better for succotash; moreover, one can use pods thus which are too immature to ripen and too old for "baricots verts." Young pods have also been dried after four minutes' scald in boiling water. *Broad Beans* picked young and shelled have been dried direct; preliminary scalding seems to be a mistake.

Sweet Corn (Maize) has been boiled, scraped off, and bottled for succotash.

Tomatos in two forms, juice bottled in small bottles so that a whole lot can be consumed at once on opening, and as *Massa Quince* have been similarly treated in "Massa" form, and in prospect some *Medlars* will be treated likewise, on recommendation of the old description that the Quince is used, "like the Medlar," for

French seem to be late varieties. Victorias were a huge crop, but none was dried, as they were not likely to yield a good product. After all, they are only fit for the market or the pig-pod.

Grapes from the cool greenhouse. Many bunches of Grapes have already been dried off. Last year we made our first cake with our own raisins. The outdoor ones are now going through.

All the drying has been effected either in the hot "linen airing" cupboard or in a recess which has been closed in about the independent stove which heats the cupboard. Plums take about a week, ten days, or more, and should be occasionally inspected and turned. One day is about enough for Beans, and Grapes may be left forgotten till Christmas if hung somewhere out of



FIG. 76. ROSE AMERICAN PILLAR.

(See p. 190.)

flavouring Apple tarts; as there is no need for bottles or for immediate use of sugar, this form of storage seems useful.

Plums. Besides those in jam or bottles, Plums have been dried, the main lot being Reine Claude Violette, which we found before the war made a very superior prune; also experimentally, for their qualities have not yet been tried, we have Early and Late Orleans, Pershore, Belle de Louvain (these two need care, as they are thin skinned), Autumn Compté (smells good), Jefferson and Monarch (these two seem very promising); also a late Plum said to be the old Mussel or muscle Plum (still good and fresh), is now being dried. This, too, looks full of promise. I may note that the Plums dried by the

the way. As the heat is never high, the ripening process continues and a more sugary product seems to result. We fancy, too, that incidentally better flavour is obtained than in the quickly dried bought Prunes. In fact, some of the Plums we had stewed were put for a couple of days in warmth to make them more sugary. Moulds will not grow so long as the temperature is even so little raised as body temperature. This mode of drying is probably much too slow for elsewhere than the household. It is made slower in practice by the intermittence of the heating; anyhow, a day's cooling does no harm, and we began its use before the war. In some drying on the market the fumes of combustion pass directly on the fruit, which is hardly to be desired. *H. E. D.*

POTATO WINDSOR CASTLE.

I know of no better Potato for cropping qualities and exhibition than Windsor Castle. Can any reader name one? To-day we are thinking about the crops for next season, and the changing of seed Potatoes to produce as many tubers as possible. In planting, many of us are guided by the seedsman's list as to the season for which different varieties are best suited. Some list Windsor Castle as a main crop; another, mid-season; and there is a big difference between main crop and mid-season. Many gardeners at the present time are helping garden and allotment societies to produce as much food from the ground as possible; and many members of these societies require a fair amount of Potatoes every day, where the families are large. Gardeners are often asked to recommend a Potato for quality, liberal cropping, and earliness. Would any recommend Windsor Castle? The seedsman says in his catalogue, for mid-season or main crop. I should have no hesitation in naming Windsor Castle. When planted as a main crop, it is liable to bad attacks of disease, but by planting early and lifting early very little disease is seen. *C. Davis, Holy Wells Park Gardens, Ipswich.*

EARLY AND SECOND EARLY POTATOS.

In response to Mr. Wm. Taylor (p. 191), I may say there is no lack of varieties of Potatoes to give the qualities he desires, if they are given favourable conditions. All of them crop heavily, and in such cases we must expect a correspondingly strong haulm, and occasionally longer or taller than he mentions. In gardens of no great width and surrounded by walls or close fences they often grow twice as tall as they ought, but in open gardens, allotment ground, and in fields they abide by their respective heights unless over-matured. May Queen, Ninetyfold, and Dumottar Castle are white kidney and pebble-shaped Potatoes, of mealy character and excellent flavour, ready for use during the first and second weeks of July. Duke of York, Midlothian Early, and Witch Hill follow them towards the end of July, judging by my experience of them this year, but it all depends on soil, situation and season. One large grower, at least, is accumulating seed of Witch Hill from private sources, because it is new, and he has discovered it to be excellent and a heavy cropper. Of the same type as Eclipse, mentioned by Mr. Taylor, I can add Early Puritan, Epicure, and British Queen, which are descendants from such American types as Beauty of Hebron and Early Rose, and betray their origin by their shape and by being often flushed with pink. White Beauty of Hebron originated in this country from the ordinary pink-skinned type. White Elephant is of the same type, but larger. This and the Hebrons are old varieties, but still much grown for market. They come into the greengrocers' shops in our district before the skin is fixed. I should call them second earlies, or British Queen, mid-season. Great Scot is also a mid-season Potato, fairly mealy, but more so when baked. The last two will keep till spring, and that applies to Witch Hill and others of its group, when stored in favourable conditions. *J. P.*

FOOD VALUES

An article in the *Scientific American*, July 29, by Dr. C. F. Boldman, advocates the affixing of food values (in calories) to all articles of food. At his suggestion a firm of New York restaurateurs has adopted the practice, and on its menu cards may be read: 632.429, cold ham or corned beef—which means that if you choose the former dish you have one providing 632 calories; if the latter, you only get 429.

This appears to us to be a very sound method of teaching food economy, and one the principle of which might be adopted in this country. How many people, for example, among the general public know such an at present all-important fact that the protein of Potatoes is, weight for weight, four times as valuable as human food as is the protein of Wheat?

The Week's Work.

THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor

SEAKALE.—The foliage of Seakale having been killed by frost, a batch of roots may be lifted and placed in heat. Only a few roots should be lifted for this first forcing, as better results may be expected later from crowns that remain in the ground for another week or two. If only a small supply is required the roots may be placed in pots or boxes closely together and the space between them filled with fine, sifted soil, which should be pressed tightly with the fingers. If the soil is dry water it thoroughly. Place the pots and boxes containing the roots in a perfectly dark pit or shed where the temperature is 60°, and keep the atmosphere moist. Large numbers of roots may be forced quite easily on beds of fermenting material, which may be made in any brick pit where fire-heat is available when necessary. The bed may consist of fallen leaves, which should be made quite firm by treading; place a layer of old potting soil on the surface to a depth of 9 inches. The roots may be planted with a spade in the same manner as Box is planted for edgings. The crowns should be placed closely together in the rows, which should be 6 inches apart. Forced Seakale will keep in good condition for 6 or 8 days after it is cut. At Frogmore we force about 20,000 crowns in batches of about 1,500 each. Water should be applied as the roots are placed in position, and the soil made firm.

WINTER SALADS.—Pits in which Lettuce and Endive are growing should be freely ventilated whenever the weather is favourable. Hoe the surface of the bed carefully, and do all that is possible to promote a healthy atmosphere. Lettuce plants which are advanced in growth are liable to damp off during the winter in dull, damp weather. Lettuces may still be planted in pits from the seed bed, with a view to producing a supply early in spring. Endive should be blanched as required by placing a few sheets of brown paper over the plants. Plants of Batavian Endive should be lifted from the open border and placed in pits at once or they may be injured by frost.

CHICORY.—Roots of Chicory should be lifted and placed in a warm, dry pit or forcing house where light can be excluded. This is a valuable salad plant, and very easily forced. The roots may be placed in pots or boxes in the same manner as Seakale.

WINTER SPINACH.—When the ground is sufficiently dry work the Dutch hoe carefully between the rows of winter Spinach. Remove all weeds and decaying leaves, and if slugs are troublesome dust the soil with soot.

BROAD BEANS.—To obtain early pods of Broad Beans make a sowing as soon as the ground is dry enough. Select a sheltered position where the soil is light and rich. Sow the seeds in shallow drills, using double the quantity usually sown in spring to provide against loss. Broad Windsor and Beck's Green Gem are suitable varieties.

BETROOT.—All Beets should be lifted and stored in a ramped shed. The roots should be stacked in sand or fine, dry soil to prevent shrivelling. It is very important to keep them beyond the reach of frost.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbots Wood, Godalming, Surrey

RASPBERRIES.—The Raspberry requires a rich, well-drained soil and an open situation. The plants are sometimes grown in odd corners, but with unsatisfactory results. The best varieties are: Hornet, Norwich Wonder, Superlative, Baumforth's Seedling, Yellow Antwerp, and, for autumn fruiting, Belle de Fontenay. Yellow sorts are not so largely grown as their merits deserve. They make a very useful and pretty

dish for dessert. If the soil has been recently trenched it will not be necessary to trench it again, but if hard and infertile it must be well tilled and plenty of burnt soil, lime rubble, or anything else that will lighten it mixed with it. Well decayed farmyard manure should also be employed. The best system for training, and the least troublesome, is to secure the canes to horizontal wires stretched from iron standards. If wooden posts are used they should be cross-tied to increase their durability. The posts should be a foot above the wire to permit of placing the nets in position in the fruiting season. Three wires will be sufficient, the first about 2 feet and the top one 6 feet from the ground level. The canes should be planted about 1 foot apart. Place a mulching of dry litter or bracken Fern over the roots to furnish protection from frost. It is not advisable to plant in wet weather, and especially on heavy ground. In established plantations the canes may be tied to the wires in their full length at the first opportunity. In the spring the ground and air are often very cold, and such work is then slow and tedious. Do not tie the canes closely together, and remove all weak shoots if this has not been done already. A liberal dusting of either soot or lime may be given after the soil is cleared of all rubbish. A mulch, if manure for the purpose can be obtained, will be an advantage.

RED CURRANTS.—The bushes may be pruned at any time after the fall of the leaf. If the branches have been summer pruned the main shoots will not require much shortening, but if the bush is as large as is desirable, hard pruning will then produce the best results. Spray the plants with paraffin emulsion to prevent birds eating the buds; another good plan is to slack some lime with paraffin and to dust the bushes with the material when they are damp.

BLACK CURRANTS.—Examine the bushes for "big bud" (if this pest is seriously in evidence the bushes should be grubbed up and burnt), and then prune them. The Black Currant does not require much pruning beyond thinning out the wood and making the plants shapely. Very old bushes should be discarded and young stock planted in a different site if the soil is exhausted. Black Naples and Boskoop Giant are good and prolific varieties. A good spraying with winter wash may be afforded the bushes, especially those growing in damp soil, where the wood becomes covered with moss and other foreign growth.

GENERAL REMARKS.—Push forward the work of planting, root pruning, stake making, tying, and pruning. Have the ground ready for planting the trees by the time they arrive from the nursery.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gaton Park, Reigate.

VANDA.—Tall-growing Vandas of the tricolor and savais sections are commencing to root freely, and will continue to do so all through the winter. The present is a suitable time to re-pot or resurface the plants; if this work is deferred until the spring, there will be a greater danger of the bottom leaves dropping. It is not advisable to disturb specimens that are well furnished with leaves if the present pot is sufficiently large to accommodate the roots for another season, but such plants should be provided with fresh material on the surface, removing a quantity of the old surface compost. Plants that have lost many of their leaves at the base and are furnished with live roots some distance up the stem, should have the old potting and drainage materials taken away, without detaching the roots which are clinging to the sides of the pot. After cutting the base of the old stem away, place a flat piece of potted over the drainage hole, stand the plant in the centre of the pot sufficiently low down, if possible, to bring the bottom leaves near to the rim, arrange the roots in position, taking care not to break them, and fill in around and between with clean crocks and rough Sphagnum-moss, pressing the materials firmly and arranging them nearly to the top of the pot, finishing with a deep layer of clean, jacked Sphagnum-moss. Secure each shoot to a neat, strong stick. Well rooted specimens,

with plenty of lower leaves, that are growing in pots too small for another season, should be re-potted. These newly potted plants should be sheltered from direct sunshine, and their immediate surroundings kept moist by frequent syringings around and between them. It is essential that the plants be always stood on a damp bottom. Direct watering will not be necessary for a few days after potting, but as often as the moss on the surface of the pots becomes dry it should be sprinkled with clear water to keep it alive. When new roots begin to push out from the stem and from the points of the old roots, the amount of water should be gradually increased, but the moss should never be kept in a saturated condition. The plants delight in plenty of fresh air, and the bottom ventilators near them should be opened at all times when the external temperature is not lower than 50°. These *Vandas* grow best in the intermediate house, or at the cooler end of the Cattleya house. The leaves and stems of the plants should be sponged with a suitable insecticide to cleanse them from dust and insect pests. A small brown scale insect attaches itself firmly to the leaves, and great care should be exercised in dislodging the pest, or the leaves may be damaged. *Vanda Kimballiana* and *V. Watsonii* are developing their flower-spikes—the atmosphere of the house in which they are grown should be kept rather warmer and drier than hitherto, but sufficient water should be afforded the roots at present to keep the Sphagnum-moss growing.

COELOGYNE.—Plants of *Coelogyne cristata* and its varieties are nearing the completion of their season's growth, and will soon be developing the flower-spikes from the new pseudo-bulbs. When this stage is reached reduce the amount of water at the roots, but not to such an extent as to cause the plant to suffer. For the present give just sufficient moisture to keep the pseudo-bulbs rigid. Well-rooted, pot-bound specimens will be greatly benefited from now onwards to the flowering stage by occasional applications of weak manure-water prepared from cow-dung, *C. lagartii*, *C. mollis*, and *C. olata* are also developing flower-spikes, and should be well supplied with moisture.

MASDEVALLIA. Plants of *Masdevallia tovarensis* are commencing to develop flower-spikes, and specimens that have been grown in cool conditions during the summer should be placed in a light position in a house having an intermediate temperature. Exercise great care in watering these plants. The compost should become dry before water is added. When watering the house remove these plants to another division or the flowers will be changed from white to pale pink.

THE FLOWER GARDEN.

By W. J. GRISE, Gardener to Mrs. DEMSTER, Keele Hall, Staffordshire.

TREES AND SHRUBS WITH ORNAMENTAL FRUITS. During the present planting season the merits of trees and shrubs bearing ornamental fruits should be considered, for a good specimen of a *Platanus Platanus* with its bright scarlet fruit, always attracts attention. Most kinds are best planted in groups, but each individual specimen should be given sufficient space for its full development. Amongst the finest of leaved trees and shrubs are *Cotoneaster frigidula*, *C. Simonsii*, *C. nonnifolius*, *Symphoricarpos racemosus*, *S. vulgaris*, *Berberis Darwinii*, *B. Gayi*, *Crataegus pendula*, *C. Carmoi*, *C. Pycnantha*, *Lalandii*, *Eugonius europaeus*, *Perrotteta*, *Skimmia japonica*, *S. fragrans*, *Parus Anoparia* (Mountain Ash), *P. M. his var.* John Downie, *P. arbutifolia*, *Viburnum lantana*, and *Elaeagnus macrophylla*. They should be planted in groups to secure the best effect. Some of those enumerated do equally well when planted under large trees, and for this purpose the list may be extended by the addition of *Hollies* in variety, *Veronica Traversii*, *V. buxifolia*, *Weigela*, *Bibes*, *Portugal Laurels*, *Lacustrum japonicum*, *Rhododendron ponticum*, and *Berberis Aquifolium*. The ground should be trenched and manured, for usually the soil under trees is in a more or less exhausted condition, and unless it be thoroughly prepared before planting success cannot be expected.

PLANTING RHODODENDRONS. If the ground has been prepared in advance, the planting of *Rhododendrons*, *Azaleas*, *Andromedas*, and other American shrubs should be preceded with care, as autumn planting is always the most satisfactory. In some districts it may be necessary to mix peat and sand with the soil, according to its character, reserving a quantity of these materials to place about the roots when the work of planting is done. Do not place the roots too deeply in the soil, but set them at the same depth as they were before the plant was lifted. Firm planting is essential in the case of all members of the Ericaceae. Do not plant when the soil is wet or frozen. Secure to stakes at once those that require a support, as nothing is more injurious to the roots than twisting and loosening by the wind. A mulch of leaf-mould or stable litter will protect the roots from frost, and promote root action.

SPANISH LIRISES.—The planting of bulbous *Lirises* should be done forthwith as they are very difficult to keep alive when out of the ground. Plant in groups in well-sheltered beds or borders in rich, sandy soil. A good selection of Spanish *Lirises* is afforded by the following varieties:—*Blanche Superbe*, *Vondel*, *Earl of Leicester*, *Mulvey*, *Chrysolera*, *Humboldt*, *Mon. Byron*, *Cajmans*, *Solferado*, *Admiration*, *Belle Chinoise*, and *Thunderbolt*. Plant the bulbs 4 inches apart and 3 to 4 inches deep. English *Lirises* form a subsection to the Spanish section, and require similar treatment, but it is advisable to allow a little more space between the individual bulbs. A fine effect can be obtained by planting a selection of the best varieties in groups in the foreground of herbaceous or mixed borders.

FRUITS UNDER GLASS.

By JAS. HUTTON, Head Gardener at Gunnersbury House, Acton, W.

PINEAPPLES.—Stickers that were potted during the past season should now be well rooted in moderately small pots. Six-inch pots will be large enough for plants of moderate size, and will suffice through the winter. Do not allow these young plants to become excessively dry at the roots, and in watering use water a few degrees warmer than the temperature of the house, say 70°. The temperature at dusk should range from 60° to 65°, and at daybreak 55°. Higher temperatures would cause too much growth in winter. For instance, if the temperature is too high and the plants dry at the roots, some of the stock may develop fruits prematurely. Plants that are in their fruiting pots, say, from 12 inches to 14 inches diameter, may be kept moderately dry at the roots for the next three months. Then, when the days are again lengthening, and water is given a little more liberally, the plants will respond readily. The atmospheric conditions should be on the dry side also; damping down is permissible, but do not use the syringe more than for light spraying between the pots. It will result in a saving of fringing to cover the glass with suitable material at night during frosty weather, and for this there is nothing to equal brown tanned sheeting.

CLEANING FRUIT HOUSES.—Let the fruit houses and trees have a thorough cleaning. It is advisable to get this work done in good time, in order that the work of resting Peaches, Nectarines, and other trained trees may be proceeded with as soon as possible. A weak solution of soft soap and paraffin is a good mixture for cleansing purposes. Use the water fairly warm for the scrubbing of the woodwork, syringing some of it vigorously into every nook and cranny. Wash the glass both inside and out. Let the walls also be well cleaned, and afterwards whitewashed, using quicklime mixed with a little salt to assist in setting the lime. If the houses are at all leaky endeavour to have them painted; there is no better time than the present for doing this work.

RESTING THE FORCING HOUSES.—Early in the year I referred to the need for deferring the very early forcing of fruit trees, including Vines, during the war, and recently I was in a neighbouring garden where this had been practised. It was a house of Muscat of Alexandria Grapes, the crop of which in pre-war days was ready for cutting by the end of May.

In ordinary circumstances these Vines would have been exhausted in a few years. Now, by a few years' normal treatment, they are again in the very best condition, and carrying at the present time a well finished crop of large bunches. I noted, too, that the wood is well ripened for another year, and the Vines bid fair to continue yielding good crops in the future. The borders are inside, hence they are under full control. If needed the Vines will be suitable to hard forcing in subsequent years, and in all probability, when the war is over, such forcing will be resumed. The house is of moderate dimensions and well adapted for forcing. I am convinced that it will pay to allow the plants a rest from hard forcing for a few years, and more especially at the present time, when there is not an urgent need for early forced fruit. Besides Vines my remarks apply to Peaches, Nectarines, other stone fruits, and Figs. It affords an opportunity of getting the trees into a better condition. In the case of both Peaches and Nectarines it affords an opportunity of thoroughly re-making the border, also of carefully thinning out the growths previous to training in healthy, fruit-bearing wood. Even in the case of fruit trees in pots, resting them from hard forcing for a few years will give new life to the trees, and it will be an additional advantage if lighter crops are taken from them meanwhile. Trees that have been previously forced early will start into growth naturally earlier than those that have not. By avoiding forcing unduly early a very considerable economy of fuel will result, and this is all-important from a national point of view. At Gunnersbury House Gardens the boilers and pipes are being emptied in two different stockholds, and I am arranging to dispense with the houses which they heat during the winter. This will meet both the Labour shortage and the fuel consumption.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORRICH, Eastwell Park, Kent.

CLERODENDRON FALLAX.—This handsome stove shrub is very distinct from the climbing species of *Clerodendron*. The vivid scarlet flower-heads are very showy, and well-grown plants are useful for decorative purposes at this season. As the plants approach their best, the amount of atmospheric moisture should be reduced, and a little more ventilation given. The pots are filled with roots, and the soil must not be allowed to become dry, or the foliage will quickly lose its freshness. At this stage feeding should be discontinued. When the plants are past their best, and becoming shabby, cut off the flower-heads back to the stem, and gradually reduce the water supply to the minimum during the depth of winter, thus ensuring the plants a good rest before starting them into growth in the spring. These old plants may thus be flowered much earlier than seedlings.

PLUMBAGO ROSEA SUPERBA.—This attractive winter-flowering plant will soon be coming into bloom. In order to develop the delicate colour of the flowers, arrange the pots thinly apart, and as near to the roof-glass as possible. When the spikes commence to open, remove the plants to a somewhat drier atmosphere than the ordinary plant stove in which they have been growing, as in drier, cooler conditions the flowers last longer. If required, the flowering season of these plants may be prolonged by keeping a batch in a cooler house, but the temperature should not be allowed to fall below 55°. When the flowers are over, if the spikes are cut out, the plants given a pinch of artificial manure, and returned to the stove, they will develop a second crop of blooms.

LATE-FLOWERING TULIPS.—As soon as May-flowering and Darwin Tulips are received from the salesmen those intended for pot culture should be potted without delay. They will succeed in pots, pans, or bowls of almost any size, but for general greenhouse purposes 5 and 6-inch pots are the best receptacles. If large specimens are required, 12 to 18 bulbs (according to the variety) should be placed in an 8-inch pot. As soon as the pots are well filled with roots they can be assisted to develop by a little warmth. But they must not be hard forced; encourage them to grow by sun heat as much as possible, and place them close to the roof-glass.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER, and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and such unnecessary delay and confusion arising from letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 42.2.

ACTUAL TEMPERATURE:—Gardens' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, November 15, 10 a.m., Bar, 30.0, temp., 41. Weather—Fair.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—Bulbs at 67 and 68, Cheapside, at 3 o'clock, by Frotheroe & Morris.

Gardening in India.

Gardening has become —for better or for worse —one of the most cosmopolitan of arts, and the influence of the modern British schools of gardening is making itself felt in all parts of the world. Whether it is better for a country like India to develop gardening along independent lines rather than to follow precedents developed in relation to British gardens is a nice question, but of this we may be sure, that so long as India is the temporary home of men and women of British origin, so long will the attempt be made to plant English gardens in India.

Though the plants which adorn these British-Indian gardens will perforce be different from those we grow here, the British-Indian gardener will insist on lawns and borders and gravel paths. His lawns must be of Doob-grass or Hariali (*Cynodon dactylon*), made by transplanting turves or dibbling or spreading mud with chopped plants, and renewed triennially. Even so, the Indian gardener will have to weed as arduously as his British confrère. In making his lawn he will be well advised also to practically sterilise his soil, just as we do, or should do; for otherwise his battle with weeds will be as arduous, and well-nigh as hopeless, as is ours nowadays.

The Indian flower-borders may, however, contain not a few representatives of those genera which contribute to the beauty of

British gardens—Dahlias and Cosmos, Tithonias and Zinnias, Coreopsis and Tagetes and Gerbera. Nor, at all events in many districts, will Roses be absent. For the British-Indian garden must always be a reminiscence of home, as well as a source of pleasure in itself, and he must indeed be a cosmopolitan who would not include in his garden many of the flowers the scent and sight of which evoke memories of the gardens of home and of childhood.

Messrs. Burns and Little have, consciously or unconsciously, borne these ideas in mind in writing of ornamental gardening in India.* How difficult it is to generalise on a subject of such magnitude may be judged from the fact that the garden of India must be prepared to flourish under a rainfall which may be nil or may reach 300 inches per annum. Irrigation must therefore play a large part in Indian gardens, and we think that the authors might well have given more space both to methods of irrigation and to the use of water in garden design. Water and shade—moving water and deep shade, as of the Boboli Gardens at Florence—would seem to us to be essential conditions for Indian gardens in hot places where water is to be obtained.

The need for forethought and prompt action essential to successful gardening everywhere, is even more vitally necessary in Indian gardening than it is at home. If the Indian gardener misses the tide in the affairs of the garden, his year is lost, for where air and soil are hot and humid the order of the garden, unless maintained by a ready hand, is turned to anarchy.

The authors are not too vocal in the praise of the native mahi—the Indian gardener. He appears to be ever clamant for more assistance, and the area which one mahi can look after is only about one-tenth of an acre—not much more than an allotment; but climate counts both in limiting the time during the day when hard work may be done and in limiting the willingness and fitness to do hard work—and gardening is, and must always be, hard work.

It may be presumptuous to offer an opinion, and not to trust implicitly the man on the spot, but we cannot agree with the authors in advocating the British system of flower-beds cut out of grass—of more or less formal shape. As the authors observe, "to some these appear inartistic." Nor can we agree that a flowering border should be so disposed that the tall plants are always at the back and the dwarf at the front:—

"Trim little scholars are the flowers of my garden,

Taught to stand in rows and answer to their names."

We gather that the rock garden has yet new worlds to conquer, for on this subject the authors are silent. Nor do we suggest that any but the extreme would advocate a rock garden in the plains of India; yet in that vast territory there must surely be many places in which the rock garden would be at home.

THE BOTANY OF BURNHAM BEECHES.—Mr. J. G. BAKER has published a list of the species of plants occurring in the 374 acres of forest land which constitute Burnham Beeches. About half the area is woodland and half common. The soil consists of sand and gravel, and the flora is not a large one. Mr. BAKER estimates that the plants—Beech, Birch, Holly, Bracken, Ling, Bell Heather, and the grasses *Deschampsia flexuosa* and *Molinia caerulea*—occupy three-quarters of the whole area.

HORTICULTURE AND THE BENCH.—New Justices of the Peace for the City of Glasgow include the names of Mr. A. N. HUNTER, proprietor of Messrs. ACSTON and McCASLAN'S seed business, and Mr. JAMES WHITTON, V.M.H., chief officer of the City Parks and Open Spaces.

GERMAN PRISONERS ON THE LAND.—The Food Production Department states that more and more German prisoners are being employed on the land, the popular impression that very few indeed are working for their living being incorrect. In different parts of the country, camps of German prisoners have for some time past been engaged on drainage and other important work. In Worcestershire alone during the week ending October 27, German prisoners engaged in agriculture worked 21,762 hours, as compared with 19,694 hours in the previous week. Some water-course cleaning in Cheshire by German prisoners has been most favourably reported upon; in Essex they are lifting and storing Mangolds.

WAR ITEM.—Eight large Pears, sent by Mr. CECEL BALDWIN, Jersey, to Messrs. ALLAN, The Bazaar, Glasgow, to be sold in aid of the funds of the Glasgow Red Cross Fund, realised the sum of £26 10s.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE LATE MR. WORTHINGTON G SMITH.

The portrait and notice of the late Mr. W. G. Smith, on p. 169, recalls memories of days past, when wood engraving was the principal, if not the sole means of illustration, and when the names of such artists as Birkett Foster stood high in the world of illustration. There was a great demand for good box-wood, and Mr. Worthington Smith was one of the first artists to interest himself in the discovery of a substitute. At an International Forestry Exhibition which was held at Edinburgh in 1884, a silver medal was offered for a report on any hard wood likely to supply the place of boxwood for wood engraving. I was the winner of this medal, which led to some correspondence with Mr. Smith. One of his letters, dated from Dunstable, June 29, 1886, runs as follows:—"My Dear Mr. Jackson—I have sent the block to London so that one surface may be prepared for engraving. I shall then be better able to judge of its quality. It appears to me to be very good, and suitable for engraving. I should, however, not like to try a portrait on a doubtful block, as a face, even of a Fijian king, demands a clear colour and a perfect surface."

The best Yew and Hawthorn are equal to ordinary Box." John R. Jackson, Lymington, Devon.

GROUND OPERATIONS. In the "Week's Work" (see p. 179) Mr. Dunn advises pushing on with digging and trenching. Quite so on light ground, but the trenching of extremely heavy ground is far best left till early spring, for such ground trenched now is beaten down by rain and snow, and in a very bad state for planting in the spring. This I proved by trenching a piece of heavy ground last autumn to receive young Onion plants raised under glass. As time went on I found I had more plants than the ground would hold. A further area of 3 rods was trenched, adjoining the ground trenched in the autumn, and I soon found I had made a mistake in trenching heavy ground in the autumn to receive

* *Agric. Jour. of India*, XII-XIII, July, 1917.

* *Journ. of Botany*, Vol. LV., Oct., 1917.

Onion plants in spring. Those planted on the ground trenched early in March made better bulbs than those planted on the ground trenched in autumn. *C. Davis, Holy Wells Park Gardens, Ipswich.*

CRITICAL REMARKS.—Practically all writers on vegetable growing urge good thinning when in the seedling stage, to ensure proper development. After this season's experience, I question the necessity of so doing with Carrots, at any rate. Owing to lack of labour, my second early batch was left unthinned entirely. They have just been taken up, and a finer developed lot no one need wish to have. If put in an exhibition, many would be passed by as being too big, while the bulk were of average size. As they were being lifted, one could grip a handful of tops and draw up bunches of five to eight specimens. Clearly, had they been thinned very many roots must have been wasted. Spring-sown Onions are another crop that will give satisfactory yields if left unthinned, provided the ground has been well tilled. The maincrop and the late crop of Beet and Carrots are mostly advised to be lifted unnecessarily soon, by which they lose flavour and freshness. Should the earlier sowings have to be taken up to make room for another crop, they should not be put under cover, but stacked on cool ground and covered with their own foliage. The late lots can well be left where growing until it is necessary to remove them to make preparations for another season. The only exception I would make to this rule is when dealing with wet-lying grounds, which would set up rotting. Ashes are sometimes recommended to cover Carrots in store, but a word should accompany such advice, to the effect, that they should be old ashes that have had not less than six months' exposure to the weather. New ashes are too sulphurous. *C. Turner.*

TOMATOS FOR MARKET GROWERS (see pp. 164, 171).—The variety *Kontine Red* requires a lot of heating for general market work, some of the clusters producing ten to twelve good sized fruits. Most varieties of the Sunrise type, grown under ordinary market conditions, produce too many "smallies." An old variety of the right size and quality is *Hillside Comet*. For an outside crop, *Yeale's Leader* has done remarkably well with me this season. *B. Peters.*

AN EIGHTEENTH CENTURY CATALOGUE.—Catalogues such as that referred to by Mr. W. Roberts (p. 152) should give interesting information concerning the so-called "florists' flowers" which were formerly grown. It would be interesting to know, for instance, when the *Pansy* was first recorded as being grown; one reads of its being "raised by seeds, and by off-sets slips of the large, bushy plants, in the autumn or spring, in the beds or borders, for increasing their growth. The varieties may be preserved in this way with safety." (Varieties mentioned but not named as having more than two colours, "as purple blue, yellow, white, improved and enlarged by garden culture." (This in a book published 1807.) One reads also of two species of *Dahlia*, *Dahlia pinnata* (purple) and *D. crocata* (yellow), nowadays regarded as *D. variabilis*, and in addition to an excellent article on the *Dahlia* by Mr. Buonanni, gardener to Lord Holland. With regard to "Smallage," this refers to *Celery*. It may also be of interest to note that *Abercrombie*, in his book published in Capel Street, Dublin, MDCCXXXI., gives 44 varieties of Apples (well approved sorts only), in addition to Crab and Paradise, used for stocks, 5 varieties of Almonds, 9 varieties of Apricots, 4 of *Berberis* (fruits), 16 of *Cherries*, and 4 of *Bird Cherries*, 13 of *Fig*, &c. Apropos of *A. C.'s* "new" methods of storing fruit such as Apples, this old book recommends "carrying them, and disposing in heaps, each sort separately, to remain a week or two to sweat and discharge the watery juices, then wiped dry, and put up into the different divisions and shelves of the fruitery and in boxes or hampers, &c., and then cover the whole closely with clean, dry straw a foot thick to exclude air as much as possible, whereby they will keep much longer in perfection." Generally keep the door and windows closely shut, for the less the external air is admitted the better the Apples will keep." *W. H. Johns.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

Nov. 6.—*Present:* Mr. E. A. Bowles, M.A., V.M.H. (in the chair), Dr. J. A. Voelcker, Dr. W. Bateson, Dr. A. B. Rendle, Messrs. J. Fraser, Ledger, Worsdell, Allard, and F. J. Chittenden (hon. sec.).

Twin Vegetable Marrows.—Mr. J. Fraser showed a Vegetable Marrow with two adnate-fruits, and remarked that a considerable number of similar instances had come to his notice during the present year, the fruits being sometimes separate.

Many-seeded Apples.—He also showed seeds taken from varieties *Duchess Favourite*, *Winter*

primitive character in these genera, for strong shoots usually bear lobed leaves. Specimens of *Morus androsa* shown were almost all lobed, while in many species of *Morus* and *Broussonetia* simple leaves are the rule.

Buds on Roots of Solanum Dulcamara.—Dr. Rendle showed a plant of *Solanum Dulcamara* with a stout root bearing numerous buds all along its length.

LINNEAN.

NOVEMBER 1.—The President, Sir David Prain, F.R.S., drew attention to the important donations of Sir Frank Crisp, Bart., of the complete series of *Linnaea* in 17 volumes, of 14 bound volumes of papers with special index by the Rev. George Henslow, and of the volume de-



FIG. 77. CHRYSANTHEMUM (O. SAGRE) FLOWER WHITE. (R.H.S. Award of Merit, November 10, 1917. (See p. 192.)

Quarrenden, and King of the Pippins, showing seeds in excess of the normal number, 10. Such excess number, up to 20, appears to be fairly constant in some varieties, e.g., *American Mother*, where four ovules in each carpel appear to be normal.

Prothuberation in Rhododendron Flowers.—Mr. Worsdell showed flowers of *Rhododendron* bearing a second flower, a prolongation of the axis through the ovary. He drew attention to the fact that the axis was normally prolonged through the ovary in this plant.

Variation in Leaves of Morus, etc.—He also commented upon the occurrence of both simple and lobed leaves in plants of the genera *Morus* and *Broussonetia*. He suggested that possibly the lobed leaf was a primitive, the entire, a less

posited in the Society's care by Mr. A. Forbes *Seveling* of *Tournefort's Histoire des plantes qui ont essaié aux environs de Paris, 1725*, with the autograph of Bullon on the title-page.

A paper on "The Germination of *Iris Pseudacorus*," *Linna.*, in Normal and Abnormal Conditions, was read by Lt.-Col. J. H. TULL WALSH, F.M.S., as follows:—

Those who were present at the meeting held on November 30, 1916, will remember that Mr. T. A. Dymes told us rather a sad story about his experiences with the seeds of the *Yellow Iris* or *Water-Flag*. He told us that "those (seeds) that fall on to the mud and remain there appear to perish from decay." "Seeds that have not sunk germinate on or near the surface of the water in the latter half of May." "The fate

of those seeds, if any, that sink before germination, has not yet been determined." I am not here to criticise Mr. Dymes. Under the conditions in which the seeds he used were expected to germinate, his results were correct. Seeds floated on deep water in a large glass bottle placed by a window with a sunny outlook behave as described. But the conditions are not normal. *Iris Pseudacorus* is such a hardy plant, so well known in England as a late spring and early summer ornament, that no description and no botanical details are necessary. That such marked changes should have taken place in the germination of the seeds of the Yellow Water-Flag without having attracted the attention of gardeners, seedsmen, and botanists seemed to me very strange—indeed, almost incredible. It is to Mr. Dymes that I owe the seeds which by their growth show, I think quite clearly, that *Iris Pseudacorus* has not been obtaining any "mutations," and may still be trusted to pro-

duced they floated on the superficial water 2 inches deep. During the winter, with its rain, snow, and frost, these seeds sank and rested lightly on the mud. A little later six seeds were floated on water about 10 inches deep; the bottle in which they were placed has been standing on a table in my dining-room in front of a window facing south and south-west. Ponds I. and II. are in my garden.

The first signs of germination appeared on May 19, 1917, in the seeds floating in the bottle—a state of things due, no doubt, to higher temperature in the dining-room, and assisted by a position exposed to our intermittent sunlight. Three seeds germinated on that day, and the other three during the following week. These seedlings throw out a long root, as described by Mr. Dymes. The mass of fibrous roots given off by normal seedlings is quite absent. As these floating seedlings increase in size and weight, they sink. Two, caught in water-weeds, have

ORMSKIRK POTATO SHOW.

OCTOBER 31 and NOVEMBER 1.—An exhibition of Potatoes was held under the auspices of the Board of Agriculture and the Lancashire Farmers' Association in the Drill Hall, Ormskirk, on these dates. The number of competitive entries was in every way satisfactory, and there were many good trade exhibits. The Board of Agriculture showed 120 dishes of Potatoes, which were divided into three sections, viz., those immune from wart disease, others non-immune, and others of a doubtful nature as to the disease. Eighteen classes were devoted to single dishes. Mr. CUTHBERT BLUNDELL, Halsall, and Mr. REGINALD CALLAND each won five 1st Prizes; Mr. JOHN BANKS, Rainford, was successful in three classes; Mr. EDWARD ALTY, Westhead, in two classes; whilst Mr. JOSEPH FARRINGTON, Westhead; Mr. RICHARD ROTHWELL, Aughton; Mr. G. W. BIRCH, Sefton; and Mr. JOSEPH WETHERILL, Clitheroe, each won a single 1st Prize. Messrs. J. and W. BIRCH, Sefton, won the Silver Cup offered for the best collection of immune varieties with 22 varieties of medium-sized, good-shaped tubers.

The Gold Medal offered by Lord Derby was won by Messrs. S. POAD AND SONS, York, for five pebble-shaped tubers of a variety named *The Ally*, and they were awarded Certificates of Merit for the varieties *Majestic* and *Gardner's No. 1* Scabbling.

Mr. CUTHBERT BLUNDELL, of Halsall House, Ormskirk, won the Silver Cup offered by the Comptess of Derby to the winner of the highest number of points, and a second Cup given by Sir Arthur Stanley, M.P., for the most points obtained by a Lancashire farmer.

Obituary.

WILLIAM MARSHALL.—By the death of Mr. William Marshall, V.M.H., which occurred at his home, Auchraith, Bexley, on the 11th inst., horticulture loses an attractive personality that for very many years was closely associated with the work of the Royal Horticultural Society. Mr. Marshall's intense love of plants and catholic appreciation of all the various branches of gardening brought him into contact with gardeners in a variety of ways, as we shall presently show, but he was known to most as the chairman of the Floral Committee of the R.H.S., a position which he held for a quarter of a century. His perfect devotion to the work of the Committee, his unremitting attendances at its meetings, and his frequent journeys to the old gardens at Chiswick, and later to the present gardens at Wisley, with deputations from his Committee, for the purpose of judging novelties in flowers, gained for him the enthusiastic loyalty of the members, who were not slow to recognise the great knowledge he possessed of the various plants which came up for judgment from time to time. A man of strong convictions, Mr. Marshall always had full confidence in his decisions as to the relative values of things, and would not lightly give up a point on which he had made up his mind. He was often credited with standing firm for the Committee's decisions on occasions when they were called in question by the Council. He had good justification for asserting his views, for beyond everything else, the late chairman of the Floral Committee was a floriculturist. He belonged to the older type, who found infinite pleasure in the cultivating of *Auriculas*, *Tulips*, and other "florists' flowers" which are no longer popular with the general public. A lover of *Roses*, one of the great disappointments of his later years was the development in the hybrid *Tea* class of varieties, with large flowers, utterly devoid of perfume. "*The scentless Rose*," as he used to call a variety of this type, was always sufficient to excite his most pronounced criticism.

William Marshall was born on November 20, 1855, at Hackney, but before the attainment of his first year his parents had removed to Upper Clapton, and here he spent the next twenty years of his life. At so early an age as eight years old he showed himself to have inherited



THE LATE WILLIAM MARSHALL, V.M.H.

duce seedlings in mud and shallow water—seedlings which are normal and healthy. If placed in the environment selected by Mr. Dymes, the floating seeds germinate; but if you will compare the seeds grown inside the house, grown in comparatively deep water, with those grown out-of-doors under normal conditions, I think you will agree with me that the former are neither healthy nor normal. The root-system is different and poorly developed, the leaves are pale and lacking in chlorophyll, and the plant is generally deformed. Of the seeds kindly given to me by Mr. Dymes (Dec., 1916) I placed eight (without any choice as to shape) in artificial pond No. I. This contained mud and weeds, was always kept saturated with water when that was necessary, and freed from superficial water when the bowl became filled by rain or snow. Pond No. I. represented the mud at the margin of pond, marsh, or stream. Seven seeds were placed in Pond No. II. This contained the same amount of mud, but when the seeds were

given up the struggle, and are dead. Two lie on the bottom, on a thin layer of mud; they will, I expect, die during the winter. Two are still to be accounted for: I show you these two as dried specimens.

On May 20 seeds in Pond No. II., those lying on mud in shallow water, began to sprout. In course of time seven fine seedlings appeared in that pond. Lastly, the seeds in the mud of Pond No. I began to germinate on June 5. Growth with these seedlings was, at first, slower than with those in the shallow water; but at the end of August the seedlings were as strong and healthy as those in Pond II. The little plants in Ponds I. and II. are now robust, and have passed into a state of rest, which will endure until next spring. I have removed and show you to-night dried specimens from each of the little ponds and from the bottles. A personal examination will tell you better than my words of mine the features which distinguish the normal seedlings from the "bottle seedlings."

his father's floricultural predilections by himself taking part in the Stamford Hill Flower Show, where his father was in the habit of exhibiting Carnations. After concluding his early education, Mr. Marshall was sent to Glasgow University. He excelled in mathematics, and also studied practical chemistry, the latter subject under Dr. Penny. Indeed, he had almost determined to become a chemist, when his father's death compelled a change, and he accepted a position in the offices of Messrs. James Thomson and Co., the founders of the present Orient Steamship Line, where he remained for four years. He later became associated with "Lloyds." After his marriage, which took place in 1859, Mr. Marshall settled in Enfield, Middlesex, and at once began to fill his leisure moments with the culture of Orchids. The earliest instance of his success is marked by the record of a First-class Certificate for *Odontoglossum crispum*, which flowered for the first time with Mr. Marshall, and was exhibited by him at a meeting of the Royal Horticultural Society on April 18, 1865. The achievement of producing the first flower of this most popular Orchid always stood out as one of the proudest in his career. He was particularly fond of a button-hole flower, and the "white crispum" was always the favourite (see portrait figure p. 203). He was particularly successful in these early days with East Indian Orchids, including *Aerides*, *Saccolabiums*, *Vandas*, and *Phalenopsis*—indeed, these constituted most of the Orchids then in cultivation. Cattleyas also succeeded well with him. Two exceedingly fine Orchids bear Mr. Marshall's name—*Oncidium Marshallianum*, a May-flowering Brazilian species introduced in 1866, and *Thunia Marshalliana*, newly allied to *T. alba*. It was introduced from Madras in or about 1870. For many years Mr. Marshall contributed specimens from his collections to the great horticultural exhibitions, especially those which were held at South Kensington, Regent's Park, and the Crystal Palace. The first considerable distinction he won was the Lindley Medal, awarded in recognition of the excellence of a collection of between fifty and sixty plants of *Cattleya* Trinitate varieties, on March 6, 1868; but two years earlier, at the famous International Exhibition of 1866, he had gained the 2nd Prize for ten Orchids, the 1st Prize having been won by Mr. Charles Penny, then gardener to Anthony Gibbs, Esq., and afterwards to the then Prince of Wales at Sandringham. As early as 1866 Mr. Marshall's admiration for British Ferns found expression in a selection of 12 plants which he contributed to the International Exhibition, and for which he obtained the 1st Prize, and he also gained a 5th Prize for twelve stove and greenhouse Ferns at the same show. At the English Fern Conference held at Chiswick on August 25, 1892, he obtained a 1st Prize for four *Polypodiums*, and 1st Prize for the best specimen Fern in the show. In the same year he staged at Earl's Court International Exhibition a collection containing every species but one of British Ferns, and numbers of varieties.

His connection with the Royal Horticultural Society began in 1863, when he was elected a member of the Council on the proposition of the late Mr. Wilson Saunders. He resigned, with the rest of the members, in 1875, as a protest against the South Kensington policy of the adherents. The controversy lasted until 1897, when the South Kensington clique was finally overthrown, and the Society removed entirely from that milieu. In 1903, to celebrate his twenty-first year of office as Chairman of the Floral Committee the members of the Committee entertained him to dinner at the Hotel Windsor, when they presented him with an almost full-length portrait in oils. This portrait now hangs in the Floral Committee room at the R.H.S. Hall. Mr. Marshall's name was included in the first sixty recommended for the Victoria Medal of Honour in 1897, but, in company with Mr. (now Sir) Harry J. Veitch, he refused the honour on the ground that he was a member of the Council, and it was not until 1906 that the medal was accepted. In 1909 he was awarded the Gold Medal of the Vetch Memorial Trust.

Mr. Marshall was a keen entomologist, and had more than the ordinary amateur's knowledge.

He was also a draughtsman of no mean order, and made many delightful sketches of insects and Orchids.

We have so far said nothing in regard to the work Mr. Marshall carried out on behalf of the horticultural charities, but his long and devoted service to the Royal Gardeners' Orphan Fund is certainly to be reckoned amongst his most valuable services to horticulture. He was the Chairman of the Executive Committee of that fund from 1890 to 1900, and it was during his chairmanship that the warrant to use the word "Royal" was secured, mainly by the good offices of Sir Julian Goldsmid, M.P. Whilst charity claimed Mr. Marshall's active sympathies and help, he also desired to provide horticulturists with the advantages belonging to an organisation that encouraged self-help, and it was largely due to his efforts that the foundation of the United Horticultural Benefit and Provident Society, in 1895-6, was safely laid. Now, at a great age, he has gone to his rest, but many will cherish his memory until they also pass "beyond the veil." Deceased is survived by three sons and one daughter. The interment took place on Wednesday last, at Bexley.

HARRY RUSSELL.—Mr. Harry Russell, for the past 15 years gardener and steward to Mr. and Mrs. Howarth, Hanelow Hall, near Nantwich, died on the 1st inst., aged 60 years. Mr. Russell commenced his professional career in the gardens at Shoreham Place, Sevenoaks; was journeyman and foreman respectively at Slugborough Hall, Stafford, and Teddesley Park, Penkridge, and for nine years fruit foreman at Tatton Park, Cheshire. Later he was appointed gardener to the late Lord Hindlip, at Dovegrange Hall, Derby, and subsequently at Hindlip Hall, Worcester. Mr. Russell was a man of exceedingly amiable temperament, and always eager to help others. His remains were interred in Audlem Cemetery on the 5th inst. He leaves a widow and one daughter.

DANIEL SCOTT.—We announce with regret the death of Mr. Daniel Scott, who for the past 36 years was forester on the estates of the Earl of Moray, Dornway, Forres. Mr. Scott was in his 72nd year. He entered the service of the Moray family in 1871, and he did much to improve and extend the fine woodlands on the estates. He enjoyed the confidence and esteem of four Earls of Moray. For fifty years the late Mr. Scott was a member of the Royal Scottish Arboricultural Society, and for several years a member of the Council of that society.

CROPS AND STOCK ON THE HOME FARM.

BASIC SLAG ON LIGHT LAND.

WHERE the soil in arable fields is only about 6 inches thick, overlying chalk, I have found basic slag of great value in promoting the welfare of the crops. Even at the end of the third crop I have found its value as a stimulant, but more, of course, at the end of the second season's crop. An example of rotation is the following:—Oat crop in the current year 1917; the stubble ploughed in before the end of November. Previous to the ploughing, 4 cwt. of basic slag, with a percentage of soluble matter of 32 per cent., is sown evenly over the land. The winter rains and frost thoroughly pulverise the soil. In the spring the land is ploughed several times and sown with Turnips, which are eaten off by sheep; Oats or Barley are then sown, with which is included grass seeds. Trefoil and Italian Rye, at the rate of 6 lb. of the former to half a bushel of the latter per acre. The grass can either be fed off by sheep in June or cut for hay as required. It is in the latter crop that the effects of the basic slag will be apparent. On the thinnest of soils the yield is increased, and all through the season the deep green colour in the grass denotes vigour and a full prospect.

Another example would be Turnips fed off in October, the basic slag sown in November, Oats sown the following February, and the grass in March or early April. Those who have not experienced the effects of this stimulant on chalk soils would be astonished at the improved result in appearance of the grass crop.

I am testing this season the effect of higher grade slag, 42 per cent., as compared with 34 per cent. With these high grades there should be a saving of 1 cwt. per acre, with the consequent reduction in the cost of carriage and labour in applying it. I fear that farmers too often prefer to buy slag of a low grade because it is cheaper, and then condemn the material if they do not experience results equal to the best.

REASONS FOR MILCH COWS.

THE time has come when we have to consider the best food for the cows in milk during the winter, as the nights are too cold and often too wet to allow such breeds as Guernseys and Jerseys to lie out at night. Colds, even in cows, are easily caught, and if neglected are liable to bring on permanent injury, especially in young stock.

When the cows are housed the building should be freely ventilated, but the inlet for fresh air and the outlet for the foul, should be arranged so that the animals are not exposed to direct draughts. Some have an idea that cows in milk do not require, or that it is not an advantage to give them artificial foods including cake, meals, or other food of a concentrated nature. Natural food, as grass, roots, Cabbage, and hay are no doubt very valuable in their way, but an addition of cake is wise, and makes all the difference in the quality and quantity of milk, cream, and butter. Those who make butter know well from results that an addition of suitable cake to the daily feed makes all the difference in the number of pounds per week obtained. I am a staunch believer in high feeding, and I think results justify the outlay.

Many also say the month of November is too early to feed Mangolds to cows; they prefer to wait until February, when the roots are riper and have the saccharine more fully developed, and, naturally, have a higher feeding value. I have never found any injury accrue to the animals by this early feeding, and the roots do not even taint the milk. To avoid any risk of taint the animals should be fed *after* milking, not before, giving hay or cake before milking. The daily ration used here at the present is 35 lbs. Mangolds and 12 lbs. Cabbages, cut in 3 lbs. 5 lbs. long hay, and 3 lbs. Bibby Dairy Cake. Linseed cake is, in my opinion, too fattening for milking cows. The Bibby cake improves the quality of the cream and butter. When milk only is required, brewers' grains and various meals, with decorticated cotton cake, are valuable foods, but where butter is the main aim the ration given above will give good results.

In normal times, crushed Oats would be added, as they are one of the best of milk-producing foods, and especially for butter. Some give Oat straw in the place of hay, but I doubt if it can compare with good quality meadow hay, which, for cows, is superior to field hay, clover, and Rye grass. Oat straw may amuse the animals during spare times.

Some persons chaff the straw and hay and mix the whole together, meals, chaff, &c., but as some cows are apt to gobble up their food quickly, I think, on digestive grounds, hay given long is better for them.

THE EFFECT OF MANURE ON CROPS.

I FEAR some do not appreciate sufficiently the value of manural stimulants upon crops. Farmers who grow the heaviest crops of cereals, roots, or hay, on the contrary, are not stingy in applying manure freely, either directly or to preceding crops, in the shape of farmyard manure, sheep dressing, or artificial stimulants. No field is unworthy of good treatment unless it is water logged and so situated that draining would be too expensive. Some so called poor land is that on the "downs," where there is from 3 to 6 inches of soil overlying chalk. Such thin soils as these, however, are capable of producing useful crops. I get instances every year illustrating the value of manural applications to crops. I will quote two instances occurring at the present time. In the last two years I have failed to grow satisfactory crops of early and late varieties of *Trifolium incarnatum*—although I am not alone in the neighbourhood—owing mainly, I believe, to selecting a piece of land unsuitable as I afterwards found, owing to its want of food and the presence of slugs. The common method is to sow the seed in August on

clean stubble, thoroughly harrowing the surface to bury the seed shallowly. Where the conditions are favourable a satisfactory crop is generally obtained. This year, owing to the harvest being so late, and to the prevalence of so much "brittle" corn, which I know would be a nuisance among the Trifolium in May and June, I selected a clean plot on which superphosphate had been sown for a previous crop. The land was ploughed 5 inches deep, which is all against local custom, harrowed and rolled three times to obtain a solid surface. I resorted to sowing the seed 4 cwt. of superphosphate, 32 per cent., was sown per acre. On this the Trifolium seed was sown, the whole harrowed over three times, and rolled firmly down. The seed germinated quickly; the plant grew rapidly, so much so that the ground is covered with the Trifolium, which is exceptionally deep green. The prospect of a full crop is certainly the most promising I have experienced in twenty years. I attribute the density of colour in the leaf to the action of the manure. In connection with this experiment another fact has displayed itself as thoroughly illustrating the effect of manure. Alongside the Trifolium two acres of Sugar Beet is growing, and although the whole crop is satisfactory, the row next to the Trifolium has made huge tops of dense green leaves and much larger roots than the remainder, but it is at the expense of the Trifolium within 2 feet of the Beet, thus illustrating how absorbent are the roots of this latter plant. The second row displays more colour in the leaves and larger growth than the remainder of the crop, but not to the extent of the first row. *P. W. Wynne, Swannore Park Farm, Bishop's Cleeve.*

ANSWERS TO CORRESPONDENTS.

APPLES AND PEARS SPOTTED: *Hartford* and *V. T.* See reply to *J.* and *H.* under "Pears" in our last issue, p. 194.

BANANAS: *M. H.* We think the lecturer must have meant months when he said weeks. The Banana is propagated by suckers, which are usually from 2 to 3 months of age; the flowering, or shooting, occurs about 7 to 9 months from the time of planting, and about 2½ to 4 months are required from the shooting stage to the development of the full-sized Bananas. These particulars refer to cultivation in tropical countries. In the West Indies, March is the favourite month for planting. The time required for the production of the first crop, from the planting of the suckers, naturally varies with the temperature; at Glenwood, Hawaii, for instance, it requires nearly three years from planting to produce a marketable bunch of Bananas.

CORRECTION. In the note we published last week, p. 190, on the formation of a new Seed Trade Association in Scotland, we inadvertently referred to the firm of Messrs. Bell and Bichenstedt. This firm, however, was dissolved in 1914, and the business now belongs solely to Mr. David Bell, under whose name it is now known.

DRIED SEEDS AS FOOD: *C. F.* The dried seeds of Scarlet Runners and Broad Beans are quite wholesome for eating. In order to have them at their best soak them for twenty-four hours in water before boiling.

GREASE BANDS FOR FRUIT TREES: *E. D.* We do not know the composition of "Ford's Motor Grease," but provided the bands to be used were of material sufficiently stout to prevent the grease from touching the bark, it would not in any case have any bad effect on the trees. If, however, you intend to use ordinary paper bands, it would be better to select one of the fats commonly sold for the purpose, such as "Tanglefoot."

INSECTS ON VINE: *A. S.* The material is insufficient to determine the insect attacking your Australian vine. Gather all the fallen leaves and burn them.

LAWN MOSS: *Patched.* Dressing the grass with Esic slag, as you suggest, would do little to do the grass good, but it would also have a tendency to encourage the growth of Clover. You would do better to apply a dressing of sulphate of iron now, and later on a dressing of

lime. The bad effects of the drippings from trees are very difficult to overcome.

LEAFHOPPERS: *J. E. S.* It is impossible to diagnose the disease from the roots only. The whole plant should be sent.

ANSWERS TO ENQUIRIES: *As the naming of fruits, we desire to oblige our correspondents as far as we can, but the task would become too costly and too time-consuming were there no restrictions. Correspondents should observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, of two of each variety are sent, identification will be easier. The fruits should be just approaching ripeness, and they should be properly numbered, and carefully packed in strong boxes, cardboard is often smashed in the post. A leaf or shoot of each variety is helpful, and in the case of Plums, Prunes and Nectarines, absolutely essential. An all-over set of labels is known and dated, for which the fruits are sent. By neglecting these precautions, correspondents add greatly to our labour and run the risk of increased delay and incorrect determination. We do not undertake to send answers through the post, or to return fruits. Fruits and flowering plants must not be sent in the same box. Delay in any case is unavoidable.*

LEAFHOPPERS: The Pear was decayed and crushed when it arrived, but it appears to resemble *Beurre Bosc*. It is of no use sending us "ripe Pears for naming, as they decay so quickly as to be almost invariably in a state of pulp when they arrive, the postal deliveries being less punctual than usual.—*H. M.* Broad End Pippin.

—*J. O. S.* 1, Maltster; 2, Gooseberry Pippin; —*C. B.* Pile's Russet; —*D. J.* Goff; 2, Manks Codlin; 3, Lemon Pippin; —*H. F.* Apples, 1, Herefordshire Pearmain; 2, Pear Calabasse; 3, too small and shrivelled; —*Smith.* Apple, Allington Pippin; Grapes, the berries were smashed in transit.

H. G. C., Reading. 1, Harvey's Wiltshire Defiance; 2, Shepherd's Newington; 3, Newton Wonder; 4, not recognised; —*H. W. F.* 1, Doyenne Boussoch; —*T. W. G.* 1, Beauty of Kent; 2, Hambleton Deux Ans; 3, French Crab; 4, Scarlet Nonpareil; 5, Histon Favorite; 6, Bleinheim Pippin; —*J. W. G.* 1, Imperial; 2, *Beurre Jean van Goert*; 2, *Passe Colmar*; 4, *White Nonpareil*; 5, *Reinette van Mons*; 6, decayed; —*L. G. P.* 5, Northern Greening; 10, Orange Goff or Pork Apple; —*W. G. T.* 1, *Carl Tail*; 2, *Court Pendu Plat*; —*F. W. G.* 1, *Beurre Diel*; —*Daniel Pearman, Pooley.* 2, *Beurre Clargene*; 4, *Cullen*; 5, *Strling Castle*; other Pears decayed; —*F. W. P.* 1, *Beurre Bachelier*; 2, *Joséphine de Malines*; 3, *Nec Plus Meuris*; 4, *Marchal de la Cour*; 5, *Beurre Superfin*; 6, *Madame Teyve*; 7, *Dunaldan*; —*T. C.* 1, *Beurre d'Ananias*; 2 and 3, decayed; 4, *Beurre Bosc*; —*Sept.* 1, *Autumn Bergamot*; 2, decayed; 3, *Seckle*; 4, *Louise Bonne of Jersey*; 5, *Winter Nectar*; 6, *Emile d'Heyst*; —*G. B. S.* Pears: 1, decayed; 2, *Marchal de la Cour*; Apples: *Aromatic Russet*; —*J.* 1, *White Westling*; 2, *Brandy's Seedling*; 5, *Galvise Rouge France*; 4, *Alfriston*; 5, *Pear not recognised*.

—*W. J. H.* 1, *Yorkshire Beauty* (syn. *Green-up Pippin*); 2, *Cathead*; 3, *Melrose*; 4, *Lodington*; 5, *Striped Beefing*; 6, not recognised; —*C. P.* *Brandy's Seedling*; —*G. P. S.* *Manmouthshire*. The fruits are not in the best condition for certain identification, as the skins are affected with disease, but we believe the variety is *Marie Louise d'Ecde*.

NAMES OF PLANTS—Correspondents not answered in this issue are requested to be so good as to consult the following number.
C. C. M. 1, Probably *Piptanthus nepalensis*, send when in flower; 2, *Metrosideros Boriemia* (Bottle Brush); 3, *Columnea hirsuta*; 4, *Helix Solanderi*—*W. C. M.* *Acer macrophyllum*.

ONION AND CARROT SEED FOR ONE ACRE: *Essex.* In the ordinary way of drilling Onion seed in rows 14 inches apart, 3 lbs. of seed per acre is required. In that case there need be no thinning of the plants; allow all to grow. A much better method of Onion culture is to sow the seed the first week in February in boxes of prepared soil in a cold frame, and plant out the seedlings when they are large enough to handle, in rows 14 inches apart, setting the plants 4 inches apart in the rows. In that case 4 lbs. of seed should suffice per acre. Seven pounds of Carrot seed will suffice for one acre. If this is mixed with dry sand it will run through the drill easier.

PERIODS OF SEVERE FROST: *Gunner P. Wright.*

The greatest frosts registered during the past 50 years were in the following years:—1879, Nov.-Dec.; 1881, January; 1890, Nov.-Jan., 1891; 1895, Jan.-Feb. The lowest temperatures recorded are:—1879, Dec. 4, 23° at Blackadder, Berwickshire; 1895, Feb. 11, 17° at Bracmar, Aberdeen, and 11.1° at Buxton, Derbyshire.

POTATO PLANTING: *H. B.* The best distance from set to set will depend on the character and strength of the land and on the variety of Potato, whether the latter is of strong or medium growth. Even given the same conditions, experts would differ in their treatment.

We regard 3 feet each way as excessive unless in very exceptional circumstances. Half that distance from set to set, and 2 feet between the rows, should be sufficient in ordinary cases. In regard to one of your questions we prefer to advise you on the cultural points raised rather than express an opinion on the status of this or that authority. The following varieties are all worthy of recommendation: *Midlothian Early* and *Duke of York* (early), *British Queen* and *May Queen* (mid-season), and *King Edward VII.*, *Arran Chief*, *Dalhousie*, and *Windsor Castle* (late).

PUPA FROM FRANCE: *M. S. A.* The chrysalis is the pupa of the Orange Tip Butterfly.

SOUVENIR DE LA MALMAISON CARNATIONS: *C. T.* June and July are the best months to layer "Malmaison" Carnations; September is too late to get the plants well established before winter. The plants require very careful treatment during the autumn and winter, as the blooms are long in expanding; very little water is necessary, and no stimulants should be given. Your general treatment appears to be correct. Top-dressing or re-potting the older plants is necessary for early flowering in spring. Two houses are necessary, as these older plants require a temperature from 5° to 10° higher than young stock to flower early. The latest plants should be grown in cool conditions to retard them. Spraying with salt and water is safe during the summer, but should not be done during the winter; this possibly is the chief cause of your blooms damping.

WALNUTS: *J. L.* No "insect" is to be found in the specimens sent. Is it possible that rooks have caused the damage?

WATERCRESS: *P. and C.* There appears to be no fungous parasite in the Watercress plants. Their appearance suggests injury caused by some insect or other form of animal life. If which is, indeed, and any specimens of the "insect" is kept, send them for identification. —*R. Z.* The approach of winter is not the best time to commence Watercress growing, nor are seeds the best method of raising a good crop of the most suitable varieties. If you wish to raise the plants from seeds, the latter should be sown in March or April in moist soil, afterwards transplanting the seedlings to boggy trenches, or, better still, to slow running and shallow streams of clear water. Propagation by cuttings or division is one of the simplest methods of increase. The cuttings soon rot in muddy soil, provided the water is not stagnant, while portions of the plants with a few white roots attached may just be thrown into the water and allowed to take care of themselves. Cuttings or divisions may be planted now or in spring. What is known as "brown" Cress thrives best in spring water that has come through a chalky sub-soil, while "green" Cress generally does best in river or canal water. In all cases the water must be very slow running, and may vary in depth from a few inches to a few feet. In large beds weeds and scum must be kept down, and it is generally wise to clean out one-half of the beds one year, and the other half the following year, where large areas of Watercress are cultivated for market.

Communications Received.—*S. T. W.*—*W. F.*—*E. M.*—*E. B.*—*N. Mar*—*P. W.*—*R. H.*—*G. H.*—*D. M.*—*G. H.*—*J. E. S.*—*C. T.*—*C. G.*—*A. R.*—*A. C.*—*J. B. S.*—*J. C. P.*—*J. E. S.*—*R. W. N.* (Thanks for 6d. for R.G.O.F. box).—*W. R.*—*H. L.*—*L. E.*—*M. E.*—*F. J. C.*—*W. W.*—*W. Cuthbertson*.—*N. J. W.*—*H. M. B.*—*C. B.*—*W. F. P.*, South-west Rhodesia.

**LAXTONS
BEDFORD
FRUIT TREES
&
ROSES
CATALOGUE & CULTURAL
HINTS CRATIS**

IMPORTANT: Please write for a Catalogue, as the Paper Commission only allow us to send to those who apply—

LAXTON BROTHERS, BEDFORD.

FRUIT IN THE GARDEN.

Root up useless shade trees and unproductive Shrubs, and replace with Fruit in these times, when food is all important.

Specially grown trees of

APPLES, PEARS, PLUMS,
of fine quality for the Walls, Edging or Vegetable and Flower Borders. Many of fruiting size. Also

FINE STANDARD TREES

A grand lot of Peaches, Nectarines and Cherries for the House and Garden Walls, also

BUSH FRUIT TREES.

Catalogue free on request and special quotations given on hearing exact requirements.

STUART LOW CO., BUSH HILL PARK, MIDDLESEX.

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest
Richard Sankey & Son, Ltd.
Bulwell Pottery, NOTTINGHAM.

AUCUGA JAPONICA.

**RHODODENDRON PONTICUM.
RHODODENDRON PINK PEARL.**
(Finest Named Hybrids.)

All the above 3ft. to 4ft. bushy, good plants for Great Planting. Must be sold cheap, to make room for potatoes. If not disposed of must be burnt.—**A BARGAIN!**

Particulars from—

R. MANSON, Nurseryman, Gateacre LIVERPOOL.

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties.

STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.



A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/8 in. (or equal to stout 21 oz.) in thickness. Can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of

**GENUINE
WHITE LEAD
PAINT.**

"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cans.

AND
**BEST
LINSEED OIL
PUTTY.**

Complete Price List of

Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground street, S.E.
Quote GARDENERS' CHRONICLE.



RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges.

AND

Orchard House Trees

ARE OF

First-class Quality.

A Large and Select Stock always on View.

PRICE LIST POST FREE ON APPLICATION.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.

STATION: HARLOW, G.E.R.

TURF LOAM.

Very Fibrous Yellow Turf Loam

For VINE BORDERS, CARNATIONS,
ROSES, MELONS, CHRYSANTHEMUMS,
FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid on Delivery.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.



**Sample CRET Pot
FREE with Booklet**
will convince you that the
Drainage, Porosity, Healthful-
ness of CRETS would help
your plants. Write—
PETER BAILEY & SONS, Ltd.
2 Heaton Mersey Pottery,
near MANCHESTER.

ROSES FOR AUTUMN PLANTING

ORDER EARLY.

Beautiful plants of the best possible cultivation,
our selection from the finest sorts including—
The Brilliant Coloured

"MDME. EDOUARD HERRIOT"
(Daily Mail Rose.)

12/- per doz. bushes, carriage paid.

Catalogue Free on request.

STUART LOW CO., BUSH HILL PARK, MIDDLESEX.

H. WOOLMAN'S

Chrysanthemum Catalogue.

Now Ready. Post Free.

From **SANDY HILL NURSERY,**
SHIRLEY, near BIRMINGHAM.

SUBSTITUTE FOR RUSSIA MATS.
"FRIGI DOMO" CANVAS.

Made from prepared Hair and Wool

A good non-conductor.
2 yds., 3 yds., and 4 yds. wide.

Price and pattern from—

BENJAMIN EDGINGTON'S,
DUKE ST., LONDON BRIDGE, S.E.

ORCHIDS.

A large and fine stock. All clean and healthy and at very low prices.

COWAN'S NEW ORCHID MATERIAL,

Is the best and by far the cheapest

Catalogues, with full particulars, post free on application to

JOHN COWAN & Co., Gateacre, Liverpool.

BLACK CURRANT BUD MITE.

Are your bushes free of this incurable pest? If not
Plant "SEABROOK'S BLACK" Currant,

the only proved mite resister.

This variety has also every other good quality, being the
heaviest cropper and stoutest grower, producing large, firm
berries

Young Bushes 0/- and 5/- per dozen.

W. SEABROOK & SONS,
Fruit Tree & Rose Nurseries, CHELMSFORD.

TOMATO SEED

Bide's "Recruit."

This grand Tomato, for its delicious flavour, uniform size
and heavy cropping qualities, is unsurpassed.

In sealed packets 1/- per packet, direct from
the raisers,

S. BIDE & SONS, Ltd.,
ALMA NURSERIES, FARNHAM, SURREY.

**EVERY
GARDENER
KNOWS
THAT**

Clay's gets there
and makes the Garden
gay all the year round

Sold everywhere for Horticultural purposes in TINS at 6d., 1s., and
in BRANDED & SEALED BAGS: 7 lbs. 2s. 6d.; 14 lbs. 4s. 6d.; 28 lbs. 7s. 6d.; 56 lbs. 13s. 6d.;
112 lbs. 24s. Or direct from the works Carriage paid in the United Kingdom for cash with Order
(except 6d. tins). Quantities of 50 lbs. and upwards are supplied in 25 lb. bags.
CLAY & SON, Manure Manufacturers & Bone Crushers, STRATFORD LONDON, E.

**IT IS THE
STANDARD
FOOD FOR
PLANTS.**

THE
Gardeners' Chronicle

No. 1613—SATURDAY, NOVEMBER 24, 1917.

CONTENTS.

Alcohol, commercial .. 210	Obituary—
Apples, sooty blotch of .. 212	Chesca, R. W. .. 213
Books, notices of—	Parton, W. H. .. 213
Mat plants, Cushion	Thomson, W. A. .. 213
Plants, and Allied	Unread notes and glean-
Forms of the Case	ings .. 213
River bed, the .. 210	Brassia brachiata .. 206
Crocuses, autumn .. 212	Cattleya Appletonii .. 206
Farm, crops and stock on	Laelo-Cattleya .. 214
the home .. 213	Henry Wilson .. 206
Food production, on in-	Odontoglossum Ar-
creased—	dendora .. 206
Birmingham, alloc.	orchids, new hybrid .. 206
ments at .. 208	Potatos, degeneration of 210
Carrots and Beets,	Red Currants, a revision
lifting .. 207	of the .. 206
Grass land, the break-	Rhododendrons, planting
ing up of .. 208	seed, raising varieties
Potato Great Root .. 208	from .. 212
Potato May Queen .. 208	Seed-testing station .. 211
Potatos and Onions at	Societies—
Heaton .. 207	National Chrysothe-
Pumpkins, cooking .. 208	mum .. 213
Horticulture, instruction	Royal Horticultural .. 212
in .. 210	Solihull gardeners, letters
Marshall, the late Mr. W. 212	from .. 207
New Zealand cushion	Soldiers, gardening by .. 210
plants .. 210	War items .. 211
	Week's work, the .. 205, 209

ILLUSTRATIONS.

Brasso-Lario-Cattleya Lady	Manningham Buller .. 211
Current Houghton Castle	.. 207
Ribes petraeum, R. rubrum and R. vulgare, shoots of .. 215	
Sooty blotch of Apples .. 212	

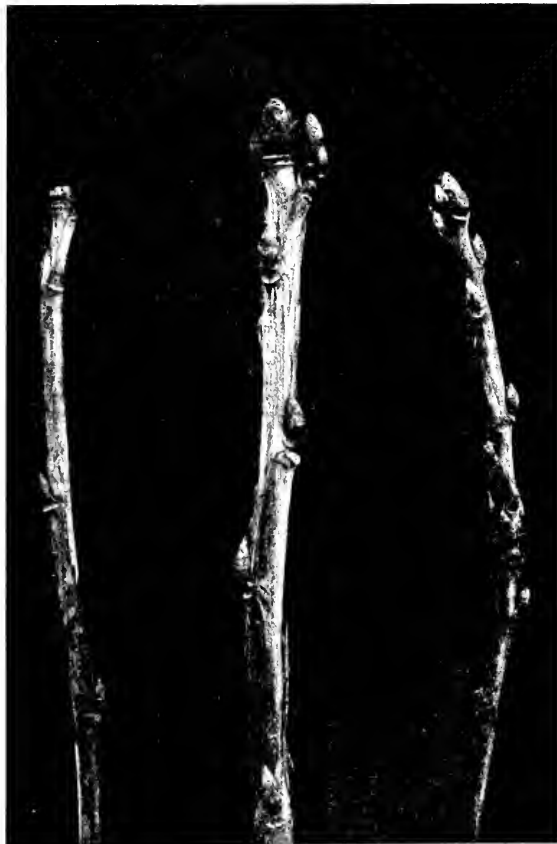
A REVISION OF THE RED CURRANTS.

THE nomenclature of the Red Currants has long been in a state of confusion. There are many reasons for this, and one is that no one seems to have thought it worth while to publish an accurate botanical description of so unimportant a thing as a Currant. A second cause is, I fear, the practice that we nurserymen have had in the past of retaining plants. I do not wish to be the one to cast the first stone, and will leave this matter here, as I think any such practices are now almost universally reprobated. A third and important cause of confusion is that so many of the Red Currants reproduce themselves almost true from seed. It is quite possible, therefore, that many "new" seedlings have been introduced in perfect good faith, where the raiser did not happen to know Currants well, which were but reproductions of known varieties. The last difficulty is that the fruits of Red Currants are in many cases so much alike that it is quite impossible to discriminate between them without knowing all the plant characters. The growth and habit, coupled with the very distinct characters of the flower, are the best means of identifying the different varieties.

With the object of tackling the problem of nomenclature, I collected in 1912 all the varieties I could procure from gardens and nurseries in England and from America and the Continent: these amounted in all to over seventy. It was soon demonstrated that there were many more names than varieties, and further, as expected, there was considerable doubt as to the identity of certain sorts. It has been an extremely difficult matter in some cases to decide what is the original type. In the Red Versailles, for instance, plants from six sources gave three distinct sorts. To settle this matter, description and figures, where available, were referred to,

and weight given to the source of plants. It is probable, for instance, that an established nursery in Paris would be more likely to have the true Versailles than an English firm that may not have taken much trouble on the subject. Contrariwise, an English variety still in the hands of its reproducer, would presumably be true to name. I fear that in some cases I shall be told that the variety I have decided upon is not the "true" thing, and, of course, it may be so; where, however, all is confusion someone must make a clearance. I shall not here go into

R. vulgare. A further character is that the flowers and fruit bunches hang downwards, thus distinguishing them easily from the rubrum varieties, of which the flowers are always held out stiffly at right angles. The foliage is generally rather thin, yellowish, upward-folded more or less, and almost hairless. R. rubrum varieties are very distinct in all characters. The flowers are bell-shaped without the fleshy ring, held horizontally in the young stages, the foliage lax, and with much more substance than R. vulgare, and generally densely hairy beneath. The fruits



From the "Journal of the Royal Horticultural Society."

FIG. 78.—WINTER SHOOTS OF CURRANTS.

1. Ribes vulgare. 2. R. petraeum. 3. R. rubrum.

details of the history of the Red Currant, as I have treated of it as some length in the current *Journal* of the R.H.S. It will be well, however, to state that three species have entered into the constitution of the garden Red Currant as we know it to-day, viz., Ribes vulgare, R. rubrum, and R. petraeum. The flowers of these are all very distinct. R. vulgare has a very open, flat flower, green, with or without a red eye, and showing a distinct fleshy ring around the pistil. This ring is a constant character, and serves to separate at a glance all derivatives, and even hybrids of

are on stiff, wiry stems, held on one side of the bunch, thus distinguishing them from true vulgar varieties, which, owing to their lax pedicels, swing freely all round the bunch. The true Raby Castle is a pure rubrum. R. petraeum has given us but few varieties, of which Prince Albert and the Seedless Red Currant are typical. The stout bullate leaf, red shoots, remarkable claret-red flowers and late habit of starting and ripening, are very noticeable in all its descendants. No one looking over a bed of varieties could fail to pick out this type.

The "Rings" section contains those large-headed and fruited sorts, of which Versailles, and also Lady's Palfrie are typical. These are the so-called *R. vulgare macrocarpa* forms, as they bear true "vulgare" flowers, though the thick leaf of a milky-green colour is a new character. It will therefore be convenient to call these the "macrocarpa" section. A common character these all show in varying degrees is the habit of going blind, and the stout shoots breaking off when overloaded or when growing in windy places.

In respect of the characters used in description, it may be as well to point out that the apparent petals of the flowers are really the sepals; the petals are very small and abortive, and generally wedge or T-shaped. The fleshy ring of "vulgare" is alluded to as the "ring." The winter wood characters will all be quite obvious except the angle taken by the bud, which may be close pressed to the shoot or leaning away at an angle. These are called "bud close" or "away," as the case may be. I have not described the "flavour" or degree of acidity, as it is quite impossible to get all the fruits at identical stages of ripeness, and such phrases as "rather acid" convey no information.

In giving synonyms I refer to the names under which I received the varieties, which may not always be synonyms in the true sense, but often errors of naming. I desire to thank many of my fellow-nurserymen for the help they have given me in forming my collection, and also many other friends who have furnished me with material. It is with the greatest reluctance that I have altered any name, preferring to let an established one stand, even if not the first given, rather than cause fresh confusion by a too strict adherence to the rules of nomenclature.

THE BABY CASTLE GROUP.

In this group are the varieties which show the influence of *R. rubrum pubescens* very strongly; the soft, downy leaves are characteristic. Baby Castle is a true rubrum, whilst Houghton Castle (see fig. 79) by its "ring" round the pistil, indicates its descent from rubrum vulgare.

Baby Castle (rubrum). Syn. American Wonder, Red Versailles, Dutch, of some.

Flowers.—Crescitate, without ring, petals markedly wedge-shaped, sepals washed with light red when young, rachis with thick curling hair. Flowers before leaves.

Leaves.—In young state pale yellowish-green tinged with brown, when fully grown, soft yellowish-green, held flat, densely hairy beneath.

Fruit.—Bunch medium length, rachis yellow, downy, pedicels fairly short, held to one side. Ovary bright red, does not turn dark on the tree, making a bright sample in the basket. Prolific.

Season.—Rather late. Buds.—Winter state, buds rather small, thin, and pointed much away, markedly hairy.

Growth.—Upright and of moderate vigour.

Origin.—Raised at Baby Castle. Mr. Shortt, gardener at Baby Castle, writes in 1860 that it is "frequently confounded with Houghton Castle, a later production. . . . Original tree still at Baby Castle." The present head gardener at Baby was good enough to send me specimens from the trees still grown there, which confirm the description above. Houghton Castle is very often sold for this Currant, but it is quite distinct in growth, being of spreading habit. Market gardeners often say they dislike Baby Castle as it turns dark red. In these cases they have got Houghton Castle in error.

OLONTOGLOSSUM (rubrum x vulgare). Syns. Woolly Leaved, Mallow Leaved, American W. B., New Red Dutch, Red Grape, R. B. L., Houghtonium (Janex), May's Victoria, Defiance.

Flowers.—In bud, slight ring visible, petals less than sepals, but Baby Castle, sepals slightly red, rachis remarkably downy.

Leaves.—In young state silvery-white, not

yellow and brown tinged as in Baby Castle; when full grown, soft yellow-green, densely woolly beneath, very like Baby Castle in this stage.

Fruit.—Bunches long, stem (before berries start) long, rachis green, stiff, hairy, berries medium, soon turning a dark, dull red. Prolific.

Season.—Mid-season. Buds.—Winter buds medium size, pointed, away, a little hairy.

Growth.—Very strong and spreading.

Origin.—Rather doubtful, but probably from Houghton Castle, near Hexham. Introduced about 1820.

Often mixed with Baby Castle, but can be picked out in spring by the colour of the young foliage; in flower by the presence of a "ring"; and by its spreading habit, contrasting with the upright growth of Baby Castle. *E. I. Bouquard.*

(To be continued.)

ORCHID NOTES AND CLEANINGS.

LAELIO CATTLEYA SIR HENRY WILSON.

MR. MUSK, gardener to Lieut.-Colonel J. F. Laycock, Wiseton, Bawtry, Yorkshire, sends us a showy flower raised at Wiseton, between L. C. Henry Greenwood (C. Hardyana x L. C. Schilleriana) and L. C. bletchleyensis (C. Warszewiczii x L. tenebrosa). Cattleya Warszewiczii enters twice into the composition of the hybrid, and takes a lead in its large size and form, but the L. C. Schilleriana (C. intermedia x L. purpurata) in L. C. Henry Greenwood is evident in the elongated front lobe of the labellum. The flower, which is 7 inches across, has white sepals and petals suffused and veined with light purple. The exterior of the tube of the lip is coloured like the petals, the interior being white, tinged with yellow, and with purple lines running into the reddish-purple front lobe, which shades off to lilac towards the margin.

ODONTOGLOSSUM ARIDENTIFLORA

Is this pretty new hybrid raised between *O. ardentissimum* (Pescatorei x crispum) and *O. Dora* (Lambianum x Pescatorei), the next

form, broad petals, and lip characteristic of *O. Pescatorei* are marked features, and in the present form it may be likened to a very fine and prettily blotched variety of that species with the addition of a firmer texture to the flower, which is obtained through *O. Rolfeae* (Harrayanum x Pescatorei), which also brings in the third *O. Pescatorei* influence. The flower is white tinged with violet at the back, the sepals having a cluster of vinous-purple blotches and the petals a central group of irregular spots of the same colour. The broad lip has three purple blotches in front of the yellow crest. The novelty is sent by Mr. E. W. Thompson, gardener to Philip Smith, Esq., Haddon House, Ashton-on-Mersey.

BRASSIA BRACHIATA.

A FINE inflorescence of this Brassia is sent by Messrs. Jas. Cypher and Sons, and well demonstrates the character given it by Lindley, who described the species from specimens collected by Hartweg in Central America for the Horticultural Society about 1842, as the finest species of the genus. The spike bears thirteen flowers, the long, slender sepals extending over a foot from tip to tip. The petals are shorter than the sepals; both sepals and petals are greenish-yellow, with dark purple blotches on the inner halves. The broad lip is cordate in front and narrower at the base; the colour is pale yellow, with raised olive-green spots. The plant is evergreen, and thrives in an intermediate house or ordinary plant stove.

CATTLEYA APPLETONI.

MESSRS. JAS. CYPHER AND SONS send us flowers of this interesting cross between *C. elongata* and *C. Dowiana aurea*, taken from a spike of fourteen flowers. The blooms, which have some resemblance to those of *Laelio-Cattleya elegans*, have mauve-tinted sepals and petals and deeper mauve lip, the front lobe of which is violet-purple. *C. elongata* was the seed-bearer, and the hybrid approaches that species in form.

NEW HYBRID ORCHIDS.

(Continued from October 13, p. 148.)

Hybrid.	Parentage.	Exhibitor.
Brasso-Cattleya Injuy	C. Comet x B. Duchyana	Dr. M. Lacroze.
Brasso-Cattleya Lisette	B. C. Duchyana-Warneri x C. Dowiana aurea	Messrs. McBean.
Brasso-Cattleya Moura	B. C. Duchyana-Warneri x C. G. Schilleriana	Russell and Co.
Cattleya Ardentiflora	B. C. Duchyana-Warneri x C. Dowiana aurea	Dr. C. G. Moore.
Brasso-Laelio-Cattleya President Wilson	L. C. Lanthe x B. C. Mrs. J. Lecnam	Stuart Low and Co.
Brasso-Laelio-Cattleya Elba	L. C. Phyre x B. Duchyana	Sir J. Colman.
Brasso-Laelio-Cattleya Thomas	B. L. C. Cookson x C. Rhoda	Dr. M. Lacroze.
Cattleya Ardentiflora	Ardentiflora x Fabia	Armstrong and Brown.
Cattleya Golden King	Hardyana x Venus	Sanders.
Cattleya Io	Iris x amabilis	Sir J. Colman.
Cattleya Lady Alexander	Fabia x amabilis	Sir J. Colman.
Cattleya Mira	Rhoda x Dowiana aurea	Charlesworth and Co.
Cattleya Trentino alba	Warneri alba x Dusseldorf Lindley	J. Andrieu, Esq.
Cattleya Uia	Lord Rothschild x Cooksonii	Sanders.
Cymbidium Ariadne	Cyathostylidium x unicoloratum	Armstrong and Brown.
Cymbidium Orion	Cyathostylidium x Dorsale	Charlesworth and Co., Esq.
Cypripedium Arcturum	Mons. de Turte x Chysoctoxum	Rev. J. Crombholme.
Cypripedium Bonaventura	Mons. de Turte x Cho	Rev. J. Crombholme.
Cypripedium Holobolus	exul x Heta Euvarides	Rev. J. Crombholme.
Cypripedium Herma	Spandium x C. P. Herma	Charlesworth and Co.
Cypripedium King Arthur	Mons. de Turte x longelyense	Rev. J. Crombholme.
Cypripedium multicolor	Gauret A. H. abbat. x aureum virginale	Rev. J. Crombholme.
Cypripedium Nestor	Dardnought x Leander	Sanders.
Cypripedium Solitaire	Spandium x King Edward VII. x Cho	Rev. J. Crombholme.
Cypripedium stadium	Dardnought x Ville de Paris	Sanders.
Cypripedium Valens	Fowlerianum x Fairieannum	Charlesworth and Co.
Laelio-Cattleya Achilles	C. amabilis x L. C. Bletchleyensis	Sir J. Colman.
Laelio-Cattleya Adonia	Juno x St. Gothard	Dr. C. G. Moore.
Laelio-Cattleya Atterdow	L. C. Sunset x C. Dowiana aurea	St. Geo. L. Holford.
Laelio-Cattleya Alane	L. C. Rubens x C. Dowiana aurea	Flory and Black.
Laelio-Cattleya Entente	L. C. J. F. Barkley x C. Fabia	Sanders.
Laelio-Cattleya Europa	L. C. Dowiana aurea x L. C. Eckettiana	St. Geo. L. Holford.
Laelio-Cattleya Golden Light	Immosa x Golden Fleece	Sir Geo. L. Holford.
Laelio-Cattleya Hardyell	C. Hardyana x L. C. Sybil	Baron Schroder.
Laelio-Cattleya Honoria	C. Mantini x C. Geo. Woodhams	Armstrong and Brown.
Laelio-Cattleya Imogene	L. C. Sybil x Lord Rothschild	Charlesworth and Co.
Laelio-Cattleya Philina	E. Jongheana x Harrisoniana	Sir J. Colman.
Laelio-Cattleya Sir Henry Wilson	Henry Greenwood x Bletchleyensis	Ed. and J. F. Laycock.
Laelio-Cattleya Spidra	C. Luddemanniana x L. C. Appletoxi	Sir Geo. L. Holford.
Laelio-Cattleya Atalanta	C. Marie Richard x Lord Rothschild	Baron Schroder.
Laelio-Cattleya Zeno	L. C. St. Gothard x C. Lugueae	Charlesworth and Co.
Odonotidium Nacette	Oncidium neivium x Odm. Hairyana	Messrs. McBean.
Odonotoglossum Adams	crispum Solima x unicoloratum	Armstrong and Brown.
Odonotoglossum Appletoxi	exul x President Bonard	Charlesworth and Co.
Odonotoglossum Ardentiflora	ardentissimum x Dora	P. Emith, Esq.
Odonotoglossum Asiana	Mars x Colossus	Armstrong and Brown.
Odonotoglossum Nyssa	exul x Alexander	Charlesworth and Co.
Sophr. Cattleya Atalanta	S. C. Ariadne x C. Fabia	Armstrong and Brown.
Sophr. Cattleya Immosa	S. C. Cambalantana x C. Dowiana aurea	Armstrong and Brown.
Sophr. Laelio-Cattleya Prymris	S. C. J. Sandberg x L. C. Golden Oriole	Dr. M. Lacroze.
Sophr. Laelio-Cattleya Maria	S. C. Swaiter x L. C. amabilis	Ed. and J. F. Laycock.
Sophr. Laelio-Cattleya Richmond	unicoloratum	Dr. M. Lacroze.

LETTERS FROM SOLDIER-GARDENERS.

IN EGYPT.

URING the autumn months of last year I had the opportunity of seeing some of the gardens and parks of Cairo, owing to a trouble with my leg, which, with excellent medical attention, recovered sufficiently for me to be sent from a base to a convalescent hospital in Cairo. To be there after a period of strenuous duty upon the desert gave me great pleasure. I was anxious to see the agricultural crops of the Nile Delta, and to find out what vegetation comprised the embellishment of the gardens and parks from the horticultural point of view. To a limited extent I was able to satisfy my curiosity, although the railway only skirted the eastern margin of the Delta.

I was impressed with the productiveness of the land and the prospective yield of the crops. Owing to the absence of rain most of the crops are cultivated by irrigation, which is easily performed by the natives in a methodical and systematic manner. They are aided by an abundance of water, and the land is naturally a vast plain.

A good Cotton crop had been nearly harvested. On one plantation of Cotton the old stems had been left, and a crop of Peas, which were then a few inches high, were apparently going to be supported by the stems. The native growers do not follow this practice; the old Cotton plants are usually pulled up and burnt, a procedure recommended by the State to minimise the ravages of the Pink boll worm, which is a menace to the Cotton plant. Large fields of Maize were frequently seen; some of these were being harvested, and others were in different stages of growth. Sugar cane grows luxuriantly and in quantity. Matured cane is stripped of its leaves and sold by vendors in the streets of Egyptian towns. Tomatos, Aubergines, and Capsicums produce their fruits, and require but little attention beyond watering. I think with more attention Tomatos could be obtained equal in quality to those at home, but at present they are inferior in every way. Cucumbers, Melons, Gourds, and Vegetable Marrows, as well as Onions, Leeks, Beets, Carrots, and Cabbage, are cultivated successfully, with table qualities equal to our home-grown produce. I did not see any Potatoes growing. I should have thought young tubers could have been procured at all times throughout the year in a climate like Egypt possesses. Those I have seen and partaken of are not of the quality one would obtain at home. I attribute it to the great heat and dry atmosphere that prevail during the greater part of the year, which impoverishes the tuber, consequently great care is necessary with them after they are taken from the ground in storage and transit. The Sweet Potato (*Ipomoea batatas*) was plentiful, and formed an agreeable dish. Personally, I like it, but to some palates it does not fill the place of the homely tuber. Large areas of land were being tilled, I assumed, for cereals, with oxen teamed to primitive implements. Nevertheless, the work of ploughing, cleaning, drilling, or planting is ably carried out by the natives, and good crops are obtained. The rich alluvial lands, combined with an ample water supply from the great and ancient Nile, and a climate of perpetual sunshine, are conducive to the growth of numerous food products.

THE PUBLIC GARDENS.

In the well kept public gardens many well-known exotic plants are to be met with growing luxuriantly and flowering profusely from their short-jointed growth ripened under the glare of a tropical sun. The floriferousness of Bougainvillea glabra was remarkable. I saw it used in forming arches and covering fences where it grows naturally to a large size, and the beauty

of its bracts is enhanced in the radiance of the brilliant sunlight. *B. spectabilis* was planted at the base of a Cypress; its growth encircled the Conifer, and festoons of its brick-red bracts contrasted admirably with the deep green of the foster-tree. This species is rarely met with in British gardens, attributable probably to the difficulty of flowering it.

Bignonia venusta apparently is thought much of by the frequency it is seen planted. The most magnificent sight I had of this climber was provided by a specimen covering a mass of masonry, where it could develop to its fullest extent. It literally draped the column with its mass of apricot-coloured blossoms. Another clothed the bole of a Date Palm. At Colbury House, Totton, Hampshire, the residence of Mr. C. Louch, where I had the privilege to be head gardener prior to the outbreak of war, we grew this climber in a large house, where it was planted out, and in December we were amply repaid by a wealth of bloom. *Solanum Wendlandii*, another South American climber, finds a home in Egypt. This, too, is grown at Colbury, planted out in the spacious conservatory; the flowering shoots used to be untied and allowed to hang down, being supported with thin twine from the roof-trellis, and for the greater part of late summer the specimen was a pleasurable sight. It also lends itself to pot culture, as is generally known, many of us being familiar with the superbly grown pot plants exhibited by Mr. Godfrey, of Exmouth, at the Royal Horticultural Society's meetings. A plant I took to be a huge *Rivina aurantiaca* was, on closer examination, unmistakably a *Solanum*. It had similar orange-coloured fruits, borne on racemes characteristic of that plant, but appeared to drop its basal fruit easily, thus detracting from its appearance. *Ipomoea rubrocorollata* merits its place, and is, as one would suppose, much finer than in Britain. Often its flowering period is retarded by the wet and cold of late summer. *Thunbergia alata* shows its golden flowers to advantage, growing and twining round a shrub less showy. The agreeable perfume of *Jasminum grandiflorum* is wafted on the cool air of the starlit Egyptian nights, which, like the days at this time of the year, are ideal and restful, after the excessive heat of the past month. *F. Gooch, Egyptian Expeditionary Force.*

ON INCREASED FOOD PRODUCTION.

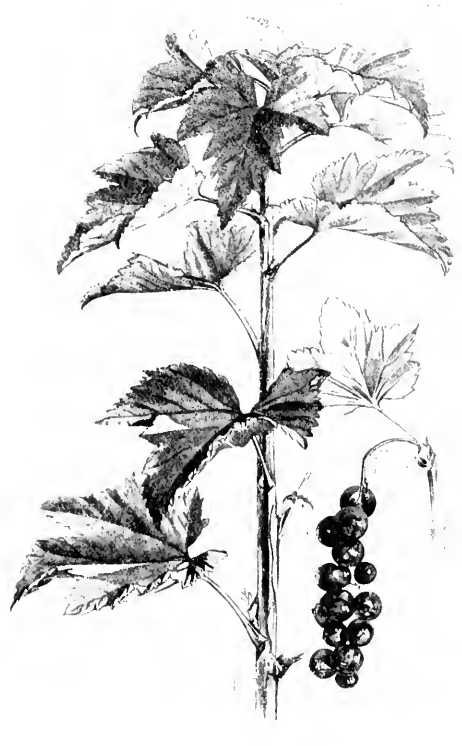
LIFTING CARROTS AND BEET.

THE remarks on p. 153 by Mr. Dunn concerning late crops should, I think, receive further attention, and be applicable to the later sowings of Beetroots. His note implies that Carrots may be taken up too soon. I believe that the roots of both Carrots and Beets are lifted too early in many gardens. It seems to have become the practice of gardeners, as well as amateurs, during the past few years, to store these vegetables in October, and even early in that month. Except for the earliest sown batches this is quite unnecessary. Both kinds

of vegetables are hardy, and I see no good purpose in treating them as being half-hardy. But they should not remain late in the ground where the soil is very wet, as they would be liable to splitting, and become coarse; and they must, of course, be lifted if the ground they occupy is urgently needed for a subsequent crop. In light soils the late batches of Carrots and Beetroots may be wintered where grown, drawing a little soil around the latter roots in the event of severe frosts. *C. Turner.*

POTATO AND ONION CROPS AT HESTON.

FOR several years the Heston Horticultural Society has encouraged its members to produce heavy crops of Potatos by arranging annual competitions. In one competition the heaviest crop from a row 2½ feet long wins, while in



[From sketch by Miss F. Bonyard.]

FIG. 79.—CURRANT HUGHESON CASTLE.

(See p. 209.)

another competition the grower must excel with one plant grown on one square yard. This year the entries were good, and all competitors had to grow The Chapman from the same seed stock, place the sets 18 inches apart, and allow 2½ feet between the competitive row and the next rows. The average crop from eighteen rows was 51½ lbs. All the crops were lifted the same day and carefully weighed in the presence of a committee. The separate results were—Mr. W. Morris, 74½ lbs.; Mr. G. Weston, 72 lbs.; Mr. T. Weston, 71½ lbs.; Mr. B. Mascheld, 65½ lbs.; Mr. J. Harmer, 62 lbs.; Mr. A. Dyer, 59½ lbs.; Mr. H. Chandler, 59 lbs.; Mr. C. Lewis, 54½ lbs.; Mr. S. A. Cragg, 53½ lbs.; Mrs. Mascheld, 53½ lbs.; Mr. P. Walker, 51 lbs.; Mr. A. Brett, 46 lbs.; Mr. P. A. Cragg, 40 lbs.; Mr. A. Crier, 39 lbs.; Mr. W. G. Lobjot, 38 lbs.; Mr. C. Cox, 35 lbs.; Mr. A. J. Robbins, 32 lbs.; Mr. E. Gladman,

23 lbs. It will be noticed that the best crop was just about $\frac{3}{4}$ times the weight of the one lowest on the list.

There were fourteen entries in the "one set per square yard" competition, and here Mr. S. Weston came out top with a crop of 11½ lbs.; the other weights were 11, 10, 9, 8½, 6, 6, 6, 6, 4, 4, and 2½ lbs. respectively, an average of 7 lbs. per root.

A new competition was one in which a prize was offered for the heaviest crop of Onions from a 12 feet row. In this, Mr. Percy A. Cragg led with 32½ lbs., closely followed by Mr. G. Weston with 30½ lbs. Other weights were 27½ lbs., 27 lbs., 18½ lbs., 18 lbs., 17 lbs., 16½ lbs., 16 lbs., and 14½ lbs., the average weight per row being 21 4.5 lbs. C. H. C.

THE BREAKING UP OF GRASS LAND.

THE leading article on this subject on p. 190 should do much to convince any waverers (and there are not a few) as to the advisability of breaking up unprofitable or even moderately good grass land. I have ample opportunities of observing how little benefit to the nation much of the grass land is now, being chairman of an advisory committee in this county, which is charged with an order to add 90,000 acres to the existing arable land. It is strange to see how some cling to their pastures, when it can easily be proved to them that much of their grass land does not produce more than half a ton of hay per acre, the hay being worth only £2 15s. Under good arable cultivation a first season's crop of Oats would return the grower at least £9 per acre, less the cost of production, and this is a low estimate.

In this county there were not many failures; probably the most were not evident during the harvest after Mr. Middleton's report was made. Where the Oats were a heavy crop many plants were laid owing to heavy showers and high winds. Oats are quite the best of cereals to grow on newly broken up grass land, because they grow away more quickly than any other cereal, provided chemical fertilisers are used liberally. Wireworm does not injure the plant after the second pair of leaves is formed.

Where Oats are to be sown it is better to defer the ploughing of grass land until the end of February or early in March, in order that the sowing may be done promptly. Wireworm has not then time to ramify through the roots of the grass before the Oat plant has grown out of farm's way by the aid of liberal manuring.

The past season's experience will teach farmers where they erred in methods of cultivation, especially with Potatoes. The farmer was not always to blame. In many cases hurried decisions were arrived at to put in certain crops, and there was not always time for due preparation. Earlier ploughing would have enabled the sward to decay more promptly—an advantage to the Potato crop. The advice given as to the summer fallowing of strong land is good, especially if it is foul, thus enabling cleaning to be done. This summer was a bad season for this kind of work, August being very showery.

Nowadays, too, there does not seem time to follow land much. Many farmers prefer to use a catch-crop of some sort, such as Mustard, Vetches, or Rape. Still, the fallowing of land in the summer, followed by a dressing of farmyard manure, generally brings good Wheat the following year. E. Molyneux.

AN ALLOTMENT GROWER'S EXPERIENCE WITH POTATO GREAT SCOT.

At the beginning of the present year the Parish Council of Ludworth decided to take over a small portion of a field for the purpose of allotments. My plot, which measured 300 square yards, was the very worst of the lot, being waterlogged, and a large portion of it was under water to the depth of about 1 inch. I dug a trench 3 feet deep from corner to corner, and found an old drain to take away the water at

one corner. Then I found a strong spring, and had to trench again. The other allotment holders formed a ditch down the south side, and I got all the water again, and had to trench that side as well. But in the long run it proved a blessing, for I made a well there 4 feet deep, and was never without water during the hottest part of the year. I found a difficulty in getting seed of Great Scot, but a friend sold me ten tubers which weighed just on 2 lbs. I placed them on the floor of my greenhouse to sprout, and afterwards cut the ten tubers into 45 pieces, each containing one eye. I got about five pieces from each Potato. These I planted in 5 inch pots in good soil, and plunged the pots in a frame which I had just emptied of Violas. I dug a trench across the allotment about 22 yards long. I had no manure except a little dry poultry droppings, and these I scattered at the bottom of the trench. I planted the Potatoes about the first week in May. A single dusting of sulphate of potash was used. Lord Howard offered a cup valued £10 for the heaviest 15 Potatoes grown on allotments belonging to him. The hauls of my Potatoes by this time were 1½ yard long. I removed the soil at one root, and the first potato I encountered weighed just over 14 oz. On the morning of the show at Glossop, Sept. 29, I lifted the crop, and got together 15 Potatoes of a total weight of 12½ lbs. I won the cup, but it was only by one pennyweight, though I must add my runner-up had to dig the whole of his allotment of 300 square yards, while I dug up a 22-yard run only. The proudest moment was when I weighed the produce of that one row, and found that I had got 114 lbs. of good potatoes, that is, 57 lbs. from each pound of seed planted. H. G. Healy, Ludworth.

MAY QUEEN POTATOS AT BECKENHAM

ON ground occupied by Sweet Peas in 1916, Mr A. Scutcher, The Gables Gardens, Wycombe Road, Beckenham, planted May Queen Potatoes. Thirty-six sets were planted, 16 inches apart, on an 18-yard run. The crop weighed 205 lbs. when lifted, giving an average of 5 lbs. 10-29 oz. per root. The smallest yield from one root was 2 lbs.; the highest was 10 lbs. The Potatoes were sprayed twice during July, and the crop was lifted on August Bank Holiday.

COOKING PUMPKINS.

ONE of the best methods of cooking Pumpkins is to cut the fruits into moderate-sized cubes, put them in a covered fireproof vessel with some butter or fat (no water), and a ravigotte of chopped Butter and Parsley, with perhaps a Bay-leaf or a tiny sprig of Winter Savory; put in the oven and let the fruit stew in its own juice. Remnants may be used to make puree soup, for what is there better than a good Pumpkin soup? Against jam and pies do the sugar and flour positions forbend. H. E. D.

ALLOTMENTS AT BIRMINGHAM.

AN exhibition of allotment produce was held in the Birmingham Town Hall on the 7th and 8th inst., inaugurated by the Parks Committee under the management of Mr. W. H. Morter, Chief Officer of the Parks Department. Upwards of 1,200 prizes were offered to allotment-holders throughout the thirty districts of Birmingham.

About two hundred dishes of Potatoes were exhibited by the Board of Agriculture from the trial grounds at Ormskirk. The trade was represented by exhibits from Messrs. Sutton and Sons, Ed. Webb and Sons, Dickson and Robinson, Allwood Bros., Gunn's, and Simpson and Sons. Medals and Certificates of the Royal Horticultural Society were awarded to these firms, and also to some of the exhibits in the competitive classes. The local Parks Department contributed an excellent collection of vegetables.

Since the beginning of the present year the Birmingham Parks Department has provided about 6,500 plots to allotment-holders. J. S.



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor

ASPARAGUS.—If a sufficient number of strong roots are available a supply of forced Asparagus may be had throughout the winter with little trouble and expense. The crowns are quite ripe, and a start with forcing may be made. A brick pit is best for the purpose, and a new hotbed should be prepared from Oak-leaves, which will produce a mild and lasting warmth capable of forcing several batches of roots. If the temperature of the bed should fall too low for forcing, shaking up the leaves and mixing with them a quantity of fresh material will correct matters. When the bed has been made firm decayed manure should be sifted over the surface and a thin layer of sieved leaf-soil placed on the top to prevent the roots from coming into direct contact with the manure before growth commences. The roots should be placed closely together and covered with fine leaf-mould, which may be washed in amongst them, using water warmed to 80°. In a few days the young shoots will be sufficiently advanced in growth to require a covering of fine, sieved leaf-soil to the depth of 4 inches. By excluding the light the leaf-mould will blanch the shoots and cause much quicker growth. In 8 or 10 days afterwards the Asparagus will be ready for cutting. When Asparagus-roots are lifted from the beds for forcing they should be placed in the forcing-pit at once.

PARSLEY.—All overgrown and decaying leaves should be removed from plants which are intended to stand the winter in the open garden. The young growth produced after this date will be much harder than that produced early in the season. Hoe the soil between the rows on frequent occasions. Plants in cold frames should be treated in the same manner, and the lights kept off until frosts occur.

SPRING CABBAGE.—Examine the rows of Spring Cabbage, and if slugs are present dust with hot lime in the early morning and again a week later. Hoe the ground and fill all vacant places in the rows with as little delay as possible. Plants which are still in the seed-bed should be transplanted at once in a border where the soil is not over-rich, allowing a space of 4 inches between the plants each way.

GREEN HERBS IN WINTER.—Place roots of Mint and Tarragon on a gentle hotbed to furnish supplies of green shoots. Sorrel and Chives are easily forced in this way. A good ball of soil should be left on the roots, placing the plants quite close together on a gentle hotbed.

POTATOS.—All seed tubers of early Potatoes should be selected and placed on trays with as little delay as possible. Many of the early varieties are producing shoots, and if not carefully placed on trays at once much injury may be done, as the growth is almost certain to become drawn. A good shed is suitable for sprouting Potatoes, provided frost is excluded. All Potatoes in stores should have sufficient covering placed over them to protect them from frost. It is good practice to secure a quantity of dry material for this purpose and keep it ready for use.

FRUITS UNDER GLASS.

By JAS. HUDSON, Head Gardener at Gunnersbury House, Acton, W.

VINES GROWN WITH OTHER FRUITS.—Good results can be obtained from vines and fruit trees in houses not specially given over to their cultivation. In a moderate-sized house it is often possible to plant a vine at one end and allow it to run over the roof. Such a house here, used in the winter to store large scented-leaved Pelargoniums and other decorative plants, contains a good type of Black Alicante vine.

which has produced for many years past fine crops of Grapes, some of the bunches this season weighing more than 5 lbs. No proper border was prepared for the vine, which was merely planted in one barrow-load of loam. The house has a west aspect and a span-roof, the walls at the sides being about 3 feet high. The bunches are usually all cut by the time the Pelargoniums are stored, and there is no trouble with damping in the berries if a steady fire is kept going. Many glasshouses could be turned to account in this way, and a saving of labour and expense effected. I know of a span-roofed conservatory in the Midlands in which Figs are planted at one side and thinly trained on the roof to allow the light to enter the house. What is applicable to vines and Figs applies also in a lesser degree to Peaches and Nectarines. Attacks of green fly and other insect pests must be guarded against when fruit trees are cultivated in houses with other plants.

FRUIT TREES AS DECORATIVE PLANTS.—It is surprising that greater use is not made of Peaches and Nectarines as decorative plants in large tubs and pots during the spring. They may be used in conservatories in which early bulbs and other spring flowers are grown. With a proper amount of ventilation it is possible to secure fairly good crops of fruit. Suitable varieties for the purpose are Peregrine and Dr. Hogg Peaches, and Humboldt and Early Rivers' Nectarines. Early Rivers' and May Duke Cherries might also be tried; the pollen of May Duke would set the fruits of Early Rivers. Even if the crops of fruit are not so large as could be desired the plants will be highly decorative when in flower. I saw an admirable illustration of this method in a garden on the Continent, where, in a span-roofed house, several Peach and Nectarine trees were furnished with good crops of fruit. The trees were all growing in large tubs, and had made good growth.

FRUITS OF PASSIFLORA.—The fruits of both *Passiflora edulis* and *P. quadrangularis* may be used for dessert; the former species does not require so much warmth as the latter, and it is distinctly ornamental when in fruit. The one essential in fruiting these climbers is to see that the flowers are pollinated, which often has to be done by hand. Keep the young shoots stopped when the fruits are forming to cause them to seed.

WINTERING POT TREES.—Where no attempt will be made to exclude frost from houses in which pot trees will be wintered, measures must be taken to safeguard the pots against being cracked during severe frost. One method is to secure sufficient dry stable litter to place between the pots and over the surface. Another is to plunge the pots in cinder ashes from the stove-holes. In an absolutely cold house, and where the growth is normal, the latter system may be adopted. The soil in the pots will keep moist, and the pots may be plunged as close together as possible, thus saving room and necessitating the use of fewer ashes. Our late Plums are plunged in this way until the flowering period arrives, when they are removed further apart. When litter is used there is a possibility of the soil becoming dry at the roots.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbeots Wood, Godingham, Surrey.

CHERRIES.—In planting both sweet and Morello Cherries, choose well-drained, leamy soil, containing plenty of old mortar rubble or lime. Plant firmly, and do the work in dry weather. Cordun trees should be set 2 feet apart, those of fan shape, 15 to 20 feet; bush trees and pyramids 9 to 12 feet, and standard trees for orchards 15 to 20 feet apart. Established trees may be pruned and trained from now onwards. Cut out all dead spurs and prune the new shoots to about three buds. If the trees have been summer pruned, the growths will require very little shortening at this operation. Train in the shoots of the current season evenly, and use plenty of loose ties to keep them in position.

PRUNING.—Take advantage of fine, mild weather to prune Pear and Apple trees. Bush

trees should be thinned freely and the branches trained regularly apart. There will be no long shoots on trees that were summer pruned, and those that have reached their size limit should be pruned hard. Mature trees need root-pruning occasionally in order to restore the balance of growth between roots and branches. Endeavour to obtain fruiting wood in all parts of the tree, for where the fruit sets in clusters irregularly it is never of the finest quality. Exhausted spurs on very old trees should be thinned and the development of fresh ones encouraged. The pruned spurs will break thickly and strongly into growth in the spring, when they should be thinned to a suitable number. Some trees naturally grow shapely and require much less pruning into shape than others.

WALL TREES.—Trees growing on walls or other supports need similar treatment to that described above. When the pruning has been done and the trees cleaned, the shoots may be either nailed or tied to the support. All old ties should be removed, as these may contain insects or the larvae of insects. Following the work of training and tying the trees, a thin layer of soil should be raked off the border, in case grubs or caterpillars are harbouring therein. After this, a slight dressing of lime or basic slag should be used, and a little fresh soil or ashes scattered over the surface to provide a clean substance for walking on. The part of the border containing the roots should not be dug with a spade, but loosened lightly with a fork. Vegetables, etc., should not be planted nearer than 5 or 4 feet from the wall. If insect pests are detected, cleanse the trees thoroughly. American blight require care and vigilance to stamp it out, as it spreads rapidly to other trees.

THE ORCHID HOUSES.

By J. COOPER, Gardener to Sir JEREMY COLMAN, Bart., Gatton Park, Reigate.

DENDROBIUM.—The majority of plants of *D. Phalaenopsis*, *Schubertianum* and its varieties are in bloom. The flowers may be kept in good condition for several weeks if the plants are grown in a dry, intermediate temperature. The flowering should not be allowed to exhaust the energies of the plants; therefore, as soon as the pseudo-bulbs show the least sign of shrivelling, cut off the spikes. After passing out of flower the plants should be placed near the roof glass in a house having an intermediate temperature. *D. formosum* quantum should receive similar treatment after passing out of flower. Evergreen *Dendrobiums*, such as *D. thyrsiflorum*, *D. densiflorum*, and *D. chrysotoxum* should be placed in the intermediate house after completing their season's growth, and afforded only sufficient water at the roots to keep the leaves fresh and the pseudo-bulbs plump.

LYCASTE.—Plants of *L. Skinneri*, *L. Ballinae*, and *L. Mary Gairdri* will soon be finishing their growth and sending up flowers from the bases of the new pseudo-bulbs. The roots should be kept somewhat drier but on no account should they be allowed to shrivel for want of moisture; the check they will receive from having less water at the roots will cause a larger quantity of flowers to push up at one time than would otherwise develop. These plants grow well in a light position in the Odontoglossum house provided the temperature does not fall below 50°. *L. leucantha*, *L. aromatica*, *L. Doopeii*, and *L. cruenta* require water less frequently; these Orchids are best grown permanently in the intermediate house.

THE FLOWER GARDEN.

By W. J. GUNSE, Gardener to Mrs. DEMPSTER, Keele Hall, Staffordshire.

EARLY-FLOWERING CHRYSANTHEMUMS.—There is no advantage in leaving border Chrysanthemums in the open after this date. After lifting those required for stock purposes in these gardens last autumn, several dozen plants were left in the beds, but not one survived the winter. Before lifting see that the labels are tied securely to each variety. Plant them closely together in shallow frames to obtain stocky growth suitable for cuttings. Where there is a shortage of frames the stools may be planted in boxes and wintered in a cold house near the roof-glass. Albeit air

on all favourable occasions, only employing just sufficient fire-heat to exclude frost.

WICHURAIANA ROSES.—All the *Wichuriana* hybrids are suitable for furnishing pergolas, trunks of trees, trellises, and walls. As the plants will occupy the same position for several years, let the ground be well drained and thoroughly worked. If the soil is poor remove it to a depth of 3 feet and 3 feet in width, replacing it with a mixture of old turf, decayed manure, leaf-mould, and bone meal. For covering trellises, pergolas, or trunks of trees choose such varieties as *Excelsa*, *Dorothy Perkins*, *Alberic Barbier*, *Mrs. F. W. Flight*, *Blush Rambler*, *Gardenia*, *Hiawatha*, *White Dorothy*, *Flower of Fairfield*, and *American Pillar*. Weeping standards of some of these varieties are very effective when planted in the background of mixed borders.

LILY-OF-THE-VALLEY.—Beds of *Lily-of-the-Valley* become crowded after a few years, and unless the crowns are replanted they become weak and fail to flower. Trench the ground and mix with it a liberal amount of decayed manure, leaf-mould, and, if the soil is of a heavy, retentive nature, a quantity of old potting soil or sand. Lift the crowns carefully and select the finest for pot culture or for planting in special beds. Plant the crowns in rows made 12 inches asunder, and allow a space of 6 inches between the crowns. Small crowns planted in reserve beds will make good plants, suitable for putting into permanent quarters next year. Give the beds that were planted last year a light top-dressing of decayed manure and leaf-mould, after all weeds and rubbish have been removed.

FALLEN LEAVES.—The difficulty of obtaining farmyard manure in any quantity is increasing. As Keels are now being used, and these are incorporated with the manure available, including decaying vegetable matter and burnt ashes from the rubbish-yard. The labour difficulty has delayed the work of sweeping paths and drives, excepting those in immediate use. Now most of the deciduous trees have shed their leaves these will be collected and placed in convenient positions for future use. Large quantities will soon be required for forcing early vegetables.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHCOLE, Eastwell Park, Kent.

BULBS FOR EARLY FLOWERING.—Examine bulbs of early-flowering Tulips and Narcissus, which were potted up early, and plunged in leaf-soil or fibre, at intervals, to see what progress has been made. Remove all those that have started into growth freely and filled their pots with roots. Place them in a frame and shade the frame with a mat for a few days until the foliage has become green, when they may be exposed to the light and air. A batch should be taken into the forcing house every week or ten days, according to requirements. Tulips will respond to hard forcing better than most bulbs. Daffodils should not be subjected to a high temperature or some will fail to bloom, and others grow weakly and not last well. Bulbs of this class, when in full growth, require plenty of water, and liquid manure or soot water to aid the development of the blooms.

CYCLAMEN LATIFOLIUM.—Early plants of the Chinese *Cyclamen* are developing their blooms, and should be encouraged to grow freely. Arrange the plants thinly, on a damp bottom if possible, in a light house. The day temperature should range between 55° and 60°, admitting a little air and increasing the ventilation as the temperature rises with sun-heat above 60°. Give the plants a little weak manure water, or top-dress them with a little very fine soil in which a small quantity of concentrated fertiliser has been mixed. Though the flowers of *Cyclamen* are not always satisfactory for use as cut blooms, small flowering plants are suitable for placing in china vases and similar receptacles in dwelling-rooms, as the blooms remain fresh for a long time, few other plants giving better results. The late batch of plants intended for flowering in spring may be grown 10° cooler; these late plants will give blooms of large size and substance.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHERS; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 41.6.

ACTUAL TEMPERATURE.—Office, 41, Wellington Street, Covent Garden, London, Thursday, November 22, 10 a.m.: Bar, 29.9; temp, 54.5°. Weather—Cloudy.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—

Balls at 67 and 68, Cheapside, at 3 o'clock, by Protheroe & Morris.

New Zealand Cushion Plants.

To those familiar with the curious cushion plants, such as the various New Zealand *Raoulia*s, Mr. Foweraker's description* of the mat plants and cushion plants of the Cass River Bed, Canterbury, S. Island, New Zealand, will be of great interest.

The district in which occur the plants described by Mr. Foweraker consists of the lower portion of the Cass Valley—a flood-plain about 4½ miles long by nearly two miles in breadth, with the river occupying a small strip in the centre. The river flows as a network of runlets, in the dry season narrow and isolated, but in flood meeting and forming a considerable stream. Cushion and mat plants are met with over the whole river plain, but are most numerous and interesting in the river bed itself.

The bed consists of water-worn rock in masses which range from lumps several feet in thickness to mere particles of sand. The characteristics of such a soil and situation are poverty of nutritive salts, a stony substratum rapidly drying out, and plenty of underground water; desert conditions above ground, but a plentiful supply of moisture for the roots of plants. Thus in spite of a high rainfall and the water supply below, the conditions are those of a desert, and the vegetation reflects those conditions in its xerophytic character.

On the "transition terraces" which lie between the river bed and the edges of the flood plain *Raoulia tenuicaulis* is the dominant plant, and one of the first to become established. It spreads as a greenish or greyish mat a yard or more in diameter; ultimately neighbouring mats run together and form patches covering areas of 30 square yards and more. This species also hangs over the edges of the terraces bordering the stream and helps to consolidate the bank, giving protection from weathering and river erosion.

* "The Mat Plants, Cushion Plants, and Allied Forms of the Cass River Bed (Eastern Botanical District), New Zealand," by E. Foweraker, *Trans. New Zealand Institute*, Vol. XLIX, June, 1917.

By its position it is very liable to be covered with sand during inundations, but its rapid growth enables it to "grow out" of this sort of danger. As is to be expected from its situation, *R. tenuicaulis* is less of a xerophyte than the other species occurring in more waterless parts of the valley.

Another plant which joins this species in invading and helping to reclaim the newly exposed shingle is *Raoulia australis*. Like the former species, it is a mat plant, and possesses, though to a less degree than *R. tenuicaulis*, the power of rapid growth. On the upper terraces *R. lutescens*, of slower growth, is found on the open shingle, and often forms cushions curving over the edges of old watercourses. Its cushions are more or less circular, raised in the centre, of smooth contour, and its surface is the smoothest of all *Raoulia*s. During summer its colour is glaucous, owing to the greyish tomentum of the leaves, but in winter it is grey, tinged with pink. The leaves are small, coriaceous, densely hairy, and contain water-storing tissue—all xerophytic characters which assist in enabling the plant to grow in situations devoid of humus.

The cushion plant best known to botanists in this country is *Raoulia Haastii*. It occurs on the upper terraces—its slowness of growth confining it to those situations.

The cushions formed by *R. Haastii* are large—more than a yard across and 5 inches deep. They are bright green in summer and chocolate-brown in winter. The periphery and surface of the cushion are irregular, the surface being thrown into numerous mounds and hollows formed by the young plant growing over or round obstacles which it encounters. Though irregular in contour, the surface is smooth owing to the compactness and uniformity of the branchlets.

On the oldest terraces occurs *R. subsericea* in the form of large, flat mats, so loose as to allow other plants to grow up within the space it occupies.

R. glabra is ubiquitous in the Cass Valley, and grows as a lax mat. *R. Menziesii* also forms an irregular mat on the old terraces.

A true cushion plant of this region is *Scleranthus biflorus* var. Other plants with mat or cushion habit found in the river terraces are *Coprosma Petriei*, as a wide-spreading mat, *Pimelea prostrata* var. *repens*, *Muehlenbeckia axillaris*, and *Acaena micropphylla*. It is interesting to observe that, as the names given above indicate, the cushion or mat habit of growth has imposed itself on members of diverse families: Polygonaceae, Caryophyllaceae, Rosaceae, Thymelaeaceae, Rubiaceae, and Compositae, and in this fact is an interesting example of what is often referred to as convergent evolution—dissimilar organisms taking on similar forms.

The most striking peculiarity of such forms is the occurrence of "filling materials," that is, structures—matted branchlets, for example—which provide for the

compactness of the cushion or mat, collect sand, and in which often run a greater or smaller number of adventitious roots. The filling material, composed of humus from dead leaflets, blown sand and debris, forms a medium of considerable water absorbing and water holding capacity, converts the cushion into a sponge, and renders the plant to some extent independent of its substratum. Thus the large cushions of *Raoulia Haastii* are quite moist inside even though all round them the shingle is quite dry.

That the form is well adapted to its environment is evident from the manner in which it withstands wind, rain, frost, desiccation, and snow, to all of which tests the mat and cushion plants are put. It is noteworthy that the long tap root so characteristic in desert plants is conspicuous only in *Scleranthus* and *Pimelea*. It occurs in other of the cushion and mat plants, but an adventitious root system developing early checks the growth of the main tap root. The genus *Raoulia* exhibits an interesting series of forms, progressing toward and achieving the perfect cushion. Thus *R. glabra* is large-leaved, lax, with large rosettes; *R. subsericea* is similar, but denser; *R. australis*, which lives on the shingle, is more matted; *R. lutescens*, a true cushion plant; *R. Haastii*, one in which the cushion habit is yet more pronounced; *R. eximia*, of dry Alpine and sub-Alpine rocks, and the famous vegetable sheep of New Zealand, a subject of curiosity to all observant visitors at Wisley and other rock gardens.

NATIONAL CARNATION AND PICOTEÉ SOCIETY (SOUTHERN SECTION).—The Southern Section of the National Carnation and Picotee Society will hold an exhibition on Tuesday, July 16, 1918, at the Drill Hall, Buckingham Gate, Westminster, in connection with the fortnightly meeting of the Royal Horticultural Society.

GARDENING BY SOLDIERS.—The land cultivated by soldiers around the various military camps has been inspected by officers of the Food Production Department. They report that the Commanding Officers not only express themselves satisfied with the results of Potato spraying, but have asked for lectures to be given during the winter to the men engaged in cultivation.

COMMERCIAL ALCOHOL.—Preliminary tests having proved satisfactory, the Food Production Department has arranged for an extensive experiment in the making of commercial alcohol from damaged or undersized Potatoes at a distillery in Scotland.

INSTRUCTION IN HORTICULTURE.—With the object of increasing the production of food and securing its preservation, arrangements have been made by the Food Production Department for systematic courses of instruction to allotment societies and similar bodies during the winter. The courses of instruction will include: (1) Lectures by a staff of twenty experts selected by the Royal Horticultural Society; (2) lectures on Potato disease and the results of this year's spraying, by members of the staff of the Food Production Department; (3) demonstrations in drying and other methods of preserving fruit and vegetables.

DEFERMENT OF POTATOS.—Our French correspondent A. M. sends us the following note on this subject: "The hundred-year-old collection of Potatoes maintained at Verrières-le-

Buisson by MM. VILMORIN-ANDRIEUX ET CIE. is interesting from the point of view of degeneration. The collection was entrusted by the French Agricultural Society in 1815 to the great-grandfather of the late PHILIPPE DE VILMORIN. Three plants of each of 120 varieties are propagated each year. The progeny of these varieties have been described from time to time in successive editions of the 'Catalogue Methodique et Synonymique des Pommes de Terre.' Many of the varieties have had only a brief duration at Verrières, and the collection is only maintained by replacing each year those that disappear. Of the 120 varieties originally planted only about one dozen survive, and these

November 14, referred to the inferior seeds which had in the past been sent into this country from abroad, containing frequently admixtures of old seed, and pointed out the protection which would be given to farmers by the new institute. The President called attention to the fact that the station must be considered as a war emergency measure, and expressed his appreciation of the help which had been received from Professor BURGER and Mr. STAPLETON, and from the seed dealers and merchants of this country, who in spite of the serious depletion of their staffs, and difficulties under which they were working, had given their best efforts ungrudgingly to help in the establishment of the

at £1,100, so that the necessity for economy had been fully met, and he hoped that the testing station would develop eventually so as to become an Institute of Applied Botany.

WAR ITEMS.—Four dishes of Apples, each dish containing six fruits, were sold by auction for the benefit of the Red Cross funds at the Exchange News Room at Liverpool on the 14th inst. The fruit was given by Messrs. KINGS, LTD., Bassett Street, and the sum realised was £119, or nearly 10s. per apple.

—Gunner C. W. CONNELL died on the 10th inst. in No. 3 Canadian Casualty Clearing Station. He enlisted in the R.G.A. in January,



FIG. 80.—BRASSICA CAULIFLORA, LADY MANNINGHAM BUTTER. Colour of flower yellow. (See R.H.S. Awards, p. 235.)

only as a result of the special care given to them. Of those that "carry on" three are relatively vigorous, and are varieties still grown in France. They are La Chave (Shaw), La Marjolain, and La Vilette, but it is to be noted that these plants grow to-day even if they are not from the original stocks."

"GARDEN MONTHLY."—The *Newspaper World* announces that the *Garden Monthly*, published for some years by the Educational Company of Ireland in Dublin, has suspended publication "until the dawn of a brighter day."

OPENING OF NEW SEED TESTING STATION.—The President of the Board of Agriculture and Fisheries, on opening the new Seed-Testing Station at 70, Victoria Street, Westminster, on

November 14, referred to the fact that England had an institute 16 years ago (in Scotland 4 years ago), and that the one now inaugurated would work in cooperation with the Irish and Scottish institutes. In future the farmers, instead of purchasing seeds with foreign certificates, would have seeds with the certificate of this institute, and this would give them a measure of assurance of quality which they had not hitherto been able to obtain. The President mentioned, with great appreciation, the services rendered by Mr. WEAVER in establishing the institute, and also referred to the appointment of Mr. STAPLETON, one of the leading authorities on seeds in this country, as director. The institute had been established at a cost of only £500, with an annual expenditure estimated

at £1,100, so that the necessity for economy had been fully met, and he hoped that the testing station would develop eventually so as to become an Institute of Applied Botany.

WAR ITEMS.—Four dishes of Apples, each dish containing six fruits, were sold by auction for the benefit of the Red Cross funds at the Exchange News Room at Liverpool on the 14th inst. The fruit was given by Messrs. KINGS, LTD., Bassett Street, and the sum realised was £119, or nearly 10s. per apple.

—Gunner C. W. CONNELL died on the 10th inst. in No. 3 Canadian Casualty Clearing Station. He enlisted in the R.G.A. in January,

1911, and was sent with his company to St. Helena, returning before Christmas, and he has since served in France. Gunner CONNELL was apprenticed in the gardens of Colonel W. H. Wrayton, Skelton Castle, Skelton-in-Cleveland, and he was afterwards employed in the gardens of the Earl of Eglarshere, Worsley Hall, Manchester. At the time of his enlisting in the Army he was employed in the Orchid department at Scampston Hall Gardens, Rillington.

PUBLICATIONS RECEIVED.—*The Life of the Rt. Hon. Sir Charles W. Dilke, Bart., M.P.*, By Stephen Gwynn, M.P., and Gertrude M. Tuckwell. 2 vols. (London: John Murray.) Price 36s. net.—*Agriculture and the Land*. By G. F. Bosworth. (Cambridge: The University Press.)

SOOTY BLOTCH ON APPLES.

The extraordinary prevalence of sooty blotch (*Asphylium Pannii*) has been noticed incidentally in my previous notes. The varieties most extensively attacked in my orchards were Cox's Orange Pippin, Charles Ross, Bramley's Seedling (see fig. 31), and Blenheim Pippin. This disease is widely prevalent in the United States, but has not excited much attention in this country. Marce, in his *Diseases of Cultivated Plants and Trees*, does not mention it. Damp weather and lack of sun-dried air are predisposing causes of the attack and development of the fungus. *Southern Grower*.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

AUTUMN CROCUSES.—I read with interest, as I always do, Sir Herbert Maxwell's "Notes from a Galloway Garden," in the issue for November 10. He expresses surprise at the little use that is made of autumn-flowering crocuses. Extraordinary use of them is made by rats and mice, which doubtless accounts for their scarcity, whilst *Colchicum* are never touched by them, though growing in my garden side by side. I know of no plant, root, or bulb which is more often attacked by rats and mice,

Aitchisonii is even finer. In our Scotch climate the Autumn and Winter-flowering Crocuses almost call for, and certainly deserve, the comforts of a cold frame. *Formakin*.

RAISING VARIETIES OF NEW FLOWERS FROM SEED.—One sentence in the note on "Rose-American Pillar and its Origin," by Mr. Eastlea, p. 196, was particularly interesting to me. It was that in which the writer stated that Mr. McGredy had raised several Gold Medal Roses from one seedling plant. This bears out my experience in the case of another quite different class of plants, namely, the Fuchsia. With this I had, at least, a fair measure of success, some of my raising being now well-established varieties. At first the results were indifferent, till, talking one day with Mr. Lodman, an old-time gardener, and a well-known raiser of Fuchsias, he pointed out (what I had already experienced) that many good kinds would produce very few, if any, fertile seeds, and even of that limited number none of the progeny ever approached the parent in quality. He instanced a case of his own, in which the breeder planted a seedling of no particular class, yielded a crop of good seeds, and the plants raised from it gave a great variety of quite superior flowers. I then set to work as far as possible on the same lines, and, though a slow process to carry out, good results ensued. My best seed-bearer was one with a pinkish-white corolla, and it yielded varieties with white, pinkish, and dark corollas. The flowers

SOCIETIES.

ROYAL HORTICULTURAL

NOVEMBER 20.—The fortnightly meeting, held in the Drill Hall, Buckingham Gate, Westminster, on Tuesday last, was accompanied by an exhibition of moderate extent. In normal times Chrysanthemums and other autumn flowers are extensively shown at the November meetings, with winter-flowering Begonias, Primulas, Ferns, and Carnations. These were represented on Tuesday, but by smaller and fewer exhibits. The largest individual display was in the floral section, and consisted of a table of winter-flowering Begonias, reminiscent of the groups which used to emanate from Messrs. Veitch's nurseries in the days when these Begonias were more or less novelties. The Floral Committee recommended Awards of Merit to two new Chrysanthemums and to the Duchess of Bedford's fine strain of *Primula obconica* known as Eureka.

Besides several fine groups, many interesting novelties were submitted for award to the Orchid Committee, and general admiration was aroused by the beautiful yellow *Draso-Laelio-Cattleya* Lady Manningham Butler (see fig. 80), which well merited the First-class Certificate and Silver-gilt Lindley Medal received. The other awards included two Awards of Merit and one Cultural Commemation.

The Fruit and Vegetable Committee found for inspection only a few seedling Apples, but none was considered worthy of award.

The lecture on the cooking of fruit, which was to have been delivered by Mr. Hermann Senn, was postponed.

Floral Committee.

Present: Messrs. H. B. May (chairman), G. Routhie, J. W. Blakey, C. R. Fielder, J. Jennings, J. Heal, T. Stevenson, C. Dixon, H. J. Jones, J. Dickson, C. E. Pearson, E. H. Jenkins, G. Paul, W. G. Baker, S. Morris, E. A. Bowles, R. C. Notcutt, R. Hooper Pearson, A. G. Jackman, H. Cowley, W. J. Bean, W. A. Bilbey, and J. F. McLeod.

AWARDS OF MERIT.

Chrysanthemum Brilliant.—A medium-sized Japanese variety, of deep crimson colour, with golden reverse. The florets are rather short and somewhat stiff, but the tone is exceedingly rich. Shown by Messrs. H. J. JONES, LTD.

Chrysanthemum Princess Mary.—A clear yellow sport from Queen Mary, of which it is a replica in all respects save colour; a Japanese exhibition variety of the largest type. Shown by Mr. CHARLES PAGE, Dropmore Gardens, Maidenhead.

Primula obconica "Eureka" (strain). This plant received an Award of Merit at the meeting on May 8, 1917, but the award was made on the present occasion for the strain. In the large batch exhibited on Tuesday the colour ranged from rose pink to deep carmine; some of the blooms have a very pretty crimson ring round the clear yellow throat. Shown by ADELINE DUCHESS OF BEDFORD, Woodside, Chertsey, Richmond (for Mr. J. Grooms).

Groups.

The following awards were made to collections—

Silver Flora Medal to Misses TANNER and TAYLOR for winter-flowering Begonias; their best varieties were Emily Clibran, Octina, and Clibran's Pink. They also showed a new variety named Mrs. Harry Barton, which has an upright habit, and produces semi-double, lemon-yellow blooms, some of the petals of which have a very faint suffusion of pink. The flowers are about 1½ inch across.

Silver Rankian Medals to Messrs. H. B. MAY AND SONS, Upper Edmonton, for Ferns, Begonias, and *Primula obconica*; Misses PETER AND FRYE, Ilorsted Keynes, for Perennial-flowering Carnations, including their novelties *Maria* (a large bloom of light pink colour), *Malva* (a corolla-scarlet), and *Gravel* (pink purple).

Bronze Flora Medal to Messrs. PETERS, Baywater, for decorative shrubs and berried plants in pots.

Bronze Rankian Medals to Messrs. ALWOOD BROS., Wivelsfield, for Perennial-flowering Carnations; ADELINE DUCHESS OF BEDFORD, for

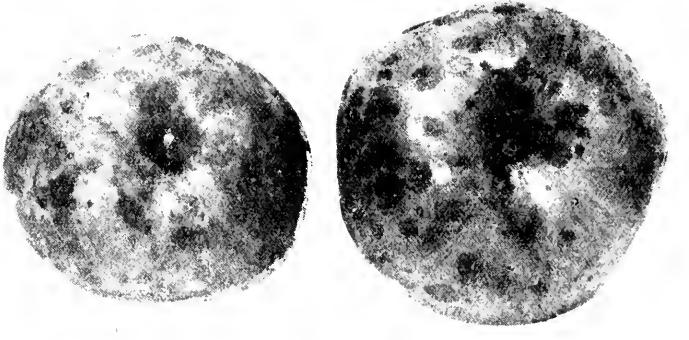


FIG. 31.—BRAMLEY'S SEEDLING APPLES AFFECTED WITH SOOTY BLOTCH.

and they have destroyed the straggling shoots with me times without number. How they can discover the bulbs of, say, *Crocus speciosus*, be it dormant, in leaf, or in flower, beats the wit of man to know. These bulbs have long been favourites of mine, but it is exasperating to find, on one's return after a few days' absence, the clumps destroyed or the grass matted with holes. Rats, I think, are the worst offenders (they can eat more), but there is a field-mouse or vole, somewhat flat and red, which I think rejoices in the name of *Arvicola agrestis*, which is most destructive. Now for the remedies, which, alas! are scarcely able to cope with the destroyers. I find traps baited with the ordinary dainties of cheese, oatmeal, and other foods offer no attraction whatever to the vermin, but, baits of nuts (Brazil nuts are possibly the best), are irresistible. I encouraged owls, and introduced not a few, but, unfortunately, they ate my ringdoves, which had given me much pleasure, cooing among the branches in the garden. I think the most effective plan I have yet found for protecting the bulbs is by placing a piece of netting with very small mesh, say, not more than ¼ inch, over the bulbs when they are planted, or even on the surface of the ground where the bulbs are, and when this is covered with some carpeting plant, such as *Veronica repens* or *Artemisia biacoloris*, it is never seen, and helps to keep the *Crocus* bulbs cleaner in dirty weather. *Crocus speciosus* is one of the best, but *C. speciosus*

were fertilised with different coloured kinds. In raising varieties with light tube and sepals, I never met with much success. H. T.

PLANTING RHODODENDRONS (see p. 199).—In the case of Rhododendrons, better results are obtained from mid-April planting than autumn planting in average seasons. Both temperature and moisture are favourable, and the sun has not attained sufficient power to cause a severe strain upon the resources of the plants. The necessity of excluding lime from soils and composts to be occupied by Rhododendrons is recognised, and peat with sand is commonly employed with success, but a good, light garden soil containing plenty of humus and no rank manure suits many of the stronger varieties quite as well as the more elaborate preparations. One of the strongest points in my mode of procedure is to transplant quickly. *James A. Power, Aldenham*.

THE LATE MR. MARSHALL.—My father had charge of Mr. William Marshall's collections of plants the whole time he had them, and I have by me all the certificates and prize cards won by these collections, which number nearly 400. They include 10 Gold and 4 Silver Medals and 45 R.H.S. Certificates, which will show to what extent Mr. Marshall cultivated Orchids. The Lindley Medal, although awarded, for some reason was not handed either to Mr. Marshall or my father. My father was elected a member of the Floral Committee of the R.H.S. in 1872. *H. Wilson, East Drive Gardens, Bonchurch, I. of W.*

Primulas; Messrs. STUART LOW AND Co., Bush Hill Park, for Perpetual-flowering Carnations; Messrs. W. WELLS AND Co., Merstham, for Chrysanthemums, a very pleasing exhibit, in which only two varieties were used, Bronze Beauty (single) and Lady Stanley (pink decorative variety); and Mr. G. REYNE, Keston, for Nerines and hardy plants.

Orchid Committee.

President: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Vetch, Messrs. Jas. O'Brien (hon. secretary), J. E. Shill, W. Bolton, Fred. J. Hanbury, C. J. Lucas, J. Charlesworth, C. H. Curtis, Patricia Ralli, A. McBean, T. Armstrong, R. A. Rolfe, F. K. Sander and Walter Cobb.

AWARDS.

FIRST-CLASS CERTIFICATE.

Brasso-Laelio-Cattleya Lady Munningham Butler (B.C. *Duglyana-Mossia Queen Alexandra* × *L.C. Uphi*), from Messrs. ARMSTRONG AND BROWN, Tunbridge Wells.—This flower is a triumph for the hybridiser, and one of the best yellow Orchids ever raised, bearing out our expressed remarks as to the potency of the somewhat despised *Laelia xanthina*, which, with *Cattleya Dowiana aurea*, produced *L.C. Uphi*, as a satisfactory element in producing yellow hybrids. The large, perfectly formed flower (see fig. 80) is buttercup yellow, the disc of the imely crumpled and fringed lip being of the darker tint. The substance of the flower is good, and the habit of the plant free. A Lindley Medal was also awarded for the plant.

AWARDS OF MERIT.

Sophro-Laelio-Cattleya Anzoc, var. *Festinus* (S. *L.C. Marathon* × *L.C. Dominiana*), from Messrs. CHARLESWORTH AND Co., Haywards Heath.—A finely-shaped flower of a clear rosy mauve colour with a reddish tint over the sepals and petals and light claret-red front to the lip. *Odontoglossum General Allenby* (*crispum nigrescens* × hybrid), from Messrs. FLOXY AND BLACK, Slough. A handsome seedling, having claret red sepals and petals with small, white bases and narrow, white margin; the broad, white lip has a large claret blotch in front of the yellow crest.

CULTURAL COMMENTARIES.

To Mr. J. E. SMILL, Orchard grower to Baron BURSO N. MOORE, The Dell, Englefield Green, for a superb plant of the white *Cattleya Astron*, with ten flowers on a spike, and similar to that for which a First class Certificate was awarded at the last meeting.

GROUPS.

The Duke of MAREBOROUGH, Blenheim Orchard grower, Mr. J. Smith, exhibited the new *Cattleya* President Wilson Blenheim variety (*labiata alba* × *Fabia* Blenheim variety), a charming flower with sulphur-yellow sepals and petals, the lip having a vein of magenta rose in front; and *C. Vepris*, with rather small flowers, but richly coloured lip.

Sir JEREMIAH COLMAN, Bart., Gatton Park, Surrey (gr. Mr. Collier), showed *Brasso-Laelio-Cattleya Antoinette* (C. *Portia coerulea* × B. *L. Helon*), with a good spike of flowers very closely resembling a good *C. Portia* and with the colouring of the ordinary form of that hybrid, but not showing conclusively the B. *Duglyana* or *L. tenebrosa* in B. *L. Helon*, although there was an appreciable indication of fringing in the margin of the lip.

MESSRS. ARMSTRONG AND BROWN were awarded a Silver Flora Medal for a group of good hybrid *Cattleyas* and *Laelio-Cattleyas*; the best plants were the new *Laelio-Cattleya Alma* (L. C. *Ernesti* × C. *Dowiana*), a pretty yellow flower; *Cattleya Maggie Raphael* (also brilliant flower); and the white-petalled C. *labiata* Mrs. E. Ashworth.

MESSRS. CHARLESWORTH AND Co. were awarded a Silver Flora Medal for a bright group composed mainly of fine specimens of the orange-coloured *Epidendrum vitellinum autumnale*, with white xanthoxes varieties of *Odontoglossums*, *Odontioida Hypatia* (*Odm ardentissimum* × *Oda. Diana*) is a pretty novelty with claret sepals and petals and lilac-coloured lip with claret blotch in the centre.

MESSRS. J. AND A. McBEAN, Cooksbridge, staged a selection of good hybrids, including *Cat-*

tleya Bellona, *Brasso-Cattleya Penelope*, *Sophro-Cattleya Pearl*, and showy scarlet *Odontiodas*. Messrs. FLOXY AND BLACK showed *Sophro-Laelio-Cattleya Eros* and a finely-spotted hybrid *Odontoglossum*.

Fruit and Vegetable Committee.

President: Messrs. W. Poupard (in the chair), W. Wilks, W. Bates, W. H. Divers, E. Beckett, A. Bullock, A. H. Allan, Edw. Harris, F. Jordan, E. A. Bunyard, F. R. Ridley, and Owen Thomas.

A new Lettuce was exhibited by Mrs. M. DOWELL MATTHEW, Little Heath Wood, Potters Bar, Herts (gr. Mr. W. H. Newton), named *Winter Beauty*. Its chief point is its decorative quality. The heads are very small, the outer leaves are a delicate green, slightly mottled, and the centre is golden, with a faint apricot flush, almost amounting to rose colour. The Committee requested that the variety should be sent to the Wisley Gardens for trial.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 19.—At a meeting of the Floral Committee of the National Chrysanthemum Society, held at Essex Hall, Strand, on November 19, only three new varieties were shown, and one of these, named *Quinola*, a deep yellow Pompon of good type, the Committee decided to see again grown in natural style. It is of American origin and was imported in 1915, and grown and shown by Mr. H. Hussey, Matford Lodge, Exeter. The question of the size of exhibition Pompon blooms was again considered.

The Executive Committee met at Carr's Restaurant in the evening, when Mr. Thos. Bevan presided. It appeared that after all accounts are paid the Society will close the year with a small balance in hand. Arrangements for carrying into effect the proposed testimonial to Mr. Richard Witty, the retiring secretary, were left in the hands of Mr. John Green, Mr. T. Bevan, Mr. E. F. Hawes and Mr. C. H. Curtis.

way at Edgubston. For several years Mr. Parton was a member of the Committee of the National Carnation and Picotee Society, but his energies were directed principally to the success of the Midland Society, of which body he occupied at various times such important positions as secretary, vice-chairman, treasurer, and on the death of Mr. Robert Sydenham in 1915 he was appointed chairman. Mr. Parton grew *Aurucias* successfully, and for several years his exhibits were a feature at the Midland Show of the National Primula and Aurucida Society. Soon after the outbreak of war he joined the Sportsman's Battalion, and later was transferred to another regiment. He went to Egypt, and at the time of his death held the rank of sergeant. In business Mr. Parton was a builders' merchant and brickmaker at King's Heath, where he was held in high esteem. He was 43 years of age, and leaves a widow and three children, the eldest of whom is serving in the Army.

W. A. THOMSON.—We regret to record the death, on November 14, of ex-Baillie William Anson Thomson, Penicuik, for many years treasurer of the local horticultural society.

R. W. CLUCAS.—The *Florists' Exchange* records the death, on October 6, at Sparkhill, New York State, of Mr. R. W. Clucas, proprietor of the Palisades Nurseries in that town. Mr. Clucas was born in Liverpool in 1860, and while still a youth entered the seed business, first in his native town, and later with Messrs. Daniels Bros., of Norwich. He emigrated to the States in 1878, and was employed for about ten years with Messrs. Peter Henderson and Co., and a further ten with Messrs. Pitcher and Manda. Later he entered business on his own account, and created a flourishing establishment at Sparkhill. He leaves a widow, one young son, and four daughters.

CROPS AND STOCK ON THE HOME FARM.

RENOVATING ORCHARDS.

It is a rare occurrence to find a well-managed orchard on a farm. So much is this the case that when a tree is blown down it is often allowed to lie for years instead of being cleared away and replaced by another and better variety. Some orchards contain little in the way of variety, and the sorts are mostly of use for cider only. This need not be so, as many others make excellent cider, none better than Bramley's Seedling, and not even the first quality fruits of this are required. The fallen fruits can be advantageously utilised for this purpose, which is surely more profitable than selling them at 1s. per bushel. I would strongly urge farmers who have orchards to do all that is possible to make them remunerative. If the land is already devoted to trees that bear only half crops, it would be better to fully crop such land with improved varieties of Apples. Bramley's Seedling, Newton Wonder, Lane's Prince Albert, and King Edward VII. are all excellent late kitchen sorts. Grandier and Norfolk Beauty ripen in September and October. Of dessert varieties, Beauty of Bath (August), Worcester Pearmain (September), Blenheim Pippin (October), and Cox's Orange Pippin, in use in November, all succeed as standards.

In filling up gaps with these I would suggest that they should not be planted exactly on the same sites as previous trees occupied, but a little on one side, so that the soil may be fresher. When planting, trench the site fully a yard deep if the soil is heavy, and plant on the surface, mounding up the roots with a prepared compost of roadside refuse, wood ashes, and decayed manure. Add manure freely to the soil 6 inches under the roots to induce vigorous growth, so that a large head will be quickly secured, remembering that the larger the area the branches cover in a short time the better the return of fruit. Some writers say add no manure at planting time; my advice is to do so, to incite vigorous growth.

Another important item in the renovation of existing trees is that of pruning. Where trees have been neglected, and the branches have grown too thickly together, shutting out light and air from the inner parts of the trees, success is

Obituary.

MR. W. H. PARTON.—We regret to record the death, from syncope, of Mr. W. H. Parton, late of Moseley, Birmingham, which occurred in Egypt on the 29th ult. Mr. Parton was a well-known amateur Carnation grower and exhibitor, whose presence will be much missed at such shows as Birmingham, London, and Southampton. It was in the year 1899 that Mr. Parton made his first appearance as an exhibitor in his native city of Birmingham, where he won a 1st Prize for six dissimilar Carnations. In 1905 he was well to the fore, winning the Champion Silver Medal at Birmingham, offered to the most successful exhibitor in the amateur classes, a success he repeated in the following year.—Mr. Parton always looked back with pleasure to the year 1905, when he won the Silver Cup for the greatest number of points in the third division at the National Carnation Society's Show in London, as well as the Silver Medal offered in the Second Division at Southampton; whilst at Birmingham he had sixty-two prizes to his credit, and these latter secured for him the premier award of a silver medal with a total aggregate of 254 points in the open classes. He also won the Silver Medal for single blooms in very strongly contested classes, and in the following year succeeded in again winning the two last named medals with blooms of superior merit. At the Southampton Show in 1911 he secured the much-coveted Sir George Cooper Silver Cup with nine 1st Prizes and four 2nd Prizes out of thirteen entries. In the following year he won the last named Cup outright with twelve 1st Prizes and two 2nd Prizes out of fourteen entries. Mr. Parton, who won upwards of 300 1st Prizes for Carnations, favoured the showing of flowers as grown with their own foliage, and for five years out of six he won 1st Prizes for twelve triplicates shown in this

not possible until the conditions are altered. Commence by cutting away weakly branches that cross stronger branches, for a drastic thinning will induce more vigour in the remaining branches; the trees will then produce stronger shoots and improved foliage.

If the trees show signs of a want of vigour, and the variety is worthy of added labour, remove the turf 10 feet from the stem all round; and under the top slip of soil fork in half decayed farmyard manure freely.

Another method is to dress the grass with basic slag, for 50 feet around a large tree at the rate of 10 cwt. per acre during November, and in March give sulphate of ammonia at the rate of 1 cwt. per acre. When basic slag is sown on the surface of grass cattle should not graze there for at least six weeks.

PREPARING THE LAND FOR ONIONS.

It cannot be said that the Onion crop of this year has been an unqualified success. One of the chief causes of failure was a want of preparation of the soil. Then, the dry weather during April and May had a deterrent effect upon the growth, leaving the plants at a standstill for some time. Moreover, the frequent showers in August were in favour of the spread of mildew.

Onions like a deep rooting medium in stiff soil, but resent stagnation at the roots. Extra deep ploughing should be done early in the autumn, to ensure good drainage and a satisfactory surface tilth.

Small plots should be trenched, but larger areas can be ploughed.

The Onion is a voracious feeder on manurial stimulants. When ploughing or trenching the land, add farmyard manure liberally. If this is scarce, basic slag can be substituted at the rate of 6 cwt. per acre, sown evenly over the surface when ploughing in the autumn. A second and shallower ploughing in February will be an advantage.

THE 1918 POTATO CROP.

WHERE Potatoes were grown on newly ploughed up grass land this year, the same site should be better suited to receive the same crop next year. The turf will so have mixed with the soil as to make the ploughing and future cultivation much easier. After burning the haulm and any diseased tubers left on the land, plough at once at least 6 inches deep, leaving the surface as rough as possible, to be turned into a good tilth by the action of the weather.

The method known as "sprouting" or "boxing" the seed for next season's planting has a beneficial influence on the future growth of the haulm, and even those who grow Potatoes on a large scale should adopt this method. When the sets are prepared in this way, there are no gaps in the rows, an earlier start into growth is made, and the haulm is stronger in consequence. A convenient size for the boxes is the following:—Length, 2 feet 6 inches; width, 14 inches; depth, 2 inches. The corner pieces should be 2 inches square and 5 inches high, to allow of one box standing on another, to economise space. The stout corner pieces are used also for the nailing of the sides and ends, which should be of light, half inch match-boarding.

The setting up of the tubers affords employment for wet days. They should be kept in a light, airy shed, free from frost. *E. Molyneux, Swanmore Park Farm, Bishop's Waltham, Hants.*

THE CORN AND HAY CROPS.

The total production of Wheat in England and Wales in 1917 is estimated at 7,164,639 quarters, or 350,000 quarters more than last year; and the yield per acre, 29.88 bushels, is 1½ bushel below the average of the ten years, 1907-16. Although the yield per acre of Barley is three-fourths of a bushel smaller than in 1916, the total production, 5,539,513 quarters is 560,000 quarters greater, owing to the increased area under this crop. The total production of Oats, 10,956,765 quarters, is 450,000 quarters more than in 1916, and the largest crop since 1907. This large crop is due to the increased area, as the yield per acre is 1½ bushel less than a year ago, and about the same amount below average. Beans are a very poor crop, and are the smallest crop recorded since 1855, both in total production and yield per acre.

Peas are rather more satisfactory, and the total production is slightly greater than last year, but still much below normal.

The total production of hay from Clover and rotation grasses is 2,405,468 tons, or nearly 500,000 tons less than the large crop of last year. The yield per acre, 23.60 cwt., is 4½ cwt. lighter than in 1916, and nearly 1 cwt. below average. The total production of hay from permanent grass, 5,149,557 tons, is also less than in 1916, by some 300,000 tons; the yield per acre in this case being rather over 3 cwt., less than last year, and 1½ cwt. under average. Taking all kinds of hay together, the total production is 7,550,000 tons, which is 1,230,000 tons less than last year, but nearly 1,000,000 tons more than the total productions of 1915.

ANSWERS TO CORRESPONDENTS.

CABBAGE ROOTS DISEASED: *Lanark.* The roots of your Cabbages and Wallflowers are attacked by Clubroot, or Finger-and-the-disease. The application of gas-lime to the soil would certainly check the spread of the disease, but if you use the lime in this form the ground must not be planted for some months afterwards. Bad drainage, and a consequent damp condition of the ground, is often a contributory cause of the disease.

FRUITS OF COMMON LAUREL: *Bansha.* We have never heard of the fruits of this shrub (*Prunus laurocerasus*) being used as food. The following is from *Lindley's Vegetable Kingdom*, p. 556: "The leaves, bark, and fruit of the common Laurel, and the oil obtained from them, are virulent poisons." In view of this we should advise you to leave them severely alone, in spite of their sweet and agreeable taste.

GRAPE SHEEVING: *B. Collins.* That the berries of Black Alicante turn black may be the result of the vines bearing an excessive crop, or because the roots, if in outside borders, are too wet, and consequently too cold. If the softening of the berries continues it will be advisable to cut the bunches and to place the shoots in bottles of water containing a few small pieces of charcoal. When the bunches are required for use take them out of the bottles and place their ends in water at almost boiling point; this will sometimes help to plump up the berries again. It is not advisable at this stage to attempt to swell the berries by watering the border. The same remarks apply to the varieties Prince of Wales and Gros Maroc. The last-named should be used first, as it is not a good keeping Grape, even when well ripened. When all the Grapes are cut and the vines pruned, it will be advisable to examine the border, and see that the drainage is perfect. If drain pipes are employed they should be placed just below the bottom of the border; they should be allowed a good fall, and be provided with an outlet.

NAME OF FRUITS:—In the naming of fruits, we desire to oblige our correspondents as far as we can, but the task would become too costly and too time-consuming were there no restrictions. Correspondents should observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. The fruits should be just approaching ripeness, and they should be properly numbered, and carefully packed in stout boxes; cardboard is often smashed in the post. A leaf or shoot of each variety is helpful, and in the case of Plants, Branches and Straws, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. By neglecting these precautions, correspondents add greatly to our labour and run the risk of increased delay and incorrect determination. We do not undertake to send answers through the post, or to return fruits. Fruits and flowering plants must not be sent by the same box. Delay in any case is unavoidable.

A. P. M. 1. White Nonpareil; 2. Twenty Ounce; 3. Claygate Pearmain; 4. Small's Admirable—*W. M. Cellini—Epsom.* 1. Decayed Pear; 2. Vicar of Winkfield; 3. The Queen; 4. Lord Burghley; 5. not recognised.—*J. D.* 1. King of the Pippins; 2. Cox's Orange Pippin; 3. Bismarck; 4. Gascoyne's Scarlet; 5. Hawthornden; 6. the Pear was smashed in post.—*R. B. K.* 1. Beauty of Kent; 2.

Domingo; 3. Fearn's Pippin; 4. Winter Quoining; 5. Lane's Prince Albert.—*Pomona.* Apples: 1. Gravenstein; 2. Grenadier; 3. Cox's Pomona; Pears: 4. Joséphine de Malines; 5. Triomphe de Jodoigne; 6. Nec Plus Meuris.—*E. T.* 1. Pitmanston Duchess; 2. Doyenne Boussoch; 3. Monarch; 4. Glou Moreau; 5. Passe Colmar.—*G. B.* 1. Fearn's Pippin (reishid); 2. Roi d'Angleterre (yellow); Pear Bergamot d'Espéren.—*J. L. B.* 1. Annie Elizabeth; 2. Prince Bismarck; 3. Less Pool.—*J. T.* 1. Northern Greening; 2. Gravenstein; 3. Melrose; 4. Lady Henniker; 5. Mabbott's Pearmain; 6. Tyler's Kernel.—*L. C. B.* 1. Yorkshire Greening; 2. Adams's Pearmain; 3 and 4. Golden Noble.—*W. P.* Pear not recognised.—*E. H. E.* 1. Cellini; 2. Small's Admirable; others too small to name.—*Enquirer.* Charles Ross.—*C. H.* Scarlet Pearmain.—*T. L.* Very magnificent fruits of Tower of Glanumis.—*G. R.* 1. Yorkshire Beauty; 2. The Queen; 3. Fearn's Pippin; 4. Herefordshire Pearmain; 5. Emperor Alexander; 6. Sturmer Pippin.—*J. D. J.* 1. Lane's Prince Albert; 2. D'Arcy Spice Pippin; 3. Harvey's Wiltshire Defiance; 4. Pear Autumn Bergamot.—*Bedfordian.* 1. Melon Apple; 2. Herefordshire Beefing; 3. Old Nonpareil; 4. Ingestre.—*R. D.* 1. Benoni; 2. Beauty of Kent; 3. Annie Elizabeth; 4. Golden Noble; 5. Tom Patt; 6. Newton Wonder; 7. Pear Beurré Hardy.—*H. S. K.* 1. Gascoyne's Scarlet; 2. Hanwell Souring; 3. Ashmond's Kernel; 4. Manning's Pearmain; 5. Golden Harvey (syn. Grand Apple); 6. decayed; 7. Emile d'Heyst.—*F. V. H. A.* 1. Fearn's Pippin; 2. Pile's Russet; 3. Worcester Pearmain; 4. Baumann's Red Reinette; 5. Golden Noble; 6. Cornish Aromatic.—*B. W. R.* Both Pears resemble small fruits of Beurré Diel. The one is not Belle Julie, which is hazel brown with reddish-brown glow on the side next the sun; neither is the other Beurré Superfin.

NAME OF PLANTS:—Correspondents not answered in this issue are requested to be so good as to consult the following number.

J. B. S. 1. Pyracantha Lelandii; 2. Spiraea Van Houttei; 3. Leucothoe Catesbaei; 4. too small to identify; 5. Berberis vulgaris; 6. Kalmia latifolia; 7. Lonicera nitida; 8. Spiraea japonica var.; 9. Eucryphia pinnatifida; 10. Eucryphia minus variegatus.—*E. P.* 1. *Dorking*. 1. Codiaeu (Croton) undulatum; 2. C. Nevillei; 3. C. Evansianum; 4. C. trilobum; 5. C. Johannis; 6. C. triumphans.

PRUNING OF APPLE TREE: *G. Yorke.* Certain varieties of Apple usually produce their flower-buds on the ends of the shoots, and, fearing to injure the crop, the cultivator is apt to leave them unpruned, with the result that long, straggling growths are made that have to be supported with props. This has happened in your case, and if you find it necessary to keep the branches shorter your plan should be to prune back a few each year. Those you prune will not bear fruit in the following season, but one or two new shoots selected to grow from the cut branch should bear in the following year. With care you could manage in this way, but, all the same, these tip-shoot fruiterers give some difficulty when planted in sites which provide but little space for shoot extension.

LIBRARIER: *E. M. M.* The value of one acre of established Rhubarb in pre-war days was between £30 and £45 per acre, and the yearly value would range from £15 to £30 or more, according to the state of the market. In present times Rhubarb may be considered a more valuable crop, notwithstanding the difficulty in obtaining sugar. The past season has been probably one of the best that Rhubarb growers have experienced for many years, and much higher prices than those quoted have been realised.

Communications Received.—A. S. R.—W. P.—A. P. X.—N. B.—H. E.—W. D.—G. B.—J. T.—I. C.—W. T.—G. A.—G.—E. W.—A. Bristol.—G. R. C.—W. D. & Sons.—R. C. W.—J. G. D.—Sloopian.—R. E. P.—S. A.—Private F.—E. M.—C. L.—J. P.—W. W.—W. F.—Leatherhead—W.—W. F.—W. H. L.—C. T.—A.

By Special Appointment to



His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St.

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

ORCHIDS.

A large and fine stock. All clean and healthy and at very low prices.

COWAN'S NEW ORCHID MATERIAL,

Is the best and by far the cheapest

Catalogues, with full particulars, post free on application to

JOHN COWAN & Co., Nurseries,
Cateacre, Liverpool.

The Modern Pied Piper

"LIVERPOOL" VIRUS

EXTERMINATES
RATS & MICE

Rats and Mice come out of their holes, not to dance to the pipes of the charmer, but to die—a less poetic but far better way of exterminating these pests.

Apart from the desirability of getting rid of the vermin on the grounds of health, think of the tremendous wastage of food due to their raiding of our granaries, cornfields and gardens. It is a patriotic duty to destroy them.

In tins ready prepared with bait: for Rats 2/6 and 6/-; for Mice 1/8 and 4/- tins.

Full particulars from
EVANS SONS LESCHER & WEBB, Ltd.,
66, Hanover Street, Liverpool.

SUBSTITUTE FOR RUSSIA MATS.
"FRIGI DOMO" CANVAS.
Made from prepared Hair and Wool.

A good non-conductor,
2 yds., 3 yds., and 4 yds. wide,

and pattern from—

BENJAMIN EDGINGTON'S,
DUKE ST., LONDON BRIDGE, S.E.

TOMATO SEED

Bide's "Recruit."

This grand Tomato, for its delicious flavour, uniform size and heavy cropping qualities, is unsurpassed.
In sealed packets 1/- per packet, direct from the raisers.

S. BIDE & SONS, Ltd.,
ALMA NURSERIES, FARNHAM, SURREY.

BLACK CURRANT BUD MITE.

Are your bushes free of this incurable pest? If not Plant "SEABROOK'S BLACK" Currant, the only proved mite resister.

This variety has also every other good quality, being the heaviest cropper and stoutest grower, producing large, firm berries

Young Bushes 5/- and 5/- per dozen.

W. SEABROOK & SONS,
Fruit Tree & Rose Nurseries, CHELMSFORD.

RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges,
AND
Orchard House Trees
ARE OF
First-class Quality.

A Large and Select Stock always on View

PRICE LIST POST FREE ON
APPLICATION.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.

STATION: HARLOW, G.E.R.

FRUIT IN THE GARDEN.

Root up useless shade trees and unproductive Shrubs, and replace with Fruit in these times, when food is all important.

Specially grown trees of

APPLES, PEARS, PLUMS,
of fine quality for the Walls, Edging or Vegetable and Flower Borders. Many of fruiting size. Also

FINE STANDARD TREES
A grand lot of Peaches, Nectarines and Cherries for the House and Garden Walls, also

BUSH FRUIT TREES.
Catalogue free on request and special quotations given on hearing exact requirements.

STUART LOW CO., BUSH HILL PARK,
MIDDLESEX.

ROSES FOR AUTUMN PLANTING

ORDER EARLY.

Beautiful plants of the best possible cultivation, our selection from the finest sorts including:—
The Brilliant Coloured

"MDME. EDOUARD HERRIOT"
(Daily Mail Rose.)

12/- per doz. bushes, carriage paid.

Catalogue Free on request.

STUART LOW CO., BUSH HILL PARK,
MIDDLESEX.

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 4014

No. 1614. VOL. LXII. {THIRD SERIES} SATURDAY, DECEMBER 1, 1917. {Registered as a Newspaper.} {PRICE 4d. POST-FREE, 4d.}

Subscription—Inland, 19/6; Foreign, 22/- per annum. Entered at New York Post Office as second-class matter. Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 215

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

NOW IS THE TIME TO PLANT

KELWAY & SON,
The Royal Horticultural Society's
LANAROST, SOMERSET
are now looking orders for their choice Holly, Perpetual Plants, Plant a Colour Border this Autumn, and you will be able to enjoy its exquisite beauty for many years without any additional expense or trouble.
Send us specimens of your Borders.
Fuchsia, Delphinium, Phlox, Geranium, and other beautiful flowers, included in their Colour Scheme, which provide blooms from early Spring to the Autumn.
WRITE NOW to the LEAFLET PLANT DEPARTMENT for the latest Price List.

BUNYARD'S STRAWBERRIES
Our new descriptive list is now ready, and will be sent on receipt of card.
ALPINE STRAWBERRIES a speciality.
GLEN BUNYARD & CO., LTD., Royal Nurseries, **Maldstone.**

WELLS' CHRYSANTHEMUM CATALOGUE now ready. Post free on application.—**W. WELLS & CO.,** Messingham, Surrey.

DOBBIES' Autumn List of Bulbs, Sweet Peas, Pansies, Carnations, Seedlings, and Vegetable Plants, etc., post free. **DOBBIE & CO.,** Royal Florists, Edinburgh.

GREENHOUSE PAINTING & GLAZING "Vitrulite," superior to White Lead Paint, "Prestone," especially for the Fall partitions from **W. CARSON & SONS,** George White, Worcester. Agents throughout the country.

HOBBIES, LIMITED, Norfolk Nuts, etc., **DERHAM.** Send for Rose Catalogue, post free.

BATH'S ROSES and PAEONIES. New illustrated catalogue, containing full and original notes of the best new quality seedling varieties, is now ready, and will be sent post free on application (Dept. A), **R. H. BATH,** Ltd., The Floral Farm, Wilsford.

SANDERS, Opheid Growers, **St. Albans.**

BUNYARD'S FRUIT TREES. New Price List is now ready, and will be sent free by return of post.
GEORGE BUNYARD & CO., LTD., Royal Nurseries, **Maldstone.**

J. GRAY, LTD., Builder of Conservatories, Greenhouses, etc., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wire, 201, Western, London. Telephone 201, Western.

SUTTON'S BULBS.

FORCING TULIPS from Holland. Single, Double, fine bulbs.

RELEASED by Order of the Admiralty. Washed, Bicolor, Variegated, Couleur de Cardinal, Duchess de Parma, Fred Meier, La Reine, Prince of Austria, Prosperine, Rose Blanche de Lou, Thomas Meier, Vermilion, Brilliant, Yellow Prince, and others. Prices on application.

SUTTON & SONS, the King's Seedsmen, **READING.**

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, etc., on all plants. It is sold in 1 lb. and 5 lb. tins. **GISHURST'S WHOLESALE FRIBES PATENT CANDLE CO., LTD.,** Battersea, London, S.W. 11.

THE GARDENERS' CHRONICLE occupies a position in the world of horticulture which is absolutely unique. Founded in 1841, in the very dawn of scientific botany, it has advanced, step by step, with the gradual development of horticulture in its country. Its founders were men of high distinction, Sir Joseph Paxton, the greatest gardener of his day, Dr. Lindley, the world-famous botanist, the late Sir C. W. Dike, the Baronet, with his typical English love of gardens, these were among the little group of men who launched the "Gardeners' Chronicle" on a long and progressive voyage. The paper had a fine and progressive tradition to maintain, and has preserved from the first a progressive spirit. It was, long ago, the confidence of its readers, and that confidence it still enjoys.

KING'S ACRE FRUIT TREES have produced the best and most remarkable Apples and Peaches in the 50 years of Choice Fruits to select from. It is in our Illustrated Catalogue, too, to be post free on receipt of card.—**KING'S ACRE NURSERIES, LTD.,** Hereford.

KING'S ACRE ROSES and FOREST and ORNAMENTAL TREES and SHRUBS of these trees are "2nd class but 1st price." **KING'S ACRE NURSERIES, LTD.,** Hereford.

BARR'S May-flowering TULIPS, the most coloured flowers of spring, plant now. Department of **BARR & SONS,** King Street, Covent Garden, W.C. 2.

WAL DUNCAN TUCKER & SONS, LTD., Lovelline Road, South Tottenham, N. 15, Co. London, Winter Gardens, Vases, Bench-houses, Patios, Buildings, etc. Catalogues gratis.

ROSES—ALLEN'S GOLD MEDAL NORTHWICH ROSES. Our new descriptive price list, with hints on how to grow roses, now ready, post free. Write today. **A. J. & C. ALLEN,** Rose Growers, Norwich (for over 50 years).

50,000 FRUIT TREES for SALE: Apple, Newtown Wonder, Bismarck Seedling, etc.; Orange, Bloem Orange, Hill Standards, 12/- dozen, 6/- 100, Lane's Prince Albert, Cox Orange, H. J. King, Alington, Worcester, Pennin, James Grieve, New York Amber, Charles Rose, 7/- each; Pear, Blue Bush, 12/- dozen, 70/- 100. Terms cash. These are clean and well-grown stuff.—**W. HORNE & SONS,** Olliffe, Rochester, Kent.

For Advertisement Charges see page v.

WATERER'S ALPINES and HERBACEOUS PLANTS.—New Catalogue now ready.

WATERER'S BRITISH GROWN BULBS.—New Catalogue now ready.

WATERER'S WARGRAVE ROSES. Catalogue and Supplementary List of new and choice varieties now ready.

WATERER'S RHODODENDRONS and CHOICE SHRUBS. Catalogue free. All or any of the above Catalogues forwarded post free on receipt of name and address.
JOHN WATERER, SONS & CRISP, LIMITED, The Nurseries, Bagshot, Surrey, and Twyford, Berks.

FORCING HOUSE for Sale, in sections, about 12 feet, divided, including two houses each 12 feet by 12 feet, complete with staging, wood floor, and heating apparatus, condition as new. Low price will be accepted, if it has been erected and in use at Dulwich, S.E. Write, R. J. Box 11, 31, Wellington Street, Covent Garden, W.C. 2.

ORCHID PEAT, 7s. 6d. per sack; Rhododendron Peat, five-bran broken, 15s. per sack, 10/- four-bran broken, 25s. dozen, Loam, Leaf Mould, Sphagnum Sand and Fibre, Rhubarb Roots (10 cwt.), Jumps for forcing, 30s. 100, fruiting, 15s. 100; Daw's Champion and Huxley's Champagne. List of 7 varieties trees. **J. HANSCOMBE, THE NURSERIES, FOLKHAM, Middlesex.**

FERNS' FERNS! Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns, Catalogue free.—**J. E. SMITH,** London, Fern Nursery, Longborough Junction, London, S.W.

DAFFODILS and large Trumpet Narcissus for forcing, 15/- dozen, 100/- dozen, and 21s. 1000, selected for forcing, 25s. 100, as large 15/- per dozen, 1000, 4s. 6d. per peck (500 bulbs). **J. HANSCOMBE, F.R.H.S.,** Folham Nurseries, Middlesex.

GENTIANA VERA, 12 large chums, 2/- each; **DIAS octopetala,** 3s.; **6 Osmunda** (1000), 3/- 100. **O'NEILLY,** Botanist, Ballyvaughan, Ireland.

AMARYLLIS BULBS: Gold Medal, First Prize strain, very choice 2, 3, and 4 year old Bulbs price list free.—**MORLE & CO.,** as above.

BULBS. Overstock; all first quality flowering; **Narcissus Emperor,** 4s. 6d.; **Empire and Victoria,** 5s.; **Barthi,** Posterns Grandiflorus and Double White, 5s.; **Bergdyk** and **Sir Watkin,** 4s.; all per 100.—**MORLE & CO.,** as above.

LILIUM LONGIFLORUM GIGANTEUM, immense bulbs, 12 and 15 inches round, 12s. and 15s. doz.; **Lilium Candidum,** 4s. and 5s. doz.; all first quality.—**MORLE & CO.,** 150-156, Finchley Road, N.W.

SPORTSMEN, FARMERS, HORSEMEN. All your splendid Yorkshire Whipped Tweed; wares like leather, showproof, 7 yards for 21/-; Patterns free. **BRADFORD WOOLEN CO.,** 71, Bradford.

SALES BY AUCTION.

RICHMOND, SURREY.

By order of the Trustee, First person. Important clearance sale of the well-known stock of Mr. L. R. Russell.

MESSRS. PROTHEROE & MORRIS will sell by Auction on the premises.

The Common Nurseries, Richmond, S.W., On Tuesday, December 4th, and two following days, at 12 each day.

- 1,700 good and Silver Hollies, 2 to 5 ft.
- 2,700 Green Hollies, 3 to 6 ft.
- 500 English and Irish Yews, 3 to 7 ft.
- 2,000 Handsome and Gold Box
- 700 Hardy Azaleas.
- 3,500 well shaped Gold Pruned, 5 to 7 ft.
- 250 Specimen Plants, spindled trees.
- 1,400 Tree Ivies.
- Clipped Yews, fine examples.
- 1,500 Camellias, specimens 3 to 5 ft.
- 1,200 Evergreens and Conifers, in borders
- 4,000 Flowering Shrubs.
- 5,000 large Aucubas and Laurels, for planting or cutting.

Fine Standard Ornamental Trees and large quantities of other stock, may be viewed. Catalogues had at the Nurseries, Richmond, of C. Butcher, Esq., Solicitor, 32, Grosvenor Street, E.C. 2; H. Mason, Esq., the Trustee, 14, Gosham Street, E.C. 2, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C. 2.

JAPANESE DWARF TREES

AND MINIATURE GARDENS. GARDEN ORNAMENTS, including Vases, Fountain and other Figures, Sundials, &c. GARDEN FURNITURE, including Chairs, Tables, Tubs, &c., and other articles suitable for WINTER GARDENS.

Friday, December 7th 1917.

MESSRS. PROTHEROE & MORRIS 67 and 68, Cheapside, E.C. 2. Catalogues on application.

MILFORD, near GODALMING.

By Order of the Executive Clearance Sale. **MESSRS. PROTHEROE & MORRIS** will sell by Auction on the premises,

Young's Nurseries, Milford, Surrey. On Monday, December 10th, and two following days, at 12 o'clock precisely.

NURSERY STOCK, including

- 2,500 Conifers and Evergreens.
- 1,000 Young's Golden Juniper.
- 2,500 Spruce for Christmas Trees.
- 6,000 Firs and Pines.
- 5,000 Flowering Shrubs.
- 10,000 Forest Trees, suitable for Poles and Fencing.
- 8,000 Rhododendrons, Ponticum, and others.
- Thousands of Privet
- 30,000 Manetti Stocks.
- 10,000 Quirk.
- 8,500 Standard and Feathered Apples, Pears and Plums.
- Three Greenhouses, Pits, Piping, Caris, Implements.
- Flower Pots, and numerous other effects.

Catalogues had on the premises of C. Butcher, Esq., Solicitor, 32, Grosvenor Street, and of the Auctioneers, 67 and 68, Cheapside, E.C. 2.

WALTHAM ABBEY.

FREEHOLD NURSERY. One Acre of Glass for Tomato and Cucumber Growings.

By Order of Trustees of Mr. J. Shearman, deceased with possession.

MESSRS. PROTHEROE & MORRIS will sell by Auction.

At their Sale Rooms, 67, Cheapside, E.C. 2. On Thursday, December 13th, at 5 o'clock.

MARKET NURSERY

In Honey Lane, Waltham Abbey, 22 Greenhouses, total length 2,500 feet, 10,000 feet piping, Sheds, &c., and 41 acres of Land, with important building Frontage to Honey Lane. No mooring value. May be viewed. Particulars had of Mr. J. H. Shearman, Rose Bank, Honey Lane, Waltham Abbey; of W. W. Paul, Esq., Solicitor, 2, New Court, Lincoln's Inn, W.C. 2, and of the Auctioneers, 67 and 68, Cheapside, E.C. 2.

SALES BY AUCTION OF BULBS
Every Monday, Wednesday, and Friday.

ROSES,
FRUIT TREES, HERBACEOUS PLANTS, &c.,
Every Wednesday.

MESSRS. PROTHEROE & MORRIS,
67 and 68, CHEAPSIDE, E.C. 2.
Staple in Stamp will ensure True Catalogues

HOME-GROWN BULBS.

GREAT TRADE SALE.

Wednesday Next, December 5th, at 3 o'clock.

Exposits of 2,000,000 Bulbs, including Narcissus, in all the best-known varieties for forcing or planting out; Tulipus Narcissus of sorts, in sacks as received; Crocus, Primus (many of which will force) and May-flowering Tulips; many thousands of Snowdrops, Free-blooms, Scillas, Anemones, Anemones, English and Spanish Iris, early-flowering Gladioli, Bearded Iris.

MESSRS. PROTHEROE & MORRIS will sell the above by Auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. 2. Catalogues forwarded on application.

WILMSLOW, CHESHIRE.

Absolute Clearance Sale, by Order of the Executors of the late E. H. Ashworth, Esq.

MESSRS. PROTHEROE & MORRIS will sell by Auction on the premises,

Harefield Hall, Wilmslow, Cheshire (Alderley Edge Station),

On Wednesday and Thursday, December 12th and 13th, 1917, at 12.30 o'clock precisely each day.

2,900 ORCHIDS,

including 500 Cypripedium, Odontoglossum crispum in variety, Masdevallias, Lycodes, Dendrobium, Cattleyas, Laelias, Laelia-Cattleyas.

Many choice and well-known white Cattleyas. On view one week prior to sale. Catalogues had on the premises and of the auctioneers, 67 and 68, Cheapside, E.C. 2.

BUSINESSES FOR SALE.

SPECIAL REGISTER OF NURSERIES, MARKET GARDENS, FLORESTS, AND SEED BUSINESSES to be Let for Lease or Sold. Published by

MESSRS. PROTHEROE & MORRIS every month. Copies may be obtained post free on application. Estate Offices, 67 and 68, Cheapside, London, E.C. 2.

FOR SALE, a MARKET NURSERY;

situated about a mile and a half from London, on excellent road markets, 8 1/2 miles from London, on a partnership would be entered with a thoroughly capable grower with a view to ultimate purchase. Principally dealt with Mr. H. Box 4, 41, Wellington Street, Covent Garden, W.C. 2.

BUSINESS CARD.

BRITISH CORRESPONDENCE SECTION OF HORTICULTURE, PENNINGTONS, 41, Oxford Road, Manchester. Complete courses for F.H.S. Section, Junior, Teachers', and National Diploma of Horticulture if Examinations. Fees moderate. Write, SECRETARY.

PLANTS, &c., WANTED.

WANTED, 1,000 Large ASPIDISTRAS, good plants, suitable for stock, cash or exchange, see other advertisements, catalogues free. SMITH, London Fern Nursery, Longborough Junction, London, S.W.

WANTED, 5cwt. of best, well-fermed HOLLY, cut in sprigs 3 inches; also Golden and Silver Queen Holly toppings. Price and sample to G. TAYLOR, Nurseries, Leytonstone, E. 11.

PLANTS, &c., FOR SALE.

RHUBARB ROOTS. The true "Chambers" (light) variety, very productive, planting 6s. per 100, 5s. per 1,000 roots, with 2 eyes per oval, 10s. per 100, 5s. per 1,000 larger roots, 40s. per 100, early planting strongly recommended; on beds, planting free by **W. W. HARRISON & SONS,** Seed Merchants, Leicester.

100,000 LARGE GARDEN FERNS.

By 100, 100s, Polias, Begonias, Crystals, Bruneris, R. S., Lilies, Gloxinias, Lilies, Hydrangeas, &c., catalogues free. J. E. SMITH, London Fern Nurseries, Longborough Junction, London, S.W.

MISCELLANEOUS.

FOR immediate delivery from stock, several wrights, washed, plain, and return the Saddle Bulbs, total 500 to 500 pair of 3 inch pipe. Write, H. B. Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

"PESTILE" destroys all soil pests (wireworms, grub, root, wart disease, &c.). Price 10s. per cwt., 25 per ton, carriage paid. **H. LANG & SONS, LTD.,** Bournemouth.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

PRIVATE.

GLAMORGAN COUNTY COUNCIL.

HORTICULTURAL DEMONSTRATOR AND ADVISER

The Glamorgan County Council invites APPLICATIONS for the APPOINTMENT of a HORTICULTURAL DEMONSTRATOR AND ADVISER for assisting the Occupiers of Cottage Gardens, Allotments, and Small Holdings in such areas as will from year to year be selected within the Administrative County of Glamorgan.

Candidates must have acted as apprentices to Gardeners, and have held situations in which they were in charge of and responsible as Foremen or Head Gardeners for Flowers, Fruit, Vegetables, and Hot-house work.

Experience as Foremen in vegetable or market gardens is an essential qualification.

Preference will be given to applicants who possess an Examination Certificate of the Royal Horticultural Society.

Applicants must provide and be able to ride a bicycle. Salary 50s. per week, with an allowance at the rate of 2s. per annum in addition for the upkeep of a bicycle.

The appointment will be for one year, subject to one month's notice on either side, and will be renewable annually.

The person appointed will be required to give his whole time to the service of the County and to reside where from time to time directed.

Applications, stating previous experience and age, with copies of three recent testimonials, must be received by the Chief Education Officer, Glamorgan County Hall, Cardiff, on or before 10 AM, on Saturday, the 15th day of December, 1917.

Candidates, whether personal or written, will be a qualification of any candidate. T. MAXWELL FRANKLIN, Clerk of the County Council, Glamorgan County Hall, Cardiff, 24th November, 1917.

WANTED, in Nobleman's establishment in Kent HEAD GARDENER, where 6 to 8 are usually kept; small amount of Glass; cottage in garden; permanent position if suitable. Full particulars a.s. to experience, &c. to E. B. 130, Mount Street, Berkeley Square, London, W. 1.

WANTED, HEAD GARDENER (WORKING), must be experienced in the growing of Fruit and Vegetables under Glass and Outside, as well as in the packing and marketing of same; preference will be given to a married man, steady over military age, with small or no family, and whose only training had been in gentlemen's private gardens. There is a large staff of garden workers, and only competent men, who can be well recommended, need apply. Good wages given.—Apply, giving particulars and references, to THE ESTATE STEWARD, Dolkeith House, Reading Road, Henley-on-Thames.

WANTED, good HEAD WORKING GARDENER, for one man, and help given.—Apply, Mrs. CURSON, Leathersheep Hall, Melton Mowbray.

WANTED, GARDENER (HEAD WORKING), where five are kept, single, malleable; fully must have had good experience inside and outside good wages. Apply, stating experience, to W. L. SMITH, Frost's Court, Newbury.

WANTED, good all-round SINGLE-HANDED GARDENER for Farnham, Bants; malleable; willing take charge pony and fowls; wife care; can help in house when wanted. State age, wages with references, and references, to F. W. BELKE, Murray Lodge, Newmarket.

WANTED, SINGLE-HANDED GARDENER, must be well up all round and willing to look after a pony. State full particulars and wages required (with references) to R. S. WYBE, Wildwood Lodge, North End, Hampton, N.W. 3.

WANTED, good all-round SINGLE-HANDED GARDENER for Somerset, must be in-credible with wife, D. A., Box 5, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, GARDENER, good Single-handed, experienced inside and out. State age, wages, and references.—BRADLEY, Union Club, Southport.

"Bull's"
THE FOOD FOR PLANTS

TURF LOAM.

Very Fibrous Yellow Turf Loam

For VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid or Delivered.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.

G.F.S.
6% MORE LIGHT
AGRICULTURAL SHEET ROLLED GLASS

A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 4 in. (or equal to about 21 oz.) in thickness. Can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of
GENUINE WHITE LEAD PAINT.
"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tin and 1 cwt. wide-neck cans.
AND
BEST LINED OIL PUTTY.



Complete Price List of
Paints, Colours, Varnishes, &c., on application.

GEORGE FARMLOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.

TOMATO SEED

Bide's "Recruit."

This grand Tomato, for its delicious flavour, uniform size, and heavy cropping qualities, is unsurpassed. In sealed packets 1/- per packet, direct from the raisers.

S. BIDE & SONS, Ltd.,
ALMA NURSERIES, FARNHAM, SURREY.



Sample **CRET Pot FREE** with Booklet will convince you that the Drainage, Porosity, Healthfulness of CRETS would help your plants. Write: **PETER BAILEY & SONS, Ltd.,** 2 Heaton Mersey Pattery, near MANCHESTER.

LAXTONS BEDFORD FRUIT TREES & ROSES
CATALOGUE & CULTURAL HINTS GRATIS

IMPORTANT: Please write for a Catalogue, as the Paper (Commission) only allow us to send to those who apply—
LAXTON BROTHERS, BEDFORD.

ORCHIDS.

A large and fine stock. All clean and healthy and at very low prices.

COWAN'S NEW ORCHID MATERIAL,

In the best and by far the cheapest.

Catalogues, with full particulars, post free on application to

JOHN COWAN & Co., Nurseries, Gateacre, Liverpool.

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest—
"Large quantity of each size required and have 'carriage paid'—
"Small 'carriage' frequently amounts to half value of goods, or twice for Price List free."
Both Bowls and Fern Pans from 2d. each.
RICHARD SANKEY & SON, LTD.,
Dulwell Potteries, NOTTINGHAM.

SUBSTITUTE FOR RUSSIA MATS.
"FRIGI DOMO" CANVAS.
Made from prepared Hair and Wool

A good non-conductor.
2 yds., 3 yds., and 4 yds. wide

Price and pattern from—
BENJAMIN EDGINGTON'S,
DUKE ST., LONDON BRIDGE, S.E.

RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges,
AND
Orchard House Trees
ARE OF
First-class Quality.

A Large and Select Stock always on View.
PRICE LIST POST FREE ON APPLICATION.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.

ORCHIDS,

Clean, well-grown and cheap; also
Many Rare and Choice Varieties
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

AUCUBA JAPONICA.

RHODODENDRON PONTICUM.
RHODODENDRON PINK PEARL.
(Finest Named Hybrids.)

All the above 3ft. to 4ft. bushy, good plants for Covert Planting. Must be sold cheap, to make room for potatoes. If not disposed of must be burned.—**A BARGAIN!**

Particulars from—
R. MANSON, Nurseryman, Gateacre, LIVERPOOL.

Rhododendron Ponticum,

1 to 1 1/2 ft. 16/- per 100, 140/- per 1000.
1 1/2 to 2 ft. 22/- per 100, 180/- per 1000.
2 to 3 ft. 35/- per 100
3 to 4 ft., these are suitable for covert planting, 140/- per 1000.

JOSEPH A. SMITH,
Moore Edge Nurseries, Tansley, nr. Matlock

WOOD'S RIVAL TOMATO
WOOD'S RIVAL CUCUMBER
WOOD'S SCARLET RIVAL MELON
WOOD'S GREEN RIVAL MELON

Packets 1/6, 2/6 and 5/- each.
H. J. G. WOOD, Seedsman & Nurseryman, Bracknell.
H. J. Greenwood, F.R.H.S., Proprietor.

LARGE POPLARS,

12 to 20 feet, GOOD ROOTS.
Consisting of Lombardy, Black Italian, and Ontario. Fine trees for Screen or Shelters.

No reasonable offer refused.
Ground wanted for Potatoes.
R. MANSON, Nurseryman, Gateacre, LIVERPOOL.

THE ROCK GARDEN

A practical work on the cultivation and management of Rock Gardens, written by Reginald Farrer. One of the best and most popular works on the subject.

Contains 3 plates in colour. Price 1/10 post free.
THE PUBLISHER,
The Gardeners' Chronicle, Ltd., 41, Wellington Street, Covent Garden, London, W.C. 2.

GARDENING CHARITIES.

GARDENERS' ROYAL BENEVOLENT INSTITUTION,
GEO. J. INGRAM, Sec.,
92, Victoria Street, S.W.
Telephone—Victoria 514.

EVERY GARDENER KNOWS THAT

Clay's gets there and makes the Garden gay all the year round

Sold everywhere for Horticultural purposes in TINS at 6d. & 1s., and in BRANDED & SEALED BAGS: 7 lbs. 2s. 6d. 14 lbs. 4s. 6d.; 28 lbs. 7s. 6d.; 56 lbs. 13s. 6d.; 112 lbs. 24s. Or direct from the works Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS). Quantities of 50 lbs. and upwards are supplied in 28 lb. bags.
CLAY & SON, Manure Manufacturers & Bone Crushers, STRATFORD, LONDON, E.

IT IS THE STANDARD FOOD FOR PLANTS.

THE
Gardeners' Chronicle
No 1614 - SATURDAY, DECEMBER 1, 1917

CONTENTS.

Allotments .. 221	Marshall, a story of the late Mr. .. 222
Alpine under glass .. 224	Orchid notes and gleanings .. 218
Cabb, a hybrid .. 221	ovivandera fenestralis .. 223
Carrots, thinning .. 222	Plant notes—
Farm, crops and stock on the home .. 223	Invisibilia .. 218
Fertilisers, the Dunsford .. 222	salvia splendens .. 218
Food production, on increased—	Potatoes, results of spraying .. 222
creased—	Potatoes, sale of "im-
Beans and Peas, dried .. 216	mune" .. 222
Carrots, thinning .. 216	Quercus ceras .. 215
Onions, continuous cropping of .. 216	Railway vans for fruit and other produce .. 221
Potato, Sir John Llewelyn .. 216	Red Currants, a revision of .. 217
Potatoes, early and mid-season .. 215	Roses, on planting .. 220
Preparing ground for next season .. 221	Societas .. 222
France, trade with .. 221	Manchester and North of England (Orchid) .. 223
Fruit, training for dis- .. 221	Royal Horticultural .. 223
aid-officers .. 222	United Hort. Benefit and Provident .. 222, 223
Gardeners fifty years' service .. 221	Trees and shrubs—
Horticultural Club .. 221	Berberis .. 218
Lafosse, Monsieur, re- .. 222	Tying materials .. 222
Lettuce, the .. 222	War item .. 216
Lettuce leaf plant, the .. 223	Weather in S. Norfolk .. 219
Lettuce regale .. 222	Week's work, the .. 218, 219

ILLUSTRATIONS.

Cucinations, forms of Wheat-ear .. 223
Crab, a hybrid, and its parent .. 221
Current Fay's Profile .. 216
Current Versalises .. 217

ON INCREASED FOOD PRODUCTION.

PREPARING THE GROUND FOR NEXT SEASON.

IN most gardens there is now a considerable amount of space uncropped, and it should be decided at once when and what steps shall be taken towards preparing the ground for next season. Soils vary much, and no hard-and-fast rules as to their treatment can well be laid down, so much depending upon circumstances. Some land is best left alone until near the time of cropping, but other types ought to be dug at once; in some cases bastard trenching would be beneficial, whilst in others ordinary trenching would be better treatment. When to manure and what manures to use are questions that require consideration, whilst soils may be greatly improved by the addition of a variety of other materials, soluble and insoluble.

Heavy soils under good cultivation usually prove the most fertile. They consist largely of clay. When first taken in hand, it is best not to attempt trenching of any kind, but the drainage ought to be made perfect. As early in the winter as possible the ground should be dug with a fork to its full depth, and strawy manure from the stable, only partially decayed, freely buried in the trenches. This kind of manure is slow in decomposition, and acts mechanically in dividing naturally close soils. Frosts, winds, sunshine, and rains will further break down or pulverise the roughly laid-up spits, and if a spring dressing of fine sandy soil, leaf-mould, wood ashes, peat, mortar rubbish, or burnt clay is forked in, the improvement effected in a comparatively short space of time will be of a permanent character.

Caustic lime applied at the rate of one ton to a quarter of an acre of ground is an excellent dressing, either for heavy soils newly broken up or for any that have been freely manured of late years, and where decomposition is slow. Place it in four bushel heaps and cover it with soil until it is slaked, then spread it over the surface of ground that has been dug some few weeks in advance, and fork it into the soil. Never bury lime deeply, it will find its way down quickly enough. The other substances, whether in mixture or separately, should also be well mixed with pulverised soil, and not deeply buried. After the top spit has been improved, and exhausted of some of its fertility, the time will have arrived for double digging.

There are some soils that contain so great a

percentage of clay that it is scarcely possible to alter their character quickly. In some cases it is unwise even to dig them many weeks in advance of cropping, some clays when pulverised assuming the consistency of birdlime. The majority of heavy soils, however, should be roughly dug as early as possible in the autumn or winter, and if soon pulverised pay well for being forked over, without disturbing the manure underneath, in February or early in March; for often the surface is finely divided when cropped, but underneath are great hard, cold lumps, which often remain in that state through the summer. The second turning discovers and brings these to the surface to be pulverised.

On no account interfere with retentive soils in wet weather, or the surface will be made pasty before it is turned in, and be years in recovering its original fairly open state. Nor should cow manure be used if supplies can be obtained from the horse stables. The former material makes the land heavier and colder than before its application, and is suitable only for light land, whereas strawy manure, as already stated, acts differently. All wheeling on heavy land must be done as much as possible either when the surface soil is frozen or in a dry state, planks for wheeling on being necessary at all other times.

Medium soils vary much, but there is generally a good depth of free working, yet fairly retentive soil, which is improved by deep cultivation from the outset. Soil that contains 20 per cent. or more of clay, of a sandy or gravelly nature, should not be brought too hastily to the surface. First prepare it by bastard trenching, and the admixture of decaying substances, such as vegetable refuse and solid manure of any kind, and then a reversal of the spits, if clay is not very abundant, may safely be attempted.

Mixed farmyard manure is the best manure for these medium soils, and they will stand plenty of it. Manure in a half decayed state may be dug in now, and the surface of the ground laid up to be improved, sweetened, and broken down by frosts. A dressing of lime is usually required about once in seven years. No garden where vegetables are grown can flourish indefinitely without it. The soil becomes sour and plants will not thrive.

Light soils of a very free-working character have their disadvantages as well as the rest. In particular, sandy soils are not sufficiently retentive of moisture. If the subsoil is not of a very chalky or gravelly nature, much may be done towards improving the physical properties of a light soil by first bastard, and then really trenching it. Clay sometimes underlies these sandy soils, and the bringing of about three inches of this, or even less, to the surface, and well mixing with it, would completely change its character for the better. It is to the absence of clay that the poorness of sandy soils is to be attributed. If either clay or marl can be obtained, it would pay well to spread about twenty loads of this over a quarter of an acre of ground, doing it either in autumn or early in winter. It must be left exposed to all weathers until broken down to a finely divided state, when it should be forked into and mixed with the surface soil, but not buried deeply. This admixture of clay or marl has the effect of at once making the ground more retentive of moisture. If no clay can be obtained, it is not advisable either to manure or dig long before the ground is wanted for cropping purposes. Should manure be buried in the ground much before the roots of plants are there to absorb the food thus placed within easy reach, the chances are much of it will be washed down the drains and washed. Better build the manure into a square heap (it ought to be well decomposed for light soils), place a layer of fresh soil underneath and another on the top, thereby preserving its best properties and increasing the bulk against the time it is wanted.

Roughly digging or ridging light soils in the

autumn or early winter is a mistake, for the reason that they are already too finely divided. Failing a dressing of clay or marl, collect a great heap of road trimmings, decayed garden refuse, and cow manure. A heavy spring dressing of this mixture, or one given when the ground is being dug, will serve to improve its depth, retentiveness, and productiveness.

Bastard trenching consists of breaking up the soil two or more spits deep without changing the position of the different layers, thereby increasing the depth and fertility without running any risks of bringing the poor, unworkable subsoil to the surface in injurious quantities. Some few soils, principally those of an alluvial or deposited character, may safely be trenched outright, but by for the greater proportion would be little short of ruined for years if other than bastard trenched at the outset.

Having a breadth of clear ground, the present is a good time to trench, it being of importance that the mass should settle again prior to being cropped. The nature of the subsoil must determine whether ordinary or bastard trenching shall be carried out. Poor subsoil must not be brought to the surface, nor rich soil buried deeply. Work in plenty of good manure. Trench any hard or weedy ground. The deep moving facilitates the passage of air and water through the soil, and an opportunity is afforded of burying troublesome weeds, except such as Bindweed and Couch Grass, which ought to be picked out as trenching proceeds. Heavy ground that has been previously bastard trenched two or three times will most probably have the subsoil sufficiently well prepared for bringing to the surface. It must be borne in mind that a spit of fresh, clayey subsoil when first brought to the surface may run together badly, and render working and cropping difficult for several years.

Full trenching is done by first digging a trench 20 inches wide and two good spits deep, the whole of the soil being wheeled back to where the work is to be finished. Mark out the next 20 inch width, and from this dig and throw the top spit into the bottom of the trench in front; on the top of this deposit the bottom spit of the second trench, leaving it in as rough a state as possible, thus exposing it to frosts. Repeat the operations until the last trench is reached, which will be filled in with the soil wheeled from the front.

In this manner the positions of the two layers of soil will be reversed, this operation greatly increasing the depth and productiveness of the whole mass. When ground is being trenched for any crop requiring a rich, deep root run (no vegetable crop that I know is influenced more by deep trenching than the large Onions that are so common nowadays), plenty of solid manure or decaying vegetable matter may well be mixed with each spit, but for ordinary crops no manure ought to be needed. *James I. Poise.*

POTATO SIR JOHN LLEWELYN.

I HAVE been very interested in the various articles on Potatoes in the columns of the *Gardeners' Chronicle* during the last few weeks, but, so far, I have not seen any mention of the variety Sir John Llewelyn. Your correspondent J. F. mentions a few good varieties; I wonder if he has tried this one, and what was his experience with it? It is a heavy cropper, has first-rate quality, and is an excellent keeper. Mr. Wm. Taylor asks for varieties which may be taken off the ground by the end of July. I presume he does not mean that they must be ripe for storing? Sir John is ripe here by the end of August. Last year, as we shall all have cause to remember, was a bad year for disease. I never found one tuber affected in this variety; later sorts were all more or less bad, so I had them used first, and reserved the Llewelyns till late spring; in fact, we were using them to the end of June, and what surprised me most, the quality was as good as ever to the last, a point readers will agree with me is a very im-

portant matter. Complaints were frequent about Potatoes being black late in the spring; for a change I heard nothing but compliments regarding these tubers. All Potatoes were stored in the same conditions, in a disused stable, and from time to time turned over and the sprouts rubbed off. Although Sir J. Llewelyn is an early variety, it gave the least trouble in this respect, and probably that had a lot to do with its eating qualities. I planted more of it than any other variety, and have had a fine crop; the soil is a light loam. *T. N. D., Willinghurst Gardens, Guildford.*

EARLY AND MID-SEASON POTATOS.

In reply to Mr. Taylor (see p. 191), I would recommend The Norseman, a kidney variety,

moved and a light dressing of sulphate of ammonia was scattered between the Bean rows and lightly tamped in. The crop of Beans was pulled up in September and hung up in an open shed until thoroughly dry, then the pods were picked off and put into a sack, and threshed out by beating the sack with a stick. The yield from this crop was 27½ pints. The quality of this Bean when cooked as a Haricot is excellent.

A sowing was also made of Sutton's Forcing; half a pint of seed was sown between the Celery trenches, the yield from which was 16 pints. This Bean is a dwarf grower and matures early; the seeds are smaller than the Brown Dutch, nevertheless it may be recommended as a most suitable variety for

From 1 pint of Early Blue Peas sown in March I obtained 13 pints of dried Peas as food for winter use. These Peas were not sown so early as usual, and when drying off they were badly winnowed by the sparrows and did not prove such a success as when sown in the autumn; consequently I have already sown 1½ pints of William I. and 3 pints of Early Blue, the crops of which will be used as dried Peas during the winter of 1918 and 1919.

There is one advantage in growing dried Peas—the land on which they have been grown is most suitable for a winter crop of Greens, and when the Pea seed is sown in the autumn the crop matures early. *G. H. W., Heath End Gardens, near Basingstoke.*

ONIONS ON THE SAME BORDER FOR TWENTY-THREE YEARS.

IN view of the fact that many vegetables at present are being grown on the same soil for more than one year in succession I may mention a case in my early experience. One border in a garden of 11 acres was set apart for the cultivation of Onions, and the gardener assured me they had been grown there for 20 years, to which I added three more while there. It was a fruit tree border, and the Apples, Pears and Cherries on the wall were very old, so that the border, probably, had not been trenched since they were planted. I was set to wheel a liberal quantity of well-rotted manure upon it, and then dig it spade-deep. This done, I was directed to give it a good dressing of well-rotted garden refuse. One year, I remember, the Onions were sown on March 12. When ready they were weeded and thinned. Soon after the Onion fly made its presence visible I watered the border once or twice with guano-water, and the Onions made rapid progress. Being intended only for home consumption we allowed only 3 to 4 inches between the plants. The crop was a heavy one, a large proportion weighing half a pound each, some more. This was before the days of Ailsa Craig and other big Onions. *J. F.*

THE THINNING OF CARROTS.

UNDER "Critical Remarks" (p. 201) Mr. C. Turner questions the necessity of thinning Carrots and Onions. He does not mention whether his Carrots were sown thickly or thinly, but to enable him to grip a handful of tops and draw up bunches of 5-8 specimens the former must have been the case.

My own experience differs from that of Mr. Turner. As a Carrot-grower of many years' practice I am convinced that, if the aim of the grower is to produce handsome roots, proper space must be allowed for development.

If Carrots are sown thinly none need be wasted, as it is quite possible, while avoiding any injury whatever to the permanent plants, so to withdraw the surplus ones that these latter may be used for cooking. Until this season I always allowed main crop Carrots to stand 6 inches to 8 inches apart in the rows; this enabled me to use the hoe freely and prevent the Carrot fly (*Psila rosae*) from ruining the crop.

Unfortunately lack of labour this season prevented the customary systematic thinning of crops, with the result that, instead of the usual, good-shaped Carrots, I have a double number of undersized, misshapen specimens. In regard to Mr. Turner's remarks on lifting, I may say that whilst I have known Carrots sown in August remain in the ground until spring and then yield a good supply of fresh roots, it is only a catch crop depending entirely on mild weather, favourable soil, and situations. The general practice is to lift and store main crop Carrots on the approach of severe weather (see Mr. Dunn's remarks, *Gard. Chron.*, Oct. 20, p. 158). This date is not unnecessarily soon; providing the crop is stored in sand in a cool shed, I find that the roots retain both firmness and flavour. *Arthur Scoble, Smalley Hall Gardens, Derbyshire.*



(Drawn by Mr. Francis Bangard.)

FIG. 82.—CURRANT FAX'S PROLIFIC (½ NAT. SIZE).

(See p. 217.)

and a heavy cropper. If planted early, lifted at the end of July, and carefully stored, the tubers keep sound until late in the winter. Windsor Castle is another variety that can safely be planted early and lifted early, and the tubers will keep well. *C. Davis, Holy Wells Park Gardens, Ipswich.*

HARICOT BEANS AND DRIED PEAS FOR FOOD DURING WINTER.

HAVING obtained at the beginning of the season one pint of Brown Dutch Beans from the R.H.S., three-quarters of a pint were sown in May between the rows of Spring Cabbage. At the end of June the Cabbage stumps were re-

use as a Haricot. On several occasions I have tried the Canadian Wonder, but as this variety is slow in maturing it is not suitable for our climate when grown for use as a Haricot.

The success with my dried Beans is partly due to partial failures in previous seasons, so I find one must choose suitable varieties, and the ground which they are to occupy must not be too rich, else they are apt to grow rank, consequently they mature late and cause endless trouble in drying.

I have other varieties which are not yet threshed out, but from the appearance of the crops Brown Dutch and Sutton's Forcing are my best.

A REVISION OF THE RED CURRANTS.

(Continued from page 206.)

THE VERSAILLES GROUP.

THIS group includes the descendants of the so-called *Ribes macrocarpa*, probably a large form of *R. vulgare*. The first variety known was the Cherry. They all possess very stout shoots that are easily broken off by wind or overcropping, large, thick and milky-green leaves, and buds that are apt to "go blind." Nearly all of the largest fruited sorts belong to this group, and it is very difficult in many cases to separate the different sorts, which often vary only in a few inconspicuous characters.

VERSAILLES (see fig. 65). Syns. Belle Versailles. La Versaillese, Eclipse, Magnum Bonum.

Flowers.—*Vulgare* type, eye slightly tinged red, petals wedge-shaped or linear, sepals turned back, rachis slightly downy.

Leaves.—Young state tinted brown, adult large, milky green, very stout, held nearly flat, leaf-stalk not channelled.

Fruit.—Bunch medium length, about 10 fruits, rachis a little hairy, keeping green when fruit is ripe, berries rather large, fairly dark, pedicels slender, rather long and lax, allowing fruit to hang loosely around the bunch.

Season.—Mid.

Buds.—Dark chestnut brown, standing well away, slightly hairy.

Growth.—Vigorous, rather upright.

Origin.—Raised by M. Bertin, of Versailles, about 1835, and put into commerce shortly afterwards. It was first named Belle de Versailles. A good and accurately coloured figure will be found in DeCandolle's *Jardin Fruities*.

CHERRY. Syn. Geise. I find it impossible to describe this variety. It is the first of its type, the *Macrocarpa*, and was sent from Italy about 1830 to M. Adrien Senebouse, of Bourg, Argenet, labelled *Ribes acrifolium*. Early authorities describe it as having fruit the size of a Cherry and only a few on a bunch. Of the varieties I have received as Cherry from modern sources, two only agree, the remaining five all present small differences, and no other variety illustrates better the extraordinary difficulty of deciding what is the original type. The distinctions are small, often only a difference in time of starting growth, a glabrous or downy rachis, the eye green or red, but as they preserve these unchanged over a series of years I cannot disregard them as negligible. None of them, however, corresponds to early figures and descriptions. In any case, the varieties grown under this name are so close to Versailles, and none is better in cropping, that it may, I think, be disregarded from the practical point of view in favour of that variety. It may be noted that for many years pomological authorities have been in disagreement as to whether there is any difference between the Cherry and Versailles, and I can only surmise that either the original Cherry has developed longer bunches or that it is now lost to cultivation.

FAY'S PROLIFIC (see fig. 82). Syn. Walkers.

Flowers.—Type, green faintly striped red, sepals just separated, petals wedged, eye red, rachis with downy hairs, and a few dark glands.

Leaves.—Large, milky green, very rugose, downward-pointing.

Fruit.—Bunches rather long, rachis with slight down, fruit large, hanging loose around bunch.

Season.—Early.

Buds.—Very long and pointed, on long supports, dark brown. Vascular bundles of leaf scar very prominent.

Growth.—Moderate, fairly open.

Origin.—Raised by Lincoln Fay in Chatauqua, New York, in 1863. Quite the best of its type, and most valuable for its earliness. The flowers show well before the leaves, and their peculiar yellow tinge as they open serves to distinguish this variety at that season.

ROUGE DE BORDEAUX. Syns. Grosse Rothe von Bordeaux. This is a poor form of the Versailles,

which it almost exactly resembles save in its poorer cropping qualities; of little merit.

Origin.—Undiscovered.

CACASIEHL.—**Flowers.**—Pale yellow, sepals apart, petals wedged, round, rachis almost hairless. Late flowering.

Leaves.—In young state dark red, adult indistinguishable from Versailles.

Fruit.—Bunch medium, rachis green, slightly hairy, berries medium.

Season.—Mid.

Winter buds rather short, round, pointed, well away, light brown, rather hairy.

Growth.—Strong, buds frequently abortive.

This has proved a poor cropper with me, and not worthy of cultivation.

which is the true type. My own efforts to procure a true stock have not been successful.

CHENONCAY. A distinct form of Versailles type, but with shorter bunches, and starting rather later than that variety. Of little merit.

WARBLER'S GRAPE. Closely resembling Chenoncay, but bunches very short at the end of a rather long stem. Has cropped very poorly with me, and is not worthy of retention.

BELLE DE ST. GILES. Syn. Schoene Von St. Gilles. Resembling Versailles very closely in nearly all characters, but the bunches are distinct, being moderately long and hanging around in a tight mass. It is, however, so apt to go "blind" that it cannot be recommended.



(Drawn by Mr. Francis Bangard.)

FIG. 65. RED CURRANT VERSAILLES (NAT. SIZE).

RED CROSS. Resembling Versailles, but having flowers with a green eye, leaves held more flatly than that variety, and starting later. A good cropper, but not so regular as Fay's Prolific. Raised by Jacob Moore, of Athens, New York, Cherry's White Grape.

NORTH STAR.—A green-flowered form of Versailles, the main difference being its very early habit of starting growth; but berries rather small. An accidental seedling introduced by the Jewell Nursery Co., of Lake City, Minnesota.

COVER (see *Card. Chron.*, August 1, 1896, fig. 26). This is considered by many to be identical with Fay's Prolific, but as I am told that when originally distributed it contained several distinct varieties, it is hopeless now to try and de-

PERFECTION (American).—A form of Versailles, differing in its habit of starting growth and flowering very early, but as it does not ripen so early as Fay's Prolific it has no advantage, and the fruits are also rather apt to run off. The variety Perfection of Laxton is quite distinct, and will be found under the Dutch section, said to be Fay's Prolific x White Grape. Introduced in 1912.

WINTER. This closely resembles Perfection (American), but it is earlier still in starting growth, and the fruit quickly attains its full size, but is long in colouring, so that it does not ripen before other early varieties. Subject to running off. A seedling of Versailles raised by E. Y. Teas, of Indiana. E. L. Bangard.

(To be continued.)

ORCHID NOTES AND CLEANINGS.

LAELIO-CATTLEYA GOLDEN WINGS.

A FINE flower of this pretty hybrid between *L. C. Ophir* (*L. xanthina* × *C. Downii aurea*) and *C. fulvescens* (Forbesii × *C. Downii aurea*) is sent by Mr. H. G. Alexander, Orchid grower to Lieut. Col. Sir Geo. L. Halford, K.C.V.O., Westorbirt, Telford. The flower, which is 6 inches across, has petals 2 inches wide and proportionately broad, and ovate sepals, both of a clear lemon-yellow colour. The lip, which is openly displayed and shows the fleshy white column, is yellow on the outside, veined and tinged with orange in the centre. The front is light rosy lilac, recurved at the apex, and showing indications of the *C. Forbesii* parent of *C. fulvescens*. Its clear yellow colour is another proof of the utility of *Laelia xanthina* in fixing the colour of yellow hybrids.

ODONTOGLOSSUM ETHELREDA.

This singular hybrid, remarkable for its very dark colour, was raised by Mr. De Barri Craw, send, Rosefield, Sevenoaks, between *O. Edwardii* and *O. triumphans*. The original plant, recorded in the *Gardeners' Chronicle*, August 3, 1912, p. 101, had a pink margin and tips to the segments. A much darker form is sent by Mr. H. Haddon, Orchid grower to Mrs. Bischoffsheim, The Warren House, Stanmore, taken from a seedling plant flowering for the first time there. The lanceolate sepals and petals are uniformly coloured dark mahogany brown, with a slight golden tint, and the front half of the narrow, apiculate lip, which is dark orange colour at the base, is coloured like the sepals and petals, but rather lighter in tint. In size and shape it is not what is usually expected of an *Odontoglossum*, but its very remarkable colour renders it acceptable.

CYRIPEDIUM JOHN HARTLEY

A FLOWER of massive proportions, resulting from a cross between *C. Reginald Young* (*Hitchinsiae* × *insigne* Herefield Hall) and *C. Shogun*, a good hybrid of unrecorded parentage but with strong evidence of *C. insigne* or *C. Dreadnought* in its composition. It is sent us by Mr. John Hartley, The Knowle, Morley, Yorkshire, the owner of this new hybrid, which secured a First-class Certificate and a Silver Medal at a recent meeting of the Manchester and North of England Orchid Society. It is one of the finest developments of the *C. insigne* type yet produced, showing plainly in its features the influence of *C. insigne* Herefield Hall, but enlarged and improved in every way. The lower two thirds of the dorsal sepal, which is 3½ inches wide, is pale yellowish green. The sides and upper part have a pure white margin, varying from half an inch to one inch in width, the central greenish portion of which has numerous dark chocolate-purple blotches and smaller purple spotting at the sides. The broad, flat petals and large lip are greenish yellow, tinged with rose.

PLANT NOTES.

SALVIA SPLENDENS.

SALVIA SPLENDENS has produced a ruddy purple sport in the Cambridge Botanic Garden. The flowers at once suggest those of *Salvia ianthina*, but the colour of that plant, which diffuses also in foliage, is blue-purple, while the purple of the novelty is distinctly ruddy. The flowers have a sombre appearance, but, nevertheless, may be regarded as having some beauty, and they are certainly attractive in contrast with everything else. The sport seems to have arisen from the base of a cutting that has not otherwise grown to any very great extent, but the cutting itself has the usual scarlet flowers, while the shoot from its base has grown

up far above it to a plant of perhaps 18 inches or more in height. I should be glad to know if the sport has already appeared in any garden? *R. Wynn Lynch.*

IRIS STYLOSA (UNGUICULARIS).

ON October 10 a flower of this lovely winter-flowering Iris was fully expanded. I have no record in these gardens of the plant being in bloom in October. The bulbs have only been planted about a year and a half, having been brought from my employer's other garden. The plants in flower are planted in front of a span-roofed vinery, among some rough sandstone, with prepared soil, and in a position fully exposed to the sun's rays. The charming flowers travel well, and open freely when picked in the bud state. *W. J. Cook, Abbot's Wood Gardens, Goddington, Surrey.*

TREES AND SHRUBS.

SOME CHOICE SPECIES OF BERBERIS.

IN recent years a great number of new Chinese trees and shrubs have received either first-class certificates or awards of merit from the Royal Horticultural Society. Among them are some striking species of Berberis, the most recent of which is *B. polyantha*, which was given a first-class certificate on October 25 last, and was illustrated in the *Gardeners' Chronicle*, November 3, p. 103. The profusion in which the clusters of bright coral-red berries are borne is therein well shown. This Berberis, which is very graceful in character, will attain a height of 6 to 10 feet. It is a deciduous species, and the young leaves and stems are tinged with red. The yellow flowers are borne in June and July. Discovered in 1899 by Mr. A. E. Pratt, this Berberis was first introduced by Mr. E. H. Wilson in 1901. It is in every way a most desirable shrub, and its first-class certificate is but the second awarded this year by the Floral Committee, the first being given to the now well-known *Robinia Kelseyi*.

Last year equal awards were made to two Berberis, namely, *Berberis subnuda* and *B. Sarcentiana*. The first-named, from the Wisley Gardens, is of doubtful origin, probably an accidental hybrid. Its rich, coral-red berries form a delightful autumn feature. It is deciduous.

The second, *B. Sarcentiana*, is evergreen, and is nearly related to the Himalayan *B. Hookeri*, but is said to be harder than that species. A native of Western Hupeh, China, *B. Sarcentiana* was introduced by Wilson in 1907. It is a bold-growing shrub, and has shoots freely furnished with light coloured spines. In the autumn some of the leaves become suffused with red and bronze, after the manner of the North American prunella-leaved species. The flowers are pale yellow, and the fruits black when ripe. Of the other Chinese Berberis, *B. Wilsonae* is still one of the best, while the larger growing *B. Stueppiana*, somewhat in the same way, is also a very beautiful. The compact growing evergreen *Berberis vernica* (buxa), whose dark, shining green leaves are glaucous on the undersides, is also a desirable shrub. *W. T.*

TURKEY OAK.

No deciduous tree stands exposure better on the west coast of Scotland than *Quercus cerris*, the Turkey Oak. It is seldom blown down, and is subject to no disease. This is remarkable, seeing that the species has its headquarters in the Mediterranean region. It may be worth while to record the dimensions of one blown down here in the gale of October 25. It carried an enormous head, which, being in full leaf, brought it to grief.—Height, 72 feet; clean bole, 13 feet; circumference at 4 feet high, 10 feet; at 12 feet, 9 feet. Messrs. Elwes and Henry report poorly of the timber of this species for outdoor use, but favourably for interior panelling and such work. It is very heavy, and is said to have a fine figure. *Herbert Maxwell, Monieith.*



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor

MUSHROOMS.—Horse-droppings should be collected daily, and placed in a dry, open shed, where they can be frequently turned, until sufficient have been got ready for making up a new bed. See that it does not become sour through want of turning, and that too large a quantity is not placed together. The temperature in houses from which mushrooms are being gathered should be kept as near 55° as possible. Do not apply fire-heat if the house can be kept warm enough without it. Syringe the walls and floor as it becomes necessary, and if the beds become too dry rain-water should be applied through a fine rose.

TOMATOS.—Young plants raised from seed in October should be kept close to the roof-glass. As soon as the small pots are well filled with roots the plants should be transferred into 5-inch pots, in a compost of turfy loam and leaf-soil, with a sprinkling of sifted lime rubble. Pot moderately firmly, and water sparingly until the roots reach the edge of the pots. Avoid cold draughts, and also high temperatures. Plants which are carrying a crop must not be allowed to suffer from want of water at the roots. Top-dress with turfy loam and decayed manure, and make the soil firm on the surface of the pots before water is applied. Do not allow the plants to become overworked. All side-shoots may be removed when quite small. A temperature of 60° will be suitable.

CARROTS IN PITS.—If brick pits are available a sowing of Early Horn Carrots may be made in December, in order to have a supply of young roots as early in the season as possible. The pit should be cleared out and a bed of new leaves made up to a depth of 4 feet, so that a mild and lasting heat may be produced. If the leaves have already been collected and allowed to ferment, they may be placed in the pit at once, and trodden tightly together until the surface is within 12 inches of the roof-glass. A bed of soil should then be placed in position to a depth of 9 inches. When this has been made level and moderately firm with a wooden rake the seeds should be sown, and covered with finely sifted soil to a depth of 1 inch. If the soil is in good order very little water will be necessary until germination takes place, but the surface may be lightly damped with a syringe on fine, sunny days.

LETTUCE IN PITS.—All pits in which Lettuce plants are growing should be ventilated as freely as possible without allowing rain to reach the plants. Remove decaying leaves, and stir the soil between the plants as often as possible with a small Dutch hoe. Examine the pit frequently, and if slugs are present sprinkle the edge of the bed with lime, and dust the plants with it lightly in the early morning. A sowing of some early-maturing variety may be made in boxes and placed in a slightly heated pit. When these young seedlings are large enough to handle they should be carefully pricked out in pits or boxes of fine rich soil, and a careful watch kept for slugs.

MUSTARD AND CRESS should be sown weekly, so that an unbroken supply may be maintained throughout the winter. A slightly heated pit or a Peach-house just started will suit the purpose well.

FRUITS UNDER IGLASS.

By Jas HUNSON, Head Gardener at Gunnersbury House, Acton, W.

YOUNG VINES.—It is somewhat early to prune young vines finally, but it is advisable to remove all the lateral growths. In a few weeks' time, when all the leaves have dropped, the work of pruning should be completed. These young rods should not be left unduly long, and the degree to which they are shortened should be governed, to a great extent, by the length of

rather, allowing three years for the rod to reach the top of a house of average dimensions. In houses of large size, four years should elapse before the young rods are allowed to reach the top of the rafter. Temporary vines, such as will be removed when the permanent vines require more space, may be allowed to grow longer in order that they may not interfere with the laterals of the others. On one occasion I left the rods of supererminent vines nearly their full length with good results. Certain varieties of Grapes break into growth very unevenly, and one of the worst in this respect is Lady Downie's Seedling. This trouble may be corrected to a large extent by bending the rod down to equalise the flow of sap. At the final pruning use scythe, or knoting, to dress the cuts against possible bleeding. These young vines must not suffer from drought at the roots, and for this reason a light mulch may be retained on the surface of the border. Young vines should not need an extension of the border the second year, but a little extension of the rooting area may be allowed to those in their third or fourth year.

OLDER OR PERMANENT VINES.—Well-established vines from which the Grapes have been cut may be pruned. Our vines are on the point of dropping their leaves, and there is no advantage in deferring their pruning after that stage. In my opinion, close spur pruning is best for all vines that are vigorous, with the exception of a few varieties such as Duke of Burgh and Prince of Wales, that do best on the long rod system. The spurs on old vines that are showing signs of exhaustion may be allowed to extend somewhat in order to secure a better choice of bunches. In doing this, however, the bunches will frequently be more straggling and loose. I would, however, not hesitate when dealing with rods upon which there may happen to be a few blanks in the spurs, to allow an upward extension to fill the gap. A good crop of fruit, rather than a good appearance, should be the primary object.

VINE EYE FOR PROPAGATION.—Whilst the pruning is being done some of the best ripened wood should be laid aside for purposes of increasing the stock. I prefer to propagate from eyes taken close to the spur, and always below the bunch; never, in my view, should the eye next the bunch be used, nor one beyond the bunch. When the prunings are being collected, select and tie in bunches some of the best ripened wood and plunge the shoots firmly in damp soil out of doors. Do not select for purposes of propagation shoots from vines that have been attacked by insect pests or mildew, or from old, weakened vines.

THE ORCHID HOUSE

By J. COLLIER, Gardener to Sir JEREMY COLMAN, Bart., Gatten Park, Beigate.

CATTLEYA, LÆLIA, AND LÆLIO CATTLEYA.—Autumn flowering Cattleyas, Lælias, and Lælio Cattleyas, such as C. Labiate, C. Bowringiana, C. Dowiana and its variety aurea, C. Hardyana, L. pumila and the many hybrids of these species, including C. Falcia, C. Manning, C. Porter, and L. C. Episcopa, are in bloom. The spikes should be cut directly the pseudo-bulbs show the least sign of shrivelling. After the plants have passed out of flower the sheaths should be removed, severing them as near as possible to the top of the pseudo-bulb, for if they are allowed to remain, moisture sometimes accumulates at their base and sets up decay in the leaves and new pseudo-bulbs. The plants at this stage should be afforded a period of rest in the coolest and best ventilated part of the Cattleya house. The roots should receive only sufficient water to keep the pseudo-bulbs plump, and the plants be given every encouragement to develop roots, but premature top growth must be discouraged. Plants of Cattleya Fiance that have completed their growth should be worked with extra care. They need only sufficient moisture to keep the root damp, but the supply may be increased slightly when the flower spikes are seen to be coming from the base of the sheaths. Cattleya Lawrenceana makes its growth during the winter months, and, in consequence, is a difficult plant

to cultivate. It should be grown in the warmest part of the Cattleya house, near the roof glass. The compost should be allowed to become quite dry between each watering; when moisture is necessary water should be poured only around the outer edges of the compost. From now onward through the winter, great care should be exercised in applying water to the roots of all Cattleyas and Lælias.

ODONTOGLOSSUM.—Plants of *Odontoglossum citrosum* that are nearing the completion of their season's growth should be suspended or staged near the roof glass in the cooler part of the intermediate house. The supply of water at the roots should be reduced gradually until after the new pseudo-bulbs are thoroughly developed; then moisture should be withheld for longer periods, affording only sufficient to prevent the pseudo-bulbs from shrivelling. This treatment should be continued through the winter and until the flower spikes are seen to be pushing from the centre of the young growths. Plants of *Odontoglossum grande* and *O. Schleperianum* that have passed out of flower should be placed on a dry shelf near the roof glass in a cool house, and rested. *O. Inseleyi* and its variety *Leopardinum* are producing their flower spikes, and should be liberally supplied with water until after the flowers fade, when they should be allowed a period of rest.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcott, Eastwell Park, Kent.

CINERARIA.—If not already done, plants of greenhouse Cinerarias should be removed from frames and placed in a light greenhouse, where they can be more readily protected from frost. Fire heat is only necessary to maintain the temperature at 50°. Plants of the earlier batches that are throwing up their flower spikes need a little stimulant, either liquid manure or a pinch of concentrated fertiliser, about once a week. The use of a little weak soot water will tend to keep the foliage healthy and green now the pots are well filled with roots, and the soil must never be allowed to become dry, or the foliage will quickly lose its freshness. A stage covered with gravel or crushed coke is much better to stand the plants on than open wooden stages, as the former provides a damp base. It is very noticeable how well Cinerarias thrive in a frame with an ash bottom, and late batches of plants may be kept in the frame for the present, if they are protected from frost. Fumigate on the first appearance of aphid, which is a troublesome pest of Cinerarias.

HERBACEOUS CALCIFOLARIAS.—Plants of herbaceous *Calcifolarias* thrive in cool, damp conditions, such as obtain in a cold frame. Young plants should not be allowed to become pot-bound in their earlier stages, but should be repotted as soon as they are well rooted. The size of the flowering pots should be regulated by the special requirements of each grower. If large plants are needed, the strongest specimens should be potted on, and finally grown in 3-inch pots. For general purposes 6-inch pots are the most suitable receptacles, but forcing must be commenced earlier in the case of small plants. Take measures to keep the plants free from green fly, which invariably causes the leaves to curl and the plant to become unhealthy. *Calcifolarias* that are badly infested with this pest rarely make good plants, even when they are fumigated.

FERNS.—All Ferns have completed their annual growth, and they will remain healthy in a lower temperature than hitherto. Many of these plants are forced into premature growth by keeping them in too much warmth during the winter, when they should be practically at rest. The roots should continue to be watered, for, as a general rule, Ferns should not be allowed to become dry, even in winter, though they do not require such large quantities of moisture as when in full growth. No manure should be given at this season. If slugs are troublesome, search for the pests at night with a lantern, and use *Lettuce or Cabbage leaves* as traps. The temperature at night should range between 40° and 45° allowing for a rise of 10° by day. Admit a little air on all favourable occasions.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVY, Abbots Wood, Godalming, Surrey.

MANURING FRUIT TREES. Farmyard dung should always form the staple manure for fruit trees; chemical fertilisers should be regarded and used as auxiliaries. Potash constitutes a large proportion of the latent ash of plants, and is a good fertiliser, whilst lime must also be present in the soil, and in greater quantity for stone fruits. Manure from a yard in which stock is fed is undoubtedly the best form of animal manure. In conjunction with this manure marlate of potash may be used with good effect at the rate of 6 lbs. to a pole, or 3 to 9 cwt. per acre. Phosphates should be given in the form of either bone-meal, basic slag, or superphosphate. In average soils of gardens very little manure is necessary for fruit trees until they commence to fruit. In the case of poor, light sandy soils, manuring at the time of planting is an advantage, and helps to give vigour to the growth. On rich land that has been well broken up, maiden trees are apt to become too vigorous, and may need lifting after a year or two to check excessive growth. It therefore follows that in manuring one must be guided by conditions and circumstances. Farmyard manure may be supplied as a top-dressing at any time with good effect, and especially on dry soils in high situations. Trees on high ground generally do better than those in low lying situations, and especially if the soil in the lower parts is inadequately drained.

GENERAL REMARKS.—Much useful work can be carried out during inclement weather, such as the cutting and sharpening of stakes, tying them in bundles, and crossing the points. Large labels may be made, painted, and the names written ready for use. Labels for Gooseberry and Strawberry plantations should be made 13 inches to 2 feet in length, and the name boldly written, to be observed at a distance. Work in dooms may also take the form of preparing cuttings of bush fruits. The cuttings should be made 10 inches to 12 inches in length, with all the lower buds pulled off, leaving about three or four only at the apex. The cuttings should be tied in bundles, named and numbered, and again plunged in soil to await a suitable opportunity for planting. Soils for various purposes should be mixed in an open shed. Shreds for tying can be cut into convenient lengths, and tools sharpened and oiled.

THE FLOWER GARDEN.

By W. J. GURR, Gardener to Mrs. DEMESTER, Keele Hall, Staffordshire.

HERBACEOUS BORDERS.—During mild weather, when the soil is in a friable condition, fork the borders over lightly and apply a top-dressing of short manure and leaf-mould in equal proportions. Certain plants will be benefited by placing a mixture of loam, leaf-mould and sand around them. Tender species may need protection from severe weather, and Bracken or leaves should be placed about them and kept in position with a few twigs. Advantage should be taken of fine weather to bring the work of planting to a close.

HELLEBORUS NIGER.—It is not advisable to remove Christmas Roses from the borders to frames, as this would check the plants severely and spoil the flowering next year. A better practice is to place spare frames or hand-lights over the plants *in situ*. The frames should be raised about 2 feet from the ground to permit the air to circulate freely. Remove all dead and decaying foliage, stir the soil lightly with a small hand-fork, and thoroughly soak the roots with manure water.

CUTTINGS IN FRAMES.—Cuttings of *Calcifolaria*, *Viola*, *Penstemon*, *Marguerite*, and similar plants are rooted, and the frames should be ventilated in mild weather. Strict attention in this respect will harden the plants and thus enable them to withstand severe weather much better than if they are coddled. Remove dead foliage and stir the soil lightly with the aid of a pointed stick. A good supply of Bracken or straw should be kept in a dry shed in readiness to cover the plants during very cold weather.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plans to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 41.2.

ACTUAL TEMPERATURE.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, November 29, 10 a.m.: Bar. 29.7, temp. 55°. Weather—Bright sunshine.

DECEMBER.

TUESDAY, DECEMBER 4—

Roy. Hort. Soc. & C.S. meet.

WEDNESDAY, DECEMBER 5—

R.G.A. Executive Com. meet.

THURSDAY, DECEMBER 6—

Meeting, 10 a.m. to 1.30 p.m.

FRIDAY, DECEMBER 14—

New moon 9h. 17m. noon.

FRIDAY, DECEMBER 21—

Moon: First quarter, 6h. 7m. noon.

TUESDAY, DECEMBER 25—

Christmas Day.

WEDNESDAY, DECEMBER 26—

Boxing Day (Bank Holiday).

THURSDAY, DECEMBER 27—

Roy. Botanic Soc. meet.

FRIDAY, DECEMBER 28—

Full moon 9h. 52m. noon.

SALE FOR THE ENSUING WEEK.

WEDNESDAY—

Bulls at 67 and 68, Cheapside, at 3 o'clock, by Protheroe & Morris.

*. *The sale of Japanese Dwarf Trees and Miniature Gardens will be held at Protheroe and Morris' Rooms on December 7, and not on December 17, as announced in the advertisement columns of the last issue.*

On Planting Roses.

Much has been written on the planting of Roses, and it will doubtless be admitted that the operation is one of the most important in the Rosarian's year. Yet the actual work is simple enough, the two essential points requiring care being merely to see that the plant is placed at the proper depth in the soil, neither too high nor too low, so that in the case of dwarfs the point of insertion of the bud is about one inch below the surface of the ground, and secondly, that the soil, after covering the roots, is carefully trodden down and consolidated.

The proper preparation of the bed is often a more important matter than the actual planting, and the amount of preparation required varies greatly with the character of the soil and the district. In naturally loamy or alluvial soils Roses will do well with comparatively little preparation, while in gravelly districts the greatest care and attention should be devoted to securing a rich and deep root run for the plants. Having given this caution, our present object is to treat of subsidiary matters well worth considering.

A certain amount of root pruning is usually desirable before planting, and when transplanting maiden plants care should be taken to cut off the stub of the stock beyond the insertion of the bud, and pare it close with a sharp knife. The object of this is to allow the plant to heal over the wound formed by cutting off the

stock; if the stump of the stock is left projecting it will decay back to the growing part, and may, and frequently does, introduce a fungous disease into the plant, which is often fatal. The purpose of root pruning is to reduce any long roots. In the case of plants purchased from nurseries, both these operations will probably have been performed before they leave the nursery, but it is well to see that the work has been properly done, correcting any deficiency, while with plants moved from one part of the garden to another root-pruning is generally necessary.

Moreover, the root of the plant should be examined to see that there are no suckers or upward growing roots likely to produce them, and if there are any suckers, to remove them with a sharp knife or secateurs close against the stem of the plant. This is particularly likely to be the case with standards that have been in the same place for some years.

It is often recommended that the hole for receiving the plant be made 2 feet square; this is scarcely necessary. It is, however, desirable that the hole be rather longer each way than the length of the planter's foot, for if not as large as this, it is difficult to press the soil down on the roots firmly and evenly all round.

It is to be remembered that the fine rootlets through which the Rose has been feeding itself have been torn up and destroyed in the act of removal, and that in the coming spring, before any great call is made upon the roots, numerous white roots will be formed, with which the plant will be supplied with water and salts through the summer.

It often happens that it is necessary without disturbing a whole bed of Roses to move out of it one or more of the plants that are not doing well, and replace them by young Rose trees, which are thus planted among the older plants, the roots of which are already in possession of the soil. Where this is the case, some extra attention to the new comer should be given, in order to ensure that it gets a good start. One of the best ways of effecting this is to scatter a few handfuls of bone meal in the bottom of the hole, and also in the soil that is being filled in over the roots; a method that is even better, and which may be combined with the last, is to bury a few good-sized pieces of turf under and around the roots of the newly planted tree. Somewhat similar considerations apply where a border has to be used which is not far removed from trees, and where their roots may be expected to invade it. Roses which have once become established will often do well in borders so near to forest trees that the roots of the latter may already have entered the border. In such cases as these, before the Roses are planted the border should be thoroughly trenched and enriched, and all invading roots cut away and pulled out. Fresh roots will in all probability invade later, but in the meantime the Roses will have become established, and it is quite possible they may not be greatly interfered with, provided

vigorous sorts are selected for planting, and there is no overshadowing of the plants by the branches of the trees. We do not suggest that a border liable to the invasion of tree roots should be selected as a site for Roses if there is an alternative. The ideal position for a Rose bush is in the open, where the plants can enjoy without competition the sun, air, and root-room; but some cultivators have not so much free space available that they can exercise an unfettered choice in the position of all the beds.

Considerable care is desirable in the choice of varieties for these tree-rooty borders, inasmuch as some succeed better than others. Curiously enough, many of the Tea section appear to do fairly well there; possibly the somewhat drier condition of the soil during winter is agreeable to them. Whatever be the reason, we have noticed that *Mme. Hoste*, the *Coquets*, pink and white, *Charles Dingee*, and *Auguste Comte* all do well, making good growth in borders that are not free from tree roots. The *Chinas*, also, will in many cases submit to these positions with tolerable grace, particularly *Comtesse du Cayla*, if given a certain amount of latitude at pruning time, as also will some of the *Polyantha Pompons*.

On the contrary, the *H.P.s* and most of the crimson *H.T.s* appear rather to resent such positions, whilst the only crimson Roses which we have seen moderately successful in such a position have been some pegged-down plants of *Avoca*. Varieties of orange tints, such as *Prince de Bulgarie*, *Edu Meyer*, and *Lady Pirrie*, have been uniformly unsuccessful in such positions, but have done well when removed to sunnier spots in the garden. Some pink *H.T.s*, such as *Mme. Léon Pain*, *Pharisier*, and *Mrs. E. G. Hill*, have succeeded perfectly.

It might be thought that in dry borders such as these, hard pruning, which diminishes the calls of the foliage upon the roots, might be beneficial, but the opposite seems to be actually the case, and so long as the plants can be prevented from becoming leggy and bare at the base, the more foliage they can be induced to carry the more successful they appear to be.

Regarding the best time for planting, no doubt it is best done from the end of October to December, and, if conditions admit, the earlier part of this period should be chosen in preference to the later. It is true that Roses can be planted, often with tolerable success, down to the end of March, but after Christmas there is a greater likelihood of partial failure. Unfortunately, the idea is still prevalent with many an amateur that he is doing rather a smart thing by delaying his order for the new plants he requires until spring, this, as he thinks, allowing the nurseryman to take the risk of winter. But he is entirely mistaken. Very few Roses die during winter. The trving time for Roses is the spring, particularly when very cold weather comes just as they have commenced growth. If, then, it should happen that the Rose has

only just been moved and its roots have no firm hold in the soil, it is much more likely to suffer injury, and even to be killed outright, by a cold spell of east winds, than an autumn-rooted plant over which the icy blasts may pass harmlessly. There is a great deal of truth in the old gardener's adage: "Plant in the spring, you may pray them to grow, but plant in the autumn, compel them to grow." *White Rose.*

A HYBRID CRAB (PYRUS FLORIBUNDA × P. NIEDZWEZKYANA).—In the early spring of 1911 a new hybrid *Pyrus* under the name of *Malus floribunda* var. *purpurea*, was purchased by the Kew authorities from M. BANNIER, of Orleans. The two small trees have since grown well and promise to become attractive specimen trees of

Westminster. It will be remembered that an announcement was published in these pages in July to the effect that the Government had commended the use of the Hotel Windsor, including the room leased to the Horticultural Club. In view of the fact that there are now but few hotels in the neighbourhood of Westminster still available for public use, and the knowledge that Horticultural Club members are not able to be in town as often as usual, it is felt that an arrangement to share the rooms of the Farmers' Club is the best that could be made. It is intended that the members of both clubs shall enjoy exactly the same privileges. Whitehall Court is situated immediately at the rear of the War Office, and has all the advantages of a first-class hotel.

ALLOTMENTS.—We have received from the National Union of Allotment Holders a copy of a resolution sent to allotment societies throughout the United Kingdom for signature, urging "the President of the

Board of Agriculture and the Director General of the Food Production Department to recognise the necessity of at once extending the tenancy of allotments held under the Cultivation of Lands Orders to such time as the said land shall be required either for immediate building or other urgent public purposes, and to take such steps as are necessary to provide that where tenants have to be dispossessed of their allotments from such causes other suitable ground shall be made available for their use. Further, that it is desirable that such legislation be at once introduced and passed so shall make it possible for allotments of a permanent character to be secured by all who are prepared to cultivate them."

THE TRANSPORT OF FERTILISERS.—Growers are strongly urged by the Food Production Department to place orders for superphosphate with their usual merchants at once. The railways will have great difficulty in providing sufficient trucks to secure rapid delivery in the spring, and it is essential that the traffic should be spread over as many months as possible. Makers have moderate stocks of superphosphate in hand at present.

FRUIT FARMING FOR DISABLED OFFICERS.—On behalf of officers disabled by war service the Ministry of Pensions is endeavouring to arrange with the University of Bristol for a special twelve months' course of training in fruit



FIG. 34 A HYBRID CRAB AND ITS PARENTS.
Pyrus floribunda. P. Niedzewkyana.

(Photograph by E. J. Wallis.)

The hybrid purpose.

moderate size. There is ample evidence of the influence of both parents in the hybrid tree, which is practically intermediate between the two, hence it is a distinct addition to the ornamental Crabs, attractive both in flower and fruit. In habit the tree is more upright in growth than *P. floribunda*, while the branching is light and graceful compared to the stiffer habit of *P. Niedzewkyana*. There is a slight shade of purple in the deep rosy-red flowers, but only sufficient to give them a distinct and pleasing shade of colour. When cut, the young wood, leaves and fruit all show evidence of *P. Niedzewkyana* as a parent, being permeated with the distinct purple-red colouring of that species. Quantities of the dark crimson red fruits were produced this season, the stalks not shape suggesting large cherries. We illustrate the two parents and the hybrid in fig. 34.

THE HORTICULTURAL CLUB.—We understand that negotiations are in progress for securing temporary headquarters for the Horticultural Club at the Farmers' Club, 2, Whitehall Court,

Board of Agriculture and the Director General of the Food Production Department to recognise the necessity of at once extending the tenancy of allotments held under the Cultivation of Lands Orders to such time as the said land shall be required either for immediate building or other urgent public purposes, and to take such steps as are necessary to provide that where tenants have to be dispossessed of their allotments from such causes other suitable ground shall be made available for their use. Further, that it is desirable that such legislation be at once introduced and passed so shall make it possible for allotments of a permanent character to be secured by all who are prepared to cultivate them."

TRADE WITH FRANCE.—The Board of Trade Journal states that H.M. Consul-General in Paris (Mr. W. R. HARRIS) reports that a firm in that city desires to get into touch with United Kingdom manufacturers of small tools, gardening implements, and lighting and heating apparatus, with a view to obtaining agencies for the

growing at a cost of about £100 for maintenance and £25 for University fees. It is expected that thereafter an officer will be able to obtain work for another year on an approved fruit farm, receiving practical instruction and maintenance in return for his services. When an officer's disability prevents him from returning to his former occupation, the Ministry can make liberal grants towards the cost of training. If a sufficient number of disabled officers come forward the Ministry hopes to open the course at Bristol early in 1918.

RAILWAY RATES FOR FRUIT AND OTHER GARDEN PRODUCE.—We have received from the Railway Clearing House, Seymour Street, London, N.W. 1, particulars of the new terms on which, at the end of the present year, perishable and other goods will be carried by passenger train or by other similar service. All consignors wishing their goods to be conveyed at reduced or "owner's risk" rates will be required to fill up, sign, and stamp a special agreement (to be obtained from the

address given above, or from the railway stations), or, failing this, to sign a separate Owner's Risk Consignment Note in respect of each consignment forwarded. Unless one of the alternative plans is adopted, consignments will be charged at the ordinary rate.

SALE OF "IMMUNE" POTATOS FOR EATING.

The Board of Agriculture and Fisheries have, by a general licence under the Seed Potatoes (Immune Varieties) Order, 1917, authorised the sale in England and Wales for consumption of Potatoes of the varieties King George V., Great Scot, Lochan, and Templar, which will not pass through a riddle having a 1½-inch mesh. The Food Production Department, however, points out that the provisions of any other Order of the Food Controller affecting such Potatoes must be complied with in the case of all sales permitted by this licence, and the licence must not be construed as an authority to deal with any Potatoes in contravention of the requirements of any Order relating to wart disease. At a later date the Board of Agriculture and Fisheries will be prepared to issue licences for the sale of these varieties for planting, but, for the present, such licences cannot be granted except in very unusual circumstances.

A STORY OF THE LATE MR. MARSHALL.—The late Mr. MARSHALL, as we stated in our memoir (see p. 202), though a man of strong convictions, was not apt to force his own ideas upon those charged with responsibility. Fifty years ago, when his Orchid collection was developing to its best, his gardener, Mr. WILSON, was allowed to practise his own methods of cultivation, and was very rarely interfered with by his keen but tolerant master. In the *Gardener's Chronicle* for 1871, pp. 253, 310, 300, 416, 515, 615, 712, 741, 775, 337, 374 and 937, there took place a somewhat heated argument in respect to the cool treatment of Orchids, the antagonists signing themselves respectively "G. H." and "Ex-Cantab." When all was over it turned out that "G. H." was really Mr. MARSHALL and "Ex-Cantab." his gardener, Mr. WILSON. No one was more surprised at this discovery than the immediate parties concerned, nor did anyone enjoy the joke so much as Mr. MARSHALL. The curious point about it is that whilst Mr. MARSHALL was advocating one kind of treatment his gardener was practising another kind and succeeding in a measure that left nothing to be desired.

RETIREMENT OF MONSIEUR LAFOSSE.—We learn from the *Revue Horticole* that Monsieur LAFOSSE, Director of the National Horticultural College at Versailles, is retiring from that position. He has been connected with the College from its foundation, and has won the esteem and affection of all with whom he has had to do—students, professors, friends, all retain for him the warmest sentiments. Although retiring from the arduous duties of the Directorship, Monsieur LAFOSSE will continue to conduct certain lectures.

A GARDENER'S FIFTY YEARS' SERVICE.—Mr CHARLES CRANSTON has completed his fiftieth year of service as gardener at Milton Lockhart, Lancashire. As mementos of the interesting occasion and in appreciation of his faithful service, Mr. CRANSTON has been presented by Mrs. LOCKHART with a watch bearing an inscription, and a cheque; and he has also received presents from other members of the LOCKHART family.

WAS IT? We regret to learn that Private JOHN HEWELL was killed in action in France on August 30, 1917. Deceased joined the Army in October, 1916, from Hackwood Park Gardens, where he was acting foreman. At one time he was gardener to the late Mr. ROBERT FITTOWAY, Shotsham Park, Norwich.

PUBLICATIONS RECEIVED.—*How to Collect and Dry Flowering Plants and Ferns.* By Harold Stuart-Thompson (London: Geo. Routledge & Sons, Ltd.) Price 7d. net.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

LILIUM REGALE.—I have mislaid the address of a correspondent to whom I promised some seed of this Lily. Will he kindly communicate with me? *Herbert Maxwell, Monreith.*

RESULTS OF SPRAYING POTATOS DURING 1917.—There can be no doubt that during the past season much spraying of Potatoes was carried out, and many, like myself, who have been expected to advise, and in many instances to assume responsibility for carrying out the work on the new allotments, would, I think, welcome a summary of the results obtained throughout the country. It is possible that many have not had previous experience of Potato spraying, as it is known that much of this work was done rather late, due to the delay in the delivery of machines. They feel that their labour has been wasted, inasmuch as the spraying did not appear to have the desired effect, and, in many instances, to the surprise and annoyance of the holders, did not harm to the haulm. It is only fair to add that in such instances the injury caused was more likely due to the unhealthy condition of the haulm from attacks of aphids, or to the quality of sets used. It will, however, prove a difficult matter to explain away the injury to the satisfaction of those whose haulms suffered, and before another season arrives we certainly ought to be better informed than at present in order to combat opposition to spraying, and if proof of its value is forthcoming, pressure in some way should be adopted, because of the disappointments and doubts as to the efficiency of spraying, a summary of the results, together with growers' experiences and experiments with soil and manures, cannot be brought to public notice too soon or too conveniently, and any further efforts of the Board of Agriculture and the R.H. Society to obtain and publish reliable information from ascertained facts would be greatly appreciated. *Queen's Park, Crone.*

CORRECTION.—Probably my handwriting is accountable for the name of Mr. Todman being spelt Ludman in the note on "Raising Varieties of New Flowers from Seed" (p. 212). Todman was well known in the London District 40 years ago as a raiser of new flowers. *W. T.*

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—It has come to the notice of my committee that some members of the Society have been under the impression that they were not entitled to benefits while they were serving with the Forces, although they had kept their contributions paid. The committee would feel indebted to any gardener who would inform the secretary of any member who is either sick or wounded, that his case may be investigated with a view to giving him the benefits to which he is entitled. *L. C. Hill, Secretary.*

TYING MATERIALS.—There is likelihood of a shortage of tying materials. Strawberry runners make excellent ties, and they can perhaps still be collected in other gardens than mine. All my Endives have been tied with them, and many of the upper parts of the Tomatos. The sheathing spathes of Indian Corn-cobs make good ties for the latter purpose when split. Rushes may also be thought of. Some of the climbing plants have a tough fibre, and I find that the stems of the Chinese Yam are very strong. In France normally much tying is done with Osier, and it gives me more delight to receive a bundle of young trees tied up with this material than with the expensive manilla cord used by some nurseries. I cleared out some superfluous branches from some Lime trees in the summer, but the best—perhaps from the season of the year—did not seem any use. What treatment is needed? *H. E. D.*

HORTICULTURAL DIG-OUTS.—In your issue of November 3, p. 177 Mr. Rowles calls attention to the possibilities of dig-outs in the garden. It may be of interest to your younger readers if I give my experience of one I have had in use for 22 years. Living on the Surrey chalk hills since 1897, the idea soon

struck me that an underground chamber in the chalk would be an ideal place for Mushroom cultivation. In the early months of 1895 we had about ten weeks of real winter, and in looking round for something to keep the outside staff employed I determined to carry out my idea. I may say that the conformation of the ground here made the undertaking easy, the garden being bounded on the north by a sloping hill. Commencing operations, I drove a narrow heading straight into the hill till I came to the chalk formation. This consists of small lumps, hard, and not of the free nature; by freeing the bottom the rest would tumble down quite easily, leaving at the top what we call locally the "bullhead." This is the first layer of chalk under the soil, which, by the action of rain percolation, gets welded together like soft concrete, and therefore forms a natural roof. To make use of this I had to turn my tunnelling operations right and left, till I formed a chamber of some considerable size. To avoid accidents from falling chalk I had cut some stout planks of Oak; these were placed under the roof, and supported at intervals by cross-beams, these in their turn being shored up each side by stout props. The right-hand tunnel, being smallest, I partitioned off with a flint wall and doorway. Excavating the floor of this some 2 feet deeper enabled me to put in a bed of fermenting material, on which I was enabled to grow, in batches, sufficient Rhubarb and Seakale for the establishment, generally making my first cutting about Christmas. In my left-hand tunnel I made four beds 1 foot deep (leaving an 18-inch pathway), in which I grew Mushrooms in succession all the year round with more or less varying success, till the advent of the motor-car, and later the war, stopped the supply of the necessary materials. As the success of Mushroom culture largely depends on an equable temperature and on preventing an excess of cold air in the winter, I built up two walls, in my heading, roofing this over with concrete, and covering all over with soil. This formed a passage some 10 feet long, which enabled me to have a door at each end. By this means the temperature rarely went below 55°. One word of warning to those who may contemplate making a dig-out, and that is, it is absolutely necessary to provide for a gentle circulation of air by some means or other, or the tender tips of Seakale and Rhubarb will damp off. I also find that mine is not an ideal place for storing fruit or Potatos for any length of time. Chalk naturally holds a certain amount of moisture, which causes fruit to sweat unduly and Potatos to sprout. In conclusion I may say that if there are any young students interested enough to give me a call I shall be very pleased to show them my bomb-proof shelter. *W. Peters, Greens Gardens, Leatherhead.*

—The remarks of your correspondent, Mr. William F. Bowles, are both interesting and instructive. What he says as to using a kind of dug-out for gentle forcing purposes, and the adaptation to horticulture of devices used in war may be worthy of investigation and trial. One feels, however, that in his zeal for cheap contrivances he goes too far in the latter part of his article, when he imagines himself living happily at home in a kind of glorified dug-out or wooden hut. Now it is a dismal fact that the accommodation provided on private estates for both single and married gardeners in this country has, in many instances, left much to be desired in the way of dryness, light, and airiness. Mr. Bowles' remarks might well be taken by many who are responsible for the housing of their workpeople as an indication that a cottage or holly providing for dryness, light, and air is a superfluity, while such ideas condone the existence and use of such cottages as one can frequently see tucked away in corners of large estates—mere rabbit hutches, overhung with trees, and often damp. I agree that the men who return will have "quite different ideas of housing," but not, I think, in the way your correspondent means. The men from remote rural districts will have messed and conversed with those from the great centres of industry here and overseas, and one may, I think, hope that the fresh ideas gained will be progressive and not retrogressive, otherwise,

shuld there be many, and Mr. Bowles, that the idea of a modern building, as residence, the gardener of the future might be offered as remuneration for his energies, so much per week and so much ground when to "dig himself in" (which heaven forbid). S. J.

THE WEATHER IN SOUTH NORFOLK. The first snow of the season fell on Sunday, the 25th ult. Strong gales of wind blew from the west and north-west on the 23rd and 24th ult., and on Sunday afternoon we experienced a snow-storm of large flakes, followed at night by more snow, and by Monday morning some 2 inches had fallen, covering trees, hedges, and houses-tops. The last fall of snow in the winter 1916-17 occurred on the morning of April 15, 1917, when the ground was covered to a depth of some 2 inches. J. Batters, Gillingham, Norfolk.

THE LATTICE LEAF PLANT OUVIRANDRA FENESTRALIS.—In the obituary notice of the late Mr. William Marshall (see p. 202) mention is made of his successful exhibits at the International Horticultural Exhibition held at South Kensington in 1886. He also showed in the Miscellaneous Class a specimen of *Ouvirandra fenestralis*, which was of particular interest to me, as I had never before seen this singular plant. Introduced from Madagascar about ten years previously, it was at that time very scarce, and attracted great attention by reason of its singular, skeleton-like leaves. This specimen was commended. It may be of interest to note that in the class for ten exotic Orchids in flower, in which the 2nd Prize was awarded to Mr. Marshall the plants shown by him were *Cattleya Mossii*, *Cattleya Skinneri*, *Cypripedium villosum*, *Dendrobium Dalhousianum*, *Dendrobium densiflorum album*, *Dendrobium nobile*, *Dendrobium tortile roseum*, *Eriopsis rufidibullbon*, *Oncidium Philippianum*, and *Selenipodium caudatum*. It will be seen that there was not a single specimen of the now popular genus *Odontoglossum*. R. T.

AWARDS.

FIRST-CLASS CERTIFICATES.

- Cattleya Sara Queen* var. *Equanatum* (Mazdara *Hya de Coen* × *Crackelliana alba*), a large, white flower with distinct markings in the lip; *Sophio-Cattleya Theophrasti* (S. C. *grandiflora* × C. *Mendelii*), both from S. GRIVIER, Esq.
- Cypripedium John Hartley* (*Reginald Young Shogun*), from JOHN HARTLEY, Esq.
- Odontoglossum crispum Xanthotes* var. *The Gentlewoman*, from W. R. LEE, Esq.
- Laelio-Cattleya Myrtila* var. *Superba* (L. C. *Gottovina* × C. *Doriana*), from P. SMITH, Esq.
- Cattleya Folia Imperator*, from Messrs. SANDERS.

AWARDS OF MERIT

- Odontodia amabilis Ashworthii*, *O. punctatum* var. *Princess Maid*, *Cattleya labrata Prude* of *Southgate*, C. *Corona* (*Mantini* × *Hindiana*), C. *Lady Ashworth's* var. *varochii* × *oreum*, and *Fubata* (*Folia* × *Portia*), *Brasso-Cattleya Chetonia* var. *Ashworthii*, all from R. ASHWORTH, Esq.
- Cattleya Estera* var. *Madonna Dissoluta* (*Andrea* × *Harrisoniae alba*), *Laelio-Cattleya Aranda West Point* var. (L. C. *luniflora* × C. *Amersoni*), *Brasso-Cattleya Oberon Sanders*



FIG. 1. SEEDS OF WHEAT-LIKE CEREALS.

- var. *B. C. Diphysia Mossae* × C. *Schradiana*), and *Cypripedium Actaeae*, from S. GRIVIER, Esq.
- Cattleya Patricia Heathfield* var., and *Laelio-Cattleya Salscha* var. *Princess Patricia*, both from J. J. BATTERS, Esq.

CULTURAL CERTIFICATES.

FIRST CLASS.

- To Mr. E. ROGERS, for *Phlox Lospinnia*.
 - To Mr. J. LAW, for *Cattleya Patricia Heathfield* var.
- CORRECTION.—The *Laelio-Cattleya* exhibited by P. SMITH, Esq., at the meeting on October 15 is *Mitrona* var. *Davidrought*, not *Mitrona* var. *Davidrought*.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

NOVEMBER 12. The monthly meeting of this society was held in the R. H. S. Hall on the 12th ult. Mr. G. H. Curtis presiding. The ordinary week pay for the month amounted to £28 15s. 4d., State Section £24 16s. 4d., and maternity claims £5. The rules having been approved by the National Health Insurance Commission, the Juvenile Section is now open to boys of 12 years and upwards.

CROPS AND STOCK ON THE HOME FARM.

THE ELECTRIFICATION OF AGRICULTURAL SEED.

SELING the many uses to which electricity has been applied with beneficial effects, it is not surprising that attempts are being made to employ it for the purpose of increasing agricultural crops. In my opinion it is now fairly well established that in the near future we shall witness results from electricity of a startling and satisfactory character.

Some few years ago Mr. H. E. Fry, of Godmanstone, near Bathurst, who had for some years previously interested himself in high velocity electricity, turned his attention to the improvement of crops by the aid of electricity and various chemical solutions, the aim being to destroy the injurious bacteria and spare the useful ones.

The present idea, however, is to saturate seed grain to the electric current before it is sown, with a view to increasing its germinating power and stimulating growth.

The process consists in steeping the grain in various solutions in conjunction with certain reagents and chemicals before submitting it to an electrical current. The chemicals that are used are inexpensive and exist universally. Some of the solutions are provided by nature, such, for instance, as the radioactive mineral waters of Buxton, Bath, and elsewhere; sea water is also specially suitable.

Mr. Fry was fortunate in obtaining the valued assistance of the owner of the Godmanstone Estate for the carrying out of his experiments. The farm is hilly, some parts 300 feet above sea level, and not what would be in some counties called rich land, but quite an ordinary thin soil overlying chalk subsoil.

For thoroughly testing the advantage of treating seed corn and roots several fields were set apart last spring, all being treated in the ordinary way of rotation cropping without any special preparation in regard to manures.

In August last, whilst the crops were still standing, I had the privilege of inspecting them under the guidance of the bailiff, Mr. Smith. The first field examined was one of 20 acres, situated on an eastern slope, and sown with Black Tartarian Oats, half with treated corn and the remainder untreated. The previous crops were, 1914, roots, fed off with sheep, followed in 1915 with dredge corn, Oats, and Barley, with which was sown Clover and grass for a hay crop in 1916. In March of this year the Oats were sown at five bushels per acre.

On approaching the field I at once detected a difference in the greater luxuriance of the growth. On a closer inspection the straw on half of the field so treated was found to be 3 inches higher than in that untreated. Mr. Smith seized a handful of straw in quite a haphazard manner in both plots, treated and untreated. The comparison showed much difference in the thickness of the straw and size of the ears.

The next field inspected was 40 acres of Champion Yellow Hybrid Turnips. A five-mulder drill had been used for sowing the seed. The treated seed occupied every fifth drill. The difference in the appearance of the plants in this single row was very striking. The foliage on many of the roots was much more robust and possessed more chlorophyll than the untreated plants in the four remaining drills.

I pulled up roots opposite each other from the two rows, without any attempt to choose. That from the treated seed was distinctly larger. This did not follow down the whole of the rows, because in a Turnip field it is seldom possible to get an absolutely even plant, as in the ordinary thinning of the plants it often happens that the larger plants are cut out and the smaller left, simply because the larger are not situated quite at the right distance. The soil, too, varies considerably in fertility; some plants get away quicker from the soil.

We then crossed over to Northmore, a neighbouring farm, owned by Mr. Mole, who has taken an interest in the subject, and has sown two fields with treated and untreated seed. The barley was being cut. Here the untreated portion displayed less luxuriance of growth in the thickness of the straw, as well as in height and in the size of the ears.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

NOVEMBER 2. Present, Mr. E. A. Bowles, M.A. (in the chair), Messrs. W. C. Woodall, J. Fraser, W. Helys, and F. J. Chittenden (hon. sec.).

Planting of Blackberries.—Mr. Bowles showed fruits of *Vitis rotundifolia*, which frequently fruits in his garden, though less profusely this year than in the past seasons, and of *V. vulpina* now fruiting for the first time in his garden.

Wheat var. Carminon.—He also showed a specimen of the well-known Wheat var. *Carminon* where a multiplication of the bracts takes the place of the flower. (Our illustration (p. 225) is from a sketch made by the late Worthington G. Smith shortly before his death.) [Eus.]

Insect attack on leaves of *Tris Calceoloma*.—He also brought from his garden leaves of this *Podisidema* with the larvae and pupae of a mining Dipteron sp. Several of the larvae fed together in the leaf and pupate in colonies.

***Lophanthus* attacked by gall on stem.**—Mr. J. Fraser showed stems of *Loganberries* attacked by a gall on the stem, similar to those on the stems of Brambles and Raspberries, recently shown, and probably due to the attack of the fungus *Coniostyrium* sp.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 1. Committee present: The Rev. J. Crossbaldstone (in the chair), Messrs. R. Ashworth, D. A. Cowan, J. C. Cowan, J. Cypriot, A. G. Elwood, J. Evans, P. Foster, A. Hamner, J. Howes, A. J. Keeling, J. Lupton, D. McLeod, J. McNab, W. Shackleton, H. Thorp, and H. Arthur (secretary).

The Oats were sown in a field which had previously lain some years as derelict grass, and naturally was in poor condition before being taken over by the present owner. Here the difference in the treated portion was most striking in the height of the straw.

The whole of the headland on one side of the field was sown with the treated seed in March, but only half the field, the remainder being the same seed but untreated, the headland especially being a greater length of straw. The untreated part of the field was ripening earlier owing to the less luxuriance in growth.

The conclusions I drew from these inspections are that, to use a common phrase, there is "something in it." If by treating the seed only two more sacks per acre are produced, which is a low estimate, in value the two sacks are worth 40s., and surely the gain is considerable.

The treating of the seed costs about 14s. per sack of Wheat, 12s. 6d. per sack of Barley, 11s. per sack of Oats, plus rail carriage when treated at a depot; quite an inexpensive matter.

It is likely, too, that further progress will be made, as Mr. Fry has many experiments on hand, especially with vegetables, notably Potatoes. If in the near future something could be done to render the plant immune from disease what a boon that would be! The Tomato disease, too, is under investigation, and so is rust in Wheat, which has so harmful an effect on the crop results.

I might quote instances of success with the treatment of seed Wheat and various results, but prefer to confine my remarks to what I saw.

Formerly, the method of treating the seed is this:—In a tub 6 feet long, 2 feet 6 inches wide, and 1 foot 6 inches deep is placed seed—Oats, Barley, or Wheat. In this tub the various chemical mixtures employed are added. Electric wires are run through the bath connected with a dynamo for electrification. The different seeds are subjected to the current for various periods. For instance, Wheat requires 3½ hours, Barley 4½ to 6, Oats 4½, Mangold 3, Swedes and Turnips 1½ hours. The seed is then dried and sown as required.

The scheme of the Wolfryn Co., who have secured patents in the United Kingdom, the United States of America, and many foreign countries, is to encourage the erection of plants in various parts where electricity is obtainable, and treat the seed direct from the farms according to individual requirements.

Thus anyone with electricity at command and the necessary chemicals, can treat their own seed, by sanction, of course, from the patentees—E. McInerney.

ANSWERS TO CORRESPONDENTS.

ALPINE UNDER GLASS: *D. M. Broadstairs*.—Nearly all Alpine plants are suitable for growing in unheated glasshouses, such as yours, and are seen at their fullest beauty in a glass house owing to the protection afforded them. For an Alpine house any form of glass structure is suitable, and fire-heat is not required. Ventilation should be freely afforded, even in the depth of winter, for no true Alpine plant is affected by frost, overhead damp being the greatest enemy. The following plants are a selection:—Late autumn and winter flowering: Alpine Cyclamen in variety, especially *C. heuphlostium*; *Oxalis lobata*, *Scilla hispanica* and *S. alba*, *Draba aizoides*, *Gentiana aemula*. Late winter and spring: *Hepatica* in variety, *Achillea argentea*, *A. rupestris*, *Anemone alpina*, *A. narcissiflora*, *Adiantum* in variety, *Elymus graminifolius*, *Eriophorum carinatum*, *Gentiana verna*, *Gentiana argentea*, *G. cinerea*, *Linum alpinum*, *L. perenne*, *Phlox amoena*, *P. prostratum*, *P. verna*, *Primula* in variety, *Saxifraga* in variety. Summer bloomers: *Campulula* in variety, *Alpine Dianthus* in variety, *Androsace carnea*, *A. serotina* (Lambly), *Edithia delphinica*, *Gentiana montana*, *G. barba*, *G. rotunda*, *Linopseum prostratum*, *L. p. heavenly blue*, *Myosotis azorica*, *Oxalis emmer-hylla*, *Sedum* in variety, and *Sempervivum* in variety. Nurserymen who specialise in Alpine and rock garden plants will be able to supply the foregoing species. A necessary adjunct to an Alpine house is a cold frame or frames, in order to be able to store the pots

and pans safely during the non-flowering periods, and to give the plants what protection is required in damp, cold weather. Plants with leaves that develop down or med especially require protection from damp.

APPLES DISEASED: *Mrs. S.* The fruits are affected with spot disease. Spray the trees next spring with Bordeaux mixture just after the fruits set, and again three weeks later. Use a fine, misty spray, and take pains to spray the undersides of the leaves, as it is there where the fungus forms its spores, which infect the fruit.

CARNATION BLOSSOMS DAMAGED: *G. C.* The Carnation blossoms have been damaged by thrips, causing the petals to become speckled, and the flower to open imperfectly. Thrips make their appearance in the Carnation houses towards the end of the summer, and cause infinite trouble to the early bloomers unless dealt with promptly. Spraying with clear soft water is a good preventive during the summer, but fumigation with any suitable nicotine compound is the best remedy at this date; do the work on a still day, and when the plants are dry.

CHRYSANTHEMUMS: *B.* Chrysanthemum cuttings may be inserted at any time from now onwards until the end of March. January and February are the best months in which to propagate the decorative and single varieties. After the old plants have finished blooming, cut them down to within 8 inches of the pot and stand the latter in a light, airy position in a cool house till the time you propose propagating, when the cuttings (from 3 to 4 inches long) should be inserted in a light compost in either pots, pans, or boxes. The cuttings should be kept in a close frame having a temperature of from 45° to 50°. When they are suitably rooted, gradually admit air preparatory to affording the plants cool greenhouse or frame treatment. The old stocks should be discarded, as you suggest. A few good decorative varieties are as follows:—*Caprice* du Printemps, and its varieties, *Cranfordia*, *Market Red*, *Mrs. H. W. Thorpe*, *Mrs. J. W. Steeter*, *Source d'Or*, *Money-maker*, *Miss A. Brooker*, *Winter Cheer*, *Heston White*, and *Antocrat*; (Japanese) *Mrs. R. C. Pulling*, *Regd Vallis*, *F. S. Vallis*, *Lady Talbot*, *W. Rigby*, *Mrs. C. Drabble*, *Queen Mary*, *Mrs. J. Gibson*, *Undaunted*, *Salonica*, *Frances Joffie*, *Mrs. E. A. Tickle*, *William Turner*, *Mrs. H. Tysoe*, *Charlotte E. Soer*, *Bob Pulling*, *Mrs. A. F. Tofted*, *Louisa Pockett*, *Master James*, *Golden Champion*, and *Mrs. Algernon Davis*.

HYDRANGEAS: *E. B.* Plants of *Hydrangea hortensis* should be partly cut back after they have bloomed in August or September, and placed in a sunny position out-of-doors, where they should be allowed to continue to grow until the foliage shows signs of turning yellow, when they should be removed to a cool house or frame. They must be protected from frost. Plants that have become pot-bound should be re-potted as soon as they have broken into growth freely after being cut back. They will continue to develop roots all through the winter. Cuttings root freely if inserted in a frame in a compost made of leaf-mould and sand, say, during August, and if potted into 48 sized pots early in October, will develop good single heads of bloom from April onwards.

NAMES OF FRUITS:—In the naming of fruits, we desire to oblige our correspondents as far as we can, but the task would become too costly and too uninteresting if we had no restrictions. Correspondents should observe the rule that NOT MORE THAN SIX VARIETIES be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. The fruits should be kept separate, ripe, and they should be properly numbered, and carefully packed in strong boxes; cardboard is often smashed in the post. A leaf or shoot of each variety is helpful, and in the case of *Phoradendron*, *Peaches* and *Nectarines*, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. By neglecting these precautions, correspondents add greatly to our labour and run the risk of incorrect delay and incorrect determination. We do not undertake to send answers through the post, or to return fruits. Fruits and flowering plants must not be sent in the same box. Delay in any case is unavoidable.

T. L. Dovey du Combe, *R. W. N. 1*, *Scotch Bridget*; 2 and 3, *Brabant Bellefleur*.

4, *Mabbott's Pearmain*; 5, *Monarch*; 6, *James Grove*. (Thanks for 6d. for R.G.O.F. Box.)—*W. P. Apple Hubbard's Pearmain*, *Pear Beurre d'Angou*—*C. G. A.*, *Moor Park Pippin*—*J. B. S.*, 1, *Baronne de Mello*; 2, *Pomme de Malines*; 3, *Duchesse d'Angouleme*; 4, decayed; 5, *Durondeau*; 6, decayed; 7, *Doyenne du Commerce*—*R. A. C.*, *Apple Ashmead's Kernel*; *Pear Bergamotte d'Hollande*—*L. L. I.*, 6, *Bourr Clargue*; the rest decayed.—*L. B.*, *Volterhampton*, 1, *Non-such*; 2, *Bank's Codlin*; 3, *Beauty of Kent*; 4, *Blenheim Pippin*; 5, *Hessle*—*J. C. P.*, 1, *Lady Henniker*; 2, *McDonald's Favourite*; 3, *Calville St. Sauveur*; 4, *Golden Russet*; 5, *Radford Beauty*; 6, *Beauty of Kent*.

NAMES OF PLANTS:—Correspondents not answered in this issue are requested to be so good as to consult the following number.

F. Clarke, *Acer dasycarpum*—*Salopian*, 1, *Berberis vulgaris*; 2, *Malva sp.*, seed in flower; 3, too withered to identify; 4, *Aralia chinensis*; 5, *Cypripedium filifera variegata*; 6, *C. Lawsoniana*, var. *albo-variegata*—*F. P.*, *Dorking*, 1, *Codiaeum (Croton) irregulare*; 2, *C. Bartonii*; 3, *C. Hillii*; 4, *C. pictum*; 5, *C. Weismannii*; 6, *C. Disraeli*.

POTATOS TURNING BLACK WHEN COOKED: *F. H. C.* Certain varieties of Potatoes grown on soils not perfectly suited to them are apt to turn black when cooked in the usual way by boiling. Try steaming them instead.

RICHARDIAS (ARUM LILIES): *E. B.* The plants should be hardened gradually after they have done blooming, and placed in the open, which will be from the end of April to the end of May, according to the flowering period. Water, or even liquid manure, may be freely given until the foliage shows signs of turning yellow, when water should be withheld gradually, and the plants turned over on their sides for a week or two. During August and before fresh rain have formed the plants should be shaken clear of the soil and re-potted in a rich and fairly holding compost. Afterwards place the plants in a frame to protect them from heavy rains for a time. Treated in this way, they do not make quite so much foliage, but bloom earlier than when planted in the open during the summer, lifted and re-potted in the autumn. You may not find it necessary to re-pot your plants every year; but every second season would suffice if the drainage is in perfect condition and a top-dressing of rich compost applied.

SEED POTATOS: *H. P.* The premature sprouting of the tubers in a clamp will not spoil them for seed if the sprouts are promptly rubbed off and others not allowed to grow again in the heap. The best way to deal with the tubers is to set them on end in boxes in a cool, airy shed or cellar, free from frost. In such conditions they will not commence to grow until the time of the year when the shoots would be at the right stage for planting such early varieties as you name. If they cannot be treated as advised, keep them in small heaps and turn them over occasionally, removing any shoots that form between the present date and January.

VEGETABLES GROWING ON HEAVY SOIL: *K. P.* You appear to have cultivated the plot in a very thorough manner, and, provided the road-sweepings are free from petrol or creosote, you can use them freely, as you suggest. In turning up the soil, leave the surface as rough as possible for exposure to the beneficial effects of frost. Apply the lime and basic slag now, and the sulphate of ammonia at the spring. The stable manure is best applied now; it will become thoroughly decayed by the time the plants are ready to make use of it. The leather-jackets and most of the wireworms will doubtless have disappeared next season. The ground crapped with Brussels Sprouts should be dressed with basic slag now, and afterwards treated as you propose. See article on p. 215.

Communications Received. *J. F. J. G. W.*, *C. R. H. E. D.*, *J. D. S. A.*, *L. D. Walker*, *Sent. A.*, *C. C. Morse & Co.*, *San Francisco*—*T. W. B.*, *Alldobd.*, *H. V. C.*—*F. E. Salisbury*, *Wholesaler*—*H. E. W. G.*, *W. G. J.*, *A. B.*—*W. F. P.*—*G. Eves*, *B. M.*, *R. W. B.*, *D. G. S.*, *W. B.*—*W. T. W.*, *T. R. W.*, *A. C.*, *J. C. B.*—*E. H. B.*—*A. S. R.*—*J. C. R. M.*

MARKETS.

CATALOGUE GARDEN November 28.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing various plants in pots such as Aralia, Asparagus, Begonias, Cacti, Chrysanthemums, and Cut Flowers, with prices in s.d. and s.d. s.d.

Fruit: Average Wholesale Prices.

Table listing various fruits including Almonds, Apples, Cranberries, Figs, Grapes, and Nuts, with prices in s.d. and s.d. s.d.

TRADE.

MANAGER or FOREMAN; well recommended. The experience Glass, Peoples, Cummings, Boshing Street, General Out-Flower, Trade and Out, for market or shop supply; Tomatoes a speciality, 4 years present place -H, Menton Cottage, Walsbridge, near Bristol.

MANAGING FOREMAN: Life-Experiences in Horticulture, Flower, Fruit, and Christmas-trees, Stone Salary, &c. -C, Box 27, 41, Wellington Street, Covent Garden, London 2.

SEED TRADE.-Advertisement at liberty in middle December, requires responsible position, 2 years experience, able to conduct in and handle seed, 2-4, Flaxton-st., W.C. 2, Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

TO SEEDSMEN.-SITUATION as ASSISTANT (part-time); good references, age 40, early 2-4, Flaxton-st., W.C. 2, Brunswick Terrace, Lambidge Wells.

'MY GARDEN' SERIES

MY GARDEN IN SPRING.

By E. A. BOWLES, M.A. Acting Chairman of the Scientific Committee of the Royal Horticultural Society.

MY GARDEN IN SUMMER.

By the Same Author.

MY GARDEN IN AUTUMN AND WINTER.

By the Same Author.

Price 5 6 each post free from- THE LIBRARIAN, THE "GARDENERS' CHRONICLE," LTD., 41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

The Gardeners' Chronicle.

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table showing charges for advertisements: Ordinary Positions, Facing matter and Back Page, Half and quarter pages, column and half column spaces, pro rata.

4 line space not exceeding 20 words ... 3 0 Per inch, single column ... 7 0 Per inch, across 3 columns ... 14 0 Per inch, across 5 columns ... 1 1 0

Front page (no display allowed) 1/- per line space. (Headline counted as two lines) For discounts apply to address below.

SITUATIONS WANTED.

26 words 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED-KINGDOM ... 19 6 per annum. ABROAD ... 22

Cheques and P.O.'s to be made payable to 'GARDENERS' CHRONICLE,' LTD.

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2. Telegrams 'GARDCHRON, LONDON.' Telephone: 1645 GERRARD.

REMARKS.-Brandy's Seedling, New-on Wonder, Dumb-bow, Seedling (working) and Cox's Orange Pippin selected form the bulk of the supplies of Apples. Several sorts of Cox's Orange Pippin are sold by the dozen, and those of lesser quality in half-sieves. In the apple trade, the demand for Gages shows a slight increase. The Alameda and its order of fruit are being killed or burnt. Oranges and Lemons are still very scarce and expensive. There is much better Tomato. Mushrooms show a slight increase in supply, not enough to affect the prices. Gimmey's Great Beans are a fairly good supply. Sticky tubercula (Cancer) Anthracis and Chorio is offered in limited quantities, but from all sources are realising high prices. A note of all plants are on what is left. The same list is given in our current list, printing with the exception of Cauliflowers and Cabbage. E. H. R. Covent Garden Market, November 28, 1917.

GARDENING APPOINTMENTS.

- Mr G Beale a Gardener to Geo L. Wood Esq. ... Mr John Busby a Gardener to the Rev. Admiral and Mrs L. ... Mr J. Clark a Gardener to the Messrs J. WALTER & SONS, 21, Abchurch Lane, the Auctioneer at New Gate Street, is Superintendent of the St. Adams Cemetery.

SITUATIONS WANTED.

Continued from page 111.

GARDENER (HEAD OF SINGLE-HANDLED); experienced in all sorts of first class gardens, 15 years in service, excellent references. A GOLD, BRONZE & SILVER Medalist, Surrey.

HEAD WORKING GARDENER seeks position in garden, 10 years experience, employed in 1st class gardens, good references, first class estate (Surrey). For particulars apply to departments of the "GARDENERS' CHRONICLE," Apple, 4, SOUTHAM, London, W.C. 2, or Mansfield, North.

GARDENER (HEAD WORKING) seeks position in garden, 10 years experience, excellent references, good references in garden, excellent references, final list of garden, 1st class, HAVERTY, The Nursery, 41, Flaxton-st., W.C. 2.

SITUATION required as HEAD WORKING MAN in SINGLE-HANDLED GARDENER, experienced in all sorts of good characters, G. MILLS, 6, Wellington Terrace, Abingdon, Monmouthshire.

GARDENER (WORKING GENERAL); preferred position in garden, 12 years experience, excellent references, West of London preferred. 105, The Grove Road, Chisloth, Berks.

FOREMAN (INSIDE), in good establishment, 10 years experience, 1st class, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th, 101st, 102nd, 103rd, 104th, 105th, 106th, 107th, 108th, 109th, 110th, 111th, 112th, 113th, 114th, 115th, 116th, 117th, 118th, 119th, 120th, 121st, 122nd, 123rd, 124th, 125th, 126th, 127th, 128th, 129th, 130th, 131st, 132nd, 133rd, 134th, 135th, 136th, 137th, 138th, 139th, 140th, 141st, 142nd, 143rd, 144th, 145th, 146th, 147th, 148th, 149th, 150th, 151st, 152nd, 153rd, 154th, 155th, 156th, 157th, 158th, 159th, 160th, 161st, 162nd, 163rd, 164th, 165th, 166th, 167th, 168th, 169th, 170th, 171st, 172nd, 173rd, 174th, 175th, 176th, 177th, 178th, 179th, 180th, 181st, 182nd, 183rd, 184th, 185th, 186th, 187th, 188th, 189th, 190th, 191st, 192nd, 193rd, 194th, 195th, 196th, 197th, 198th, 199th, 200th, 201st, 202nd, 203rd, 204th, 205th, 206th, 207th, 208th, 209th, 210th, 211st, 212th, 213th, 214th, 215th, 216th, 217th, 218th, 219th, 220th, 221st, 222nd, 223rd, 224th, 225th, 226th, 227th, 228th, 229th, 230th, 231st, 232nd, 233rd, 234th, 235th, 236th, 237th, 238th, 239th, 240th, 241st, 242nd, 243rd, 244th, 245th, 246th, 247th, 248th, 249th, 250th, 251st, 252nd, 253rd, 254th, 255th, 256th, 257th, 258th, 259th, 260th, 261st, 262nd, 263rd, 264th, 265th, 266th, 267th, 268th, 269th, 270th, 271st, 272nd, 273rd, 274th, 275th, 276th, 277th, 278th, 279th, 280th, 281st, 282nd, 283rd, 284th, 285th, 286th, 287th, 288th, 289th, 290th, 291st, 292nd, 293rd, 294th, 295th, 296th, 297th, 298th, 299th, 300th, 301st, 302nd, 303rd, 304th, 305th, 306th, 307th, 308th, 309th, 310th, 311st, 312th, 313th, 314th, 315th, 316th, 317th, 318th, 319th, 320th, 321st, 322nd, 323rd, 324th, 325th, 326th, 327th, 328th, 329th, 330th, 331st, 332nd, 333rd, 334th, 335th, 336th, 337th, 338th, 339th, 340th, 341st, 342nd, 343rd, 344th, 345th, 346th, 347th, 348th, 349th, 350th, 351st, 352nd, 353rd, 354th, 355th, 356th, 357th, 358th, 359th, 360th, 361st, 362nd, 363rd, 364th, 365th, 366th, 367th, 368th, 369th, 370th, 371st, 372nd, 373rd, 374th, 375th, 376th, 377th, 378th, 379th, 380th, 381st, 382nd, 383rd, 384th, 385th, 386th, 387th, 388th, 389th, 390th, 391st, 392nd, 393rd, 394th, 395th, 396th, 397th, 398th, 399th, 400th, 401st, 402nd, 403rd, 404th, 405th, 406th, 407th, 408th, 409th, 410th, 411st, 412th, 413th, 414th, 415th, 416th, 417th, 418th, 419th, 420th, 421st, 422nd, 423rd, 424th, 425th, 426th, 427th, 428th, 429th, 430th, 431st, 432nd, 433rd, 434th, 435th, 436th, 437th, 438th, 439th, 440th, 441st, 442nd, 443rd, 444th, 445th, 446th, 447th, 448th, 449th, 450th, 451st, 452nd, 453rd, 454th, 455th, 456th, 457th, 458th, 459th, 460th, 461st, 462nd, 463rd, 464th, 465th, 466th, 467th, 468th, 469th, 470th, 471st, 472nd, 473rd, 474th, 475th, 476th, 477th, 478th, 479th, 480th, 481st, 482nd, 483rd, 484th, 485th, 486th, 487th, 488th, 489th, 490th, 491st, 492nd, 493rd, 494th, 495th, 496th, 497th, 498th, 499th, 500th, 501st, 502nd, 503rd, 504th, 505th, 506th, 507th, 508th, 509th, 510th, 511st, 512th, 513th, 514th, 515th, 516th, 517th, 518th, 519th, 520th, 521st, 522nd, 523rd, 524th, 525th, 526th, 527th, 528th, 529th, 530th, 531st, 532nd, 533rd, 534th, 535th, 536th, 537th, 538th, 539th, 540th, 541st, 542nd, 543rd, 544th, 545th, 546th, 547th, 548th, 549th, 550th, 551st, 552nd, 553rd, 554th, 555th, 556th, 557th, 558th, 559th, 560th, 561st, 562nd, 563rd, 564th, 565th, 566th, 567th, 568th, 569th, 570th, 571st, 572nd, 573rd, 574th, 575th, 576th, 577th, 578th, 579th, 580th, 581st, 582nd, 583rd, 584th, 585th, 586th, 587th, 588th, 589th, 590th, 591st, 592nd, 593rd, 594th, 595th, 596th, 597th, 598th, 599th, 600th, 601st, 602nd, 603rd, 604th, 605th, 606th, 607th, 608th, 609th, 610th, 611st, 612th, 613th, 614th, 615th, 616th, 617th, 618th, 619th, 620th, 621st, 622nd, 623rd, 624th, 625th, 626th, 627th, 628th, 629th, 630th, 631st, 632nd, 633rd, 634th, 635th, 636th, 637th, 638th, 639th, 640th, 641st, 642nd, 643rd, 644th, 645th, 646th, 647th, 648th, 649th, 650th, 651st, 652nd, 653rd, 654th, 655th, 656th, 657th, 658th, 659th, 660th, 661st, 662nd, 663rd, 664th, 665th, 666th, 667th, 668th, 669th, 670th, 671st, 672nd, 673rd, 674th, 675th, 676th, 677th, 678th, 679th, 680th, 681st, 682nd, 683rd, 684th, 685th, 686th, 687th, 688th, 689th, 690th, 691st, 692nd, 693rd, 694th, 695th, 696th, 697th, 698th, 699th, 700th, 701st, 702nd, 703rd, 704th, 705th, 706th, 707th, 708th, 709th, 710th, 711st, 712th, 713th, 714th, 715th, 716th, 717th, 718th, 719th, 720th, 721st, 722nd, 723rd, 724th, 725th, 726th, 727th, 728th, 729th, 730th, 731st, 732nd, 733rd, 734th, 735th, 736th, 737th, 738th, 739th, 740th, 741st, 742nd, 743rd, 744th, 745th, 746th, 747th, 748th, 749th, 750th, 751st, 752nd, 753rd, 754th, 755th, 756th, 757th, 758th, 759th, 760th, 761st, 762nd, 763rd, 764th, 765th, 766th, 767th, 768th, 769th, 770th, 771st, 772nd, 773rd, 774th, 775th, 776th, 777th, 778th, 779th, 780th, 781st, 782nd, 783rd, 784th, 785th, 786th, 787th, 788th, 789th, 790th, 791st, 792nd, 793rd, 794th, 795th, 796th, 797th, 798th, 799th, 800th, 801st, 802nd, 803rd, 804th, 805th, 806th, 807th, 808th, 809th, 810th, 811st, 812th, 813th, 814th, 815th, 816th, 817th, 818th, 819th, 820th, 821st, 822nd, 823rd, 824th, 825th, 826th, 827th, 828th, 829th, 830th, 831st, 832nd, 833rd, 834th, 835th, 836th, 837th, 838th, 839th, 840th, 841st, 842nd, 843rd, 844th, 845th, 846th, 847th, 848th, 849th, 850th, 851st, 852nd, 853rd, 854th, 855th, 856th, 857th, 858th, 859th, 860th, 861st, 862nd, 863rd, 864th, 865th, 866th, 867th, 868th, 869th, 870th, 871st, 872nd, 873rd, 874th, 875th, 876th, 877th, 878th, 879th, 880th, 881st, 882nd, 883rd, 884th, 885th, 886th, 887th, 888th, 889th, 890th, 891st, 892nd, 893rd, 894th, 895th, 896th, 897th, 898th, 899th, 900th, 901st, 902nd, 903rd, 904th, 905th, 906th, 907th, 908th, 909th, 910th, 911st, 912th, 913th, 914th, 915th, 916th, 917th, 918th, 919th, 920th, 921st, 922nd, 923rd, 924th, 925th, 926th, 927th, 928th, 929th, 930th, 931st, 932nd, 933rd, 934th, 935th, 936th, 937th, 938th, 939th, 940th, 941st, 942nd, 943rd, 944th, 945th, 946th, 947th, 948th, 949th, 950th, 951st, 952nd, 953rd, 954th, 955th, 956th, 957th, 958th, 959th, 960th, 961st, 962nd, 963rd, 964th, 965th, 966th, 967th, 968th, 969th, 970th, 971st, 972nd, 973rd, 974th, 975th, 976th, 977th, 978th, 979th, 980th, 981st, 982nd, 983rd, 984th, 985th, 986th, 987th, 988th, 989th, 990th, 991st, 992nd, 993rd, 994th, 995th, 996th, 997th, 998th, 999th, 1000th.

LADY GARDENER wishes situation in garden, 14 years experience, excellent references, M. L., Box 20, 41, Wellington Street, Covent Garden, W.C. 2.

WOMAN UNDER GARDENER; strong, experienced in all sorts of garden work, 10 years experience, excellent references, 105, The Grove Road, Chisloth, Berks.

WELL EDUCATED GIRL (17) desires position in garden, 10 years experience, excellent references, 105, The Grove Road, Chisloth, Berks.

Cut Flowers, &c.: Average Wholesale Prices

Table listing various cut flowers such as Anemones, Carnations, Chrysanthemums, and Liliums, with prices in s.d. and s.d. s.d.

Cut Foliage, &c.: Average Wholesale Prices

Table listing various cut foliage plants such as Adamant, Artichoke, Beans, and Carrots, with prices in s.d. and s.d. s.d.

Vegetables: Average Wholesale Prices

Table listing various vegetables such as Artichoke, Beans, Broccoli, Cabbages, Carrots, Cauliflowers, and Lettuce, with prices in s.d. and s.d. s.d.

Watercress, per doz. 0 4-0 6

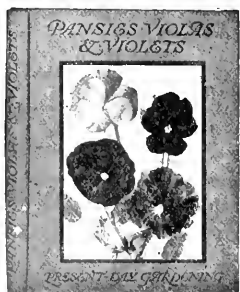
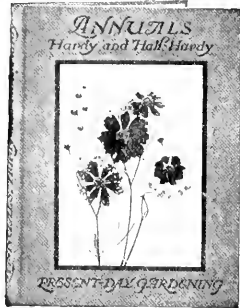
The Best Christmas Present.

A Complete Set of

PRESENT-DAY GARDENING

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."

EACH VOLUME IS WRITTEN BY AN EXPERT.
ILLUSTRATED WITH EIGHT PLATES REPRODUCED FROM COLOUR PHOTOGRAPHS. ■ ■



"Everyone who loves his garden should make a point of getting the whole series illustrating 'Present-Day Gardening.'"—*The Country Home*.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS, AND VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With Preface by the Rev. W. WILKS, M.A.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

ROOT AND STEM VEGETABLES. By the late ALEXANDER DEAN, V.M.H., Chairman of the National Vegetable Society.

CARNATIONS AND PINKS. By T. H. COOK, Head Gardener to Queen Alexandra at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. M'LEOD.

RHODODENDRONS AND AZALEAS. By WILLIAM WATSON, A.L.S., Curator of the Royal Botanic Gardens, Kew; with Preface by Sir FRED W. MOORE, M.A., A.L.S., V.M.H. (*The only volume published on this subject.*)

LILIES. By A. GROVE, F.L.S., with Preface by H. J. ELWES, F.R.S.

APPLES AND PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of Fruit and Vegetable Committee of the Royal Horticultural Society.

IRISES. By W. R. DYKES, M.A., with Preface by Prof. BAYLEY BALFOUR.

ANNUALS: HARDY AND HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARMAN PAYNE.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRETLAND FARMER, F.R.S.

TULIPS. By the Rev. JOSEPH JACOB, Secretary of the Midland Daffodil Society.

DAHLIAS. By GEORGE GORDON, V.M.H., President of the National Dahlia Society.

ROSES (double volume 2/6 and 3/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON, with introduction by WM. ROBINSON. Author of "The English Flower Garden." (Double volume 2/6.)

A complete set as above will be sent carriage paid to any part of the United Kingdom for 29/-, or single volumes can be had 1/10 each (Roses and Climbing Plants 2/10), post free from

The PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

SALES BY AUCTION.

MILFORD, near GODALMING.
By Order of the Executors, Clearance Sale.
MESSRS. PROTHEROE & MORRIS
will sell by Auction on the premises,
Young's Nurseries, Milford, Surrey.
On Monday next, December 10th, and two following
days, at 12 o'clock precisely,
the whole of the

NURSERY STOCK,

including
2,000 Conifers and Evergreens.
1,000 Young's Golden Juniper.
2,500 Spruce for Christmas Trees.
6,000 Firs and Pinus.
5,000 Flowering Shrubs.
10,000 Forest Trees, suitable for Fades and Fencing.
8,000 Rhododendrons, Pernetium, and others.
Thousand of Privet.
30,000 Manetti Stocks.
10,000 Quirk.
8,200 Standard and Feathered Apples, Pears and Plums.
Three Greenhouses, Pits, Piping, Carts, Implements,
Flower Pots, and numerous other effects.
Catalogues had on the premises; of C. Butcher, Esq.,
Salisbury, 32, Gresham Street, and of the Auctioneers,
67 and 68, Cheapside, E.C. 2.

WILMSLOW, CHESHIRE.

Absolute Clearance Sale, by Order of the Executors of
the late Ethel Ashworth, Esq.
MESSRS. PROTHEROE & MORRIS
will sell by Auction on the premises,
Harefield Hall, Wilmslow, Cheshire
(Alderley Edge Station),
On Wednesday and Thursday, December 12th and
13th, 1917, at 12.30 o'clock precisely each day.

2,900 ORCHIDS,

including 500 Cypripediums,
Odontoglossum crispum in variety, Masdevallias,
Lycaete, Dendrobium, Cattleyas, Laelias,
Laelo-Cattleyas.
Many choice and well-known white Cattleyas.
On view one week prior to sale. Catalogues had on
the premises and of the auctioneers, 67 and 68, Cheap-
side, E.C. 2.

WALTHAM ABBEY.

FREEHOLD NURSERY.

**One Acre of Glass for Tomato and Cucumber
Growing.**
By Order of Trustees of Mr. J. Shearman, deceased,
with possession.

MESSRS. PROTHEROE & MORRIS
will sell by Auction

At their Sale Rooms, 67, Cheapside, E.C.,
On Thursday, December 13th, at 5 o'clock,
the compact and easily worked

MARKET NURSERY

In Honey Lane, Waltham Abbey.

22 Greenhouses, total length 2,500 feet, 10,000 feet
piping, Sheds, &c., and 41 acres of Land, with important
Building Frontage to Honey Lane. No incoming valua-
tion.
May be viewed. Particulars had of Mr. J. H. Shear-
man, Rose Bank, Homer Lane, Waltham Abbey; of
D. M. Paul, Esq., Solicitor, 2, New Court, Lincoln's
Inn, W.C. 2; and of the Auctioneers, 67 and 68, Cheap-
side, E.C. 2.

HANWELL.

Clearance Sale of Fruit Trees and other Stock
MESSRS. PROTHEROE & MORRIS
will sell by Auction at the

**Osterley Park Nurseries, Windmill Lane,
near Hanwell,**

On Monday, December 17th, at 12 o'clock.

by order of Mr. G. Cannon, 3,500 well-grown standard
Bush and Grand Fruit Trees of the best varieties,
including 1,500 Apples, 500 Pears, 300 Plums (mostly Vic-
tor), 1,100 standard and dwarf-trained Peaches and
Nectarines, 4,000 Gold and Green Privet (3 to 5 ft.), 500
Laurels (3 to 4 ft.), Flowering and Evergreen Shrubs,
Standard and Dwarf Roses, &c. May be viewed.
Catalogues had on the premises, and of the Auc-
tioneers, 67 and 68, Cheapside, E.C. 2.

SALES BY AUCTION OF

BULBS

Every Monday, Wednesday, and Friday.

ROSES.

FRUIT TREES, HERBACEOUS PLANTS, &c.,
Every Wednesday.

MESSRS. PROTHEROE & MORRIS,
67 and 68, CHEAPSIDE, E.C. 2.

Specimens on Stamps will ensure Twelve Catalogues.

BUSINESS TO LET.

FOR SALE, a MARKET NURSERY;
about 8 acres and 60,000 super feet of Glass; ex-
cellent local markets; South of England; or a partner-
ship would be entertained with a thoroughly capable
grower with a view to ultimate purchase. Principals
only dealt with.—M. H., Box 4, 41, Wellington Street,
Covent Garden, W.C. 2.

PARTNERSHIP.

WANTED, a Gentleman, with £1,000
capital, to join another in a good Fruit, Flower,
and Vegetable Business, well established; return for
capital and help in business to be £225 per year, plus
half all profits above £250 per year; returns based on
Income Tax figures for past 3 years. Anyone in touch
with Fruit and Flower Growers preferred, and if not
free himself, with a daughter or sister who could help
in business.—Write, G.W.Y.T.H., Box 2, 41, Wellington
Street, Covent Garden, W.C. 2.

BOOK WANTED.

WANTED TO PURCHASE
second-hand copies of
Dr. HOGG'S
"FRUIT MANUAL,"
(Fifth Edition)

WHAT OFFERS?

"Amateur," Box 27,
41, WELLINGTON STREET, COVENT
GARDEN, W.C.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two),
6d. for each succeeding line.

Gardeners desiring their Advertisements repeated
must give full particulars, otherwise no
notice will be taken of their communications.
Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant
Situations are recommended to send them
copies of testimonials only, retaining the
originals. On no account should they enter
into communication with unknown cor-
respondents who require a fee beforehand.

Advertisers are cautioned against having Letters
addressed to Initials at Post-offices, as all
Letters so addressed are opened by the
Postal Authorities and returned to the
Sender.

PRIVATE.

GARDENER (HEAD) required.—Reply,
stating age, experience, wages, &c., to E. J.
BENTHALL, Trowichen Estate Office, Grampound Road,
Cornwall.

WANTED, experienced HEAD (WORKING)
GARDENER, and 1 Dozen or over two at pre-
sent, for all-round work Apply, MRS. SANDBACH
PARKER, Ponsfeld, Hertford.

WANTED, GARDENER (SINGLE-HANDED),
with help, permanency if competent. Flowers,
Vegetables, Orchard, poultry; in all about 1½ acres; one
warm House, two Cold; no cottage. Call Sunday, or
write, stating wages, &c., MURKIN, Ravensbury Gar-
dens, Mit-ham.

WANTED, good all-round WORKING
GARDENER, one with knowledge of laying out
Gardens preferred; also an ASSISTANT. — STOREY,
Thornden Hall, Baldenden, Kent

WANTED, GARDENER, for Outside
work; chiefly Kitchen Garden; ineligible or dis-
charged man, to work under Head Gardener, where
ages are kept.—Write, with full particulars, stating
wages required, with Botby &c., to WM. BARK,
Brompton Gardens, Oswestry, Salop.

WANTED, good MAN (ineligible) for
general work in large Gardens; wife look after
Botby; wages to suitable man 27s., with good cottage;
8s. for Botby attendance; son can be employed. State
age and experience to HEAD GARDENER, King's
Walken, Burf, Hitchin.

40s. per week offered for good all-round
GARDENER for Private Garden; able to milk
cows; had kept for help.—State age, married or single,
when discharged, send copies of references to A. 84,
Crossbrook Street, Waltham Cross.

WANTED, GARDENER; good all-round
man,—WRIGHT, Gwalior House, Old Southgate,
London, N.

WANTED, SINGLE MAN, ineligible, for
Outside Garden work; one able to take Sunday
duty, overtime paid.—Particulars of experience to H.
KING, Stevenstone Gardens, Torrington, N. Devon.

WANTED, GARDENER; ineligible, mar-
ried; wife help as cook and working housekeeper
to two children, girl and other help given; man good
all-round; take charge of cow, horse, goats, and pigs;
must be willing, obliging, good temper; no grumbler;
make himself useful; first-class references indispensable;
reason, fire, and garden. State lowest combined salary
expected; country. Kent.—Write, "GARDENER," c/o
SNGR, 289, Regent Street, London, W.

MARRIED COUPLE wanted for country
cottage, 20 miles from London, between Rick-
manstow and Gerrards Cross; to live in house during
winter months and in cottage close by during summer;
man to act as Gardener; a few poultry, and possibly
chickens are kept.—Write, with full particulars, wife to
act as cook when owner at residence for week-end
during winter, and to assist in house during summer.—
Write, HUNTER TOD, 11, Upper Whitpole Street, W. 1.

WANTED, by 17th, married couple as
GARDENER and CARETAKER during winter
months; to live in cottage in summer and be Head of
two; mixed Garden, Green-house, fowls; good refer-
ences; wages 40s.—R. T., 9, Gloucester Terrace, W. 2.

WANTED, Two Men, for Inside and Wall
Fruit; discharged soldiers or ineligible. Botby
and vegetables. State wages and particulars to F.
PARKES, Wollston Hall, Nottingham.

WANTED, several young MEN, dis-
charged from the Army, with previous Gardening
experience, for Outside. Wages according to condition
and capabilities; excellent Botby; 1 p.m. Saturdays.—
A. J. COBB, Duffryn Gardens, near Cardiff.

WANTED, FOREMAN (Inside); single;
well up in Fruit and Plant Growing; lodgings
on estate; wages 40s. to good man.—J. GILBERT, Han-
worth Park Gardens, Feltham.

WANTED, Two experienced JOURNEY-
MEN; to APPROVE for Inside; 24s. and 18s.
per week respectively to start, with Botby, milk,
and vegetables.—Apply, C. H. WHEELER, Swinton Gardens,
Masham, Ripon.

WANTED, JOURNEYMEN, experienced
in Inside work, also Fruit Trees, &c.; ineli-
gible, or discharged from Army.—State experience and
wages required to W. R. GODBEER, Dransfield Court
Gardens, Sevenoaks, Kent.

WANTED, TWO LADY GARDENERS
(Inside); £1 per week, Botby, &c., duty alternate
Sundays. Apply, GIBSON, Alfreton Park, Alfreton,
Derbyshire.

WANTED, a FOREWOMAN for Gardens,
with some knowledge Inside and Out; board
at lodge; state wages; staff 2 men, with help.—Ad-
dress, FARWELL, The Priory, Burnham, Bucks.

WANTED, TWO LADY GARDENERS for
Inside and Outside work in Kent.—Write, stating
wages, age, and experience, to GARDENER, Box 23, 41,
Wellington Street, Covent Garden, W.C. 2.

WANTED, strong YOUTHS, inside and out, wages 20s. to 22s., with Botby, milk, and vegetables, according to experience, dairy paid extra. Apply, STANLEY G. GARRATT, Caswell Hall Gardens, Sutton Coldfield, Birmingham.

WANTED, IMPROVER, inside Houses; age 16, wages 41 weekly, with Botby, vegetables, milk.—E. MORGAN, Woodland Hall Gardens, near Hull.

WANTED, LAD, about 16, for inside and out, take-shir, wages 20s. per week, Botby and vegetables.—Apply, L. WATERMAN, The Gardens, Sydenham, Faversham.

TRADE.

WANTED, HARDY PLANT FOREMAN. —Apply, stating full particulars, age, experience, and wages desired, to "FOREMAN," Box 1, 41 Wellington Street, Covent Garden, W.C. 2.

WANTED, a thoroughly qualified MAN, for the North of England, to take charge of a quantity of Glass, Cucumber, Tomatos, Chrysanthemums, &c.—Address, giving full particulars, experience, wages, &c., S. F., Box 9, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, Smart, Active GREENHOUSE FOREMAN for North Country Nurseries; intelligible for Army, Chinese, Japanese, references, and wages asked to NORTH, Box 2, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, first-class PROPAGATOR of Clematis, Roses, and Flowering Trees and Shrubs. Write, stating wages and experience, to W. W. Box 26, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, PROPAGATOR, not eligible for Army, Chinese flowering Trees and Shrubs, Clematis, and Roses, in quantity only. Write, W. C., Box 27, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, CUCUMBER GROWER for MAN, for glass and bare. Cucumber growing. Write, stating experience and wages, with copies of references, to APPEL, SMITH, Hipsley, Nurseries, Loughborough.

WANTED, MAN or WOMAN GARDENER, used to potting and watering Pot Plants, to take charge of Glass and/or Fernery in rapidity, would suit energetic young woman who wishes to gain all-round knowledge in growing for the Trade. Apply, COLLE PARK NURSERY, Morden Lane, 1st, North.

WANTED, MAN for Building and grafting STEVENS, Nurseries, Coventry.

FLORIST'S Furnisher and Decorator wanted; good pay; must be thoroughly experienced. Write, DEBORATE, c/o Goulde, 54, New Oxford Street, W.C. 1.

WANTED, First-class FLORISTS, part-time, to CHEMBERT LEROY, 155, High Street, Notting Hill Gate.

WANTED, MAN for Agricultural Seed Department, well experienced in executing orders. Apply, stating age, experience, and salary expected, to W. G. or Hirst & Sons, Ltd., Houndsditch, London.

WANTED, SEED ASSISTANT; intelligible. Please give particulars of experience and salary required to JOHN PLED & SON, Seedsmen, West Norwood, S.E. 27.

WANTED, PACKER, for Plants, Seeds and Bulbs. Please apply, giving particulars of experience and salary required, to JOHN PLED & SON, Seedsmen, West Norwood, S.E. 27.

WANTED at once, an energetic and capable ASSISTANT to the Seed Department; two or three seasons' experience; suitable for heavy work. Full particulars, stating wages, &c., to HILBER & SONS, Seedsmen, Seedsmen, &c., Winchester.

WANTED, LADY GARDENERS, as SHOP ASSISTANTS—Apply by letter, stating experience and salary required, to the Bolton Manager, JAMES CARTER & CO., 237, High Holborn, London, W.C. 1.

WANTED, young LADY FLORIST, with some knowledge of Seed—Particulars of qualifications and wages required to W. THOMAS PERKINS, Florist and Seed Merchant, Kettering.

SITUATIONS WANTED.

Twenty-six words for 1s. and 6d. for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

GARDENER (HEAD) or Gardener and Small Estate Management, where required; life experience in all branches. Inside and Out; early and late for long several years. Head in good families; thorough methods. Highly recommended, married, 40, 11, Woodhouse, Woodhouse, Possings-orth Gardens, Cross Hill, Sussex.

GARDENER (HEAD), where several are required. Fruit, Vegetables, and Flowers are well growing. 21 years in Garden and Estate Work; age 48. F. BENNETT, Woodhouse, Woodhouse, Loughborough.

GARDENER (HEAD) seeks engagement in a good establishment, where several others are required. Experience in all branches, highly recommended. In an employer after 11 years' service; left business previously being well married. Age 49. C. BAILEY, 6, Middle Road, Brompton, London, S.W.

GARDENER (HEAD WORKING) desires to engage in a good establishment, where several others are required. Experience in all branches, well recommended, over 20 years' service. Write particulars to COMINGSBY, 1, 3, 4, 21, Bristol.

GARDENER (HEAD WORKING) seeks permanent situation, life experience in all branches. 20 years' married two children, 14 and 16; excellent references. RENNIE, Leaside, Dartingtonbury, Hert.

GARDENER (HEAD WORKING), where several are required. Experience in all branches; 15 years' married, age 28, discharged from Army. DAVY, 1, Lower Down, Tulsehulph, Plymouth.

ADVERTISER, with 20 years' experience in the management of London Property, Woods, Flower, Gardening, and engagements temporary or otherwise. Highest references, can be furnished; moderate salary. I am permitted to give outside office—A., Box 14, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (single) seeks situation in Nursery or Private Garden, 12 years' experience Inside and Out, intelligible; please state wages.—NEWHAM, 99, Somerset Road, South Farnborough, Hants.

TRADE.

FOREMAN (WORKING); life experience in Cucumber, Tomatos, Bolding Stuff, and Chrysanthemums; married, good refs. State salary.—C. LIND, QUEEN, 8, Clifton Terrace, Spencer Road, Millham, Surrey.

THE ROCK GARDEN

A practical work on the cultivation and management of Rock Gardens, written by Reginald Farrer. One of the best and most popular works on the subject.

Contains 5 plates in colour. Price 1/10 post free.

THE PUBLISHER,

The Gardeners' Chronicle, Ltd., 41, Wellington Street, Covent Garden, London, W.C. 2.

GARDENING CHARITIES. GARDENERS' ROYAL BENEVOLENT INSTITUTION.

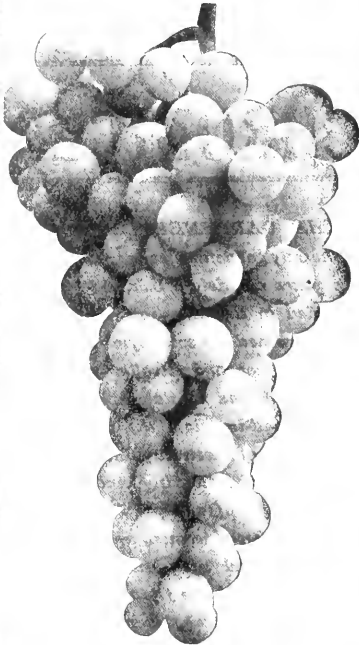
GEO. J. INGRAM, Sec., 92, Victoria Street, S.W. Telephone—Victoria 514

IN PRAISE OF THE GARDENERS' CHRONICLE.

THE GARDENERS' CHRONICLE is the only gardening paper with seventy-six years of history behind it. It was founded in the dawn of what is commonly termed the scientific age. It has seen the rise and development of the railway, and its partial supersession by motor road-traffic; the discovery of the power of electricity, and its application to a bewildering multiplicity of every day affairs; the economic emancipation of women, and their entry into industrial life; and, last of all, the discovery of the flying machine—so long believed to be impossible. The GARDENERS' CHRONICLE has not remained static through all these marvellous changes. It has grown, developed, expanded. It has remained throughout its whole career completely in sympathy with its readers. It has advanced with them, explored with them the realms of experiment, examined with them in a spirit of intelligent sympathy every new theory of botanic or horticultural science, provided a medium whereby they have been enabled to communicate with each other and make their discoveries known. It is revered for its great age, yet respected for its modernity; it has the experience of years and the elasticity and progressiveness of youth. Through the storm and stress of the past three years it has stood unmoved, and it looks forward in full confidence to the enjoyment of the ampler scope and increased opportunities which the termination of the war will bring.

AN ADMIRER.

BULL'S FOOD FOR PLANTS, FRUIT & VEGETABLES.



CANNON HALL MUSCAT
Grown with Bull's Food for Plants at Menpes Fruit Farm.

MENPES FRUIT FARM, LTD.
18 Nov., 1916.

Dear Sirs,
For many years we have exclusively used your "Food for Plants" for our Vines, and the results have invariably been all that could be desired.

Please repeat our last season's order and oblige,

Yours faithfully,
For Menpes Fruit Farm, Limited,

J. J. Peters
Manager.

Sole Manufacturers:

BULL'S PLANT FOOD CO.,
536, King's Rd., Chelsea, London

WOOD'S RIVAL TOMATO
WOOD'S RIVAL CUCUMBER
WOOD'S SCARLET RIVAL MELON
WOOD'S GREEN RIVAL MELON

Packets 1/6, 2/6 and 5/- each.

H. J. G. WOOD, Seedsman & Nurseryman,
Bracknell.

H. J. Greenwood, F.R.H.S., Proprietor.

Rhododendron Ponticum,

to 1 ft. 16/- per 100 140/- per 1000.
to 2 ft. 22/- per 100 180/- per 1000.
to 3 ft. 35/- per 100
to 4 ft. These are suitable for covert planting.
140/- per 1000.

JOSEPH A. SMITH,

Moor Edge Nurseries, Tansley, nr. Matlock

LAXTONS BEDFORD
FRUIT TREES
&
ROSES

CATALOGUE & CULTURAL HINTS GRATIS

IMPORTANT: Please write for a Catalogue, as the Paper (Commission only allow us to send to those who apply—
LAXTON BROTHERS, BEDFORD.

SLUGS SLUGS

"SANITAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (for London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
Limehouse, London, E.
Awarded Medal at Royal Horticultural Exhibition, 1911.

Sample **CRET Pot** FREE with Booklet will convince you that the Drainage, Porosity, Healthfulness of CRET'S would help your plants. Write **PETER BAILEY & SONS, Ltd.** 2 Heaton Mersey Pottery, near MANCHESTER.

THOMSON'S VINE, PLANT & VEGETABLE MANURE

Unrivalled for all Garden Crops. The result of long practical experience in Horticulture. So compounded as to combine stimulating with lasting effects. Produces vigorous, healthy and fruitful growth. Also

THOMSON'S SPECIAL TOP-DRESSING MANURE. AN EXCELLENT STIMULANT.
Prices—(No retail quantities of 56 lbs. and over are supplied in S. H. bags.)
Vine, Plant & Vegetable Manure—12 lbs., 24/-; 56 lbs., 13/6; 28 lbs., 7/6; 14 lbs., 4/6; 7 lbs., 2/6. This 2 1/2, 1, & 6d. Care paid on 56 lbs. and upwards anywhere in United Kingdom.
Special Top-dressing Manure—56 lbs., 20/-; 28 lbs., 11/-; 14 lbs., 6/-; 7 lbs., 3/6.
This 1/- Care paid on 28 lbs. and upwards anywhere in United Kingdom.

THOMSON'S STYPTIC,
3/- and 1/6 per bottle. Sold for Horticultural purposes by all chemists and Nurserymen, or direct from

SOLE MAKERS
W. THOMSON & SONS LTD CLOVENFORDS, N.B.

TOMATO SEED
Bide's "Recruit."
This grand Tomato, for its delicious flavour, uniform size, and heavy cropping qualities, is unsurpassed.
In sealed packets 1/- per packet, direct from the raisers.
S. BIDE & SONS, Ltd.,
ALMA NURSERIES FARNHAM, SURREY.

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
Independently of each year's demand and heavy carriage (usually amounting to half value of goods), we write for "Recruit" Seed pots at all descriptions. Bulk orders and Fern Pots from 2s. each.
RICHARD SANKEY & SON, LTD.
Dalwell Potteries, NOTTINGHAM.

RIVERS'
Fruit Trees, Roses, Vines, Figs, Oranges, AND Orchard House Trees ARE OF First-class Quality.

A Large and Select Stock always on View.
PRICE LIST POST FREE ON APPLICATION.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.

"This is the rat that ate the wheat."
Thousands of tons of food are destroyed by Rats and Mice in our barns, fields, gardens and pantries.

LIVERPOOL VIRUS RATS & MICE EXTERMINATES
Harmless to human beings and domestic animals. No disagreeable smells as they come out of their holes to die.
In 24 hours prepared with bait for Rats 2 1/2 & 6/- for Mice 1/6. Of all Chemists.
Full particulars from **EVANS SONS LESCHER & WEBB, Ltd.** 56, HAZELTON ST., LIVERPOOL.

SUBSTITUTE FOR RUSSIA MATS.
"FRIGI DOMO" CANVAS.
Made from prepared Hair and Wool.
A good non-conductor.
2 yds., 3 yds., and 4 yds. wide
Price and pattern from—
BENJAMIN EDGINGTON'S,
DUKE ST., LONDON BRIDGE, S.E.

ORCHIDS,
Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue,
JAMES CYPHER & SONS,
Exotic Nurseries, GELTENHAM.

THE
Gardeners' Chronicle
No. 1615—SATURDAY, DECEMBER 8, 1917

CONTENTS.

Agricultural machinery	231	Orchid notes and gleanings	231
Appointments at Bournemouth	231	New hybrids	227
Apple	231	Osqueria latifolia	226
Apple William Peters	227	Potato crops, North American	231
Books, notices of	227	Printers' wages, increase in	231
Chrysanthemums and the various hybrids	229	Red Currants, a vision of	232
Bull garden	225	Rhododendrons, planting	233
Autumn Crocuses	225	Scottish National Union of Allotment Holders	230
Casleau, Mr. George	233	Seeds, lost names of	226
Coopering depot, a Welsh	231	Societies, local	231
Crops, effects of drought in the garden	233	Societies	231
Effect of one plant on another, the	233	Perpetual-flowering	231
Farm, crops and stock on	234	Pruning	231
The house	234	Royal Horticultural	232
Food production, on the ground	234	Trees and shrubs	232
Garden and allotments	225	Uses of saucy macrocarpa	226
Ground operations	225	Petrea volubilis	226
Potato Windsor Castle	225	Winter-fruiting trees	236
Garden allotments at Chester	225	Work, the	225, 229
Linnean Society, a Welsh	229	Welsh small-holding colony	231
Market fruit garden, the	227		

ILLUSTRATIONS.

Apple William Peters	227
Planting latifolia	226
Red Currants, London	231, 232

THE MARKET FRUIT GARDEN.

FORTUNATELY, November proved a comparatively dry month, which was welcome after the deluge of October. Only 0.58 inch of rain fell before the 26th, when 0.90 inch was registered, with 0.12 inch on the 30th, making the total 1.50 inch, which fell on eight days. The land, however, dried very slowly, and the digging of fruit plantations was not easy work. Nor could good work be done, as there was too much grass to turn in well—a legacy of the wet summer and the heavy rainfall of October, which rendered hoeing almost useless. Owing to the great shortage of male labour, women have to be depended upon mainly for digging. They do the work passably, considering the condition of the land; but they make it cost about double the amount paid to men at pre-war rates, and probably 50 per cent. more than would have to be paid to men now. Probably soldiers could be obtained to do the digging, but there would be the chance of inefficient men being sent, while there might be trouble in obtaining lodgings for them. As for the National Service women, I prefer to employ the local women, who work for me regularly during a good part of the year. Digging is not properly women's work, and, at the best, they are only makeshifts at it.

PRUNING APPLES.

In settling down steadily to the long pruning campaign, we find evidence of injury to the condition of those Apple trees which were unavoidably missed last season, in consequence of the shortness of labour. Shoots on comparatively young trees, which should have been cut back last winter, in many cases, have become thickly studded with fruit spurs, which will prevent the free extension desired. Further, there is a thick growth of slender laterals, crowding the interior parts of trees of free-growing varieties. The worst victims of last season's neglect are trees of Allington

Pippin, planted eight years ago. As a pruner this variety is my particular aversion, on account of its tendency to make slender growths studded up to near their ends with fruit spurs, forked terminals, and unnecessary laterals pointing in wrong directions. If I were planting a thousand fresh acres, I would not put in a single Allington. It fruits profusely in alternate years only, and, when it does bear, it requires a great amount of thinning. Moreover, it is badly subject to scab. The variety requires severe pruning until it has become well furnished with branches kept well apart, and most of the laterals, which it throws out in great profusion, should be cut off entirely. No artificial spurring is needed, as natural spurs grow only too thickly. The particular trees under notice were trained on these lines, and they had been growing as satisfactorily as Allingtons ever do grow, up to last year, when, unfortunately, they were among the minority of Apple trees not reached by the pruners by the end of the pruning season. Some Blenheim Pippins, also planted eight years ago, have likewise suffered from the lack of pruning last year, the long branches being thickly covered with fruit spurs, a feature not common with young Blenheims. But the variety is a vigorous one, and it will recover its tendency to wood growth after the severe treatment it has just received. By the way, some rows are on the free stock and others next to them on Paradise; yet there is no decided difference in the sizes of the two lots of trees, while the development of fruit spurs is as abundant on one stock as on the other. It is easy to make symmetrical trees of this variety, and it is a pleasure to prune them.

There is not much to do to Worcester Pearmain beyond the thinning out of shoots from the interior parts of trees. With me, this variety is a miserably poor grower. The only trees of it that have branched out well are some on the Paradise stock, all the rest being on the free stock. The former are growing in the lightest soil on the farm. The pruning of Cox's Orange Pippin is always a tedious operation, in consequence of the immense number of new shoots that have to be cut out or spurred, and many more requiring to be cut back below scab-infected wood.

In dealing with Lane's Prince Albert, the main object is to cut back so as to promote extension growth, to secure which there should be no hesitation in sacrificing fruit spurs when the trees are dwarfed, as they are too likely to be. This variety should be pruned severely for some years after planting, in order to force vigorous wood growth before fruiting comes to exercise its dwarfing effect.

INSTRUCTIONS IN PRUNING.

The details of pruning cannot be taught by printed instruction. The variations necessary in practice are too intricate. Only general principles can be laid down safely as rules to be followed. Even in the case of trees for the first three or four years after planting, no

precise instructions are infallible. Varieties of a robust habit of growth require much less severe pruning than those of a feeble habit. There is no fear of the former fruiting prematurely, as there is of the latter. In nearly, if not quite, all pruning instructions a grower is advised to cut to a bud pointing outwards. This is right on the occasions of the first cutting back of freshly planted trees, and it is usually right in the second season. After that, the extension growths of trees of a drooping habit of growth often need to be pruned to buds pointing upwards; and this is quite commonly the proper proceeding among older trees, particularly after the weight of fruit has caused the branches to bend downward. Even among spreading trees planted only eight years ago, most of the cutting this season has been to buds pointing upward, though occasionally a sideways direction is desirable. The only universal rule is to cut to a bud pointing in the direction in which extension growth is desired. With varieties of an upright habit of growth, however, cutting to a bud pointing upwards is the rule to be observed. These remarks apply to Apple trees; but the case is similar with Plums, Victorias, for example, with overhanging extension growths, need to be cut to buds pointing upwards almost invariably, while with Monarchs cutting to buds pointing outwards is almost as generally advisable.

MISSRAPEX APPLES.

There is a larger proportion of distorted Apples among a few varieties this season than I have ever seen before. This is strikingly the case with Bramley's Seedling. The fruit of this variety is generally of good size, and much of it is quite large and of an extraordinary beauty of colour. But among the fruits this season, large and small alike, there are some of the ugliest of shapes, caused by deep clefts, often two or three in the same fruit. That the cause was injury to the surface of the Apples in their very young state by the bite of some insect is almost certain. The capsid bug is known to cause such deformity, and the bites of caterpillars are also believed to have a similar effect. The capsids sent from my place for identification in previous seasons have been declared to be of species regarded as harmless. But it is reported that capsid injury has been serious this season in places where it has not been noticed before. A curious point, however, is that capsids found this season when search was being made for Apple suckers were much fewer than usual. Caterpillars, as every grower knows, were very much more numerous than they commonly are. But Bramley's Seedling was much less seriously attacked by caterpillars than were many other varieties; yet it has suffered more than any other from the bites of some pest, that have caused contortion in shape. When the skin of a fruitlet has been pierced by an insect, the wounded spot does not swell in unison with the rest of the Apple, and, in consequence, a deep cleft is left.

CAUSES OF APPLE-ROTTING.

Messrs. Brooks and Cooley, in the *American Journal of Agricultural Research*, enumerate no fewer than ten micro-organisms which cause the rotting of Apples in store, first living as parasites, and only becoming saprophytes when the increased growth of their mycelium permits them to find, in the decomposed tissues, the substances necessary to their development. The researches of the writers were extended so as to cover the various temperatures at which the several micro-organisms could develop and attack the fruit; but, as all but two of them, when inoculated into the pulp of healthy fruit, grew normally at freezing point, while we are not told how much below 32° F. it would be necessary to keep the temperature of a fruit room to secure safety from attack, further enlightenment is desirable. The question is, Whether a sufficiently low temperature could be maintained without freezing the Apples? *Southern Grower*.

TREES AND SHRUBS.

WINTER-FRUITING TREES AND SHRUBS.

I HAVE never before seen such a wealth of fruit on ornamental trees and shrubs as is the case this year, and consequently the out-door gardens in winter were never more attractive than they are this season. Many of the newer introductions, especially from China, are providing us with a fine touch of colour, and from this point of view alone are great acquisitions, whilst the American species and varieties of *Crataegus* must be seen to realise their true worth. I am venturing to send the Editors a few sprays of various kinds and varieties, gathered on November 29.

A few that strike me as among the most beautiful are *Berberis aggregata*, *B. orthobotrys*, *Celastrus acuminatus*, *C. rugosa*, and *C. scandens*, simply laden with their bright fruit. *Cotoneaster salicifolia rugosa*, *C. species*, *Forrest*, *C. Zabelii*, *C. frigida* (Aldenham variety), and *C. divaricata*.

Crataegus monogyna fructu-luteo is covered with its bright yellow fruit; *C. monogyna foliis var.*, and *C. chipmewaensis*, are very beautiful, as also is *Acanthopanax Henryi*. *Eucnymus europaeus fructo-albo* is remarkably effective, and should be grown much more largely than it is. *Hippophae rhamnoides* (Sea Buck thorn) was never before so beautiful here. *Pyrus Malus aldenhamensis* is most distinct and beautiful. *Rhamnus erythroxylon* is covered with its fine, black fruit. *Pyraeantha Gibbsii*, in my opinion one of the finest berried plants in existence, *Stranvesia Davidiana* and *S. undulata* are both grand plants. *Symphoricarpos racemosus laevigatus* (the new Snowberry) is a delightful addition, and very conspicuous amongst other shrubs.

Many of the new *Viburnums* are a magnificent sight, *V. ovalifolium* being one of the best.

What an opportunity this bountiful fruit yield affords all who are interested in this branch of horticulture to increase their stocks by collecting seeds and raising them personally. To watch these germinate and grow into effective specimens must surely be one of the real pleasures of life to all who care for beautiful trees and shrubs. For the benefit of those intending to do this, I would say that I have found it best to sow the seed immediately the ripened fruit is gathered, and raise the plants in cold frames. *Edwin Beckett*.

PETREA VOLUBILIS.

THERE is a fine specimen of this twiner in one of the glasshouses at Holland House, Kensington. It covers an area of the roof measuring 20 to 25 feet by 8 feet, being wider than high, owing to the method of training. The stems are of considerable thickness, showing that it must be an old plant. It is very handsome when in bloom, the flowers being furnished with a

petaloid calyx of five long blue sepals and a violet corolla. The sepals are showy long after the corolla-drops, as in species of *Clerodendron*, which also belong to the Verbenaceae. In the genus *Petrea* some of the species are erect or arborescent habit. The plant flowers at various periods of the year, apparently as a result of differences of temperature. Mr. Dixon, the gardener, says it sometimes blooms in February, but is best in March. Last year it was at its best in May, and this year it was later still, owing to less artificial heat being given and to the severe winter. The species forms the subject of the supplementary illustration in *Gard. Chron.*, Jan. 13, 1906. The genus was named in honour of Robert James Lord Petre, and the name is often spelt *Petraea*. *J. F.*

ABIES BALSAMAE MACROCARPA.

A note in *Gardening* (Chicago, Nov. 1, 1917) states that Mr. A. D. Hill, whilst travelling in

LOST NAMES OF SEEDS IN EIGHTEENTH-CENTURY CATALOGUES.

The remarks by Mr. Roberts (p. 150) on an 18th century catalogue awaken a sense of long-forgotten or obsolete nomenclature. The distinguished writer himself acknowledges the difficulty experienced by anyone wishing to understand the stocks of seed of that period, and what is meant by the various names.

I have found by studying my earlier gardening works the modern equivalents of some names of seeds mentioned by Clarke and others.

THE TOKER BEAN. This is very obscure. I have never seen it nor anyone who has. It appears in almost all the early lists. It may have been derived from Tokat, in Turkey, as we had a Bean a few years ago called *Sword* or *Turkey*, which was a long-pod, and the Toker was classed



FIG. 86.—*POSOQUERIA LATIFOLIA* FLOWERING IN GLASGOW BOTANIC GARDENS.

northern Wisconsin, has found this handsome form in a wild state. It is characterised by long needles, large cones, dark foliage, and by the fact that even old trees hold their lower branches, characters which make of this variety one of the most beautiful of Firs.

POSOQUERIA LATIFOLIA.

The plant illustrated in fig. 86 will be best known to the majority of gardeners as *P. revoluta*, the leaves having revolute margins, but the correct name is *P. latifolia*. The photograph was taken in the Glasgow Botanic Gardens, and is sent us by Mr. Whittton to show how well the species flowered during the past summer in one of the glasshouses. The genus *Posoqueria* consists of about twelve species, all natives of tropical America. Like most members of the Rubiaceae, they have white, sweetly-scented flowers, with long corolla tubes

with the Windsor type. Switzer spells it *Stoker*, and Miller, *Tokay*.

BOGGOLE or BORECOLE, with "neighbour" and *Boorman* (an old Kentish family name), remind us of earlier ties with our gallant cousins in South Africa.

BOG BEAN is *Faba*, and has no relation to the *Buck* or *Bog Bean* (*Menyanthes trifoliata*). It is identical with *Dwarf Fan* or *Cluster* of the gardens; it was strongly recommended about 1760 for marsh and bog lands, the tall varieties requiring strong, clayey loam. It bears well, and has erect pods. The *Menyanthes* is an aquatic plant, intensely bitter, and has been used instead of rennet for coagulating milk.

BRUCCOLI: PURPLE AND WHITE. Switzer reports three kinds growing in his garden at Vauxhall, and gives an interesting account of his having procured the seeds from Italy. Many garden seeds were imported, as now, from that country, and, not having English names for them, they bore names in Latin, as *Brassica*

capitata. I have seen such paper labels pasted on old seed drawers. Several had the word Capitata contracted to Cap, which no doubt led to the name of "Cape" to Broccoli and Savoy. The first Broccoli and Chou de Milan (Savoy) were Sprouting varieties.

BUCKWHEAT, or BRASK (*Polygonum fagopyrum*). The specific name is derived from the likeness of the seed to Beech nuts, although only about one-third of the size. Cakes are made from the flour in the United States, but here the seed has been only used as pheasants' food.

KIDNEY BEANS, Dwarf and Tall. Nearly all the dwarfs have a tendency to produce running varieties, or "rogues"—for example, Canadian Wonder, and its now popular climbing form. We might include Scarlet Runners as French Beans, but the French call them Haricots d'Espagne. They are herbaraceous.

BURNET (*Poterium Sanguisorba*) is the small salad, or Sheep's Burnet, and quite distinct from *Sanguisorba officinalis*, a marsh plant, and a very shy seeder, often infertile.

CARDUS BENEDICTUS was formerly used to cure cancer, but long since discarded. The old name of *Cardus sculentus* (Eating Thistle) appeared in some lists. It was in all probability the Spanish Chardon (now Cardoon). It is described as a wild species or kind of Artichoke.

LOVAGE (*Ligusticum scoticum*), very frequent on the rocky coasts of Scotland, was reckoned a good emmenagogue. It has now dropped out of cultivation, and is rarely seen except in botanical collections.

MUSTARD, Black or Brown. *Sinapis nigra*. This is still cultivated, like the white, in the Eastern Counties, and formerly in the North, where it was known as Durham Mustard. The seed of the black species looks more like Turnip seed, and is very pungent. The white Mustard has yellow seeds; the flowers of both are yellow.

FINOCHIO, or ITALIAN FENNEL. The foot stalks at the base of this plant fold up like Celery. These overlapping pedicels become quite solid, and when boiled they form a very agreeable dish, but, like boiled Lettuce, have not been popular with British cooks.

HUMBLE PLANT (*Mimosa pudica*).

SENSITIVE PLANT (*Mimosa sensitiva*).

POMPIONS and PUMPKINS were represented by what the Americans call Squash. Gourds were mostly edible, the mammoth Pumpkin and ornamental gourds of various shapes were also cultivated. Loudon says the Pompon was the Melon or Melon of our early horticultural lists, the true Melon being formerly distinguished by the name of Musk Melon. The Vegetable Marrow came later from the Levant.

POPPLES (*Papaver somniferum*) (white seed) were grown for the heads or capsules, and the blue seed as maw for birds.

SMALLAGE, or WILD CELERY (*Apium graveolens*). The name Smallage for the plant that was the original of the garden Celery was retained in gardening books of the early 19th century.

PEAS. Just as it is common now for growers to apply "Marrow" and "Marrowfat" to blue-boiling Peas, so many round varieties bore these descriptions, but the terms Marrow or Marrowfat in the modern sense to wrinkled Peas could not have been applied before Knight's Tall White Marrow, the first of the new race of wrinkled Peas. It was produced from a very remarkable crossing of a small, round, white garden Pea and an earthy coloured tall variety with purple flowers, almost like a grey field Pea, but quite distinct; probably this variety may still be found here and there in the neighbourhood of Hereford by the name of Grey Jack. It has a nice, marrowy taste, and is much liked by cottagers.

To those who may be interested in the Mendelism of the wrinkled Pea, I would refer them to a small 8vo work published at Ludlow in 1802 by T. A. Knight, entitled *The Apple and Pear*. Wrinkled Peas when dry are no good as boilers.

They seem to contain less starch, or the grape sugar develops too quickly.

READING; PEA is a misnomer; it should be Reading, or Essex Reading.

Switzer, in his Compendium, 1751, writing about this Pea, says "not Reading, as by some falsely so called." It was similar to the old Hot spur of Early Emperor type. *J. Morrison.*

APPLE WILLIAM PETERS.

THE Apple illustrated in fig. 87 was exhibited by Mr. W. Peters, Givons Park Gardens, Leatherhead, at the autumn fruit show of the Royal Horticultural Society, held on October 9, and gained an Award of Merit from the Fruit and Vegetable Committee after a deputation had seen the variety in growth at Givons Park. It is a seedling from an extra large fruit of Cox's Orange Pippin, and in general appearance is a little suggestive of smooth, moderate sized fruits of Blenheim Pippin. It is probably at its best at the middle of October, when we found it to possess a very rich, vinous, and agreeable flavour. We give the following descriptive details: Eye open, set in a deep basin of even shape; calyx segments long and spreading; stamens median, tube cordate; stalk 1 inch long, thin, and set in a medium sized, even cavity; cells round, axile. Skin when ripe greenish yellow, with broken stripes of bright red on the side exposed to the sun, marked with spots and patches of grey, and a few specks of russet; flesh greenish yellow, very tender, juicy, sweet, and of good flavour. Foliole small, ovate, acuminate, much serrated; the tree is fruitful in a young state on the Paradise stock.

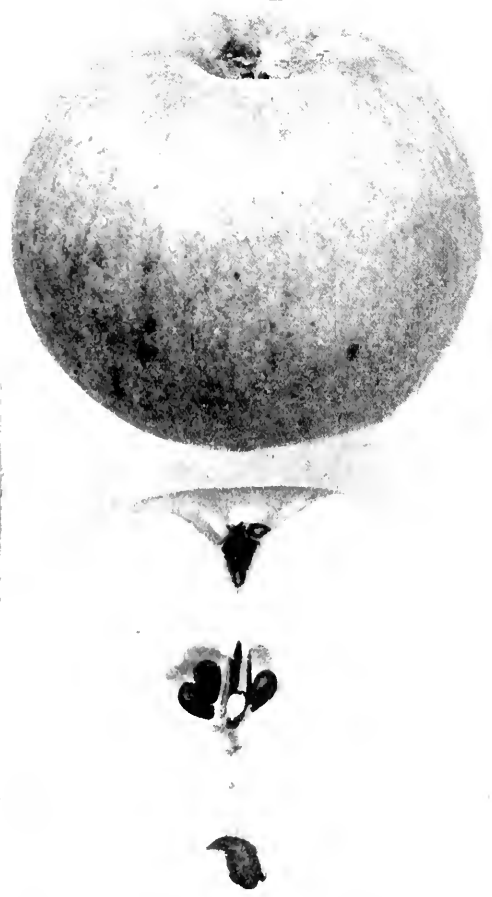


FIG. 87. DESSERT APPLE WILLIAM PETERS.

ORCHID NOTES AND CLEANINGS.

NEW HYBRIDS.

Flowers of the following three new hybrids have been sent to us by Mr. FREDERICK J. HANBURY, Brookhurst, East Grinstead:—

LAELIO-CATELEYA LYDIAEVA (L. C. Lydia (C. Gaskelliana) x L. C. Cowanij) and C. Dowiana aurea).—A very pretty flower of bright chrome yellow, the lip veined and tinged with orange, the wavy-edged front lobe ruby red, and the exterior of the side lobes a lighter shade of the same colour. *Laelia Cowanii* combines with C. *Dowiana aurea* in fixing the bright yellow colour, but there is no trace of the rose and purple of C. *Gaskelliana*.

CYPRIPEDIUM MISS RUTH BONSALE (C. *Acteas* Drucei's variety (insigne x *Lecanum* var.) and C. Miss A. Audrey Locke (Garret A. Hobart x *Troilus* var. Amy Moore).—Following a very good strain in which C. *insigne*, C. *Spicerianum* and C. *villosum* are blended, the present hybrid has a large and finely formed flower. The dorsal sepal is nearest to a large, light form of C. *insigne*, the broad petals, lip

and stamens resembling C. *villosum*. The broad, upper sepal is white, with a gamboge-yellow base having numerous dark purple blotches extending upwards into the white above. The sepals and petals are whitish-yellow tinged with purple.

LAELIO-CATELEYA MRS. R. P. MURRAY.—A very effective hybrid of light colour and attractive form, raised between *Laelia pumila* pumilans and *Laelia Cattleya* 1851 *L. toebrousa* x C. *Leopoldii*. The flower, which is 4 inches across, has nearly equal sized sepals and petals of bright rose purple colour, the petals having also a veining of darker reddish purple. The lip, which has the tubular form of the *Laelia pumila* section, with the margins folded over the column

in the lower half, is white tinged with rose at the base, and the front and margins of the recurved side lobes are bright ruby purple. There are several raised lines running from the base to the yellowish-cream disc of the lip.

JABOROSA INTEGRIFOLIA.—This plant is exceedingly attractive when in bloom, but those who have cultivated and flowered it find that its reputation for tenderness is only too well founded. In a sunny nook, in dry, leamy soil, it is very fine indeed. Its height varies from 6 to 12 inches, and above the broad leaves are shown the handsome, white, tubular flowers, about 2 inches long, and sweetly scented.

ON INCREASED FOOD PRODUCTION.

GARDENS AND ALLOTMENTS.

MUCH has been written on the necessity of making the most of labour and capital, but not much has been said and still less has been done in the direction of making the most of our limited supplies of land. The need for a more rational utilisation of this third great agent of production is clear. Notwithstanding that there is land available, and that there are thousands of men and women anxious to work that land, we see every day large areas on municipal out-kirts only "extensively" tinned and paying a rent of 20s. to 30s per acre. We have, on the one hand, multitudes dwelling in a wilderness of bricks and mortar, and on the other hand acres of land "extensively" and inadequately utilised. It is estimated that there are 750,000 war gardens or allotments now in this country. If 750,000 persons can be found with sufficient enthusiasm to work allotments, how many would be willing to work in real gardens attached to real homes? For the tremendous superiority of a garden attached to one's home, as compared with a mere allotment, needs not to be emphasised. These willing workers and these acres must be brought together. Everyone would benefit, including the landowner.

In the first place the municipal authorities of a town should have control of the land on the outskirts, i.e., the municipal "fringe," and they should be enabled to acquire it on equitable terms, that is to say, in most cases as purely agricultural land, and not with a heavy burden of "unearned increment" tacked on to the price. Probably the powers given under recent Small-holdings Acts would be sufficient. This fringe should be made as extensive and accessible as possible by improved travelling facilities. It is surprising how very unevenly population is distributed, even in this country. On the one hand there is the overcrowded city, while a few miles out one might imagine oneself in the wilds of British Columbia.

The ideal to aim at should be the provision of at least $\frac{1}{2}$ acre with each home. In a town with a population of 100,000 we may suppose that there are 20,000 households, of which at least half will be office or factory workers. Ten thousand houses with $\frac{1}{2}$ acre each will require 2,500 acres, exclusive of roads. A town of this size should have a municipal fringe of many times this extent. On a quarter of an acre it should be possible to produce vegetables and fruit equal or nearly equal in value to the rent paid for house and land. Thus the householder, by some expenditure of his spare time, would live practically rent free. It might be possible in many cases to have holdings $\frac{1}{2}$ acre in extent, or even more than this, thus providing a progressive scale for the ambitious, offering finally the possibility of ownership under certain conditions. "Give a man the secure possession of a black rock and he will turn it into a garden," said Arthur Young. The provision of sufficient land to pay the rent by spare-time gardening would introduce a fresh factor in municipal finance.

This combination of industry and horticulture might form the beginning of an industrial system wherein a man could work at two occupations, involving the highest economy of labour and reducing some of the disadvantages due to the monotony of ultra-specialisation and division of labour.

Another result would be that the food supplies of the country would be greatly increased. It is said that the world is now racing with starvation. Sir William Crookes, in 1908, said that we should soon be in a deadly peril for lack of food. Grossly exaggerated and unduly alarmist these statements may well be, and merely uttered for dramatic effect. Nevertheless we cannot afford to neglect any means for

increasing the home supply of food and making the most of our land. W. G. C.

POTATO WINDSOR CASTLE.

I AM quite in agreement with Mr. C. Davis (p. 196) when he says that the above Potato is still to be reckoned with for cropping, exhibition, and quality. This had a First-class Certificate in 1895, and has stood the test of time well. As for cropping, it varies from good to very heavy. I have watched enthusiastic and highly successful exhibitors carefully cultivating it, lifting the crop when mature, selecting the most shapely tubers, sponging them with water and then wrapping them in tissue-paper to wait the eventful day of the exhibition, so I know it is a handsome Potato for the purpose. Nearly all of the big nurserymen and Potato growers' catalogues I have list it as a second early, which, in my estimation, means mid-season—say, in the middle of August to the middle of September, earlier or later, according to soil, season and district. To get the flavour of a new Potato the tubers may be lifted earlier, if large enough. I never dig up a plant to see if the tubers are sufficiently large, but scrape away the soil and see how they are progressing. No doubt Windsor Castle is more subject to disease than for merely, but even a big market grower will prefer to risk a little loss from this cause than to grow a poor cropping variety with few good qualities to its credit. J. F.

WINDSOR CASTLE Potato, when grown as an early variety, sprouted in boxes or trays, and planted out at the end of March, is ready to lift early in July. The flavour, on our light land, is excellent. Having tried during the past 16 years as many as six new early varieties in one year, I can safely say I have no better early Potato for June lifting or for forcing in pots or frame than May Queen. It is my best-flavoured variety. I know two other sorts that run it close in coming to maturity, but when judged by flavour (without the Mint) May Queen comes out on top. Duke of York and Windsor Castle follow next according to season and the condition of sprouting of the sets. This year, 1917, Epineure was planted as second early (as both of the above-named varieties were scarce), and yielded well at the rate of 2 cwt 1 lb. from 50 square yards, and in the whole half hundred-weight of seed not one was larger than a Walnut; they were much shrivelled and dried, but responded well to generous treatment on newly broken up grass land, as did Dalhousie, which returned 10 tons to the acre with similar treatment, all the work being hastily done as a national necessity to provide food. Our cricket field, used for a review of the V.T.C. on Easter Sunday, before Whit Sunday was cropped to its fullest extent. J. G. Wilson, *Cherry Park Gardens, Wakefield*.

GROUND OPERATIONS.

It would be interesting if Mr. Davis would try the system I call "ridge-trenching," which I described some time ago (*G. C.*, 4, iii, 16, p. 136). With simple ridging about half the area of the second spit is exposed; with the ridge-trenching the third spit is only covered by one spit. If time permits to add the trenching to the ridging I shall add lime and matured ashes to the third spit. H. E. D.

BULB GARDEN.

AUTUMN CROCUSES.

In regard to the remarks on autumn Crocuses printed on p. 212, I may say that I have given up the cultivation of these Crocuses here in Hereford—they make splendid leafage, and then there are a few or no blooms which rarely last more than a day; they do not seem to like our damp mists. A year or two back I was amazed to see what a show they made in a garden at Reading. I have tried about 10 species. H. E. D.



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

EARLY POTATOES.—A few Potatoes may be forced in heated pits. If the sets have been placed in boxes to sprout they should be planted before the shoots have grown very long, or they will be liable to injury. The material of the old hot-bed should be removed, and a quantity of freshly fermented leaves substituted. Let them be packed tightly together to provide a mild and lasting warmth, and cover them with soil to a depth of 9 or 10 inches. When all the material of the new bed, including the soil, is warmed by fermentation, plant the tubers, allowing them plenty of room. If only a small number of New Potatoes is required the forcing may be done in pots, which should be well drained, and half filled with light, rich soil, thus allowing room for subsequent top-dressings. The temperature of the house or frame should be 55°. Place the pots near to the roof-glass.

FRENCH BEANS.—Make a sowing of French Beans in 7 inch pots, with a view to obtaining a supply of pods in February. Successional sowings made at intervals of ten days will maintain an unbroken supply of Beans. The pots should be placed not more than 18 inches from the roof-glass. A night temperature of 60°, rising to 70° by day, with sun and a moist atmosphere, are necessary. Plants which are producing pods should be given weak liquid manure from the farmyard. On bright days the foliage should be lightly syringed to keep red spider in check.

SEAKALE.—There should be no difficulty in forcing Seakale from now onwards, and batches of roots should be placed in warmth at intervals of eight or ten days. Grow the roots in perfect darkness and in a moist atmosphere in a house or shed having a temperature of 60°. As the roots are lifted for forcing, young, straight things of suitable size should be selected and prepared for next season's stock. Let them be cut into 7 inch lengths and laid in a horizontal position closely together in a light, sandy border, and covered with the soil to a depth of 4 inches. Protection from severe frost is necessary, and this may be provided by placing sifted ashes over them to a depth of 4 inches. The cuttings will be ready for planting in the beginning of April.

CUCUMBERS.—Make a sowing of Cucumber seeds in small, clean pots, to obtain seedlings for planting out early in the new year. Use soil that is moderately moist that will not require moistening again until the seeds germinate. Mice should be guarded against by placing sheets of glass over the pots as soon as the seeds are inserted. Cucumber plants in forcing need careful attention; all decaying leaves and shoots should be removed, as these harbour red spider. Keep the atmosphere of the house moist by syringing the walls and floor several times daily, and syringe the foliage lightly in fine water. Do not allow the plants to become overworked, which would necessitate the removal of large quantities of foliage at one time, and cause a check to growth. When watering the roots, moisten the whole of the soil. The application of light top-dressings of loam and leaf mould in equal parts on frequent occasions will do much to keep the growth clean and healthy. The temperature of the house at night in mild weather should be 70°, but in very cold weather it may be allowed to drop to 67°. Open the ventilators a little on sunny days, but not sufficient to expose the plants to cold draughts.

FRUITS UNDER GLASS.

By JAS HUDSON, Head Gardener at Gunnersbury House, Acton, W.

OLD AND EXHAUSTED VINES.—Vines that have become exhausted through old age or other causes may be rejuvenated by cutting them down and training in young growths as new rods.

This treatment is applicable to all vines, whether early, mid-season, or late. I have recently practised it with distinctly good results in the case of late vines. Such treatment offers an excellent opportunity of ridding vines of insect pests, especially where they have been persistent and difficult to eradicate by other means. I have never been troubled with mealy bug on vines, but it is one of the worst pests the indoor gardener has to contend with. In *Gard Chron.*, Jan. 6, 1917, p. 4, I dealt with the treatment of vines that were infested with such pests. Such drastic measures as cutting down the vines afford opportunities of dealing with the border in a thorough manner. I remember in my younger days some old vines that, with one exception, were all rooted out, the one left being at the end of theinery. The border was chiefly outside the house, only about 3 feet being inside. All the material of the outside border was removed, and all this old vine had to grow in was the inside border. With the making up of the new border, however, it quickly put on renewed vigour, and was in bearing again before the young vines that were planted.

COVERING OF VINE BORDERS.—I do not advocate the covering of vine borders to any great extent. A light covering of leaves, or a top-dressing with farmyard manure, may, however, be used with advantage. By this I chiefly mean the use of fermenting material for early forced vines. A border that is compactly inserted into the house is to be preferred for early forcing. In cold districts, or where it is known that the border becomes excessively wet in winter, it pays to cover it with corrugated iron sheeting or spare laths. In doing this, however, see that the rainfall is carried off completely from the border, or matters will not be improved. Before the covering is placed in position, give a light top-dressing of rich loamy soil, and if the vines have borne a heavy crop, add a sprinkling of vine manure.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbots Wood, Colindale, Surrey.

TRAINING WALL TREES.—Defects in trained trees are apparent as soon as the leaves have fallen. The shoots or branches of horizontally trained trees need to be nailed at regular intervals of space, which are easily measured on walls where the lines of bricks are visible. Other wise, a chalk line or similar means should be adopted. This, of course, would chiefly be necessary for beginners, of which there are a good many, even in the best gardens this season. The branches should be trained about 14 inches apart, which will equal about three courses of bricks. Fan trained trees are very useful for forming into large specimens. A good wall of horizon tally trained trees is also a good feature in any garden; Pears are especially suitable for this purpose. The bottom branches of the fan trained tree should be practically horizontal, the next ones at a very slight angle, and so on, till the whole fan is formed, with the central branch in a vertical position. These trees should be now pruned and trained as fast as opportunity permits. Any scions required for grafting in the spring should be collected, labelled, and well "heeled" in on a north border.

PLANTING.—All kinds of fruit trees and bushes may still be planted in mild, dry weather. The Bullace and Damson should not be omitted, as these fruits are most useful. They do well, even in hedges, and can be planted to form the boundary of an orchard, thus serving a double purpose. The fruits are often found useful when the Plum crop is short. Shepherd's Bullace has large, green fruits; Black Bullace is a very late variety, and excellent when used with Apples; Veitch's Bullace is a very prolific bearer. Among Damsons, Bradley's King (sometimes called King of Damsons), Cheshire, and Frogmore are three desirable varieties.

SPRAYING AND MANURING.—Fruit trees may now be sprayed. Choose a calm day for the operation. Grass grown orchards may be much improved by manorial dressings.

FRUIT ROOM.—Examine the fruits regularly, and remove all decaying specimens.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady Northcote, Eastwell Park, Kent.

PERPETUAL-FLOWERING CARNATIONS.—Carnations are some of the best of winter-flowering plants, and can be grown with very little fire-heat. The main batch of winter-blooming plants is now at its best. To keep both plants and blooms in good condition, abundance of fresh air in all but the most inclement weather is necessary. If the weather is fairly dry and bright, scarcely any fire-heat need be used; in very damp weather a little warmth will be required. Under normal conditions the night temperature should be from 47° to 52°, but there is not the slightest danger if the temperature of the house drops 10 or 12 degrees lower on cold nights. Codling is very injurious to Carnations, and they are easily damaged by excessive fire-heat. Watering should be done fairly early in the morning, so that all dampness is dispersed before nightfall. If little or no fire-heat is used the plants need not be watered more than two or three times a week. When watering, be sure to fill the pots quite full, thus ensuring the whole of the soil in the pot getting watered. If signs of Carnation rust are seen every infected leaf should be cut off and burnt, but do not spray the plants at this season. Rust is sometimes caused by too much heat and moisture; overfed plants are also very susceptible to disease, as the growth under such conditions is apt to be soft and flabby. During the next few weeks artificial manure should not be given. If any difficulty is experienced in finding sufficient room for the plants, sooner than crowd them to gether place some in a fruit house at rest, such as ainery or Peach house. The conditions there will suit the plants, and though, if the weather is severe, the blooms will not open very fast, those which do develop will last a long time, and the plants will remain vigorous for blooming in the spring. Half a dozen excellent varieties are May Day, Triumph, Mary All-wood, Salmon Enchantress, White Wonder, and Mikado.

SOUVENIR DE LA MALMAISON CARNATIONS.—

For old plants of Malmaison varieties may be wintered in cool houses, the principal points to be remembered in these conditions being, first, that they should never be watered unless quite dry, and, secondly, that they need an abundance of fresh air. Growth is now practically dormant, and the grower need not be disturbed if the thermometer in the house should register a few degrees of frost; it will not harm the plants. After such a rest they will start into growth very strongly in the spring, when more water and some stimulants can be given. This year's layers, if well rooted, can be potted into trench pots. Unless well rooted, however, they should be left over till the new year; there is then less danger of overwatering than if potted now.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart, Gatton Park, Reigate.

CYPRIPEDIUM. Cypripedium colorado, C. niveum, C. Gold-Froyae, C. bellatulum, and the many hybrids of these plants should receive very careful treatment in winter. They all have thick, fleshy leaves, and do not require so much moisture at the roots as other Cypripediums. The compost should become quite dry before water is applied, when the receptacle may be immersed nearly to the rim, or the water may be poured around the outer edges of the compost to prevent moisture lodging in the axis of the leaves. Take care that water dripping from the roof does not fall on the foliage. In removing the flower-stems cut them out clean to the base, for if any portion of the stalk be left it sometimes sets up decay, which soon proves fatal to the plants. Other Cypripediums of the flat-leaved section, including C. Leachii, C. Rothschildianum, C. laeviculatum, and C. Stonei, are rooting freely, and may, if necessary, be repotted. Specimens requiring increased rooting space should be turned out from their receptacles and the old drainage materials removed from between the roots, disentangling the latter as much as possible, but taking care not to break or damage them. Select

a pot large enough to accommodate the plant for two seasons. Plants of the Sepentepodium section, such as C. quadrifide, C. Sedoni, and C. macrophyllum, that need re-potting, may be dealt with in a similar manner.

PLEIONE.—As plants of P. lagenaria, P. concolor, P. proteoxia, and P. Wallichiana pass out of flower they should be repotted, and this is best done when new roots are developing from the bases of the young shoots. Ordinary shallow Orchid pans without side-holes are the most suitable receptacles for these plants. The old compost should be shaken from the roots, and all dead portions of the latter cut away. About one dozen of the pseudo-bulbs may be planted together in a 6 inch pan, or the old plants may be broken up and the finest pseudo-bulbs selected and potted together. The smaller specimens that are not likely to bloom soon may be grown on for another season. The potting compost should consist of fibrous loam, chopped Osmundifibre, and Sphagnum-moss, in equal parts, mixing a quantity of broken crocks and coarse silver sand with these materials. The pans should be filled one-third their depth with clean crocks for drainage, covering the drainage with a layer of Sphagnum moss and a little of the compost. Place the pseudo-bulbs evenly over the surface, leaving sufficient space between each plant for a season's development. After being repotted the plants should receive little or no water for several weeks, and afterwards only sufficient to keep the compost moist. When in full growth afford the plants copious supplies of water. A light, airy position in the intermediate house is the most suitable place to grow these Orchids, and they need plenty of sunlight. Pleione humilis and P. Hookeriana have finished their season of active growth; the plants should be suspended in a cool house, and given only sufficient water to keep the soil moist. The rare P. yunnanensis should receive similar treatment.

THE FLOWER GARDEN.

By W. J. GUISE, Gardener to Mrs. DEMETER, Keele Hall, Staffordshire.

WALL PLANTS AND CLIMBERS.—In removing old and exhausted shrubs from wall plants and climbers leave sufficient young growths to fill the vacant spaces. Make large branches secure against winds. Tender plants need protection from severe frosts, such as is afforded by inserting bracken or dry litter between the branches. Heather and shoots of Yew may be employed for the same purpose.

EARLY-FLOWERING GLADIOLI.—If corns of early Gladioli are not already planted they should be set forthwith. Varieties of the Colville section planted in pots or boxes may be forced gently in flower by May, but care must be exercised, as very little fire-heat is necessary, and only when the plants are throwing up their flower spikes. To obtain a succession of blooms plant corns on a well drained, sunny border; if the soil is of a retentive nature, incorporate a quantity of old potting soil, or sand and leaf-mould with it. Plant the corns 4 inches deep, and cover the surface to a depth of 2 or 3 inches with decayed leaves as a protection from severe weather. It is a good plan to place spare lights over such sorts as the Bride, Peach Blossom, Salmon Queen, and others of the more delicate shades, directly they commence to bloom, to prevent the flowers being soiled in showery weather.

SPIRAEA ARGUTA.—The shrubby Spiraeas are excellent plants for the margins of lakes and streams. One of the earliest to bloom is S. arguta, the branches of which are completely covered during April with compact clusters of pure white flowers. Spiraeas thrive in most soils, and are quite hardy, but the early flowering varieties do best in a sheltered position, as the flowers are easily injured by cutting winds.

CARNATIONS.—Border Carnations which are being wintered in frames must have plenty of ventilation during mild weather. Keep the foliage as dry as possible; frost will not harm the plants, but a close, damp atmosphere would be very injurious. Young plants in beds should be examined after frosts, and pressed firmly into the soil if they have become loose.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors only intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturalists.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 40.5.

ACTUAL TEMPERATURE.

Gardeners' Chronicle office, 11, Wellington Street, Covent Garden, London, Thursday, December 6, 1917. Bar., 29.9; temp. 32.5. Weather—Bright sunshine.

SALE FOR THE ENSUING WEEK.

WEDNESDAY—

Bulls at 67 and 68, Cleapside, at 3 o'clock, by Frotheroe & Morris.

The discovery of a large number of species of Rhododendron in China by French missionaries, and by Dr. Henry Wilson, Forrest, and others, has increased the interest and importance of the genus, botanically as well as horticulturally. Many of these species are now in cultivation in British and Irish gardens, and, although still on trial with respect to hardiness and attractiveness, enough is known about them to satisfy gardeners that they are worth growing. Owing to the wide distribution of many and their consequent variation, probably also to their crossing readily with each other, the naming of the new Rhododendrons is difficult. Certainly too many species have been made, and this matter will have to be righted when more is known about the plants. Meanwhile, both amateur gardeners and nurserymen are forming collections of them, and in those parts of the country where the conditions are favourable to Rhododendrons the collections are rapidly becoming of great interest.

Wilson has stated that the centre of the greatest concentration of the genus is the wild and rugged region of the China-Tibet borderland, a continuation of the Himalayas. Consequently, the Sikkim-Himalayan species and those found in China show a close family resemblance. We owe a great deal to the Sikkim set, which Sir Joseph Hooker introduced and helped to popularise as garden shrubs about three-quarters of a century ago. Plant breeders were at first slow to turn some of the best species to account, *R. arboreum* and *R. campanulatum* being the only two that were much used, in combination

with the older caucasicum × catawbiense race. The best work had been done with *Azalea indica*, and the Swamp Honeysuckles, and we are not likely to get anything out of the new comers to beat these two races. But we do know now how to mate, how to breed plants, and almost every gardener tries his luck at crossing plants of some kind. For this reason the acquisition of such a wealth of fresh material as is provided by the Chinese Rhododendrons makes an epoch in British gardening. There will be no difficulty in growing them, nor in breeding from them, and before long we shall have them as generally in favour as Roses are at the present. Indeed, it may be said of Rhododendrons now that they are by far the best of all hardy shrubs.

Comparatively little has been written about Rhododendrons as garden plants. Sir Joseph Hooker published several interesting essays, which helped gardeners to some extent, and his big book, *The Rhododendrons of Sikkim-Himalaya*, revealed their beauty. One of the first to become enthusiastic about them was the late J. H. Mangles. He got together a collection of the species in his garden at Haslemere, where he made many crosses that had not been made before. He was generous with his plants, and it is more than likely that good hybrids which appeared in other gardens owed their origin to his skill. He contributed inspiring articles on Rhododendrons to the *Gardeners' Chronicle*, rousing an interest in the plants which has since spread with good results.

The first book about them was the excellent 1s. 6d. treatise, by Mr. William Watson, which is one of the *Present-Day Gardening* series, and was published about five years ago. Now another book many times larger than, and a hundred times the price of, that little effort, has been furnished by Mr. J. G. Millais, an amateur fancier, the author of a fine illustrated work on *The Mammals of Great Britain and Ireland*, and of other books of the *Edition de Luxe* kind. In dealing with Rhododendrons, Mr. Millais has been assisted by other amateurs, including Sir Edmund Loder, Mr. John Williams, and Mr. Percy D. Williams, whilst Mr. Hutchinson, of Kew, has helped with the botany of the subject. Mr. Millais tells us that he has visited all the best gardens where Rhododendrons are grown, and that for some years he has had a collection of his own at Compton's Brow, Sussex. The illustrations, which are numerous, some coloured, some collotype, others reproductions of photographs, have been made from cultivated plants. They are on the whole good, some particularly good, a few not good enough. It was a big undertaking for a comparative beginner in the fancy, but Mr. Millais has got through with it very creditably. The book is not intended for professional men, but for wealthy amateurs who like large volumes (it is larger than the old-fashioned family Bible) and who want to know something about Rhododendrons as garden plants. The

chapters are on Gardens Generally; Distribution; Chinese Species; Hybrids; Cultivation; Gardens where Rhododendrons are a Special Feature; Description of Cultivated Species, Hybrids, and Varieties, with notes on their Habits in Gardens. The last chapter is by far the most valuable. Many of the species that are included are as yet scarcely known, but they are all supposed to be represented by living plants in British collections.

A reviewer is expected to point out faults as well as good qualities, and there are some in Mr. Millais' book. Mistakes in spelling are too frequent; there should be none in a book of this character. The use of italics and of initial capitals is inconsistent, and, in some places, really irritating. Carelessness in the collation of descriptive and historical information is also in evidence, as, for example, *R. Batemannii* is given as a variety of *R. arboreum*, a hybrid between *R. campanulatum* and *R. arboreum*, and as a distinct species. It was scarcely worth while to give lists of supposed crosses which have not yet flowered. Every breeder knows that this is counting the chickens before the eggs are hatched. The big trade collections of Rhododendrons appear to have been overlooked in the text. The nurseries of the Waterers, John and Anthony, have done much for the Rhododendron cult, and their collections to-day are unrivalled. Nor, for that matter, has Kew received as much credit as she is entitled to. Hooker's work was really Kew work, and the collections there now are a great national asset.

These criticisms are by the way. Mr. Millais has done a great service to horticulture by collecting this big bookful of information about and pictures of Rhododendrons. He would add to it not a little by publishing the work as a small volume at about 10s., giving all the letterpress and a few of the illustrations.

A LINNEAN SOCIETY FOR SWEDEN.—At the meeting of the Linnean Society, held on the 29th ult., the secretary stated that a new Linnean Society had been recently established in Sweden as "Svenska Linné-Sällskapet," intended as a means for spreading information about Sweden's greatest naturalist, CARL VON LINNÉ (1707-78). It proposes to do this by the publication of works by LINNÉ and his pupils; by throwing new light from modern standpoints on LINNÉ'S personality; by drawing up a catalogue of all known memorials; and by founding a complete Linnean library. The president is Dr. TYCHO TRILLBERG, a lineal descendant of LINNÉ.

FRUIT FOR THE RED CROSS.—On p. 211 we gave some particulars of a sale of Apples at Liverpool arranged by Messrs. KER, LTD., in aid of the Red Cross funds. On the 29th ult. another display in 80 dishes was made by the same firm, which, being ruffed for, realised £101 10s. On this occasion, 5 per cent. of the takings will be given to the gardening charities.

SCOTTISH NATIONAL UNION OF ALLOTMENT HOLDERS.—A conference is to be held in Dowell's Rooms, 18, George Street, Edinburgh, on December 15, at 4 p.m., for the establishment of a Scottish National Union of Allotment-holders.

* *Rhododendrons and their Various Habits.* By J. G. Millais. Price 3s. 6d. (Longmans, Green & Co.)

It has been estimated that there are 30,000 allotment-holders in Scotland, of whom about 5,000 are in Glasgow, and some 3,000 in Edinburgh.

NORTH AMERICAN POTATO CROP.—It is estimated that the Potato crop in U.S.A. is 100,000,000 bushels in excess of last year, but in spite of the large surplus prices rule as high as 2 dollars a bushel.

WELSH SMALL-HOLDING COLONY.—It is reported that the Board of Agriculture has completed the purchase of 1,400 acres at Pembrey, in Carmarthenshire, for a small-holding colony for discharged Welsh soldiers and sailors. The Board will take possession next Michaelmas, and the land will be tamed into market gardens.

PRISONERS OF WAR.—The total number of prisoners of war working in agriculture is now 5,065. Schemes for the employment of a further 1,500 men are about to be started.

ALLOTMENTS AT BERMONDEY.—A remarkable quantity of good vegetable produce has been obtained during the year from the allotment grounds cultivated under the direction of the Gardens and Open Spaces Committee of the Bermondsey Borough Council. The district is one of the most thickly populated in London, and the ground available was of the most unfavourable character, which makes the results all the more creditable. A special letter of appreciation was sent to the superintendent, Mr. W. H. JASANT, from the Director of Horticulture, Board of Agriculture and Fisheries, for the valuable work done under his direction.

LOCAL SOCIETIES.—The annual meeting of the Garden City Horticultural Society was held in the Howard Hall, Leythorpe, on Monday, the president Mr. W. H. GAVIN in the chair. Mrs. GAVIN presented the prizes for the Potato-growing competition, and Messrs. HAYDON and HERRINGTON gave an excellent report of the school gardens. Mr. C. F. BARR was elected president for the coming year. The accounts presented at the annual general meeting on Thursday of the Croydon Horticultural Society showed a credit balance of £25 10s., which was handed to the Mayor of Croydon War Fund. The Mayor, Alderman HOWARD BOURNE occupied the chair, and was re-elected president of the Society, and Mr. L. R. WYSHAM as secretary.

INCREASES IN PRINTERS' WAGES. The Federation of Unions in the printing and allied trades, comprising fourteen in all, has recently put forward demands for an increase of wages of 6s. per week for every man, the conversion of the present war bonus of 7s. per week into wages, and payment for all public holidays. The matter has been compromised by the concession of an advance of 4s. per week, payable from November 2, 1917, and a further advance of 2s. from January 3, 1918. The second and third claims have been shelved for the present. These and other concessions since May last add to the already high prices of printing another 25 per cent. increase.

AGRICULTURAL MACHINERY FOR SPAIN.

The *Board of Trade Journal* informs us that H. M. Consul has recently received a letter from a British subject, who is the manager of a joint stock company in Malaga dealing in agricultural implements. The writer points out that to expect Spanish firms to purchase a large number of agricultural implements, and at the same time to require payment on a cash basis, is a British pity, render business out of the question. Manufacturers of agricultural implements in the United Kingdom who are desirous of exporting their goods should, whenever there is an opportunity for so doing, form an Association and appoint agents or representatives in Malaga, to travel the agricultural districts and study the customs and requirements of the Andalusian and North African farmers. Extensive propaganda would be productive in a short while of the best results to the manufacturers. The writer states

that unless the hand implements above referred to are of the required form they would be useless in the Andalusia district. The question of the supply of agricultural machinery and implements suitable for Andalusian soil is a complicated one, and he instances the case of hand implements used in ordinary every day work in the field or garden, which require special attention. This is due to the peculiar angle at which the Spanish agriculturist holds his head when working, for Spaniards in Andalusia work in a stooping position instead of in the nearly upright position preferred by labourers in most countries. H. M. Consul at Malaga also states that a commission agent in Granada desires to obtain agencies for United Kingdom manufacturers of agricultural

A WELSH CONSERVING DEPOT.—A movement is on foot in the Llandudno district for the better organisation of the fruit and vegetable supply of the surrounding area. An enormous quantity of fruit and vegetables, fresh or preserved, is imported to Llandudno, Colwyn Bay, and other coast towns of South Wales in the holiday season, from outside sources. On the other hand, many tons of fruit and vegetables grown in the district are said to be wasted in every year of good crops from sheer lack of local organisation. A conference is being held this week end at Llandudno Junction with a view to the creation there of a Horticultural Depot. It seems likely that this depot will be run on co-operative lines, and that canning, drying, and



(Drawn by Miss Frances Bungard.)

FIG. 33. RED CURRANT (CONDICION 1/2 NAT. SIZE).

(See p. 232.)

machinery and chemical products. This province is mostly agricultural, and up to quite lately agricultural machinery was very rarely employed. There is no doubt that British firms have at the present time an opportunity of developing business in the Granada district. Further in this connection, H. M. Consul has collected and forwarded to the Department of Commercial Intelligence a number of catalogues of agricultural machinery, etc. Most of these catalogues do not appear specially adapted to Andalusia, but they show how non-British firms are working. The catalogues may be consulted by British manufacturers of agricultural machinery and implements at the Department of Commercial Intelligence, 73, Basinghall Street, London, E.C. 2.

pulping will be undertaken, in combination with the handling of fresh fruit and vegetables. Llandudno Junction is a good centre for dealing with the produce of Anglesey, Carmaronshire, and parts of Merionethshire. It need hardly be said that local efforts of this sort have the warmest sympathy of the Food Production Department and the Ministry of Food. Their general adoption throughout the country would go far to solve many of the minor problems of food production and distribution.

EFFECTS OF SUNLIGHT ON CROPS.—At the Royal Society, on November 20, Colonel H. E. RAWSON, C.B., read a paper before the Fellows of the Royal Colonial Institute on "The

sun as Empire builder. The lantern there is fitted with an epidiascope, and enabled him to show a specially interesting collection of "sports," which are said to have been produced at will by his system of selective screening. This consists of placing a plant in such a position that it will only get full sun on it at selected periods of daylight, and will be in the shade of distant trees, a house, or a wall at other times; or if it is growing in a conservatory, will be screened by a post or a shelf, or perhaps a strong blind at such times. He has found that the amount of red and blue light falling on the plant varies greatly with the sun's altitude, and that screening affects their saturation. By taking advantage of this the well-known "sports" of *spinifloria*, pro-

A REVISION OF THE RED CURRANTS.

(Continued from page 217.)

GONDOUN GROUP.

This very distinct group contains the descendants of *R. petraeum*. The stout wood, long buds, red campanulate flowers, and the stout coriaceous leaves all render them easily distinguishable.

GONDOUN (see fig. 38). Syn. *Bridgeford Red*.—*Flowers*.—Closely resembling *R. petraeum*, buds crimson, flowers campanulate, dark claret-red, sepals overlapping, not ciliated, petals broadly wedge shaped, rachis very hairy.

Leaves.—Young growth red, adult blackish-green, very thick and bullate, stiffly held upright.

Fruit.—Bunch medium size, berries large and even, very bright clear red, a little flattened, rachis downy.

Season.—Late.

Buds.—Large, long and flat, pressed close to wood, almost exactly resembling *Prince Albert*, and indistinguishable in this state.

Growth.—Very vigorous, stout, upright shoots.

Origin.—Raised by M. Gondoun at St. Cloud and described by Janczewski as *R. Gondoun*, a hybrid between *petraeum* and *vulgare*. It very closely resembles *Prince Albert*, but can be distinguished by the more hairy rachis and the much thicker and darker leaves and darker colour of the flowers. Like all this group it retains its leaves late in the autumn.

PRINCE ALBERT SYNS. *Rivers' Late Red*, *German Soure*, *Knights* and *Hollandische Rote* (on the Continent), *Ruhm Von Harlem*, *Verrieres Rouge*.—*Flowers*.—Almost exactly the same as in *R. petraeum*, buds very dark crimson-red, flowers campanulate, red, sepals overlapping, ciliated, petals very broad wedge, rachis hairy.

Leaves.—Young state strongly red-tinged as are the young shoots, adult very dark green, fairly thick, and very stiffly held upright.

Fruit.—Bunch medium size, berries large, even, bright red, a little flattened, slumping, rachis downy.

Season.—Late.

Buds.—Long and flat, dark brown, a little hairy, clinging close to the wood, the leaf scar light brown and very prominent.

Growth.—Very stout, vigorous, and upright.

Origin.—This variety has been grown for some 200 years or longer. It is the *R. pallidum* of Otto and Dietrich, and considered by Janczewski to be a hybrid of *petraeum* and *vulgare*.

GOEGGINGERS PYRIFORM—This curious form has Pear-shaped fruit, and there is also a white variety. In foliage and other characters it is like *Gondoun*, and a true *petraeum* derivative.

Raised by Heinrich Goegginger, a market gardener in Riga, and first described by Dr. Regel in 1878.

SEEDLESS RED, *Kornlose*.—This curious variety is also a form of *Gondoun*, alike in all respects save its dwarfier habit. The seeds do not set, and there are thus only the soft, unfertilised ovules in the berry. So far as I have tried it its great fault is that the berries are

very apt to run off, and if this habit is maintained it will be valueless for garden uses. Found by Herr Petzold in Hessen.

THE SCOTCH GROUP.

This group contains those varieties which show their descent from *R. rubrum*. They have in common the bell-shaped flower, more or less tinged with red, the habit of holding out the flowers at right angles to the stem, the stiff, wiry rachis and the stiff, upward-folding foliage. It is somewhat difficult to pick out the distinctions between some of them, as they are nearly identical in many cases. One of the oldest of this type is doubtless the *Chiswick*, but as it is now so little grown I have adopted the *Scotch* as the type, as this form is very largely grown for market purposes around London, and will therefore be known to a large number of people.

SCOTCH. Syns. *Millern Red*, *London Market*, *Fowler's London Red*.—*Flowers*.—Urecolate, green, striped with red, buds faintly red, sepals overlap, petals wedge shaped, rachis a little hairy, stiffly held upwards.

Leaves.—In young state green, late in opening, adult, pale green, rather small, strongly up folded, holding on late in the autumn.

Fruit.—Bunch medium length, compact, berries held firmly to one side, rachis stout, hairy.

Season.—Early.

Buds.—Winter state, moderately large, dark brown, very slightly hairy, rather away from wood.

Growth.—Very sturdy and rather upright.

Origin.—Undiscovered.

This Currant is very largely grown for market purposes and is remarkably prolific and of bright colour.

LA CONSTANTE.—*Flowers*.—Slightly urecolate with slight ring, sepals slightly brown-tinged, petals broad wedge shaped, bunch held stiffly outwards, rachis with dense curling hairs, which distinguish it from *Scotch*. Very late in opening.

Leaves.—Young state green, adult very dark green, upward folded, stiffly held.

Fruit.—Bunch moderately long, stem (before fruits begin), $\frac{1}{2}$ inch, berries bright red, held to one side, rachis turns yellow when fruit is ripe.

Season.—Very late.

Growth.—Vigorous and very upright.

Origin.—Undiscovered. Though very like *Moore's Ruby* it is distinct in many characters, and is one of the latest and best of the Red Currants.

MOORE'S RUBY.—This resembles *Scotch* very closely in all characters, but the foliage is of a darker and slightly glaucous green, and the fruit ripens late, bunch a little longer. Hardly distinguishable in winter state.

CHISWICK RED.—*Flowers*.—Urecolate, yellowish-green, sepals hardly meeting, turned back, petals markedly wedge shaped, rachis downy.

Leaves.—In young state slight yellow, brown tinge, adult exactly resembling *Scotch*, except that the silver edge is rather more pronounced.

Fruit.—Bunch longer than *Scotch*, berries on stiff, wiry stems held to one side.

Buds.—Fairly large, outward held, slightly hairy.

Season.—Early.

Growth.—Vigorous and sturdy, upright.

Origin.—Undiscovered. This seems to agree with the *Chiswick* as described by Thompson and Barron, but it is apparently now almost out of commerce, as I received it from one nursery only.

(To be concluded.)

THE ACORN CROP.—The Food Production Department of the Board of Agriculture urges that in places where Acorns are still lying on the ground, collecting parties should be organised without delay. A leaflet on the Feeding of Acorns may be obtained post free from the Secretary, Board of Agriculture and Fisheries, 3, St. James's Square, S.W. 1.



(Drawn by Miss Frances Bunnard.)
FIG. 39.—RED CURRANT "SCOTCH" ($\frac{1}{2}$ NAT. SIZE.)

liberation, fasciation, and leaf division have been produced several years in succession, and some of them have been fixed in the case of *Nasturtium*. Eight flowers have grown where one grew before, and ten cords have bifurcated where there was a single stem before. According to the author of the paper, the effect of a shadow on a fruit tree should be noted, for the scent of flowers varies with the selective screening and the flavour of fruit should vary also. The colour of the light found on a fruit tree growing in grass land is not the same as when in cultivated soil. Speaking generally, pruning fruit trees increases red light and diminishes blue, while increased illumination through leaves excites a different response from the plant from that where there are no leaves. The experiments are quite in their infancy, but the results already obtained are interesting.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

PLANTING RHODOENDRONS.—Your correspondent, p. 212, states that better results are obtained from mid April planting than autumn planting. I have my doubts about this, except in the case of garden hybrids, as many of the Himalayan species and hybrids are then in bloom, or about to bloom. I do not say that planting at that date is never successful, for I have practised it myself in a suitable season, and when I was obliged to do so; but I have planted in the winter for many years, and have handled thousands of these plants. Himalayan species and garden hybrids. Regarding soils, any soil that will grow Bracken and Heather is suitable for Rhododendrons. The ground is well broken up to a depth of 2 feet 6 inches, and plenty of good cow manure incorporated. An important point is to plant fairly thickly, so that the plants will partly shade each other's roots. Then, after two or three years, the bed should be re-made or the plants thinned. The addition of some more manure, and after this mulching, will be sufficient for many years. *R. praecox* is showing colour now, and with open weather should soon unfold its flowers. At the present time all seed-pods will probably be ready to gather, especially those of the earlier-flowering hybrids and species, such as *R. praecox*, *R. Thomsoni*, and *R. ciliatum*. The seed collected will be carefully labelled and stored in a dry place until the end of February, when it will be sown in shallow boxes or seed pans in a temperature of about 55° or 60° F. *F. Cook.*

THE EFFECT OF ONE PLANT ON ANOTHER.—Although I do not assert that it is an example of the effect of a toxic excretion, I think that the following observation is of interest. After three years, during which they had yielded fairly good crops, had been manured lightly, and mulched, four or five rows of Strawberries were dug up and the ground dug and planted with spring Cabbage. The rows of Cabbage occupied not only the Strawberry quarter but ground on one side of it as well. Within a week of planting a remarkable difference was to be observed between the Cabbage plants planted on the old Strawberry quarter and that planted beyond its limits. The latter thrive and make good growth, and left the former behind. Now a matter of 6 weeks after the planting the Cabbages on the ground from which the Strawberries were lifted are still puny, and have a starved look. Toxic or no toxin, it is hard to believe that their miserable growth is to be ascribed to poverty of soil, for the Strawberries did not show any lack of vigour. *L. N.*

MR. GEORGE CASBELL.—Readers of the *Gardeners' Chronicle* will remember Mr. George Casbell, who, for nearly twenty years, filled the position of Garden Superintendent at the Crystal Palace. Every exhibitor who attended the shows held at the Palace will know how ready he always was to give any assistance in his power to those in the slightest difficulty. Owing to a serious illness, together with changes at the Crystal Palace, Mr. Casbell was forced to relinquish his charge. For nearly three years he has been under the doctor and has had a nurse in the house. At the present time he is in bed for twenty-one out of each twenty-four hours. It is scarcely any wonder that the savings he had put by have vanished. He has only £20 per annum he receives from the Gardeners' Royal Benevolent Institution, 5s. per week from his club, and occasional help from his son, who is a private in the Army. As treasurer and secretary of the National Chrysanthemum Society, we feel certain that there are many who would wish to render him some practical assistance in his time of need. Let us say, therefore, that any help readers may be disposed to give should be forwarded immediately to Mr. Curtis, 35, Wellington Street, Covent Garden, W.C. 2. *John Green, Richard J. Witty, Charles H. Curtis.*

GARDEN ALLOTMENTS AT CHESTER.—A census taken in June last revealed the fact that there were 1452 acres of land under cultivation in the neighbourhood of Chester, representing 1,229 allotments, 153 of which are under the

control of the Chester Corporation, the remainder being under the control of the Hodge Urban Council and other public bodies in the neighbourhood, as well as private owners, including the Duke of Westminster. The Chester Paxton Society, that for a long series of years has done much educational work in various branches of gardening, has dealt with the allotment question in a very practical way. It was felt by that body that as the majority of these new allotment tenants would be novices at gardening, a short treatise giving cultural hints, and naming some of the best varieties of vegetable to cultivate in the neighbourhood should be issued. The treatise was written by Mr. N. F. Barnes, and copies of the work were supplied free of charge to the allotment holders in March. The Society further offered a series of prizes amounting to £15. In addition to cultural certificates for the best and heaviest cropped allotments, (A) The best kept and heaviest cropped allotment which has been cultivated for two or more years, for the purpose of providing a food supply in war time. (B) The best kept and heaviest cropped allotment on land cultivated for this purpose for the first time. (C) The best kept and heaviest cropped cottage garden for the purpose of providing a supply of food in war time. Over a hundred entries were received for these prizes. Reported visits were made by the winners appointed to make the awards, and the results were made known in August. By request of the Board of Agriculture the honorary secretary undertook to act as its local representative, and in consultation with the executive of the Paxton Society it was decided for working arrangements to group these 1,200 odd allotments into six colonies. To assist the beginners, twelve practical men belonging to the Society were then appointed to act as honorary advisers to these colonies, and the services rendered by these practical men have gone a long way towards bringing the movement to its present high standard of efficiency. Not an instance is known of any holder wishing to give up his allotment, on many of them are quite prepared to take long leases of the plots they are now cultivating. The area of these plots varies a little, but the average holding represents 500 square yards. Potato culture enters largely into the cropping of these allotments. Peas, Beans, Cabbages, Cauliflowers, and a succession of other vegetables were also cultivated. One example will suffice. A piece of land 4½ acres in extent, which was bought some few years ago for building purposes, but not utilised, was, until this spring, lying idle. This is now occupied by 60 allotment holders, and the owner's rental has in consequence risen from an average of 50s. per annum to £26 10s. per annum. Another interesting case illustrating intensive culture was recently noted where a piece of grass-land close to the goods yard of a railway station in the suburbs was given over to a few platelayers. This was divided into six plots, about one eighth of an acre each, at a nominal rental of 2s. per plot. On one of these the holder sold off his plot last year 4 cwt. of Onions, at prices ranging from 3d. to 4½d. per lb. This by no means represented all his produce, as in addition he sold other vegetables amounting to over £20, and in addition he was able to supply the wants of a moderately large family with a plentiful supply of Potatoes and other vegetables for the whole of the year. *G. D. Miles.*

DUGOUTS IN THE GARDEN.—If foreign government treaties are to be mere "strapped paper" in the future, the possibilities of garden dugouts are worthy of every consideration. Miniature tunnels can be bored on hillside positions in such a way that the entrances are disguised, or, at any rate, that they are inconspicuous, so as not to mar the beauty of a garden. The following are some of the most important uses of a dugout: (1) As a comparatively safe retreat from "rain clouds." (2) It may be used as a summer house or shelter from inclement weather. (3) The interior might serve as a motor garage or a photographic "dark room." (4) An exterior slope of the ground would be advantageous as a starting place for an aeroplane. (5) A suitable place for the storage of Apples, Pears, tuberoses, roots, and vegetables. (6) It should prove useful for the cultivation of Mush-

rooms, Sea-kale, Rhubarb, blanched Chicory, white Lilac, Lilies of the Valley, etc. The dugout could be heated, if required. (7) If sufficient light could be afforded the place would be suitable for wintering large Palms in tubs, Tree Ferns, standard Bays, and large specimen Fuchsias. These could be placed out on terraces during the summer months. On the Cotswolds, Apples and Pears are already stored in dugouts, the interiors of such places being sometimes lined with dry Gorse or Bracken. Bashes might also prove suitable. This is a matter of importance when we read that tons of fruit are spoilt for lack of marketing baskets! Why not store the fruit, in ideal conditions, in tunnelled dugouts? Where large quantities of clay are excavated it could be made into bricks, tiles, drainage pipes, and flowerpots. Burnt ballast is also useful for many purposes. Fertile soil should never be deeply buried or otherwise wasted. It is more useful at the surface for purposes of cultivation. Where there are large areas of infertile soil this might be surfaced with dredgings from the rivers, waterways, and canals. *Frank James, Mitchell.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 4.—The meeting held in the Drill Hall on Tuesday last completed the list of fixtures for the year.

Novelties were submitted to the Floral Committee, and Awards of Merit were won by two new Carnations. The only other awards in this section were a Silver Flora and a Silver Bank San Medal, both awarded to groups of Perpetual-flowering Carnations, staged by Messrs. ALWOOD BROS. and SEVANT LOW AND CO. respectively.

There were several attractive groups of Orchids, and a number of novelties, for which three Awards of Merit were given.

The Fruit and Vegetable Committee made no award to a novelty, but awarded three medals for collections. Apart from the floral exhibits, there were several of a miscellaneous nature, including a collection of artificial manures staged by Messrs. LARG AND SONS, Hounslow.

Floral Committee.

President: Messrs. H. B. May (chairman), W. J. Bean, J. Green, J. F. McLeod, C. R. Fieldler, F. Page Roberts, T. Stevenson, W. Howe, J. Jennings, W. P. Thomson, J. Heal, C. Dixon, J. Dickson, A. Turner, W. H. Morter, C. E. Pearson, E. H. Jenkins, E. A. Bowles, R. C. Noddy, E. F. Hazelton, A. G. Jackson, and R. Hooper Pearson.

Awards of Merit.

Carnation Mrs. Edward Dooty.—A pale yellow, ground fawn variety of the Perpetual-flowering type, the petals irregularly striped with vermillion. The bloom is of large size, and possesses a long, stout stalk and firm calyx. Shown by Messrs. ALWOOD BROS.

Carnation Mrs. Edward Dooty.—The colour of this novelty is exactly similar to that of *Carola*, but the petals are not of such firm substance. Pot specimens of the flower were exhibited, showing that the plant is of good habit and robust growth. Shown by Messrs. SEVANT LOW AND CO.

Orchid Committee.

President: Sir Jeremiah Colman, Bart. (in the chair), Sir Harry J. Veitch, Messrs. Jas. O'Brien (hon. secretary), William Bolton, Walter Cobb, E. R. Ashton, Arthur Dye, R. Freeman White, Frederick J. Hambury, Pamtia Rath, C. H. Curtis, T. Armstrong, W. H. Hatcher, S. W. Flory, R. A. Rolfe, J. Charlesworth, J. E. Shill, and Fred K. Sander.

Awards of Merit.

Sophia Cottley's Favourite (C. Fabia × S. C. Davis).—Shown by Mr. J. E. SULL, The Dell Gardens, Enghfield Green. The flower is nearly as large as that of *C. Fabia*, and the sepals and petals are pale yellow. The lip is rose-coloured, with a reddish purple tinge and darker veining

over the front lobe, which has a narrow cream-coloured margin and gold lines extending from the base to the centre.

Cypripedium insipide var. Louis Stander, from Messrs. SANDERS, St. Albans.—A fine, imported variety of large size and good form. The broad dorsal sepal is white above and yellowish-green on the basal half, dark reddish-brown blotches extending from the base, changing to purple in the white area. The lip and petals are coloured as in the type, but they are of broader proportions.

GROUPS

Dr. MIGUEL LACROZE, Bryndur, Rochampton, showed Sophro-Laelio-Cattleya Marathon, Bryndur variety, with deep rose-naive flowers, the sepals having white midribs at the base, and the petals tinged with crimson up the middle; the lip is ruby-crimson with thin gold lines in the base; also Laelio-Cattleya Serbia var. Opal, a grand flower with white sepals and petals and rich claret-purple coloured front to the lip.

MESSRS. ARMSTRONG AND BROWN, Orchid-hunters, Tambridge Wells, were awarded the Williams' Gold Medal for a group, in which about forty plants of their famous white-petalled strain of Cattleya Magge Raphael alba were a feature, two of the best varieties being Dreadnought and splendens. Good novelties were shown in Laelio-Cattleya Diana var. Buttercup (L. C. Jacobus × L. C. Ophir), a distinct hybrid with a showy flower having yellow sepals and petals, the lip and short side lobes veined with purple and reddish rose front lobe; *Cypripedium Arthurianum nobilior* (insigne Harsfield Hall × Fabricianum), with a finely blotched dorsal sepal; and *Odontoglossum* hybrids flowering for the first time.

MESSRS. CHARLESWORTH AND Co., Haywards Heath, were awarded a Silver Banksian Medal for a group which included finely-flowered *Odontoglossum* at the back, fronted by Cattleyas and Laelio-Cattleyas, the best of the latter being the new L. C. Seleste (L. C. Fascinator × C. Trianae), a large white flower, slightly tinged with rose, and broad purple lip with yellow disc. A novelty among the *Odontoglossums* was *O. xanthinum* (ardentissimum xanthos × luteo purpureum Vuytstekeanum), with white ground colour blotched with light yellow.

MESSRS. SANDERS, St. Albans, were awarded a Silver Banksian Medal for a group of *Cypripedium* of excellent quality, among which we noted *C. Hippolyta* (Dante × Hera Enryades), a new form of good size and shape, and Cattleya Magge Raphael albo-cornea, clear white with violet-coloured front to the lip.

MESSRS. E. H. DAVIDSON AND Co., Orchid Dene, Twyford, showed Sophro-Laelio-Cattleya L. McKenna (S. L. C. Odipus × C. Dowiana aurea), a dark claret-coloured flower; and Sophro-Cattleya Dorcas (S. C. Dora × C. Dowiana aurea), yellow, with rose lip veined with orange at the base.

MESSRS. STUART LOW AND Co., Jarvisbrook, Sussex, staged a selection of hybrid Orchids, including good Sophro-Cattleya Doris, S. C. Pearl; Laelio-Cattleya Alex, and Cattleya Alci-melia alba.

Fruit and Vegetable Committee.

President: W. Poupert (in the chair), and W. Wilks, E. W. Roach, J. Harrison, A. W. Metcalfe, A. Ballock, J. G. Weston, W. H. DIVERS, E. Beckett, Owen Thomas, W. Bates, and F. Jordan.

Colonel W. N. DAVIS, Salt Hill House, Slough (for Mr. W. R. Ballock), was awarded a Silver Knightian Medal for a collection of Apples and Pears. This was a fine exhibit; the fruits were model specimens in every respect. Fruits of Apple Court Pendl Plat were of a remarkably high colour, and the same remark applies to Adams's Pearmain, Christmas Pearmain, Winter Collin, Cox's Orange Pippin, and Blenheim Pippin. American Mother and Blenheim Pippin were the best and most richly coloured fruits, being far above the average.

Sir DANIEL GOUGH, Highlands, Chelmsford, showed a collection of Apples, for which a Silver Banksian Medal was awarded.

Mrs. MUIR, Marlow-on-Thames, showed "Mowden" preserves, for which a Silver Banksian Medal was awarded.

PERPETUAL-FLOWERING CARNATION.

DECEMBER 4.—The annual meeting of this Society was held on the 4th inst. at the offices of the British Wholesale Florists' Federation, Wellington Street, Covent Garden. Mr. J. S. Branton presided. War conditions have limited the operations of the Society and restricted its income. One show was held in December, 1916, and the Society published a Year-book in 1917. The membership stands at 197, and on a turnover of £134 3s. 6d. there is a balance in hand of £26 8s. 4d., as compared with the balance of £46 3s. brought forward from 1916. There was no lack of enthusiasm on the part of the members present, and they re-elected the whole of the officers, added Mr. T. Stevenson and Mr. Pinches to the committee to fill vacancies, and agreed that a Year-book should be published next year but no exhibition be held. The name of the Society was altered. Originally the Winter-Flowering Carnation Society, it became the Perpetual-Flowering Carnation Society, and in future is to be known as the British Carnation Society. Efforts to amalgamate with the National Carnation Society have not materialised, and the new title has been adopted so that new types of Carnations may receive consideration and the scope of the Society be widened. Mr. T. A. Weston was voted an honorarium of twelve guineas for his services as hon. secretary.

The Floral Committee met at the Drill Hall, in conjunction with the fortnightly meeting of the Royal Horticultural Society, on the 4th inst. and made the following awards:—

FIRST-CLASS CERTIFICATES.

Carnation Winter Glow.—A well formed bloom, possessing plenty of substance in the petals. The colour is glowing corse, of exceeding depth and brilliancy. Shown by Messrs. STUART LOW AND Co.

Carnation Marion Willson.—(See award by the R.H.S. Floral Committee.)

CROPS AND STOCK ON THE HOME FARM.

Pigs.

ALL who have the convenience to keep breeding sows should not fail to do so, as the short age of pigs in the country is a matter of some seriousness. In view of the prices obtained for pork, bacon, and stores, no one can say pig-keeping is not profitable. I do not say that with the present high price of feeding stuffs every out-thrower can fatten even one pig with a fair return for labour and outlay. We look more to dairy farmers, especially those who make butter, to rear and fatten pigs in quantity, as with an abundance of milk from the latter source small pigs thrive amazingly. The cost of keeping sows to the ordinary farmer is not an expensive matter if some provision is made for growing Cabbage, Maize, and Mangolds, for with the surplus small Potatoes but little else is required beyond a small quantity of bran twice daily. These are inexpensive foods, within the reach of every person who tries to produce them. Of the foods named, Cabbage produces an astounding quantity from quite a small area when good cultivation is practised. A further advantage to the pig keeper is a small meadow where the sows can roam, obtaining much food, and what is of considerable importance, exercise. All breeding animals require gentle exercise. Where a yard with a snug straw bed is available for night, and an outside room during the day, the conditions are favourable to success.

Sows in such conditions should produce fine litters of young within two years. From the right sort of pig it is reasonable to expect ten stores, sometimes more. Of late, good quality stores ten weeks old have made from 30s. to 40s. each, sometimes more.

In counties there are fashions in breeds of pigs, also the local requirements, of what the pork butcher and bacon factor require personally. I have a strong penchant for a cross between a Large Yorkshire White sow and a Middle White Yorkshire Boar or a Berkshire boar. From the former I obtain a larger number of pigs generally than from a Berkshire boar. Therefore, as numbers tell, I prefer the former. A Large

Sussex sow and a Berkshire Boar answer capitally; some reverse the sows and boars. No breed of pigs come to hand so quickly as pure-bred Berkshires alone, but the general fault in my experience is small litters of young. I allow the boar to run with the sows always, as exercise is conducive to health, even in the sire. The six pigs sows are separated from the rest only two or three weeks before the young are due. Naturally in the winter the sow occupies as warm a sty as is possible in reason, free from draught, and with a southern exposure, so that the newly-born pigs can have the advantage of sun, which they revel in. A close wood floor, with a gentle slope, is an advantage over brick, cement, or earth, being warmer, and naturally prevents to a great extent cramp in the young pigs, which is all too common on cement floors. After birth of the young the sows should be carefully and liberally fed with milk and meal. The young pigs, too, should be quickly encouraged to drink milk in a separate trough in an adjoining sty, where they are secure from the ravages of food by the sow, who seems to think all is for herself only. My plan is to have a temporary hole through the partition of one sty to the next, through which the small pigs quickly find their way. The more attention that is paid to the sow and her young in regard to food, warmth, and cleanliness, the quicker the growth assured. *E. H. Molyneux.*

AGRICULTURAL WAGES BOARD.

The Board of Agriculture and Fisheries, after consultation with the Ministry of Labour, has established an Agricultural Wages Board for England and Wales under the provisions of Part II. of the Corn Production Act, 1917. The Board, in accordance with the regulations made on November 8, consists of 39 members, of whom seven are appointed as impartial persons, and the remainder as representative of the interests of employers and workers respectively in equal numbers. Of the sixteen representatives of employers, the Royal Agricultural Society, the National Farmers' Union, the Central Chamber of Agriculture, and the Welsh Agricultural Council, were each invited to elect two members, and of the representatives of workers, the National Agricultural Labourers' and Rural Workers' Union were invited to elect six, and the Workers' Union two. The remaining representative members have been nominated by Mr. Prothero, after consultation, in regard to the representatives of workers, with Mr. G. H. Roberts.

ANSWERS TO CORRESPONDENTS.

ADDRESS: J. T. W. The address of the secretary of the London and Southern Counties section of the National Union of Allotment Holders is Mr. D. Chater, 8, Buckingham Street, Strand, London, W.C. 2.

ALLOTMENT: J. F. The sample of clay you sent us is inert and dead, and quite unsuitable for the cultivation of any crop. Where this clay foams the subsoil you should not trench in such a way as to bring it to the surface, but keep on the surface the loamy portion you mention, enriching and deepening it by the addition of leaf-mould and rotted (not fresh) manure. You can also apply basic slag now, and leave it to work itself in during the winter. With regard to the gravel, this also makes poor soil for cultivation, and should not be brought to the surface, unless it is well mixed with loam, and forms only a small proportion in the conditions you have described. It is hardly probable that Onions, which require rather rich soil, would thrive; we should advise you to plant only a few as an experiment.

APPLE CULTIVATION: Blackheath. Maiden Apple trees frequently bear crops that look out of proportion to their size and strength. Of the statements made in the newspaper cutting we know nothing. You may make experiments.

Communications Received.—A. C. B. (Please send name and address, not for publication, but for our own information.) H. E. H.—S. A.—E. B.—J. A. P.—W. H. C., Barrow—J. B. H., Cambridge, Mass.—H. A. D.—O. L. C.—C. O. C.—J. W.—W. B.—C. C. T. W. B.—A. G. D.—Catherine—W. I.—M.—N.—O. S. E. B. K.—J. O., Reading—E. H. B.—J. C. J.

Books as Christmas Presents.

There is nothing so helpful to a young gardener as carefully selected books written by successful cultivators in the various branches of gardening.

- Botany, A Year's.** Adapted to Home and School Use. By Frances A. Kitchener. With 195 Illustrations. 5s. 4d.
- China, A Naturalist in Western.** By Ernest Henry Wilson. Illustrated, in Two Volumes. £1 10s. 6d.
- Flora, British, Handbook of the.** By Geo. Bentham. Revised by Sir Joseph Hooker. Seventh Edition. 9s. 5d.
- Fertilisers and Manures.** By A. D. Hall, F.R.S. 5s. 5d.
- Insect and Allied Pests of Orchard, Bush and Hothouse Fruits.** By F. V. Theobald, M.A., etc. 328 Illustrations. 30s. 6d.
- Insects, Injurious and Useful.** An Introduction to the Study of Economic Entomology. By L. C. Miall, F.R.S. 100 Illustrations. 5s. 9d.
- Intensive Culture of Vegetables on the French System.** By P. Aquatias. Illustrated. 3s. 11d.
- Iris, the Book of the.** Illustrated. By R. Irwin Lynch. 2s. 10d.
- Johnson's Gardener's Dictionary.** New Edition. 9s. 6d.
- Judging, Rules for.** Issued by the Royal Horticultural Society. Latest Edition. 1s. 6d.
- Land of the Blue Poppy, The.** By F. Kindon Ward. With Illustrations and Maps. 12s. 6d.
- Landscape Architecture, The Art of.** By Samuel Parsons. A practical and authoritative work. Illustrated. 15s.
- Lawns.** By Sutton and Sons. Reading. In paper cover. Well Illustrated. 1s. 3d.
- Lawns and Greens.** By T. W. Sanders. A Guide to the Formation and Management of Lawns, Tennis Courts, etc. Illustrated. Paper. 1s. 8d.
- Lily, Book of the.** By W. Goldring. Illustrated. 2s. 9d.
- Little Gardens and How to Make the Most of Them.** By H. H. Thomas. A handy and useful work for the Amateur. Paper. 1s. 3d.; cloth, 1s. 9d.
- Mango, The.** By G. Marshall Woodrow. An account of its Culture and Varieties. 1s. 1d.
- Manures and the Principles of Manuring.** By C. M. Akman. 6s. 10d.
- Manures for Garden and Farm Crops.** By W. Dyke. Cloth, 1s. 9d.
- Manuring, The Science and Practice of.** By W. Dyke, with introduction by J. Wright. A most practical work for the Amateur, Market and Professional Gardener. 1s. 2d.
- Manuring of Market Garden Crops, The.** By Bernard Dyer and F. W. L. Shrivell. New Edition. 1s. 3d.
- Market Gardening, The Book of.** By R. Lewis Castle. Illustrated. 2s. 9d.
- Mendelism.** By R. C. Punnett, F.R.S. New and Enlarged Edition. 5s. 4d.
- Mendel's Principles of Heredity.** By W. Bateson, F.R.S. 12s. 6d.
- Mushrooms, and How to Grow Them.** By John F. Barter. An excellent Treatise. Illustrated. 1s. 2d.
- My Garden in Spring.** By E. A. Bowles, M.A., Chairman of Scientific Committee of Royal Horticultural Society. With Preface by Reginald Farrer. "Mr. Bowles . . . has the time to be his own gardener, and has thereby gained that first-hand knowledge of plants without which any writer on horticultural subjects is . . . apt to be neither interesting nor informing." Price 5s. 6d.
- My Garden in Summer.** By the same author. Price 5s. 6d.
- My Garden in Autumn and Winter.** By the same author. 5s. 6d.
- Orchids and their Cultivation.** By James O'Brien, V.M.H., Hon. sec. of the R.H.S. Orchid Committee. Contains 8 full-page Coloured Plates from colour photography. 1s. 10d.
- Orchids: Their Culture and Management.** By W. Watson (Curator, Royal Botanic Gardens, Kew), and H. J. Chapman. Illustrated with 139 Engravings and 29 Coloured Plates. 25s. 8d.
- Orchids, Fertilisation of.** By Chas. Darwin. Illustrated. 3s. 11d.
- Orchid Grower's Manual, The.** By the late B. S. Williams. 600 pages. Numerous Illustrations. 16s. 3d.
- Pansies, Violas and Violets.** By W. Cuthbertson and R. Hooper Pearson. With 8 full-page Coloured Plates from colour photography. 1s. 10d.
- Pansies and Violets.** By D. B. Crane. Paper. 1s. 2d.; cloth, 1s. 9d.
- Peach, The Book of the.** By H. W. Ward. A Practical Handbook on the Cultivation of Peaches and Nectarines under Glass and Out of doors. 2s. 10d.
- Pears and Plums, The Book of.** By the Rev. E. Bartrum, D.D. Illustrated. 2s. 9d.
- Pinks, The Genus.** By George Russell Shaw. Price £2 15s. 6d.
- Plant Breeding.** Being Five Lectures upon the Amplification of Domestic Plants. By Prof. L. H. Bailey. Illustrated. 6s. 11d.
- Plant Life.** By C. A. Hall. £1 0s. 6d.
- Practical Plant Physiology.** By Frederick Keeble, F.R.S. Illustrated. 5s. 10d.
- Practical Tree Repair.** By Elbert Peets. The Physical Repair of Trees—Bracing and the Treatment of Wounds and Cavities. Illustrated. 7s. 11d.
- Plants and Trees, Diseases of Cultivated.** By George Masee. Well Illustrated. 7s. 11d.
- Plants, A Popular Treatise on the Physiology of.** By Dr. Paul Sorauer. Translated by F. E. Weiss, D.Sc. With 53 Illustrations. 9s. 6d.
- Primula, Handbook of the Hardy.** By H. M. Paul. An Illustrated Work on the Culture, Mode of Growth and Utility of Primulas. 1s. 14d.
- Pruning.** A Compendium of Outdoor Work, with special chapter for Small Holders. Reprinted from the "Fruit Trades' Journal." Illustrated. 1s. 1d.
- Pruning, The Handy Book of.** With Chapters on Grafting and Budding. By James Udale, with introduction by the Right Hon. Viscount Colclath. New Edition. Illustrated. 1s. 9d.
- Rhododendrons and Azaleas.** By W. Watson. With preface by Sir. F. W. Moore, F.L.S. (The first popular volume published on this subject.) 8 full-page Coloured Plates. 1s. 10d.
- Rock and Alpine Gardening.** By H. Hemsley, rockwork expert. A practical guide to the making of Rock, Alpine, Wall and Water Gardens. Profusely Illustrated. 1s. 3d.
- Rock Gardens.** By Reginald Farrer. With Preface by Dr. J. Bretland Farmer, F.R.S. Contains 8 Coloured Plates. 1s. 10d.
- Rock Garden, The English.** By Reginald Farrer. A complete dictionary of Hardy Plants suitable for Rock Garden Culture. Contains 500,000 words and 300 Illustrations. In 2 Vols. Price. £2 2s. 10d. post free (in the press).
- Root and Stem Vegetables.** By the late Alexander Dean. Contains 8 full-page Coloured Plates. 1s. 10d.
- Rose, The Book of the.** By Rev. A. Foster-Melliar, M.A. Illustrated. New Edition. 5s. 5d.
- Roses.** By H. R. Darlington. Contains 8 full-page Coloured Plates. 2s. 11d.
- Roses for the Garden and Greenhouse.** By John Weathers. Description, Culture, Propagation, Manures, etc. Coloured Illustrations. 5s. 4d.
- Roses in Pots.** By Wm. Paul. Ninth Edition. An invaluable Guide to the Cultivation of Roses in Pots, whether for forcing or otherwise. 2s. 2d.
- Salads and their Cultivation.** By T. W. Sanders. How to grow them in the Open, on Hot Beds, and Under Glass, etc. Freely Illustrated. Paper. 1s. 10d.
- Saxifrages or Rockfoils.** By W. Irving and R. A. Malby. A practical work on the Culture of Saxifrages. Well Illustrated in Colour and Half tones. 2s. 10d.
- Soil, The.** By A. D. Hall, F.R.S. An introduction to the Scientific Study of the Growth of Crops. New Edition. 5s. 5d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

THE GARDENERS' CHRONICLE

ESTABLISHED 1841.

No. 4016

No. 1616. VOL. LXII. (THIRD SERIES) SATURDAY, DECEMBER 15, 1917. {Registered as a Newspaper.} PRICE 4d. {POST-FREE, 4d.

Subscription—Inland, 19/6; Foreign, 22/- per annum. Entered at New York Post Office as second-class matter. Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1843.

For CONTENTS see page 235.

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

KELWAY & SON.

NOW IS THE TIME TO PLANT THE Royal Horticulturists, BANGOR, SOMERSET. are now booking orders for their Choice Hardy Perennial Plants, Plant a Colour Border this Autumn, and you will be able to enjoy its exquisite beauty for many years without any additional expense or trouble. Send measurements of your Borders.

Plonies, Daphnias, Phloxes, Gardenias, and other beautiful flowers, included in their Choice Selections, which provide blooms from early Spring to late Autumn. WRITE NOW to the RETAIL PLANT DEPARTMENT for Reduced Price List.

GREENHOUSE PAINTING & GLAZING

Vitreous, superior G. White Lead Paint, "Pasture" super-durable putty. Full particulars from W. CALMON & SONS, Grove Works, Battersea. Agents throughout the country.

DOBBIE'S Autumn List of Bulbs, Sweet Peas, Roses, Carnations, Seedling and Vegetable Plants, &c., post free. DOBBIE & CO., Royal Florists, Edinburgh.

BARR'S CASH CLEARANCE SALE OF CHOICE DALLIES, April and May Blooming, TULIPS, &c., for in and out-lands. Also Bulbs for larger plantings. List from BARR & SONS, King Street, Covent Garden, W.C. 2.

WAL DUNCAN TUCKER & SONS, LTD

Leyton Road, South Tottenham, N. 15. Conservatories, Winter Gardens, Vinerys, Teahouses, Portable Buildings, &c. Catalogues gratis.

ROSES. ALLEN'S GOLD MEDAL, NOTWICH ROSES

Our new descriptive price list, with hints on how to Grow Roses, now ready, post free. Write today, A. J. & C. ALLEN, Rose Growers, Norwich (for over 50 years).

GISHURST COMPOUND

has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes about 1lb., 2lb., and 12lb. by Dealers in Garden Sundries. Wholesale: PRICE'S PATENT CANDLE CO., LTD., Battersea, London, S.W. 11.

J. GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Danvers Street, Chelsea, London, S.W. 3. Wire, 201, Western, London. Telephone: 201, Western.

HOBBIES, LIMITED, Norfolk Nurseries, DEREHAM

Send for Rose Catalogue, post free.

SUTTON'S VEGETABLE SEEDS. SUTTON'S FLOWER SEEDS. The Best.

SUTTON & SONS, The King's Seedsmen, READING.

BUNYARD'S STRAWBERRIES.

Our new descriptive list is now ready, and will be sent on receipt of 5d. ALPINE STRAWBERRIES a speciality. GEO. BUNYARD & CO., LTD., Royal Nurseries, Maidstone.

SANDERS, Orchid Growers, S. Albans.

WANTED, 1,000 Large ASPIDISTRAS.

Well plants, suitable for stock, cash or exchange. See our latest advertisement, catalogues free. SMITH, Loughborough Nursery, Loughborough Junction, London, S.W.

THERE is no more delightful occupation than the long evenings of winter, when, to make up a good fire, and take in one's hand a favorite book, this represents the acme of comfort, and a hard day's work "to reading," as in everything else, it is "everything to his taste," and the garden enthusiast, be he professional or amateur, will devote his winter evenings to a book which deals with the subject nearest to his heart, that of horticulture. And in this theme, old, yet ever new, no volume can give so much and such varied information within a short compass as a bound volume of the "Gardeners' Chronicle." On one page it tells of the latest discovery in horticultural science, and describes the rich harvest of new plants introduced into cultivation by intrepid plant collectors from the remotest parts of China and Tibet; on another page it relates the progress of the horticulturists of today in the raising of new plants by hybridizing; and, again, it tells the romance history of the latest records to the legion of plant pests. The "Gardeners' Chronicle" has been printing such records for over seventy years.

APPLES.—Wanted, from 30 to 50 bushels

of good sound Apples, Cox's, Benlomas, and other good keeping varieties, for cash, send samples; fair price given. ROBERT GREEN, 26, Crawford Street, London, W.

SEKALE wanted; extra strong forcing

peas, any quantity, quote price to Box 351, G.P.O., Manchester.

100,000 LARGE GARDEN FERNS.

25 to 100 Palms, Begonias, Crotons, Draconas, Roses, Ericas, Gloxinias, Lilies, Hydrangeas, See catalogue free. J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

DAFFODILS and large Trumpet Narcissus

for Grass, Shrublands, and Wild Gardening, 15s. and 21s. 1,000; selected for forcing, 25s. 1,000; 28 dog. 15s. per bush (2,000), 4s. 6d. per peck (500 bulbs). J. HANDSCOMBE, F.R.H.S., Feltham Nurseries, Middlesex.

WELLS' CHRYSANTHEMUM CATALOGUE

now ready. Post free on application.—W. WELLS & CO., Merstham, Surrey.

For Advertisement Charges see page 111.

WATERER'S ALPINES AND HERBACEOUS PLANTS.—New Catalogue now ready.

WATERER'S BRITISH GROWN BULBS.—New Catalogue now ready.

WATERER'S WARGRAVE ROSES.

Catalogue and Supplementary List of new and choice varieties now ready.

WATERER'S RHODODENDRONS AND CHOICE SHRUBS.—Catalogue free.

All or any of the above Catalogues forwarded post free on receipt of name and address. JOHN WATERER, SONS & CRISP, LIMITED, The Nurseries, Bagshot, Surrey, and Twyford, Berks.

"PESTIE" destroys all soil pests (wireworms, club-foot, wart disease, &c.). Price 10s. 6d. per cwt., £8 per ton, carriage paid. G. LANG & SONS, LTD., Hounslow, Middlesex.

ORCHID PEAT, 7s. 6d. per sack; Rhododendron Peat, 7s. 6d. per sack; 15s. per yard, 10 to 15 yard trucks, bags 20s. dozen, Loam, Leaf Mould, Silver Sand and Fibre, Rhubarb Roots (10 acres), clumps for forcing, 30s. 100; fruiting, 20s. 100; Dow's Champion and Hawkes' Champion; Sea Kife, forcing crops and seeds. List free. J. HANDSCOMBE, The Nurseries, Feltham, Middlesex.

PETHEROE & MORRIS, HORTICULTURAL, FRUIT, MARKET GARDEN, AND ESTATE AGENT, AND VALUERS, 67 and 69, Chesapeake, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

FOR SALE, a MARKET NURSERY;

about 8 acres and 60,000 super feet of Glass; excellent local markets; South of England; or a partnership would be entertained with a thoroughly capable grower with a view to ultimate purchase. Principals only deal with M. H., Box 4, 41, Wellington Street, Covent Garden, W.C. 2.

NURSERY, to be Let or Sold; old establish-

ment house and shop, main road; 200ft. Glass-houses (about 4), good land; having in join Army.—W. PARSONS, Branson Road, Clacton-on-Sea.

BRITISH CORRESPONDENCE SCHOOL OF HORTICULTURE, PENNINGTON, 251, Oxford Road, Manchester.

Complete courses for B.S. School, Junior, Teachers', and National Diploma of Horticultural Examinations. Fees moderate.—Write, SECRETARY.

PARTNERSHIP, either sex, Market Gard-

ener, Fruit, &c., 10 miles S.W. London; near rail, good markets. CAMERON, 47, Ebra Road, Wembleton.

SPORTSMEN, FARMERS, HORSEMEN.

Try our splendid Yorkshire Whipped Tweed; wears like leather, shaverproof, 7 yards for 21s. Patterns free. BRADFORD WOOLLEN CO., 71, Bradford.

FERNS! FERNS! —Tree Ferns, Climbing

Ferns, Basket Ferns, Stove and Greenhouse Ferns, Hardy Garden Ferns; catalogues free.—J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.

SALES BY AUCTION.

HANWELL.

Clearance Sale of Fruit Trees and other Stock by order of MESSRS. PROTHEROE & MORRIS will sell by Auction at the Osterley Park Nurseries, Windmill Lane, near Hanwell.

On Monday, December 17th, at 12 o'clock, by order of Mr. G. CANNON, 3,500 well-grown standard Bush and trained Fruit Trees of the best varieties, including 1,500 Apples, 200 Pears, 400 Plums (mostly Victoria), 1,100 standard and dwarf-trained Peaches and Nectarines, 4,000 Gold and Green Princes (3 to 5 ft.), 500 Laurels (3 to 4 ft.), Flowering and Evergreen Shrubs, Standard and Dwarf Roses, &c. May be viewed.

Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C. 2.

SALES BY AUCTION OF

BULBS

On Monday and Wednesday next.

HERBACEOUS PLANTS, &c.

On Wednesday.

MESSRS. PROTHEROE & MORRIS, 67 and 68, CHEAPSIDE, E.C. 2.

Specimens in Stamps will ensure Twelve Catalogues.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to initials at Post offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

HEAD GARDENER required, chiefly Out-side work; some Glass; good cottage; liberal wages.—Apply to J. W. LITTLE, Bill House, Mifham.

WANTED, HEAD WORKING GARDENER, beginning of January; over two at present; for all-round work; permanent; good wages and cottage.—L. B., Box 15, 41, Wellington Street, Covent Garden, W.C. 2

WANTED, good all-round HEAD WORKING GARDENER. Knowledge of Outdoor Fruit Culture essential—small Nursery.—Apply, with references, to AGENT, Fishbrook Hall, Uppingham, Rutland.

WANTED, good WORKING HEAD GARDENER; wages 30s., coal and very good house.—Write all particulars to MRS. JEFFREYS, Sherwood, Winchfield.

WANTED, GARDENER; ineligible, married; wife help as cook and working housekeeper to two bachelors, girl and other help given; man good all-round; take charge of cows, horses, goats, and pigs; must be willing, obliging, good temper; no grumbler; make himself useful; first class references indispensable; rooms, fire, and garden. State lowest combined salary expected; country Kent.—Write, "GARDENER" c/o Ssgt, 269, Regent Street, London, W.

WANTED, GARDENER, for Lady Students' Hostel; 2-acre Garden, furnaces; man or woman, married or single, can be arranged for, but there is work for wife if desired.—St. Michael's, Grove Park, S.E. 12.

WANTED, SINGLE MAN, ineligible, for Outside Garden work; one able to take Sunday duty; overtime paid.—Particulars of experience to H. KING, Stevenstone Gardens, Torrington, N. Devon.

WANTED, MAN; married or single; able to take sole charge of Plants and Tomatos under Glass.—CHAS. LOUCH, Colbury House, Totbury, Southampton.

MARRIED COUPLE wanted for country cottage, 20 miles from London, between Rickmansworth and Gerrards Cross; to live in house during winter months and in cottage close by during summer; man to act as Gardener, a few poultry, and possibly pony and trap to be looked after in summer; wife to act as cook when owner in residence for week-ends during winter, and to assist in house during summer.—Write, HUNTER TOD, 11, Upper Wimpole Street, W. 1.

WANTED, UNDER GARDENER; ineligible; to work under Head; single; good lodging can be had close to Gardens; wages 30s. per week.—Apply by letter to MAXWELL, Great Comp, Borough Green.

WANTED, UNDER GARDENER; married or single; ineligible; good cottage or both, milk and vegetables, general work, chiefly Out-side.—Apply, stating ages, wages, &c., to T. HERBERT, Titisloe Lodge Gardens, Tarporley, Cheshire.

WANTED, UNDER GARDENER; Kitchen Garden and Hardy Fruit; cottage provided.—Apply, stating wages and experience, COOK, Sundome Castle Gardens, Shrewsbury.

WANTED, FOREMAN (INSIDE); also JOURNEYMAN; ineligible or discharged soldiers; wages 30s and 20s, a week, with both and attendances.—S. POPE, H. Honeyswood Gardens, Longton Green, Tunbridge Wells.

WANTED, FOREMAN (INSIDE) or good JOURNEYMAN; wages 30s., both, &c.; four in both.—E. BRISTOW, Leywood Gardens, Groombridge, Tunbridge Wells.

WANTED, JOURNEYMAN, for a first-class establishment, near London; an ineligible man or discharged soldier preferred; attractive wages paid.—Apply, in the first place, to JOHN PEED & SON, The King's Soudmen, West Norwood, S.E.

WANTED, JOURNEYMAN, for Houses; wages 24s., both; also IMPROVER, wages 18s., both, &c.; ineligible—Apply, J. HOWARD, Benham Valence Gardens, Newbury.

WANTED, JOURNEYMAN (INSIDE and OUT); both, vegetables; duty every third Sunday.—Apply, stating wages, to U. EARL, Somerhill Gardens, Tonbridge, Kent

WANTED, WOMAN GARDENER, to take charge of Glasshouses under Head Gardener; must have previous knowledge and experience. State age and wages required, with board, lodging, and laundry.—Apply to MISS STRAIGH, Whitebaker, Gray-shott Hill, Huddersfield, near Haslemere, Surrey.

WANTED, MARRIED COUPLE; man to work in Vegetable Gardens; to live in Garden. For further particulars apply to MISS TICE, Head Gardener, Easthampton Park Gardens, Wokingham.

WANTED, a LADY GARDENER for Inside and Out; both, 21s., duty extra; a beginner would suit if healthy and willing to learn.—SMITH, Garden, Bookham Grove, Bookham, Surrey.

WANTED, LADY GARDENER; trained Inside and Out; work with ladies; live in. State wages, references.—MISS D. HASELL, Dacre Lodge, Penarth.

LADY GARDENERS wanted; all suited entirely free of charge. Head and Under for (1) Herby 38s., vegetable, coal, and good rooms; old man and boy kept; Southampton; good deal glass; 2 men kept. Near Maidenhead. Forewoman and Under wanted; 30s.; good both, vegetables; Head Man and 6 Under kept. Glass. Valence for (1) Norfolk; Head Lady three suit by us; In and Outside work; 20s. and furnished cottage. (2) Somerset; Head Man kept; able to drive and milk good training given in Glass and Fruit. (3) Near Woking; Head and Under kept; must understand Glass.—MRS. HUNT LTD., 95, High Street, Marylebone, W. 1.

WANTED, young WOMAN GARDENER; excellent opportunity for acquiring general knowledge, no both, but comfortable lodgings; wages according to experience.—Particulars to FAYLOR, The Gardens, Framwood, Stoke Poges, Bucks.

WANTED, WOMAN UNDER GARDENER; strong, experienced pointer, chickens, goats (milking); live outting.—Apply, MRS. LITTLE, Whitehill, Blochinger, Surrey.

WANTED, MAN or WOMAN (single) for Dairy and Poultry work. Please state wages required.—HEAD GARDENER, Fulwell Park, Twickenham, S.W.

WANTED, in good Garden, a well-experienced IMPROVER for Inside; age 17; wages 42s. weekly, with both, &c.; 7s. per duty every third or fourth week; 6d. per hour overtime; 1 o'clock Saturdays. Apply, H. LLOYD, Twin Water Gardens, Welwyn, Herts.

WANTED, Two IMPROVERS (INSIDE), 16 to 17; wages 18s., both, &c.; duty and overtime paid.—W. J. EARL, The Gardens, Tranby Croft, Hull.

WANTED, IMPROVER, age 16-17; wages 28s., with both, milk, and vegetables; Sunday duty paid; 1 o'clock Saturdays.—GARRATT, Canwell Hall Gardens, Sutton Coldfield, Birmingham.

WANTED, Two YOUTHS; about 16; wages 18s. per week, both, milk, vegetables, &c.; Sunday duty paid.—J. McCOMBE, Smidlow Manor Gardens, Uttoxeter, Staffs.

WANTED, LAD, about 16, for Inside and Out; take duty; wages 20s. per week, both and vegetables.—J. L. WATKINMAN, The Gardens, Ssidade, Faversham.

TRADE.

EXPERIMENTAL STATION, CHESHUNT, HERTS. EXPERIENCED and careful GARDENER required early in the New Year to take charge of six experimental Tomato Houses (about 5,000 plants), and to cultivate according to the instructions of the Director. Experience in a Market Nursery is not essential, but deep green with packing, stoking, &c. Only those ineligible for military service need apply. Applications, enclosing copies of two recent testimonials, should be received by the DIRECTOR (from whom further particulars can be obtained) not later than December 29.

WANTED, a PROPAGATOR and GROWER, with a knowledge of Cucumbers and Tomatos and Pot Plants.—Please state wages required, with copies of testimonials (specimen plants) to A., Box 19, 41, Wellington Street, Covent Garden, W.C. 2

WANTED, a GROWER; experienced in Cucumbers, Tomatos, and Chrysanthemums.—Please state wages required, with copies of testimonials, to F., Box 17, 41, Wellington Street, Covent Garden, W.C. 2

WANTED, WORKING FOREMAN, ineligible for Army; for small Market Nursery, Palms, Ferns, and Tomatos grown; good cottage and firing found. State age, wages, and experience to E. CERRY, Whitehall Lane Nursery, Chingford, Essex.

WANTED, Smart, Active GREENHOUSE FOREMAN for North County Nursery; ineligible for Army.—State age, experience, references, and wages asked to NORTH, Box 12, 41, Wellington Street, Covent Garden, W.C. 2

WANTED, HARDY PLANT FOREMAN.—Apply, stating full particulars, age, experience, and wages required, "FOREMAN," Box 1, 41, Wellington Street, Covent Garden, W.C. 2

WANTED, immediately, experienced GARDENER for Greenhouse Department.—Write, state age, experience, wages required, to JAMES CARTER & CO., The Nurseries, Houston Wood, Forest Hill, S.E. 27.

WANTED, SEED ASSISTANT; ineligible. Please give particulars of experience and salary required to JOHN PEED & SON, Seedsmen, West Norwood, S.E. 27.

WANTED, PACKER, for Plants, Seeds and Bulbs.—Please apply, giving particulars of experience and salary required, to JOHN PEED & SON, Seedsmen, West Norwood, S.E. 27.

FEMALE GARDENER required for London Florist work. Apply, stating age, experience, and wages required, to WILES & SEGAR, Royal Exotic Nursery, Gush Green, South Kensington.

WANTED, pushing MAN, to help work in extra van, small Nursery, under Glass; Fires, &c.; especially for Potting; wages 40s. to 45s.—CHIFFEY, FIELD, Hampton Hill, Middlesex.

WANTED, young LADY FLORIST; fill in spare time with Soles.—Particulars of qualifications and wages required, to G. THOMAS PERKINS, Florist and Seed Merchant, Kettering.

SITUATIONS WANTED.

Twenty-six words for 1s. 6d. and 6d. for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

PRIVATE.

GARDENER (HEAD), where several are kept, thorough experience in large establishments where Fruit, Vegetables, and Flowers are well grown; good management of Garden and Estate work; age 48.—F. BENNETT, Maphurst, Woodhouse Eaves, Longborough, Notts.

GARDENER (HEAD) seeks re-engage-ment in a good establishment; large and varied experience in all branches; 11 years in present place; age 44; married (3 children). State wages. C. B., Box 16, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER (HEAD) of Gardener and Small Estate Management where required; life experience in all branches, Inside and Out, early and late forcing, several years Head in good families; thoroughly reliable; highly recommended; married (no children);—WOODHOUSE, Fossingworth Gardens, Cross-in-Hind, Sussex.

GARDENER (HEAD) seeks engagement in good establishment, where several are kept; could manage small estate; highly recommended by late employer after 11 years' service; left through place being sold; married; age 49.—C. BAULK, 9a, Midmore Road, Balfham, London, S.W.

GARDENER (HEAD); thoroughly competent in all branches; Land, Stock, Timber Repairs, and General Estate Work if required; life experience in first-class establishments.—C. J. D., 109, Wiverton Road, Sidenham, S.E. 26.

GARDENER (HEAD WORKING) seeks situation; life experience in all branches; over military age; married (two children); excellent references. State wages.—RENNIE, Leaside, Hertingfordbury, Herts.

MR. ROGERS, Wotton Gardens, Aylesbury, can highly recommend a GARDENER, aged 55, for a good place; 10 years as Head; a good all-round man; well up in early forcing and general routine, Inside and Out. Please state terms to above.

ADVERTISER, with 20 years' experience in the management of Landed Property, Woods, Farms, Gardens, seeks engagement, temporary or otherwise; highest credentials can be furnished; moderate salary if permitted to give outside advice.—A. Box 13, 41, Wellington Street, Covent Garden, W.C. 2.

SITUATION required as FOREMAN in large establishment, under good Head; eight years' practical experience in Plant and Fruit Culture; College trained.—MISS HEBBITCH, Gramsbyke, Harrow Weald.

YOUNG WOMAN (Danish) seeks post by January, under exp. Head Gardener, Inside or Out as required; accustomed to duty and stocking.—Please state particulars to MISS HANSEN, The Gardens, Ashby St. Lekear, Rugby.

YOUNG LADY requires Post under Head Gardener; one year's experience in large vicarage garden; good references; Lanes, and stocking.—MISS BUCKLEY, Terry Cottage, near Longdon, Staffordshire.

TRADE.

MANAGER, market or retail; life experience in—Cucumbers, Tomatoes, Chrysanthemums, Ferns, Soft-wooded and Bedding Stuff, Bulb Forcing, &c.; also Outside Fruit, Vegetables, Salads, &c.; married; age 45; not eligible.—E. A., Box 13, 41, Wellington Street, Covent Garden, W.C. 2.

The Gardeners' Chronicle. SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Table with 4 columns: Description of ad placement, and 3 columns of rates (s., sh., d.). Includes rows for Ordinary Positions, Facing matter and Back Page, Half and quarter pages, 4 line space not exceeding 20 words, Per inch, single column, Per inch, across 2 columns, Per inch, across 3 columns.

Front page (no display allowed) 1/- per line space. (Headline counted as two lines.)

For discounts apply to address below.

SITUATIONS WANTED.

28 words for 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

Table with 2 columns: Location (THE UNITED KINGDOM, ABROAD) and Rate (19 6 per annum, 22 - " ").

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telegrams: "GARDCHRON, RAND, LONDON." Telephone: 1542 GERRARD.

SELECT LIST OF BOOKS ON GARDENING.

To be obtained at the "GARDENERS' CHRONICLE" OFFICE for the Publisher. Prices Quoted are in all Cases Post Free to any part of the United Kingdom.

- Botany, Elementary. By Dr. E. Drabble. 2s. 10d.
Botany, First Course of Practical. By G. F. Scott Elliott. Illustrated. 3s. 10d.
Botany, Lectures on Plant Physiology. By Dr. Ludwig Jost. Translated by J. Harvey Gibson. Morocco back, gilt top. 24s. 6d.; cloth, 21s. 6d.
Botany, Practical Plant Physiology. By Frederick Keeble, Sc.D., F.R.S. Recommended for use in colleges and schools. 3s. 10d.
Botany, Structural. By D. H. Scott, M.A. 2 Vols.
PART I.—FLOWERING PLANTS. 3s. 11d.
PART II.—FLOWERLESS PLANTS. 3s. 11d.
An excellent introduction to the Anatomy and Life Histories of Plants
British Plants, List of. By G. C. Druce, M.A. A detailed list of Species and Varieties. 2s. 9d.
British Plants, The Uses of. By Prof. Henslow. 3s. 9d.
Bulb Book, The. A Practical Work on Cultivation, Propagation, etc. By John Weathers. Illustrated. 15s. 7d.
Bulbous Plants, Beautiful. By John Weathers. 3s. 4d.
Bulbs and their Cultivation. By T. W. Sanders. 2s. 10d.
Bulbs, The Book of. By S. Arnott. Illustrated. 2s. 9d.
Cambridge Manuals of Science. Cloth edition, 1s. 7d. each, post free.
Plant Animals: A Study in Symbiosis. By Frederick Keeble, Sc.D., F.R.S.
Plant Life on Land. By Prof. F. O. Bower, F.R.S., Sc.D.
Earthyworms and their Allies. By F. E. Bedford, F.R.S.
The Earth. By Prof. J. H. Poynting, F.R.S.
The Atmosphere. By A. J. Berry, M.A.
The Story of a Loaf of Bread. By Prof. T. B. Wood, M.A.
Bees and Wasps. By O. H. Latter, M.A.
Soil, The Fertility of the. By E. J. Russell, D.Sc.
Insects, The Life Story of. By Prof. G. H. Carpenter.
Carnation Culture, Commercial. Edited by J. Harrison Dick. A collection of treatises by the best modern cultivators. Illustrated 7s. 4d. (81.50).
Carnations, Perpetual Flowering. By Laurence J. Cook. A Practical Manual with Details of Cultivation. Illustrated. Paper, 1s. 6d.; cloth, 1s. 9d.
Carnations and Pinks. By T. H. Cook, Head Gardener at Sandringham; James Douglas, V.M.H.; and J. F. McLeod. Contains 3 Coloured Plates, reproduced from colour photographs. 1s. 10d.
Carnations, Picotees and Pinks. By John Fraser. Fully Illustrated. 8d.
Chemistry of the Garden. By D. R. Edwards Ker. A course of practical work designed for the use of Teachers and Students of Gardening. 1s. 8d.
Climbing Plants. By W. Watson, A.L.S. With Introduction by W. Robinson, author of "The English Flower Garden." 2s. 10d. and 3s. 10d.
Coco nut, The. By Edwin Bingham Copeland 10s. 6d.
Cottage Gardening; or, Flowers, Fruits and Vegetables for Small Gardens. By E. Hobbay. 1s. 9d.
Cucumber Culture for Profit. By W. Dyke. A Practical Guide to the Cultivation in Frames and in the Open. 1s. 2d.
Cyclopaedia of Botanical Drugs, Potters. By R. C. Wren, with additions by E. M. Holmes. Containing the Names and Properties of all the Herbs employed medicinally in this country. 3s. 10d.
Cyclopaedia of Horticulture, The Standard. By L. H. Bailey. In 6 vols. Fully Illustrated in colour and half-tone. A valuable book of reference. Each part, 26s.
Daffodils. By the Rev. Joseph Jacob. With Preface by the Rev. W. Wilks, M.A. A full treatise on their culture for private and Exhibition purposes. With 8 Coloured Plates. 1s. 10d.
Dahlias and their Cultivation. By J. B. Wroe. 1s. 2d.; cloth, 1s. 3d.
Dahlias. By George Gordon, late President of the National Dahlia Society. Contains 8 Coloured Plates. 1s. 10d.
Date Growing in the Old World and the New. By Paul P. Popenoe. Illustrated. 9s. 6d.
Dictionary of Hardy Flowering Plants (see "The English Rock Garden," by R. Farrer).
Directory, Horticultural (see Gardeners' Chronicle Horticultural Directory).
Diseases and Garden Pests, Book of Plant. By R. Hooper Pearson. 214 pages. Over 65 Illustrations. Cloth, 2s. 11d.
Diseases of Cultivated Plants and Trees. By George Mussee. 7s. 11d.
English Rock Garden. By Reginald Farrer, author of "My Rock Garden," "Among the Hills," etc. This work contains up-to-date monographs of the Plants suitable for cultivation in the Rock Garden. The text consists of 500,000 words. 300 Plants are Illustrated in Half-tone Plates. In 2 Vols. Price £2 2s. 10d. (in the Press).
English Flower Garden, The. An Illustrated Dictionary of the Plants Used, and Directions for their Culture and Arrangement. By W. Robinson. With numerous Illustrations. 15s. 7d.
Ferns, The Book of British. By C. T. Drury. Illustrated. 3s. 10d.
Ferns, Choice, for Amateurs. For the Garden, Conservatory and Stove. Illustrated. With full directions for their Cultivation, and Formation of Ferneries, Rockeries, etc. By George Schneider. New Edition. 3s. 11d.
Fern Culture. By A. Henslow. Well Illustrated. 2s. 10d.
Ferns and Fern Culture. By J. Birkenhead. Third Edition, revised by F. Parsons. 1s. 4d.
Flora, British, Illustrations of the. By W. H. Fitch and W. G. Smith. 1,315 Wood Engravings. Revised and enlarged. 9s. 5d.
Floral Decoration, British. By R. F. Felton. Containing 26 full-page Illustrations (12 in colour). 4s.
Florists' Bibliography. The. By C. Harman Payne. Second Edition, with Supplement and Index. Cloth. 5s. 4d.
Flower Garden, The. By T. W. Sanders. The Formation and Management of a Garden, and the Culture of Outdoor Flowers and Plants. 450 pages. 104 Illustrations. 8s.
Flower Grower's Guide, The. By John Wright. In three volumes, beautifully illustrated with coloured plates. £3 4s. 6d., post free.

Complete New Catalogue sent Post Free on application to

THE LIBRARIAN 41, Wellington Street, Covent Garden, W.C. 2.

"Bull's"
THE FOOD FOR PLANTS

TURF LOAM.

Very Fibrous Yellow Turf Loam

For VINE BORDERS, CARMATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid or Delivered.

A. B. JOHNSTON,
New Park, Cranleigh. SURREY.

G.F.S.
6% ROLLED SHEET MORE LIGHT GLASS

A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 4 in. (or equal to about 21 oz.) in thickness. Can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of
GENUINE WHITE LEAD PAINT.



"BLACKFRIARS BRAND."
Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck case.

BEST LINSKED OIL PUTTY.

Complete Price List of
Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
SOLE GARDENERS' CHRONICLE.

TOMATO SEED
Bide's "Recruit."

This grand Tomato, for its delicious flavour, uniform size, and heavy cropping qualities, is unsurpassed. In sealed packets 1/- per packet, direct from the raisers.

S. BIDE & SONS, Ltd.,
ALMA NURSERIES, FARNHAM, SURREY.



Sample CRET Pot FREE with Booklet will convince you that the Drainage, Porosity, Healthfulness of CRET'S would help your plants. Write: **PETER BAILEY & SONS, Ltd.** 2 Heaton Mersey Pottery, near MANCHESTER.

LAXTONS BEDFORD FRUIT TREES & ROSES
CATALOGUE & CULTURAL HINTS GRATIS

IMPORTANT: Please write for a Catalogue, as the Paper Commission only allow us to send to those who apply—
LAXTON BROTHERS, BEDFORD.

JOHN WATERER, SONS & CRISP, LIMITED.

SPECIAL CLEARANCE OF BULBS.

The Bulbs are in splendid condition, sound, and guaranteed flowering size.
TULIPS.

DARWIN.	Per Doz.	Per 100	Per 1,000
Clara Butt (extra large) ...	1 0	7 6	70 0
Dream (beautif. of mauve) ...	1 10	11 0	—
James Douglas (violet rose) ...	1 0	7 6	70 0
Jupiter (glossy crimson) ...	1 3	9 0	85 0
Margaret (blush pink) ...	1 2	8 6	80 0
Mr. Farncombe Sanders (scarlet) ...	1 6	12 0	115 0
Salmon King (salmon rose) ...	1 3	9 0	85 0
White Queen ...	1 3	10 0	95 0
Extra choice mixed ...	0 9	5 6	45 0

COTTAGE.	Per Doz.	Per 100	Per 1,000
Boston (sa) (golden yellow) ...	1 0	7 0	65 0
Duchet alba (round white) ...	1 3	9 0	85 0
Emerald Gem (salmon orange) ...	1 3	10 0	—
Golden Crown, red and yellow ...	0 9	5 6	50 0
Inglescombe (pink) ...	1 8	12 0	115 0
Parisian (violet) ...	1 4	10 6	—
Yellow ...	1 4	10 6	100 0
Marvispola (crimson) ...	0 9	5 0	50 0
Parisian (yellow) ...	1 3	9 0	85 0
Peacock (white-edged pink) ...	1 0	8 0	75 0
Rosalind (dual edged) ...	1 0	8 0	—
Choice mixed ...	0 9	6 0	50 0

SINGLE EARLY.
Cranrose (brilliant scarlet) ... 2 0 15 0
La Reine (rose and white) ... 1 6 12 0
Yellow Prince ... 2 3 17 0

Special Cheap Offer of other Bulbs on Application.

JOHN WATERER, SONS & CRISP, LIMITED.
THE NURSERIES,
Bagshot, SURREY, and Twyford, BERKS.

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
State quantity of each size required and have "carriage paid" quotation ("carriage" frequently amounts to half value of goods), or write for Price List, free.
SPECIAL POT'S of all descriptions. Price from 2d. each. Bulb Bells and Fern
RICHARD SANKEY & SON, LTD.
Bulwell Potteries, NOTTINGHAM.

RIVERS'
Fruit Trees, Roses, Vines, Figs, Oranges, AND Orchard House Trees ARE OF First-class Quality.
A Large and Select Stock always on View.

PRICE LIST POST FREE ON APPLICATION.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.

SUBSTITUTE FOR RUSSIA MATS.
"FRIGI DOMO" CANVAS.
Made from prepared Hair and Wool.
A good non-conductor. 2 yds., 3 yds., and 4 yds. wide
Price and pattern from—

BENJAMIN EDGINGTON'S,
DUKE ST., LONDON BRIDGE, S.E.

ORCHIDS,
Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue,
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

Rhododendron Ponticum,
1 to 3ft. 16/- per 100, 140/- per 1000.
1 1/2 to 2ft. 22/- per 100, 180/- per 1000.
2 to 3ft. 35/- per 100.
2 to 3ft., these are suitable for covert planting, 140/- per 1000.

JOSEPH A. SMITH,
Moor Edge Nurseries, Tansley, nr. Matlock

WOOD'S RIVAL TOMATO
WOOD'S RIVAL CUCUMBER
WOOD'S SCARLET RIVAL MELON
WOOD'S GREEN RIVAL MELON
Packets 1/6, 2/6 and 5/- each.
H. J. G. WOOD, Seedsman & Nurseryman, Bracknell.
H. J. Greenwood, F.R.H.S., Proprietor.

LARGE POPLARS,
12 to 20 feet, GOOD ROOTS.
Consisting of Lombardy, Black Italian, and Ontario. Fine trees for Screen or Shelters.
No reasonable offer refused.
Ground wanted for Potatoes.
R. MANSON, Nurseryman, Gateacro LIVERPOOL.

EVERY GARDENER KNOWS THAT **Clay's gets there** and makes the Garden gay all the year round **GLAY'S FERTILIZER** **IT IS THE STANDARD FOOD FOR PLANTS.**

Sold everywhere for horticultural purposes in TINS at 6d. & 1s., and in GRANDED & SEALED BAGS: 7 lbs. 2s. 6d.; 14 lbs. 4s. 6d.; 28 lbs. 7s. 6d.; 56 lbs. 13s. 6d.; 112 lbs. 24s. Or direct from the works Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS). Quantities of 50 lbs. and upwards are supplied in 25 lb. bags.
CLAY & SON, Manure Manufacturers & Bone Crushers, STRATFORD, LONDON, E.

THE
Gardeners' Chronicle

No. 1616.—SATURDAY, DECEMBER 15, 1917.

CONTENTS.

Comma, the, i. botanical names .. 241	Plant, the effect of one on another .. 242
Edinburgh, new plant at .. 240	Primula sin-purpurea .. 241
Farm, crops and stock on the home .. 243	Raffia and camouflage .. 241
Farmyard manure .. 240	Red currants, a revision of the .. 237
Food production .. 241	Rhododendrons, planting .. 242
Food production, on increased .. 240	Root crop yields for 1917 .. 241
Flour .. 238	Societies—
Flour .. 238	Royal Horticultural .. 243
Flour .. 238	Southampton Royal Horticultural .. 243
Flour .. 238	Stable manure for army camps .. 241
Flour .. 238	Trees and shrubs—
Flour .. 238	Flowering shrubs in Wiltshire .. 242
Flour .. 238	Trials at Wisley .. 243
Flour .. 238	Week's work, the .. 239
Flour .. 238	Flower garden, the .. 239
Flour .. 238	Fruits under glass .. 239
Flour .. 238	Hardy fruit garden, the .. 239
Flour .. 238	Kitchen garden, the .. 239
Flour .. 238	Orchid houses, the .. 239
Flour .. 238	Plants under glass .. 239
Flour .. 238	Women's National Land Service Corps .. 241
Flour .. 238	Wood pigeons .. 241

ILLUSTRATIONS.

Current Victoria, 235; Fertility .. 237
Primula sin-purpurea .. 241

SOME 17th AND 18th CENTURY GARDENERS.

THE history of gardening must largely consist of a piecing together of many shreds. The subject is so full of ramifications, and spreads over so many centuries, that the gathering of the multitude of data is a matter of time, patience and research. Every student may contribute his share to the building of the fabric by taking up some unexplored line of research and by publishing the results of his inquiries. A complete history of the subject may be written eventually, and the future historian will be assisted by such details as can be brought to light in the meantime.

I have been able to glean a good many facts concerning gardeners of the 17th and 18th centuries from one of the most useful books of biographical reference ever printed—the six large octavo volumes published by the Harleian Society from 1899 to 1901, and generally known as Musgrave's *Obituary*. This stupendous compilation, which deals almost exclusively with British names, was the work of Sir William Musgrave (1735-1800); it remained in MSS. for nearly a century, and is now in the British Museum. Musgrave extracted his obituary notices from many hundreds of volumes, among others the *Gentleman's Magazine*, and biographical memoirs of all kinds. Musgrave observed no definite system of selection, but took whatever notices were printed, and threw the whole into an alphabetical arrangement. His system had the supreme advantage of preserving for us a very large number of names of men and women who, in a general way, were not celebrities, except perhaps in the minor walks of life. His volumes, as edited by Sir George J. Armytage, enumerate over 60,000 names, and give references to the

original sources of authority, where in most cases further and often very important additional information may be found. The work, in fact, may be described as an index to English obituary notices from the earliest times to the end of the year 1799.

There are some hundreds of names which are of interest to students of the history of horticulture and botany. This interest is naturally of a very varied character; and many gardeners are here recorded, not because they were famous for their technical skill, but for some extraneous reasons. For instance, to take the earliest name I have extracted: a certain Trestram who was a gardener at Brentford, Middlesex, and who died in 1619, at the age of about 76 years. He is enshrined in Fuller's *Worthies of England*, 1684, and in Winstanley's *Lives of the Most Eminent Persons in the English Nation*, 1660, and his title to notice is that, being "seized with an extreme fever and violent inflammation of the lungs, recovered after the loss of 60 ozs. of blood in three days"; he was under the care of Dr. Theo. Deodate, physician to Prince Henry and Lady Elizabeth, and to have been attended by a Royal medical man shows that Mr. Trestram was a personage of some importance. In the same year—1619—we have the record of the death of another gardener, Vincent Corbet, who has a double title to fame, first because he was the father of Richard Corbet (1582-1635), successively Bishop of Oxford and Norwich, and secondly, because his virtues have been immortalised in a fine epitaph by Ben Jonson. He lived at Twickenham, and was famous for his nurseries and plantations of trees. Jonson tells us:

"His mind as pure and neatly kept
As were his nurseries,"
and his own son, the Bishop, who ranks as a poet, further informs us:
"Years he lived well-nigh fourscore,
But count his virtues he lived more."

The Corbets, moreover, have another interest for us to-day, for Peter Corbet, "a descendant and worthy representative, bating the point of sanctity, of old, factious Bishop Corbet," figures in Charles Lamb's "Character of the Late Elia."

We may conveniently group together the names of the various men recorded by Musgrave who acted as gardeners to the Royal family. At the head of these in point of time is John Rose, who died on September 11, 1677, aged 58. He was chief gardener to Charles II., and in the Royal collection there is a portrait of him presenting the first Pineapple cultivated in England to the King. He is a familiar figure in the history of English gardening. In 1738 the *London Magazine* records the death, "of a dropsy, at his house at Kensington," of Charles Bridgman, "gardener of all his Majesty's Royal gardens, a place of considerable profit." A notice of him appears in Johnson's *History of Gardening*, and in the first supplement of the *Dictionary of National Biography*. He was succeeded by a Mr. Dent, concerning whom history is silent, and whose reign was apparently not long, for in the *Gentleman's Register of*

1749, the King's "master gardeners" are entered as Sam. Milward at Kensington and St. James's, and George Lowe at Hampton Court. In 1757 (September 2) the death occurred of Thomas Greening, gardener to George II., and his widow died at Turham Green in June, 1781, aged 70. The above-named George Lowe remained at Hampton Court until his death on November 24, 1758; and six years later (September 8, 1764) there was another death in the Royal gardens in Mr. Brian, who was kitchen gardener to the King. Evidently living in retirement at Molesey, and not far from the scene of his active labours, was Mr. Pettit, "master gardener at Hampton Court to King George I." (who died in 1727), and here he died on March 9, 1771; and another veteran passed away on September 10, 1772, in Mr. Sheppard, "gardener to the King," at the great age of 109.

A number of my extracts are of men who, like the last-named, were centenarians. John Storey, gardener to the Duke of Bedford, who died on April 9, 1770, reached the age of 105 years; Archibald Nisbet, of Aughtyfarmale, Co. Lanark (June 21, 1792), aged 103; a Bristol gardener of the name of Hobbes (1753), aged 107; an Exeter gardener, John Jackson (July 17, 1764), aged 113; R. Asley, of Streatham (June 7, 1782), "late gardener to Mr. Stallard," aged 100; John Hammond, of Maidstone (May, 1789), aged 100, "the oldest Freeman and inhabitant of Maidstone"; Anthony Noble, gardener to Henry Bevan, Esq., of Milltown, Ireland (May, 1790), aged 115; and, older than all, John Watson, park-keeper at Limehouse, Cheshire (April, 1778), aged 130. It may be questioned if all these centennial claims could withstand severe testing. The 18th century was an age of easy faith in such matters.

Southwark to-day does not suggest either nurseries or gardens, yet two centuries or more ago it must have been an agreeable suburb of the City. What was formerly Kent Street, and is now Tabard Street, is full of historical associations; it was the route taken by Chaucer's pilgrims, and through it the Black Prince conducted the captive French King; but in the 18th century Smollett described it as "a most disgraceful entrance to such an opulent city." It was near Kent Street Turprike, on October 11, 1736, that a florist of the name of Jones came to an accidental death. He had, according to the *Gentleman's Magazine*, "several times been robbed of valuable flower roots," and "had provided a gun with several wires to the trigger that when touched would go off," and scare the intending thieves; he unfortunately forgot the trap which he had set for others, and fell a victim to his own contrivance. Ten years later (June 17, 1746), we read of the death of Richard Atkinson, gardener, of Southwark, at the age of 90, "worth £30,000." He was probably a gentleman who resided in the district, who made a hobby, rather than a business, of gardening. Rotherhithe, too, has its horticultural celebrity

in John Warner (he died February 24, 1760, aged 86), who lived in East Lane; he is described as "a gentleman eminent for his skill in the most curious articles of horticulture." I identify him with the Warner mentioned in Hughson's *History and Survey of London*, as having attempted to restore the cultivation of vineyards in England. Observing that Burgundy Grapes ripened early, and conceiving that they might be grown in England, Mr. Warner obtained some cuttings which he planted as standards, and, although the soil was not particularly good, he, with care and skill, was so successful that he obtained crops so ample that

have the record of the death of "William Smith, Esq., a curious florist," at South Lambeth, probably a private resident with a large garden rather than a tradesman. Another "eminent florist," a Mr. Dennet, died in the same parish on April 18, 1739; and in November, 1745, the *London Magazine* announced the death of Mr. Kingman, "Master of the Artichoke Alcubouse in Lambeth Marsh, and the most eminent florist in England." The combination of the two callings of publican and florist is distinctly unusual, but it is not unique; for instance, in that somewhat scandalous little book, *Memoirs of the Green Room*, 1814, we are told

of dog-bites, Abraham Spencer at Twickenham, 1747, and Mr. Jackson at Fulham, 1778; Joseph Longhurst, a Chertsey gardener, who died June 12, 1769, aged 69.

London seedsmen figure somewhat prominently in my lists, and most of these had shops in the Strand. The earliest of these was "J. Foster, Esq.," "formerly a seedsmen in the Strand," who died at an advanced age at Cheshunt, Herts, January 2, 1781. Both Mr. Ferno (of Ferno and Thatcher, seedsmen and net makers, 147, Fleet Street) and his wife died within nine hours of one another on March 30, 1782. Two years later (November 5, 1784) we have the announcement of the death of Warren Luker, seedsmen and nurseryman, of City Road. Alexander Eddie, the founder of the firm of Eddie and Dupin, seedsmen, of 68, Strand (in 1783 the firm was Eddie, Taylor, and Chambers, and in 1795 Wright and Beck), died at Lambeth May 3, 1788. Charles Minier, the founder of one of the longest lived firms of seedsmen in London, at 63, Strand, died at Kew on March 22, 1790, the firm existing until our own times.

Two at least of our names may rank as those of pioneers, if the claims of those who wrote their obituary notices hold good. For a Mr. Evans, of Kilbroyth, Montgomeryshire (May, 1774), it is stated that he first introduced the culture of Turnips into Wales; whilst for Henry Prentice, who died at Edinburgh, January 24, 1788, aged 85, the claim is advanced that it was he who first introduced the cultivation of Potatoes into Scotland. It is very difficult to accept this statement. A selection of other names can only be dealt with briefly. Thomas Engeham, a gardener, who died at Canterbury, March 4, 1792, claimed to be a lineal descendant of Sir Thomas Engeham, of Goodneston, Kent, who died in 1611, and of whom an account appears in *Hasted's Kent*, Vol. III. From Frome, in Somersetshire, came the announcement of the death, on March 24, 1774, of John Moody, "an ingenious florist," who "won the prize at the Florists' Feast for upwards of thirty years past." The death of another noteworthy man, Mr. Close, gardener to John Fuller, Esq., of Rosehill, Sussex (January, 1788), "remarkable for his skill in the management of hot-houses," calls for notice, not so much for what he accomplished as for the extraordinary man by whom he was employed—"Jack Fuller," as he was generally called. Fuller, who died in 1834, was a stormy petrel in Parliament. He was committed to the Tower for insulting the Speaker, and on receiving an offer from Pitt of a peerage is reported to have thrown the letter into the fire, exclaiming "Jack Fuller I was born, and Jack Fuller I will die." He was a patron of Turner, the artist, and erected an observatory and several ornamental buildings in his park and gardens, where Turner painted several pictures. Some account of Jack Fuller was published in the *Times* of March 19 and 23, 1908; and if all the stories which have been told of "Jack Fuller" are true, Mr. Close, as his gardener, could not have lived in a bed of Roses. *W. Roberts.*



(Drawn by Miss Frances Bunyard.

FIG. 90.—RED CURRANT VICTORIA ($\frac{1}{2}$ NAT. SIZE).

(see p. 237.)

it afforded him upwards of 100 gallons annually, and he furnished cuttings to growers in many other parts of England. The memory of a famous botanist is recalled by the announcement of the death at Stratford in March, 1781, of John Morrison, "an ingenious botanist" and principal gardener to Dr. John Fothergill (who himself died in the December previously), whose celebrated garden was at West Ham. Fothergill's name is to be found in most biographical dictionaries, but that of Morrison, to whom probably Fothergill owes much of his fame as a botanist, may be sought in vain.

Lambeth's celebrity for its gardens and nurseries is well known, and in March, 1738, we

that the Drury Lane actor, Mr. Penson, was the son of a nurseryman and seedsmen, who also kept the Red Lion Inn at Chester. At least one of Lambeth's nurserymen developed into a very big swell indeed, for Thomas James, of Cupor's Bridge, Lambeth (opposite Somerset House), who died on January 2, 1791, was in the Commission of the Peace for Surrey, and Sheriff of that county in 1774. Islington had a nurseryman in William Watson, who died on January 29, 1795, aged 75; Brompton, one of many in Joseph Kirke (July 1, 1791); and at Molesey John Villet (April 1, 1769) is described as "famous for raising Pineapples." Two of our names are of gardeners who died from the effects

FRUIT REGISTER.

A GOOD LATE PEACH.

It may interest some who are contemplating planting Peach trees this autumn to know of a first-rate variety which is, I think, very little cultivated. I purchased trees some 25 years ago from Messrs. J. Veitch and Sons, under the name of Marquis of Downshire. This tree is still producing good crops in an unbeated house facing west. When the tree is not heavily cropped the fruits are of large size and good colour, and, what is often lacking in late Peaches, of good flavour. Some years I have realised 12s. per dozen for the fruits in Covent Garden late in September. *W. Peters.*

A REVISION OF THE RED CURRANTS.

(Continued from page 232.)

THE DUTCH GROUP.

THESE varieties of the Dutch group have flowers of the vulgare type, and the leaf is large and rather like Versailles in pose but lighter green in colour, nearly all being a light pea-green.

DUTCH.—Syns. Old Dutch, Red Champagne, Goliah.—*Flowers.*—Vulgare type, rather large, slight ring, greenish-yellow; sepals apart, petals wedge-shaped, buds quite green, rachis glabrous.

Leaves.—Young slightly brown, rather hairy in this stage, adult, pea-green, rather large, upward folded, but not so much as Scotch, boldly serrate.

Fruit.—Bunches long, stem long, often 1½ inch, fruits medium size, pedicels short, rather stiff, so that the fruit is held to one side, calyx rather prominent.

Season.—Medium.

Buds.—Round pointed, well away, slightly hairy.

Growth.—Vigorous, rather upright. Very free cropping.

Origin.—A Dutch Currant has been known for several centuries, but it is impossible to say if it is this one. The variety I have described I have received from many sources, all labelled as Dutch, so there is little doubt that it is generally known under this name. The Currant known on the Continent as Dutch is Prince Albert, described in the *Petraeum* group.

UTRECHT.—*Flowers.*—Vulgare type, pale yellow, sepals well apart, hardly folding back, petals wedge-shaped, rachis slightly downy and with a few dark glandular hairs.

Leaves.—Young state slightly brown tinted, adult yellowish green, a little inward folded.

Fruit.—Bunch medium, stem quite half total length of bunch, rachis very stout, slightly downy, fruits hang loosely.

Buds.—Rather small, dull brown, close to wood, very slightly hairy.

Season.—Medium.

Growth.—Strong spreading, internodes rather short.

Origin.—Unknown.

This useful Currant is at first sight very like the Dutch but the long stem of the bunch and the more spreading growth serve to distinguish it from the type variety.

PERFECTION (LAXTON).—*Flowers.*—Vulgare type, green, sepals overlapping, petals T-shaped, rachis almost glabrous.

Leaves.—In young state slightly brown tinged, adult greenish green, very rugose.

Fruit.—Bunch very long, berries very large, of even size, held lively, rachis unusually stout and keeps green.

Season.—Mid to late.

Buds.—Rather small, roundish, dark brown, away.

Growth.—Very stout and vigorous.

Origin.—Raised by Messrs. Laxton Brothers and introduced in 1910. This proves to be the finest Currant of recent years, as the fruit is large without special culture, keeps a bright red even at the end of August, and is extremely prolific. From the character of the leaves it seems to be of the Dutch type crossed with Ruby Castle. The American variety of the same name described under the Versailles group is quite different, and with me greatly inferior.

SKERREIN'S EARLY.—This resembles the Dutch very closely but is earlier; the bunches do not have the long stem of Dutch, the rachis turns yellow and the fruits decrease in size, more to the end of the bunch. A distinct and vigorous variety much grown in Kent for early market use. Origin uncertain, but probably raised in Kent.

VARIETIES OUTSIDE THE GROUPS.

KING'S RED.—There are several Currants of this name in commerce, but they have proved

so different, varieties of the *petraeum*, *rubrum* and *vulgare* groups all bearing this name, that I have been unable to select any one as the true type.

The varieties described below are "mono typic," and do not fit in to any of the groups previously described.

VICTORIA (see fig. 90). Syns., Wilson's Lang-Bunch, Houghton Castle (in error), Langtraubige, A longue grappe.

Flowers.—Vulgare type, ring marked, sepals well apart, petals markedly wedge-shaped, rachis almost glabrous, buds green.

Leaves.—Brownish tinged when young, adult a little yellowish, held flat and very lax and irregular, petioles long.

quite greenish yellow, sepals not touching, much folded back, petals wedge-shaped, slightly downy, with a few glandular hairs.

Leaves.—Young state, yellowish-green and malt, with faint brown tinge, later they are very dark green, rugose, held nearly flat, coriaceous.

Fruit.—Bunches rather long, berries large, of even size.

Season.—Early.

Buds.—Pointed, a little away, slightly hairy.

Growth.—Rather spreading.

A very distinct variety, one of the earliest to start growth, and by its dark green coriaceous leaves stands out as distinct from any other kind. From the leaves alone one would suspect a *petraeum* × *vulgare* cross, but no



(Drawn by Miss Frances Bunyard.)

FIG. 91.—RED CURRANT FERTILITY (½ NAT. SIZE).

Fruit.—Bunch long, but the stem is unusually long, often 2 inches, making it appear longer than it really is. Rachis glabrous, turns yellow, berries inclined to be held to one side.

Season.—Very late.

Buds.—Remarkably long and thin, dark brown, away, glabrous.

Growth.—Very straggling and uneven. Moderately fertile.

Origin.—I have not been able to discover the origin of this variety, but it is probably well over 100 years old.

This cannot be the Victoria which was confused with Ruby Castle, and I expect May's Victoria was probably Houghton Castle. The stock of this variety seems fairly true.

LA TURINOISE.—*Flowers.*—Vulgare type,

evidence of this is found in any other part of the plant.

FERTILITY (see fig. 91). Syns. Le Fertile, A gros Fruit Rouge.

Flowers.—Vulgare type, sepals well apart, much turned back, petals slightly wedged, eye a little red.

Leaves.—Young, decidedly brownish, very early starting. Adult, pale green.

Fruit.—Bunches remarkably long, often as many as 25 flowers, rachis slightly woolly, berries held on one side. *Season.*—Late.

Buds.—Small, round, a little away, scales edged hairs, dark chestnut-brown.

Growth.—Moderate, upright.

Quite the longest bunch in my collection.

H. A. Bunyard.

ON INCREASED FOOD PRODUCTION.

GROUND OPERATIONS.

On p. 200 Mr. C. Davis seems to imply that he believes it to be good policy to dig light ground early. On p. 215 Mr. J. Paice states that the digging of light soils early is a mistake. Which advice is the more sound? I believe that of Mr. Paice to be correct; certainly it is the practice most generally followed. There may be occasional times when the accepted methods of dealing with soils may seem at fault—some peculiarity of texture requires that the rule shall be reversed. But 99 out of every 100 times there can be no doubt it is best to trench heavy land as early in the season as possible. When heavy ground is dug rains pass away more quickly, air has a longer time to permeate the moved layers, and frosts, winds, and sun, effect a disintegrating influence on the mass. Some gardeners when trenching or digging heavy soils omit to break or loosen up the soil in the bottom of the trench, which makes all the difference to the condition of the top soil. Light soils should not be prepared until spring is approaching, because they do not require the same disintegrating process as heavy land, and also because there is the danger of valuable food being washed away in the drainage water. C. Turner.

ALLOTMENTS.

It is essential that there should be a large increase in the number of allotments throughout the country before next spring, and the Commissioners have been asked to give all the assistance they can to see that any unmet need demand for land for this purpose is met as far as possible.

In urban districts and non-county boroughs the local authorities have adequate powers to take over land for allotments, subject, in the case of occupied land, to the consent of the County Agricultural Executive Committee. In county boroughs no such consent is required. Most urban local authorities are exercising their powers wherever necessary, and arrangements have been made by the Department for this work to be stimulated and supervised by officers of the Department.

The number of allotment plots so far reported as laid out under the Cultivation of Lands Order in England and Wales is 183,004. In Surrey alone over 1,000 acres of additional allotments have been provided under the powers exercised by the Food Production Department and the local authorities.

MUSHROOMS.

It is a little surprising that Mushrooms are not more extensively cultivated in this country than is the case. When one takes into consideration the large demand for them throughout the year, the good prices invariably obtained for them, and their value as a food, combined with their extremely appetising quality, it is strange that larger numbers do not grow them wherever horse-manure is obtainable easily. Old Mushroom-bed manure is one of the most valuable materials for nearly every branch of gardening, consequently there is no waste in the manure used for the beds.

Many may be under the impression that it is a costly proceeding, and that unless one is provided with elaborate Mushroom-houses this useful fungus cannot be satisfactorily produced. This, however, is not the case, as, with a little experience, large crops can easily be produced in any out-of-the-way building, disused cellar, or even in the open; indeed, it frequently happens that much better crops are obtained when grown in such conditions.

One of the most important rules to observe is to place the material for the beds under cover and turn it a few times to sweeten it. The

short litter should not be removed, as this is beneficial rather than otherwise. In placing the material together to form the bed it can scarcely be made too firm. The spawn should be obtained from a reliable source. It should be broken into small pieces and buried at regular intervals when the bed is at a temperature of 70° to 80°. After about a week the bed should be soiled, using, if possible, the top spit of an old pasture, which should be broken up finely, or passed through a coarse sieve, using as much fibre as possible. It should be spread to a depth of 1½ to 2 inches, and beaten perfectly level with the back of a spade or shovel. When the bed is made in a cool shed, or in the open, a good thickness of stable litter should be placed over the whole, and the beds should never be allowed to become too dry. In six weeks or two months the Mushrooms should begin to appear. Never cut the stalks with a knife, but simply twist them off when gathering the crop. When the bed shows signs of exhaustion give a thorough watering with diluted liquid manure from the farmyard, warmed before being applied. Edwin Beckett.

POTATO TRIAL.

The following results of a careful trial of Potatoes may prove of interest to readers of the *Chronicle's* *Chronicle*. The tubers were grown in shallow soil over chalk, with stable manure added at the time of digging, but no artificial manure was used. The haulm was sprayed three times during the season. The results show that seed tubers of large size do not produce the heaviest crop, also that new seed is essential. M. Nicholls, St. Clare Gardens, Kensington, near Strewnok.

Variety Up-to-Date, planted April 26:

Six seeds, 1 oz. weight; crop 36 lbs.; heaviest tuber 17 oz.; sample 2nd.

Six seeds, 2 ozs. weight; crop 41 lbs.; heaviest tuber 24 ozs.; sample 1st.

Six seeds, 3 ozs. weight; crop 24 lbs.; heaviest tuber 11 ozs.; sample equal 3rd.

Six seeds, 3 ozs. weight (sprouted before planted); crop 25 lbs.; heaviest tuber 15 ozs.; sample equal 3rd.

Six seeds, eye with section of tuber; crop 18 lbs.; heaviest tuber 15 ozs.; sample 6th.

Planted May 1, from pots inserted in pots one month previous:—

Six eyes, with only skin attached; crop 20 lbs.; heaviest tuber 9 ozs.; sample 6th.

Six cuttings; crop 25 lbs.; heaviest tuber 17 ozs.; sample 4th.

Planted April 26:

Arran Chief, 4 rows, 1 oz. weight seed, 14 lbs. new seed, crop 4 cwt. 77 lbs.

Arran Chief, 5 rows, 1 oz. weight seed, home saved; crop 3 cwt. 50 lbs.

King George, 14 lbs. home saved, mixed sized seed; crop 1 cwt. 62 lbs.

King George, 14 lbs. new seed, mixed sized seed; crop 3 cwt. 70 lbs.

Sharpe's Express, new seed, 14 lbs.; crop 2 cwt. 56 lbs.

British Queen, new seed, 14 lbs.; crop 4 cwt. 37 lbs.

Harbinger, new seed, 14 lbs.; crop 2 cwt. 34 lbs.

Epicure, new seed, 14 lbs.; crop 3 cwt. 5 lbs.

Windsor Castle, new seed, 14 lbs.; crop 2 cwt. 95 lbs.

SUGAR BEET.

The British Sugar Beet Co., which has acquired an estate near Newark for the purpose of growing Sugar Beet under the auspices of the Board of Agriculture, takes possession of the estate at Lady Day next. For various reasons it will be impossible to put the greater part of the land under Beet for next season, and the company hopes to utilise 1,500 acres for corn.



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor

EARLY PEAS.—As soon as the ground is dry enough a sowing of early Peas may be made on a sheltered border the soil of which has been trenched and prepared for the purpose. For this sowing narrow trenches may be made to the depth of 6 inches and the soil placed in a position to afford protection from cold winds during the spring, as young Pea plants are more frequently injured by rough winds in spring than by frost. Sow the seeds thicker than is usual for later crops and cover them with 2 inches of fine soil. A sharp watch should be kept for pests, as much injury may soon be done if these pests are not destroyed. The Pilot is a suitable variety for present sowing, and a space of 5 feet should be allowed between the rows.

CAULIFLOWERS.—Frames containing Cauliflower plants in pots intended for planting out in April should be freely ventilated whenever the weather is favourable. On mild days the lights may be removed entirely early in the day and replaced at night. Examine the plants frequently for watering, and when moisture is necessary soak the soil with soft water. A cold brick pit is the best place in which to winter the plants, but a protective covering must be used to ward off frost. Slugs should be kept in check by placing lime round the edges of the bed. Seedlings still in the seed bed should be carefully potted or pricked out in boxes for successional cropping. If the stock of these plants is short make a sowing of a good early variety at once in boxes or pans and germinate the seeds in a house or pit having a temperature of 50°. When the seedlings are large enough to handle they should be transferred to 3-inch pots and grown in a slightly heated pit close to the roof-glass. Dean's Early Snowball and Great Dane are two excellent varieties.

ENDIVE IN UNHEATED PITS.—In order to maintain a supply of blanched heads a number of plants may be covered with sheets of paper, over which a layer of dry Bracken Fern should be placed to ensure perfect darkness. Keep the atmosphere of the pit as dry as possible.

LETTUCES IN PITS.—Pits in which Lettuce plants are well advanced should be freely ventilated and the soil lightly stirred with a small hoe to prevent damping. The plants should be protected during frosty weather.

FORCING OF CHICORY.—Continue to lift roots of Chicory and place a batch in heat every eight days. A dark chamber with a dry atmosphere is necessary, as the young leaves soon decay if subjected to an excess of moisture. When the roots are placed in the forcing quarters keep the crowns clear of the soil, which should be made firm round the lower part of the roots. If only a small supply is necessary the forcing may be done in pots.

AUTUMN CAULIFLOWERS AND BROCCOLI.—These crops should be protected during frosty weather. If the plants have been lifted with a good quantity of soil adhering to the roots and placed closely together their protection will be a simple matter, provided sufficient clean covering material is available. Dry Bracken Fern is a useful material for the purpose, and should be laid lightly over the plants, but removed again as soon as the weather turns warmer. In lifting the plants for replanting closely together exercise great care, and place the roots deeply in the soil. We are cutting good heads of Halloween Giant Cauliflower, which are well protected by their own foliage.

LATE TURNIPS.—Late Turnips which are of sufficient size for use may be lifted and placed under cover for use during the winter. If protected from frost very late Turnips still under-sized may be left in the ground all the winter.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

ZYGOPETALUM.—The partially developed pseudo-bulbs of *Zygopetalum Mackayi* are now sending out their flower spikes, and, from now onwards until the flowering season is over, extra care must be taken in watering the roots, for an excess of moisture may cause the leaves to become spotted. Water should only be applied when the compost is dry, and sufficient should be given to soak it thoroughly. When flowering is past or the spikes are cut the plants may be repotted if necessary, and as it is a free, deep-rooting species, plenty of pot-room and a good depth of compost are required. The pots should be filled to about a quarter of their depth with drainage materials; a mixture of good turfy loam and Osmunda or A1 fibre, with plenty of crushed crocks mixed in, will form a suitable potting medium. Pot the plants, with the compost up to about half an inch of the top of the receptacle, and place a layer of the compost and Sphagnum-moss, chopped rather short, over the surface. This species generally does best in a warm, stove-like temperature. *Zygopetalum orinatum*, Z. Clayi, Z. Perseoudii, Z. Burkilli, Z. Gottiannum, *Zygocaulis Wigandiana* and Z. Charlesworthii are in full growth, and should be afforded liberal supplies of water at the roots until their new pseudo-bulbs are completed, and should be grown in a cool, shady position in the intermediate house. *Zygopetalum Ballianae*, Z. rostratum and Z. Roebingianum should occupy a position near the roof-glass in a moister and warmer atmosphere. The surface moss should be given frequent sprinklings in order to keep it in a healthy condition. Z. Ganten and Z. maxillare will be producing roots from the base of the young growths, and plants that require increased rooting space should be given attention. These two species have a rambling habit of growth, and are not suitable for growing in pots or pans; they do best if fixed to a portion of the stem of a tree fern. If necessary, the rooting space may be extended by wiring another piece of stem on the top of the old block, and the plants should be suspended in a moist, shady position in the warmest part of the intermediate house.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abhors Wood, Galding, Surrey.

BERRY BEARING PLANTS. Blackberries should be planted as soon as possible, and the stakes or wires for training should be in readiness. The Loganberry is probably the most popular of berries, and the most prolific and easy of culture. The Malin Raspberry and Blackberry is also a useful and good-flavoured fruit, and *Rubus phoenicolasus* is suitable for jam making. All these berry-bearing plants will grow in heavy soil and are, as a rule, very vigorous.

ORCHARDS.—All the weak growths should be cut off from orchard trees that are in a bad condition, more especially from the centre of the tree. Expose every branch, if possible, to the sunshine, remembering that one bushel of good fruit is equal in value to three or four bushels of inferior quality, whether for market or for home consumption. Inferior trees should be rooted up and replaced by young and vigorous trees. Some carefully selected varieties should be planted, of which the fruit can be used from January to April.

FIG TREES.—In very cold districts Fig trees should now be unfastened from the wall and their branches tied together to keep them as inactive as possible. In very severe weather the branches should be protected by means of old mats, burlap, heather, or any dry material that is at hand. It must be fastened securely, so that the wind will not blow it out of position. Figs need a restricted root area. Should root-pruning be necessary it may be done at any time now, when the weather permits. Plenty of old mortar rubble should be placed about the roots, and the soil made very firm. The best variety for

outdoor culture is Brown Turkey. Negro Largo is a finely flavoured variety, and in some places does exceedingly well on a warm wall. Bruna Ischia is another desirable variety, and White Ischia does well, but the fruits are small. White Marseilles bears large, rich fruits, but is a shy bearer out-of-doors until the trees are of considerable age. Fig trees should be planted in poor but sweet soil, on well-drained land. A sandy soil in which are incorporated plenty of bricksbats is one of the best rooting mediums, and liquid manure should be supplied during the season of growth.

FRUITS UNDER GLASS.

By JAS. HUSOX, Head Gardener at Gunnersbury House, Acton, W.

VINES IN POTS FOR EARLY FORCING.—There is no better method of obtaining ripe Grapes by the end of May than to force pot vines. Preparatory to starting pot vines, it will be as well to select some Oak or Beech leaves as a fermenting material. These can be put direct into the house, and the vines stood on but not plunged in them, for a few weeks to come. Bend the rods down at once, and use the syringe freely. A night temperature of 55° is suitable when the weather is above freezing point. With frost the temperature may be somewhat lower. Varieties suitable for early forcing are Black Hamburgh and Royal Muscadine.

THE CHERRY HOUSE.—In previous notes I have given details of the management of Cherry trees in pots. The cultivation of these trees is profitable, for the house in which the plants are grown may be used from the end of June until the end of January for other purposes. At Gunnersbury House Figs are grown in the Cherry house until November, and at the present time it is used for Palms, whilst, if occasion arose, late Chrysanthemums could be grown in it. Span-roofed houses are best for pot Cherries, and they are suitable for trees planted out. A three-quarter span house is also suitable. With Cherries under glass the fruits will hang for some considerable time after they are ripe, and by a judicious selection of varieties the season may be made of considerable length. The cost of growing Cherries indoors is less than in the case of either the Peach or Nectarine, and they form an agreeable addition to chocolate sort fruits from the latter part of April until the earliest sorts are ripe on open walls during the month of June. Where too many indoor Peaches and Nectarines are grown one of the houses might well be planted with Cherries. Only a little fire-heat is needed, but an abundance of ventilation is necessary, for the Cherry is impatient of a close atmosphere. I prefer to have the bottom of the border covered, for excessive vigour in growth must be guarded against. The soil should consist of rich fibrous loam of an encaustic character, and beyond some old mortar rubble nothing else need be added. A border of not more than 24 feet in depth is preferable, but let this be made up piecemeal, as in the case of vines. Varieties suitable for successional cropping are (black) *Orange d'Annonay*, a first early variety, followed by Early Rivers and Late Black Bigarreau (coloured varieties) Governor Wood and Englemore. Early Bigarreau, with Bigarreau Napoleon as a later sort. All the varieties mentioned are excellent croppers. Our collection includes a tree or two of May Duke, for the sake of the pollen. The double or triple cordon is the best form of tree; these are easy to control, very simple in training, and they come into bearing sooner, in average conditions, than other styles of tree.

THE FLOWER GARDEN.

By W. J. GIBBS, Gardener to Mrs. DEMESTER, Keele Hall, Staffordshire.

VIOLETS IN FRAMES.—During the next few months pay strict attention to ventilating the frames in which Violets are grown. If the frames are heated, use just sufficient fire heat towards evening to dry up an excess of moisture. The top of the light should be raised a little at night and the heat turned off next morning, except in severe weather. Remove all

dead and decaying foliage at frequent intervals, and stir the soil lightly with a hoe or small hand fork. Small black slugs are a pest of the Violet, and difficult to detect at night, but they may be kept in check by light dustings of soot. Flowers of sulphur will keep mildew in check, and light dustings of fresh lime over the surface of the soil is a good preventive of spot disease.

RENOVATING OLD SHRUBBERIES.—The pruning, cleaning and forking of shrubberies which have been in existence for many years can be done at this period, when weather conditions make it impossible to carry out the usual routine. If the specimens of Laurels, Yew, Hollies, Privet, and similar shrubs are very old, however carefully they are pruned, the effect is poor; in such cases grub out these old trees, thoroughly prepare the ground, and replant with better varieties. The ground must be trenched and enriched with a liberal dressing of decayed manure. With the exception of fallen leaves, which should be dug into the soil, all rubbish should be burnt, and the ashes scattered over the surface. If it is necessary to retain some of the old specimens, they may be headed back to within 3 or 4 feet of the ground, and in certain cases even less, without fear of injury. Space may be reserved in the foreground for herbaceous plants. Care must be taken to prepare these spaces thoroughly, as they are usually full of fibrous roots from the shrubs.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to Lady NORTHCOLE, Eastwell Park, Kent.

PLANTS IN FRAMES.—Plants in cold frames should be matured carefully. In some cases little or no water will be required before the New Year. Ventilate the frames freely in mild weather, and remove all decaying foliage. Arrange the plants thinly apart, and if they are growing (as distinct from resting), place them near to the roof-glass.

CHRYSANTHEMUMS. All but the very latest varieties of Chrysanthemums are past their best, and plants that are over and not required for stock purposes may be discarded. Cut the stems down to within a few inches of the soil, and place the stools in a shallow frame, or light glasshouse, near to the roof-glass, for sturdy cuttings invariably make the best plants. The latest batch, for blooming about Christmas and the New Year, may be arranged with other plants in the conservatory. Keep the atmosphere of the houses dry; this may be accomplished by watering the plants early in the day and mopping up the water that drains from the pots. Ventilate much or little, according to the weather conditions, and keep the house freely aired in mild weather.

THE PROPAGATING HOUSE.—After the autumn batches of cuttings from stock plants are struck the propagating house will not be required much for the present. Advantage should be taken, while it is comparatively little used, to cleanse the woodwork and glass thoroughly. Clear out all hot bed or plunging material, which often becomes infested with wood-bore, cockroaches, and similar insects. Before bringing fresh plunging material into the house, dust under the pipes and stages with vermin powder or soil fumigant. Having finished the cleaning, use may be made of the house almost immediately, by inserting a batch of Carnation cuttings. Carnation plants that are now flowering usually furnish the best shoots for cuttings at this season, the growth being healthy and vigorous, and not too hard. In proper conditions they will strike readily, and they root freely in shallow boxes or pans filled with sand. Water the cuttings thoroughly once, and keep their tops fresh by occasional dampings, but on no account keep the sand saturated with moisture. The temperature of the house should range between 55° and 60°. To get good plants for blooming next winter, a long season of growth is required, for Carnations will not be hurried into growth. One cannot make up for lost time in growing Carnations. The main lines to follow are, to propagate early and grow the plants on gently all the season.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 39.9.

ACTUAL TEMPERATURE:—*Gardeners' Chronicle* Office, 41, Wellington Street, Covent Garden, London, *Thursday*, December 13, 10 a.m.: Bar, 29.9; temp., 45.0°. Weather—Fair.

SALE FOR THE ENSUING WEEK.

WEDNESDAY—

Balls at 67 and 68, Cheapside, at 3 o'clock, by Protheroe & Morris.

Food Production.

An appeal to horticulturists which has been made by Sir Arthur Lee, Director of Food Production, has been forwarded to Fellows of the R.H.S. by the president and council, and the text of the appeal, with the accompanying letter from the R.H.S., is printed below. The letter demonstrates the serious necessity for increasing the production of food by small cultivators as well as by farmers. Readers of the *Gardeners' Chronicle* are aware that we have consistently urged this course upon all those who have, or can obtain, the necessary facilities, and we again urge it. As Sir Arthur Lee says in his letter, all the food which can be produced will be wanted, and it behoves everyone, not only to produce as much food as possible, but also to exercise the greatest care in its use and distribution. Gardeners in particular, who are experienced cultivators, should devote as much space as possible to the growing of early crops, and in particular early and second early Potatoes of those varieties of which there is a plentiful supply of seed. By this means they may raise fresh food supplies at a comparatively early date, and may use the ground which has produced them for successional crops. We understand that the object which the Horticultural Division of the Food Production Department has set itself

to achieve is the doubling of the area under small cultivation. The task which lies before us is clear. In order to ensure that the total shall be doubled, it is necessary that everyone who already has ground available, should endeavour to triple his own area under vegetables. Special efforts are being made to increase the allotments in urban areas, and thereby to bring new land under intensive spade cultivation. Every gardener should become a missionary on behalf of the cause of garden and allotment cultivation. There is still time to bring fresh land into cultivation. The results obtained last year showed that even where it was not possible to turn up land under grass before the early spring, good crops were obtained; needless to say, however, the sooner the work of preparation is taken in hand, the better the chances of success. Another direction in which gardeners can help is by raising seedlings under glass, for planting out in the spring. Local organisation should render it easy to ascertain the total number of plants of the different kinds which can be raised in this manner, and also to secure their distribution to those who are prepared to grow them. We trust that every owner of a garden, and every gardener, both professional and amateur, will give serious heed to the authoritative appeal which has been addressed to them, and will help the Food Production Department to achieve the object which it has in view.

Royal Horticultural Society,
Vincent Square,

Dear Sir or Madam,—The enclosed letter from Sir Arthur Lee, Director-General of Food Production, sets forth in clear language the great urgency of making yet further efforts to increase food production.

The Fellows of the Society have already done invaluable work in this direction, but if sufficient supplies of food are to be produced during the coming year still more energetic efforts will be required.

We therefore trust that you will give the fullest possible practical effect to Sir Arthur Lee's appeal, and that, in addition to increasing so far as is possible the vegetable cultivation in your own garden and grounds, you will bring the contents of the letter to the notice of all others in your neighbourhood who would be able to render a similar assistance to the State.

GRENFELL,

Vice-President.

BALFOUR OF BUREIGH.

LAMBOURNE,

JAMES W. LOWTHER,

Members of Council.

W. WILKS,

Secretary.

November 16, 1917.

Dear Sir or Madam,—The harvests have been in large part gathered in. The food produced this year by the chief countries of the world is known, and the quantity of food required by this country and its Allies is also known. From this knowledge it is clear that the security of the nation demands that the greatest possible effort towards increased food production should be made.

It is on the farmers of the country in the first place that this task falls, but the country must also look to horticulturists to bear their share in it. The yet further increase in food production by horticulturists—both amateur and

professional—is of vital importance. The small cultivator has shown this year what considerable contributions he can make to our food supplies. Our needs next year will demand yet further contributions from him, and I therefore appeal most earnestly to every horticulturist—to the amateur and professional gardener, nurseryman, florist, fruit-grower, and to the allotment-holder—to do everything that lies within his power to increase the supply of food, to leave no garden ground uncropped, and to use every available glasshouse and frame for the purpose of food production.

If everyone possessing garden land and even partial leisure will do his utmost, horticultural food production may be increased far beyond the already remarkable stage to which it has attained during the past season. The present is no time for spending labour on the mere preservation of garden amenities, on the rolling of paths, the tending of lawns, or the planting of flower-beds, or the maintenance of glasshouses for the cultivation of shrubs and flowers, with the possible exception of such rare and valuable plants as the labours of a lifetime might not be able to replace. The situation demands that all these pleasures of the garden should be foregone, and that the whole energy of the gardening community should be devoted to the growing of food.

I appeal, therefore, to all owners of and workers in gardens to concentrate their energies on the vitally necessary work of increasing the area of ground under vegetable cultivation, and of using to their fullest capacity all glasshouses and garden frames for the production of food crops.

For, more than ever before, the country will have need in the coming year of every ounce of food which can be raised in these islands.

A. LEE,
Director-General of Food Production.

NEW PLANTS AT EDINBURGH.—In No. XLVI. of *Notes from the Royal Botanic Garden, Edinburgh*, is continued the "Descriptions of New Plants in the Herbarium," from 251—350. These are all Asiatic and, with few exceptions, Chinese, having been collected by F. KINGDON WARD, G. FORREST, R. E. COOPER, E. E. MAIRE, PÈRE MONBEIG, A. HENRY, and several others, but mainly by FORREST. The plants described are mostly shrubs and small trees belonging to well-known genera, such as *Lonicera*, *Viburnum*, *Eunonymus*, *Osbeckia*, *Cotonaster*, *Spiraea*, *Eriobotrya*, and *Photinia*. Among less familiar genera are *Acanthopanax*, *Brassaiaopsis*, *Illigera*, *Stemona*, *Sabia*, *Brandisia*, *Myricaria*, and *Caryopteris*. Two new genera are described, namely, *Sporoxeia* and *Trailliaedoxa*. The former is allied to *Oxyospora-Melastomaceae*, *Trailliaedoxa* (*Rubiaceae*) is so named by Mr. W. W. SMITH in honour of Mrs. G. FORREST. It is a lowly shrub with small yellow, rosy-white or creamy-white flowers. We are glad to see other commemorative names. *Buddleia Fallowiana* is given to keep in memory Sergeant George FALLOW, 5th Batt., The Royal Scots, a former gardener on the staff of the Royal Botanic Garden, Edinburgh, who died in Egypt from wounds received in action at Gallipoli. *Pyrus Harrowiana* is named in honour of Mr. ROBERT LEWIS HARROW, head gardener of the Royal Botanic Garden, Edinburgh, since 1892.

GIFT OF FRUIT TREES FOR FRANCE.—A consignment of a thousand standard fruit trees, the gift of the Mayor of Huntingdon (Councillor H. PERRINS, of the well-known nursery firm of WOOD AND INGRAM), has recently been sent to France to re-plant the orchards devastated by the Germans. The gift forms part of a present of 10,000 trees from the nurserymen of England, organised by the Agricultural Relief of Allies Committee. The trees were grown at

Brampton, and comprised Pears, Apples, and Plums. Each tree, apart from bearing the name of its variety, also bears a label to the effect that it is a gift from Great Britain. The trees were packed in 50 large strawed bundles, and filled six railway trucks. All the trees were dug and packed by German prisoners.

WOMEN'S NATIONAL LAND SERVICE CORPS

—The annual report of this corps has just been received from 50, Upper Baker Street, where the administration is now being carried on. It is a record of good work well organised, and the cheerful letters from workers, which form a large portion of the report, show how well the women in the corps are performing their duties. We are informed that, now that the prejudice of the farmers against female labour has been largely broken down, the demand for such labour exceeds the supply.

ROOT CROP YIELDS FOR 1917.—The total production of Potatoes in England and Wales in 1917 is estimated at 3,339,995 tons, or 335,000 tons (33 per cent.) more than in 1916, and is the largest crop recorded since returns of the production of crops were first collected in 1855. The yield per acre, 6.37 tons, is three-fourths of a ton heavier than last year, two-fifths of a ton above the average of the last ten years, and has only been exceeded four times in the last 50 years. The yield per acre of Turnips and Swedes is estimated at 12.55 tons, or two-thirds of a ton below average, and 1.25 ton less than in 1916; the decline being due to the unfavourable weather of the early summer in the north-eastern counties. The total production, 12,163,624 tons, is 429,000 tons smaller than last year, but 350,000 tons heavier than in 1915. Mangelwurzels, on the other hand, are a very satisfactory crop; the total production, 3,481,573 tons, is 1,400,000 tons greater than in 1916, and the yield per acre, 21.59 tons, is about 2½ tons heavier than last year.

STABLE MANURE AT ARMY CAMPS.

—Enquiries have been made by the Food Production Department with regard to possible accumulations of stable manure from Army Camps in Surrey, Hampshire, Dorset and elsewhere. Generally speaking, it seems that all manure now made is being removed, but there are one or two dumps that were accumulated in the early days of the war. The Hampshire Agricultural Executive Committee is taking active measures in connection with the matter, and has obtained orders from local farmers for 18,000 tons to be carted from a dump at Pitt Corner, near Winchester. This manure is distributed within a radius of five miles at 3s. 6d. per ton, the Army providing horses and wagons, and the Committee lending soldier labour from the Winchester Depot.

FARMYARD MANURE.—In the year before the war the amount of farmyard manure used on the land was estimated at 37,000,000 tons, of a value of £11,000,000, nearly three times the value of all other manures whatsoever. Having regard to the general use of farmyard manure, it is probable that there is no other means which would be so calculated to increase food production as the more general improvement in the storage of this manure. In this connection the first point to realise is that the liquid excreta of animals is richer both in nitrogen and in potash than is the solid excreta. In the next place, as confirmed by the experiments* carried out by Dr. RUSSELL and Mr. L. H. RICHARDS the consolidation of the heap is a means of reducing loss. Similarly and no less important is it to store the heap under shelter. If the heap is both sheltered and made compact, loss of nitrogen is reduced to a minimum.

DEAR MUSHROOMS.—In respect to Mr. BREKKE's note on Mushroom cultivation on p. 233, and the high prices frequently asked for this highly flavoured and nutritious food pro-

duct, it may be noted that last week the retail price in the London stores was 3s. a pound.

RAFFIA AND CAMOUFLAGE.—It is stated in *Gardening* (Chicago, Nov. 1, 1917) that every ball of raffia in New York has been commandeered by the U.S. Army authorities, who have requisitioned it on behalf of the troops in France for the purposes of camouflage.

WOOD PIGEONS.—A considerable amount of damage has been done this year in some counties by wood pigeons, and in Derbyshire and Worcestershire, among others, drastic measures are to be taken for the suppression of pigeons. All the Saturdays in December have

is used even when the name is of Latin formation and therefore susceptible of infection.

PRIMULA SINOPURPUREA.

The members of the nivalis section of *Primula* have so far proved difficult of cultivation, being short lived and shy in flowering, but *P. sinopurpurea* (fig. 92) is a handsome species, which promises to be an exception to the rule. The plant is a native of Yunnan, China, and specimens were collected by Mr. George Forrest in open, moist, pasture land on mountains west



[Photograph by W. Irving]

FIG. 92.—PRIMULA SINOPURPUREA: FLOWERS ROSY-PURPLE.

been notified for organised pigeon shoots throughout Derbyshire, and advertisements to this effect have been issued by the County Committee.

THE COMMA IN BOTANICAL NAMES.—An interesting point is raised by Monsieur S. MOTTET in the *Revue Horticole* as to the desirability or otherwise of the comma in botanical names such as *Campanula patula*, Linn. Monsieur MOTTET follows the English practice of inserting the comma, but in this respect he differs from most Continental botanists, who hold that the signature, being in the genitive case, should follow the specific without the comma, which is superfluous and even misleading. In our own case, and in the *Index Kewensis*, the comma

of Fengkou at an altitude of 12,000 feet. The leathery leaves are dark green above, and coated beneath with a golden meal; they grow to a length of 12 inches, while the stems rise to a height of from 12 to 20 inches. The flower-stalk, like the under side of the leaves, is covered with a golden farina. In May the rich, rosy-purple, fragrant flowers are produced in trusses of 6 to 12 or more; each is about 1 inch in diameter, and has a grey "eye."

Kew is indebted to Mr. J. C. Williams for seeds of this *Primula*, which has grown vigorously, and promises to be easy to cultivate, flowering freely, and producing plenty of seeds. *P. sinopurpurea* grows best in a moist, partially-shaded situation, and in rich soil. W. I.

* *Journal Royal Agric. Society of England*, 77, 1915.

TREES AND SHRUBS.

FLOWERING SHRUBS IN WILTSHIRE.

The year 1917 has been remarkable for the wealth of bloom on all kinds of flowering trees and shrubs. The severe weather experienced in the early part of the year prevented any growth for some time, and afterwards there were no late frosts to do mischief. *Buddleias* flowered well, and the varieties of *B. variabilis* made a fine show. *B. asiatica* is pleasing, but it requires a wall to succeed here; *B. nivea*, too, with its woolly leaves, is very attractive. *Carpenteria californica*, although hit hard by the severe weather, flowered well; its large, Anemone-like flowers are very fine—here it is on a west border, and does well. *Clerodendron trichotomum* was superb; we have a fine bush of it, and its delightful perfume fills the garden. The Bladder Senna (*Coletea*) is very hardy and ornamental; *crenata* and *C. arborescens* both flowered well. *Cotoneasters* also make a good show; the berries and foliage at this date make a pleasing bit of colour, especially the creeping plants on the rockery, such as *adpressa* and *congesta*. The various *Cytisuses* (Broom) all did well, *Præcox* and *Andrusium* (Baisy Hill) especially. *Deutzias corymbiflora* and *kalmiflora* are both good, also the old *crenata* fl. pl., and all are very hardy. *Diervilla*, or *Weigela*, all flowered most profusely. The varieties *Abel Carrière* and *Eva Rathke* are both good; *Mont Blanc* is really very fine. *Eucryphia pinnatifida* is a treasure not often met with; its fine white flowers are freely produced, but it requires a somewhat sheltered position. The Spindle tree, *Enonymus empetrus*, is pretty just now; the pale red fruit and orange-flowered seeds are very attractive; this grows and flowers well in the shade of trees. *Forsythias* are very fine when planted in groups, and they are quite hardy; they need careful pruning after flowering. *Fremontia californica* is extremely handsome. There is a fine tree of it in the garden of the late Canon Ellacombe, at Bitton.

Hydrangeas all flowered well, especially in the south and west counties and near the coast. *Indigofera Gerardiana* is an uncommon and distinct shrub; here on a south border it flowers profusely, producing rosy-pink flowers in July and August—but it is very seldom seen in these parts. *Magnolias*; these are hardy and beautiful trees and shrubs, and flowering as they do in succession are very valuable. *Grandiflora* succeeds best on a wall, although it does fairly well as a shrub. *Conspicua*, *Lemnei*, *parviflora*, and *stellata* are all good. A fine North American species flowered well with us this year; it has immense leaves and fine white, fragrant flowers. Usually late spring frosts have spoilt many of the blooms. *Olearias*, although not really hardy in cold districts (with the exception of *Haastii*) are all valuable free-flowering shrubs. *Macrodonia* (very ornamental), with fine trusses of bloom, and *stellata*, are both good. *Nummularifolia* is very quaint and quite distinct. *O. insinuis* is very beautiful but only to be found in very favoured spots. One should always have spare plants of *Olearias*, especially in cold and damp situations. *Philadelphuses* have all flowered here with the greatest freedom. *Avalanche* was really superb, with its long, clean growths, wreathed with bloom, arching over most gracefully. *Pompet Blanc*, too, was exquisite; *Boule d'Argent* and *Fantaisie* were also very good, the latter a beautiful hybrid; these all need careful pruning after flowering. *Pittosporum Tobira* flowers well here on a south border. *P. crassifolium* and *P. undulatum* are both fine and fragrant. All kinds of *Prunus* flowered well, such as *Amagdalus*, *persica*, *Mume*, *triloba*, and *Pissardii*, the latter in this neighbourhood fruiting very freely. *Pseudo-*

cerasus and *Cerasus pendula* also did well. *Pyruses*, too, flowered freely, including the genera *Malus* and *Cydonia*, and have been followed with highly coloured fruits. *Robinia hispida*, although, strictly speaking, a tree, but kept here somewhat shrubby, is another beautiful flowering plant, its long racemes of rose-pink flowers, resembling a *Wistaria*, are charming; it requires a sheltered situation, as the wood is very brittle.

Of the shrubby *Spiræas*, *S. Aitchisonii*, with its fine flowers and red bark, was very fine; this somewhat resembles *S. Lindleyana*. Of *Syringa* (*Lilac*), the attractive and sweet-smelling flowers all bloomed very freely, and some are very beautiful. *Madame Lemoine*, pure white, is a great favourite, and all are good for early forcing. *Veronicas* are best for seaside and mild districts. *Salicifolia* does well here, also varieties of *Andersonii*. The lovely *Hulkiana* succeeds best on a wall, but I have seen it as a bush, and a fine sight it is. *V. carnosula glauca*, *Autumn Glory*, and *Chathamica* are all fine on the rockery. Unless it be in favoured spots a reserve of these should be kept; last winter played sad havoc with most varieties in this neighbourhood, and even in more sheltered and favoured spots. The well-known *Guedler Rose*, *Viburnum Opulus sterile*, flowered grandly, huge balls of purest white *Carlesii* and *macrocephalum* deserve a place in every garden; the latter sometimes needs a wall. *Pheacium*, too, is lovely, and fine for grouping; this is a Chinese species, as also is *thytiophyllum*, which is very attractive; the flowers are succeeded by fiery-red berries.

In order to have them at their best, careful attention must be paid to the pruning of all kinds of flowering shrubs; no haphazard methods will do; experience and close observation will soon teach one how and when to prune to obtain the best results. *R. H. Long, M.C., Sham House Gardens, Wiltshire.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

NATIONAL UNION OF ALLOTMENT HOLDERS.—I would esteem it a great favour if you would be so good as to give publicity to an alteration in the time limit fixed for the passing of the resolution by allotment societies on the question of security of tenure, which I issued some days ago, and which was announced in the Press. The date originally given for the receipt of these resolutions, which will be presented in bulk to the Board of Agriculture, was December 10, but it has been found that the time allowed for the passing of the resolution was too brief, and it has therefore been decided to extend the date to January 31. *D. Clotter, 8, Buckingham Street, London, W.C. 2.*

FRUITING TREES AND SHRUBS (see p. 226).—Mr. Beckett's note on the winter fruiting of trees and shrubs interested me. In the gardens at Abbotshury we have had this season an abnormal number of fruits on trees and shrubs that have fruited very sparsely in previous years. The various Crabs have produced fruits of extraordinary colour and in large numbers, and the members of the genera *Crataegus* and *Cotoneaster* have been equally good. Apart from *Cotoneaster frigidus*, of which we have many large trees at the present time laden with fruit, one of the showiest species is *S. Simonii*, and another very graceful species is *C. pinnosa*. Some of the *Viburnums* have also been laden with fruits, especially *Viburnum Opulus sterile*. Amongst Wilson's plants, *Lonicera Maackii*, omitted by Mr. Beckett, is still a magnificent sight. We have raised a number of plants of this *Hymenocle* from seed, and they are now about 14 feet high. At the time of writing they are like huge bushes of Red Currants. *Lonicera Koehneana* is also heavily laden with fruits, but the berries are not so brilliant in colour. *Skimmia* in variety are very full of berries, but probably the most striking plant is

Prunus capitata, syn. *Benthania fragifera*. All our plants of this species suffered severely during last winter, but they recovered, and now the fruits are colouring; the branches are being weighted down with the quantity. Some of our plants are 25 to 30 feet high, so the effect can well be imagined. A large plant of *Rhaphi- prunus cyanocarpus*, probably 30 to 35 feet high and 20 feet across, has been very striking with its brilliantly coloured purple fruits, but, strange to say, a plant of *Stranvaesia glaucescens*, over 30 feet high, although it flowered freely, has never yet set any fruits. When in flower the tree is a magnificent picture. *Rhamnus Alaternus argenteus* has fruited more than usual this year, and with its bright coral fruits amidst its pretty, variegated foliage, is very striking. *Ruscus croceus* also has fruited more than usual this season, and the same remark is true of *Ruscus aculeatus*. One of the most striking plants in the gardens, when its foliage was a very deep copper, was a large plant of *Lagerstromia indica*, about 25 feet high and nearly 20 feet across. The tree did not flower freely this year, having produced only about 50 spikes of bloom, but, seen in the afternoon's sun, its foliage was magnificent. *Laurus nobilis* has fruited freely, also various species of *Prunus*, such as *P. pissardii*, which has never fruited freely in previous years. We also had a heavy crop of fruit on a small "Mirabelle" Plum. The fruits were delicious. Apart from fruits, this is an extraordinary season. At the time of writing (December 10) I have picked flowers of *Narcissus*, *Rhododendron*, *Acacia nerifolia*, *Camellia*, *Chionodoxa fragrans*, *Polyanthus*, *Wallflower*, *Berberis hyemalis*, *Roses*, and many others. *H. Empshall, Abbotshury, Dorsetshire.*

PLANTING RHODODENDRONS (see pp. 212 and 233).—With regard to Mr. Cook's note on the planting of *Rhododendrons*, I am quite aware that some growers believe that autumn planting is the best. A prominent characteristic of *Rhododendrons* is the densely fibrous nature of their roots, they always lift with a good ball of earth, and consequently can be transplanted with very little risk about mid-April. If the plants are well supplied with water after planting they are little affected by disturbance. There is a widespread belief that peat in the soil is necessary for the successful cultivation of *Rhododendrons*. This opinion would be dispelled if note were taken how well they flourish in a good, open, moderately moist loam. The plants will, of course, do well in peat, where the situation is not too dry, but not better than in rich, open loam. There is, therefore, no need to go to the expense of taking out a considerable depth of soil and replacing it by peat in order to make the staple suitable for *Rhododendrons*. Staff, clayey soils are unsuitable, also soils containing lime, hence it is useless to look for any measure of success in gardens where chalk abounds. *Rhododendrons* are greatly benefited by a top dressing in early spring, and especially where the soil is at all dry. A suitable material for the purpose consists of leaf-mould, mixed with a little loam and well decayed manure. Permanent planting is, in my experience, however, best done in April. *Rhododendrons*, as a rule, seed very freely, and this has a decidedly weakening effect on the plants, hence, in the case of choice varieties at least, the old flower-buds should be cut off as soon as their beauty is over. *James I. Paine, Aldham Vicarage Gardens, Wulford, Herts.*

THE EFFECT OF ONE PLANT ON ANOTHER.—My experience in planting Cabbages on old Strawberry beds is the reverse of that of J. V. I have for years adopted the following practice when doing away with Strawberry beds: As soon as the Strawberries are finished the plants are grubbed in and allowed to lie for a day or more according to the weather, then they are buried, together with the litter, and the ashes spread over the soil. No manure is applied, but just before planting the Cabbages lime is spread and tamped in. I have never had a failure with Cabbages grown in this way. Again, when making a new bed of Strawberries, setting the plants at 2 feet apart, I put Cabbages between

the rows, and these are pulled before the Strawberries need all the space. Old Strawberry beds are harbours of injurious insects, and there are other factors that may lead to failure, and such as bad weather and soil qualities, and I think that A. N. should look for something beside "toxin" if he would know the true cause of his ill-success. C. E. Bridgett, *Red Roots Gardens, Bloom Road, Teddington.*

SOCIETIES.

**ROYAL HORTICULTURAL
Scientific Committee.**

DECEMBER 4.—*President:* Mr. E. A. Bowles, M.A. (in the chair), Messrs. J. Hudson, J. Fraser, W. C. Worsdell, J. Odell, H. E. Lawson, and F. J. Chittenden (hon. sec.).

Calystegia sepium rosea.—Mr. J. Fraser showed specimens of the pink form of *C. sepium* which he had collected in apparently wild localities in Surrey. Possibly the seed was carried by some means from a garden; for the variety is often seen in gardens.

Convolvulus arvensis hastatus.—He also showed a curious form of the common Bindweed with very narrow leaves which he had found near Molesey, and it was found to agree with the description of the variety *hastatus*.

Hemerocallis.—Mr. Hudson showed a sample of finely powdered house refuse which was being offered as a manure. Since such samples contain large quantities of coal ashes it is unlikely that their value will be great, though if it is to be had for a nominal sum and at small cost for carting the material may be worth using. It is found to be somewhat variable in composition.

Supposed influence of light on fasciation and flower production.—Col. H. E. Rawson showed further illustrations of fasciation appearing in plants of *Topopolium tuberosum* which were screened in the open garden. Successive corolla had bifurcated till the stem, 22 in number, had become fasciated flat ribbons 10 to 21 mm wide, closely covered with leaves and without any flowers. In the same position for the two previous years and unscreened the plant showed no signs of fasciation and bore flowers freely.

Influences.—Further examples were shown of increased flowering arising on selectively screened plants: all leaves being sun-dried and the flowers appearing in clusters. Spontaneous examination had shown that red light had been in excess during the increased flowering and blue light during fasciation.

Seedling Pears with adventitious roots.—Mr. Bowles showed a seedling of *Pyrus Niedtzkyana* with adventitious roots in considerable numbers appearing at the nodes as in the old Burbank Apple, and as happens in seedling Orbits at times.

Chimonanthus fragrans.—Mr. Bowles also showed flowers of the variety *grandiflora* of *Chimonanthus fragrans* appearing thus early in the winter.

Staurtia Pseudo-camellia fruiting.—Rev. W. Wilks sent ripe fruits of *Staurtia Pseudo-camellia* from his garden, where, for the first time, fruits had been produced abundantly.

TRIAL OF SPRING SOWN BEET

The following awards have been made by the Royal Horticultural Society after trial at Wisley:

BEETS.

FIRST CLASS CERTIFICATE. No. 41, *Green Top*, sent by Sutton and Sons.

AWARDS OF MERIT. No. 47, *Bradford's Exhibition*, sent by Barr and Sons; No. 45, *Chelton's New Green Top*, sent by Scheibman, Ltd.; Nos. 36 and 37, *Dunlop's Nutting's Red*, sent by Barr and Sons and Nutting and Sons; No. 33, *Earl's Cur Garden Compact Top*, sent by Barr and Sons, but considered identical with Nos. 36 and 37; No. 49, *Sutton's Perfection*, sent, raised, and introduced by Sutton and Sons; No. 53, *Nutting's Selected Red*, sent by Nutting and Sons.

HIGHLY COMMENDED. — Nos. 67, 68, and 69, *Deep Blood Red Non-bleeding*, sent by McLennan, R. Veitch and Sons; D. Bell (raised and introduced by D. Bell); No. 65, *Sutton's Black*, sent by Sutton and Sons; No. 66, *Dobbie's Purple*, sent by Dobbie and Co. (the Committee consider 65 and 66 to be identical); No. 48, *Market Favorite*, sent, raised, and introduced by Sutton and Sons; No. 29, *Veitch's Intermediate*, sent by Sutton and Sons; No. 73, *Yates' Nonpareil Red*, sent by Barr and Sons, raised by Yates.

COMMENDED. — No. 51, *Carter's Perfection*, sent, raised, and introduced by J. Carter and Co.; No. 52, *Pragnell's Exhibition*, sent by Barr and Sons; No. 25, *Queen of the Blacks*, sent by Barr and Sons.

POTATOS.

The following awards were made to Potatoes resistant to wart disease, grown at Wisley, to compare the cropping and cooking qualities. The names in brackets following the name of the variety are of those who presented the seed tubers, or from whom they were purchased. The "seed" was, in each case, grown in Scotland or Ireland.

AWARDS OF MERIT.—Nos. 50 and 51, *Golden Wonder* (Dobbie and Co., Sutton and Sons); Nos. 6, 7 and 8, *Great Scot* (Dobbie and Co., Sutton and Sons, R. Veitch and Son) (the Committee consider that No. 9, *St. Douglas King* (Sands), and No. 10, *Southampton Wonder* (Togood and Sons), are identical with Great Scot); No. 20, *King Albert* (Sands); No. 5, *King George* (Sutton and Sons); Nos. 27 and 23, *Langworthy* (Dobbie and Co., Sutton and Sons) (the Committee consider No. 29, *Walter's Wonder* (Sutton and Sons) to be identical with Langworthy).

HIGHLY COMMENDED. — No. 26, *Burroughs Early* (Dobbie and Co.); No. 4, *Comquest* (Sutton and Sons); No. 45, *Dominion* (Dobbie and Co.); Nos. 15 and 14, *Favourite* (Dobbie and Co., Sutton and Sons); Nos. 32 and 35, *Rob Roy* (McAlister, R. Veitch and Son); No. 44, *St. Malo Kidney* (Fidler); No. 22, *The Crofter* (Dobbie and Co.); No. 24, *Twentieth Century* (Sutton and Sons); Nos. 42 and 43, *White City* (Dobbie and Co., Sutton and Sons); No. 49, *Western Hero* (R. Veitch and Son). The last variety has not yet been grown in the trials carried out under the Board of Agriculture for wart resistance.

SOUTHAMPTON ROYAL HORTICULTURAL.

At a recent meeting of the Council of the above Society Mr. C. S. Furdie, who will complete 45 years' continuous service as secretary at the end of this year, and is in his 72nd year, tendered his resignation. The Council, however, induced him to continue in office, with the help of an assistant secretary, and Mr. J. T. Robb was appointed to the latter position.

The annual statement of accounts for the twelve months ending November 30 showed a credit balance of over £134.

It was decided to hold, next year, a Rose Show at South Stoneham House grounds, on June 20, and the Summer Show, on the Pier, on July 25 and 24.

It was also decided to hold a fruit and vegetable show to encourage food production, with special classes for allotment cultivators, on October 15 and 16.

Obituary.

JAMES E. HOPE.—We regret to record the death, from acute pneumonia, on December 8, of Mr. James Edward Hope, of Belmont, Walsingham. Mr. Hope was nearly related to the late Miss Hope, of Wardie Lodge, Edinburgh, and, like her, was a keen horticulturist. He was specially interested in Alpine and hardy flowers, and had one of the best-kept gardens in the Edinburgh district. Deceased, who was born in 1852, was formerly in charge of the Estate Duty (Scotland) Office.

CROPS AND STOCK ON THE HOME FARM.

WHEAT IN 1918.

The extremely dry weather experienced during the whole of November and the latter part of October was almost a record for that period of the year, very different from that experienced in October and November, 1916, when only twenty-five dry days were recorded for the two months, and the sowing of Wheat was in consequence much hindered. The present season has been quite ideal for this work, and there have been a few sharp frosts to disintegrate tenacious clods and make harrowing all the easier. In spite of what was thought to be a bad harvest season for seed Wheat, the plant, now well established and giving through the soil, is very strong, and gives promise of satisfactory growth later. Indeed, it is admitted generally that Wheat never looked better than it does at the present time. The favourable weather, too, is encouraging an extended seeding season. Most acres will be sown than would have been the case had the weather been unfavourable. Rocks have been less troublesome than usual, and this is indeed a boon in these days of labour shortage.

I find a tendency this season amongst farmers to make use of the newer varieties of Wheat, especially those that produce heavier yields, if not of quite such high quality. No doubt this is wise when it is considered that quantity is the main object to study at present.

It is pleasing, too, to note that there is a greater desire to sow seed that has been well prepared, by screening the smaller and inferior grains from the bulk, thus starting with a uniform sample of seed.

Much grass-land and old leys have been ploughed and sown with Wheat in the general wish to produce an increased crop. Where a prepared wheat manure was sown along with the Wheat the plant is promising in growth and colour alike. With a dressing of sulphate of ammonia in February at the rate of 1 cwt. per acre these by-sown Wheats should produce satisfactory results.

No doubt there are still many plots yet to sow, where the previous crop is Rape and Turnips to be fed off by the sheep. If a difficulty is found in working the soil into a satisfactory tilth, and to save time, it is a good plan to sow the seed first and plough it in, harrowing the surface afterwards. In the case of "catchy" weather this is a good plan if only a small portion is sown daily. On thin soils a covering chalk it is a good plan to use a heavy pressure to aid in solidifying the soil, as Wheat likes a firm rooting medium, and especially is this an advantage where rocks abound.

Fallows that were ploughed up out of stubble after harvest and intended for Swedes and Turnips should be cross-ploughed when the weather is suitable. In no circumstances should stiff fallows be broken upon when wet, as that only brings trouble later on when a fine surface tilth is required.

Owing to strong winds, much rain, and in many cases heavy ears of grain, Oads were badly laid last autumn, and there was much "busted" Corn, which is now growing freely. The dis-turbing of the fallows now will destroy these self-sown plants and check the growth of weeds, including Dock, which may easily be collected after the plough and burnt. I notice that there are increasing numbers of this weed, especially in arable fields. The Docks may be due to Hay fed to sheep on the land, neglect to take the weeds out of the previous Corn crop, and by carting out manure where Hay was fed to cattle in the yard. Any stubble intended for roots and not yet ploughed should be attended to without delay. This is the time to plough the land an extra inch or two deep for this crop, especially if the soil is heavy and the sub-soil somewhat pervious to water. All subsequent ploughings should be less deep, as Turnips appreciate a firm rooting medium. The first or second ploughings will aid in pulverising the surface soil by exposure; too fine a seed bed is not possible for roots, therefore any help

given in that direction now will be valuable later on.

MANGOLD.

The present is a good time to cart manure on the land for this crop. The dung should be ploughed in at once to ensure it being thoroughly decayed and integrated with the soil by late June sowing is done in April. With the use of 15 to 20 tons per acre of half-decayed manure, ploughed in in the autumn, and 4 cwt. of superphosphate per acre at sowing time, excellent crops may be obtained without the aid of further stimulants in the form of nitrate of soda or sulphate of ammonia.

Again, good Mangolds are obtained by the aid of artificial manure only. Where farmyard manure is scarce or required for other crops no one need despair of growing good Mangolds. I had fully 35 to 40 tons per acre on one 6-acre plot enriched with 4 cwt. of superphosphate and 8 cwt. of agricultural salt per acre; not a scrap of any ammonia stimulant was used. A good tilth, early sowing, and keeping the land clean, are the essentials to success. The superphosphate was not drilled with the seed, as is commonly done, but sown broadcast in front of the drill and worked in by the harrows when preparing the seed-bed.

CARROTS.

The crops of both Red and White Carrots have been remarkably good this season where the land was thoroughly prepared and the attention given the plants in their early stages of growth in keeping them free from weeds. Carrots, apart from their value for feeding purposes, are a remunerative crop.

Now is the time to prepare the land by extra deep ploughing to ensure a free rooting medium, as good Carrots cannot be grown in shallow soil. *E. Molyneux, Swanmore Park Farm, Bishop's Waltham, Hants.*

ANSWERS TO CORRESPONDENTS.

APPLE, PEAR AND PLUM TREES FRUITING UNSATISFACTORILY: *D. G. S.* Give the cordon Pear, bush and standard Apple trees, the dressing of basic slag now. Trees of the age you mention would benefit most from a good dressing of farmyard manure if available, or they could be mulched with this material in the spring. The same remarks apply to the Plum trees you are dressing with lime. The Apples also would be benefited by a dressing of lime.

ASPIDSTRAS: *C. M.* Mix a little bone-meal with the potting soil and water the plants occasionally with a weak solution of some nitrogenous fertiliser, such as sulphate of ammonia or nitrate of potash. If you wish for a complete fertiliser use Touk's manure, which is made as follows:—

Superphosphate	12 parts.
Nitrate of Potash	10 parts.
Sulphate of Magnesia	2 parts.
Sulphate of Iron	1 part.
Sulphate of Lime (Gypsum) ..	8 parts.

CLIMBERS FOR A NORTH-EAST ASPECT: *J. C. B.* Suitable sweet-scented climbers for a low, north-east wall are *Chimonanthus fragrans*, *Choisya ternata*, *Lonicera aurea reticulata*, *L. fragrantissima*, and *Philadelphus* *Monster*. The following Roses will also do well in such a situation: *Comon China*, *Gross* an *Tepitz*, *Reine Marie Henriette*, *Rève d'Or*, and all the members of *Gloire de Dijon* class. Other useful plants, although not scented, are *Clematis*, *Cotoneaster*, *Jasminum nudiflorum*, and *J. officinale*.

CROSEOTE FOR SPRAYING: *C. L.* The croseote would probably be less effective than the ordinary caustic washes at present used for winter spraying. At the same time, if the trees are not badly affected by pests, and are free from Lichens and Moss, the croseote or insecticide would probably meet the case very well. In general, the good effect of any of these washes is due primarily to their cleansing properties. Croseote, if used strong, is fairly caustic, and must be handled with care.

GARDENER'S NOTICE: *C. C.* It is usual for a gardener living in a house on his master's property to give or to receive a month's notice before leaving his situation. The agreement you made with your employer at the time of the appointment should have been committed to paper; a verbal agreement is useless. We note the reason you state for your discharge; this fact, if correct, may make all the difference in regard to the amount of notice required. You should consult a local solicitor.

NAMES OF FRUITS:—In the naming of fruits, we desire to oblige our correspondents as far as we can, but the task would become too costly and too time-consuming were there no restrictions. Correspondents should observe the rule that NOT MORE THAN SIX VARIETIES be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. The fruits should be just approaching ripeness, and they should be properly numbered, and carefully packed in strong boxes; cardboard is often smashed in the post. A leaf or shoot of each variety is helpful, and in the case of Plums, Prunes and Nectarines, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. By neglecting these precautions, correspondents add greatly to our labour and run the risk of increased delay and incorrect determination. We do not undertake to send answers through the post, or to return fruits. Fruits and flowering plants must not be sent in the same box. Delay in any case is unavoidable.

W. A., Bristol. Doyenné du Comice.—*W. D. and Sons.* Fondante d'Automne.—*E. P.* Reineette Franche.—*A. T. H.* 1, Hornmead Peppermint; 2, Striped Beefing; 5, Small's Admirable; 4, not recognised; 5, Old Nonpareil.—*A. R. P., Wandle.* 1, Franklin's Golden Pippin; 2, Gascoyne's Scarlet Seedling; 3, Alfriston; 4, Flower of Kent; 5, Doyenné du Comice; 6, Uvedale St. Germain's.—*R. C. W.* Pear Beurré Clairgeau; Apple Beauty of Kent.—*J. G. D.* 1, Dumelow's Seedling; 2, Annie Elizabeth; 3, Sturmer Pippin; 4, Wyken Pippin; 5, not recognised; 6, Joséphine de Malines.—*G. B., Cranleigh.* 1, Golden Russet; 2, Lady Henrick; 3, Hambleton Deux Ans.—*S. R.* 1, Bacon's Incomparable; 2, Marie Louise; 3 and 4, decayed; 5, Dumelow's Seedling (syn. Wellington); 6, not recognised.—*R. W. R.* One large Pear, Beurré Diel; two Pears, Soldat Labourer.—*Christian.* 1, Round Winter Noneseuch; 2, Wyken Pippin; 3, Triomphe de Joazeux.—*P. M.* 1, Striped Beefing; 2, The Queen; 3, Golden Harvey; 4, Reineette van Mons; 5, Northern Spy.—*R. M.* 1, Rosemary Russet; 2, Cockle Pippin; 3, not recognised; 4, Reineette du Caux; 5, and 6, decayed.—*I. S.* Apple Castle Major.—*Triton.* 1, Ponsard's Noneseuch; 2, Norfolk Beefing; 3, Golden Spire; 4, Norfolk Stone Pippin.—*D. W.* Green Winter Greening; flushed, Api Rose.—*W. O. A.* 1, Nanny; 2, Reineette du Caux; 3, Dumelow's Seedling (syn. Wellington); 4, not found; 5, Golden Pippin.—*I. E. H.* 1, Pear decayed; 2, local, not recognised; 3 and 4, Hanwell Sounding; 5, Wormsley Pippin; 6, York-shire Beauty.—*J. C.* 1, Triomphe de Joazeux; 2, White Doyenné; 3, Van Mons Léon Ledere; 4, Joséphine de Malines; Apple Pine Golden Pippin.—*E. B. P.* 1, King of the Pippins; 2, Lady's Finger; 3, Hanwell Sounding.

NAMES OF PLANTS:—Correspondents not answered in this issue are requested to be so good as to consult the following number.

J. O., Reading. *Juniperus communis fastigiata*, the Irish Juniper.—*F. S. M., Wrexham.* The flower sent is a *Cattleya labiata* of the autumn-flowering type. *C. labiata* is a very variable species, both in the form and tint of its flowers, the shape of its pseudo-bulbs and width of the leaves. There is little doubt that the other one described by you is of the same species. Send specimens of the other Orchids as they bloom, for naming.—*F. W. J.* *Linaria Cymbalaria*, Ivy Toad Flax.

PEARS SPOTTED: *J. E. H.* There is no fungus present on either of the Pears, and the injury appears to be only superficial. Spray the trees in the spring, when the leaves are just opening, two or three times, at intervals of a few days, with weak Bordeaux mixture.

PLANT "FIXTURES": *T. B.* Plants which are growing in the soil are part of the freehold

and belong to the landlord. Consequently they cannot be removed by an outgoing tenant. There is not any legal decision reported to the effect that a tenant has any right to remove plants which are necessarily placed in the soil temporarily with a view to replanting, although we may expect to find, sooner or later, a test case fought out, in which the tenant will plead "custom" to that effect. Plants standing in pots or growing in a detachable window-box have been held to be removable by the tenant, but there are cases reported in which it has been held that hedges, plants, and a border of Box formed of such plants cannot be so removed. These cases apply to a private garden only; the nurseryman, for instance, has the right to remove growing plants from the soil, as this right is a necessary incident to his business by reason of its special nature.

PRUNING RHODODENDRONS: *T. Clewlow.* Rhododendrons and similar hardy shrubs should be pruned in early spring before growth commences. *Rhododendrons*, by W. Watson, deals with the pruning and propagation of these flowering shrubs. You can obtain the book from our publishing department, price 1s. 10d., post free.

RAISING ORCHIDS FROM SEEDS: *W. W.* Orchids have both the male and female organs in the same flower. The pollen is found in a mass known as pollinia, at the apex of the column. When the flowers are ripe it is usually possible to withdraw the pollinia by means of a pointed stick, and it should be transferred to the stigma of the plant intended to be the seed-bearer. You will find information on the crossing and raising of new Orchids in *Orchids*, Present-Day Gardening Series, obtainable from our Publishing Department, price 1s. 10d., free by post.

RAISING VEGETABLE SEEDS: *D. H. S.* We know of no work dealing exclusively with the raising of vegetable seeds, but any good cultivator of vegetables would be able to inform you as to the planting of specimens desired for seedling purposes.

TIMBER: *E. H. B.* A good work on timber is *Wood*, by Prof. G. S. Boulger, published by Edward Arnold, London, 1903, price 12s. 6d. The following are the names asked for: *Padouk* (*Pterocarpus indicus*), *Saunwood* (*Chloroxylon Swietenia*), *Rio Rosewood* (*Dalbergia nigra*) *Sri Lanka*, *Borneo Rosewood* (*Pterocarpus* sp.), *Cunary Wood* (*Liriodendron Tulipifera*), *Pitch Pine* (*Pinus australis*), *Yellow Pine* (*Pinus mitis* and *P. ponderosa*), *Red Deal* (*Pinus sylvestris*), *Cedarwood*. There are over 60 different Cedarwoods, and we do not know which one is meant. *Silver Gray* *Sycamore* is not known to us.

VEGETABLES UNDER GLASS: *Catherine.* You are right in assuming that every possible use should be made of glasshouses for the production of early vegetables. To advise you how to apportion the space available we should require to know the requirements of the household as to any particular vegetable. Assuming an average demand, one-half should be devoted to early Potatoes, such as *Midlothian Early* and *May Queen*; one-quarter to Peas and climbing French Beans, and the rest divided between early Turnips, Carrots, Cauliflowers, and various kinds of salads. The soil of the cultivated ground on which the glasshouses are to be erected will, if of good quality, be suitable for the purpose of growing vegetables.

YOUNG ESPALIER APPLE TREES: *W. L. W.* Generally speaking, it is necessary to reduce the extension shoots of espalier Apple trees about one-third their length. All the side shoots should be pinched back to two or three leaves during the summer, the leaders only being allowed to grow their full length throughout the season, shortening them as recommended above at the winter pruning.

Communications Received.—*W. E., H. A., G. F., R. W., R. E., H., J. S., E. S., M., F. T., A. R., E. C. W., T., W. O., W. E., E. H. A., O. P., Ignorance.*—*H. G., W. B. H., O. T.*

MARKETS.

COVENT GARDEN, December 12.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing plants in pots such as Aralia Sieboldii, Asparagus plumosus, and Begonias, with prices in s.d. and s.s.d.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers such as Arums, Begonias, and Camellias, with prices in s.d. and s.s.d.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage such as Adiantum (Maiden hair Fern) and Asparagus plumosus.

REMARKS.—Supplies consist chiefly of those already given for the Christmas trade. The cold weather has checked the supply of Roses and Carnations, and the prices for these flowers are advancing, and will doubtless continue to rise throughout next week. Business is very brisk in the present prices. Ferns are only of medium quality, but they are selling freely at advanced prices.

Vegetables: Average Wholesale Prices.

Table listing vegetables such as Artichoke, Asparagus, Beans, Beetroot, Brussels Sprouts, Cabbage, Carrots, Cauliflowers, Celery, Cucumbers, Endive, Garlic, Greens, Herbs, and Watercress.

Fruit: Average Wholesale Prices.

Table listing fruits such as Almonds, Apples, Apricots, Raspberries, Grapes, Almonds, Apples, Apricots, Raspberries, Grapes, Almonds, Apples, Apricots, Raspberries, Grapes.

REMARKS.—The market is well supplied with Apples of seasonable varieties, but Pears are limited in numbers. The demand for grapes has not been so great during the past week as hitherto, and this may be due to the increased prices. The consignments of Grapes from the Channel Islands are practically finished. Oranges, Lemons, Nuts, Brazil-nuts, and Dates are all scarce and expensive. The Potato crop is finishing. Asparagus, both English and French grown, is on offer. Mushrooms are obtainable. Peas, Dwarf Beans, new Potatoes, Chickens, and Mint. All outdoor vegetables are plentiful.

GARDENING APPOINTMENTS.

Mr. D. H. Rose, for the past five years Gardener to B. N. SILEM, Esq., Cantley Manor, Norwich, as Gardener to E. H. KING, Esq., Summerfield, Dorking, King's Lynn. Mr. J. Mann, for the past ten years, Gardener to E. S. Low, Esq., Redley Park, Yoxford, Suffolk, and previously at Kilsbane, Tipperary, as Gardener to Mrs. BARNARD, Kirkington Hall, Kirklington, Southly, Northamptonshire. Mr. W. J. Newbery, formerly of the Royal Botanic Gardens, Kew, and the Royal Botanic Society's Gardens, Regent's Park, London, and for the past seven years, Chairman of the Board of Gardens, Peterborough, Notts, as Superintendent of Public Parks to the Peterborough Municipality.

AUCUBA JAPONICA.

RHODODENDRON PONTICUM. RHODODENDRON PINK PEARL. (Fines Named Hybrids.)

All the above 2ft. to 4ft. bushy, good plants for Covent Planting. Must be sold cheap, to make room for potatoes. If not disposed of must be burned.—A BARGAIN!

Particulars from R. MANSON, Nurseryman, Gateacre LIVERPOOL.

'MY GARDEN' SERIES

MY GARDEN IN SPRING.

By E. A. BOWLES, M.A.

Acting Chairman of the Scientific Committee of the Royal Horticultural Society.

MY GARDEN IN SUMMER.

By the Same Author.

MY GARDEN IN WINTER.

By the Same Author.

Price 5 6 each post free from—

THE LIBRARIAN,

THE "GARDENERS' CHRONICLE," LTD.,

41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

GARDENING CHARITIES.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

GEO. J. INGRAM, Sec.,

92, Victoria Street, S.W.

Telephone—Victoria 614

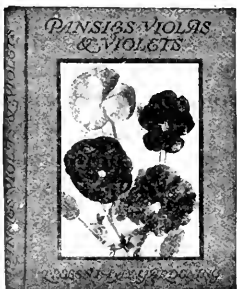
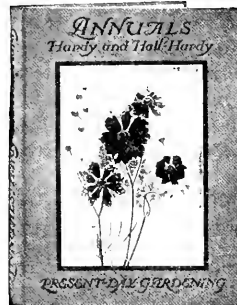
Do Not Forget the Gardeners-Soldiers.

"Many thanks for the GARDENERS' CHRONICLE, which I have received safely each week through the kindness of Lady Theodora Guest. You will see that I am now in Mesopotamia. The CHRONICLE is very welcome to me out here; it seems good to read all the news in the old paper, and surely the GARDENERS' CHRONICLE is the king of all gardening papers."

This letter was sent us by a soldier in the Mesopotamia Force. YOUR soldier friend, who was a gardener before he went to the front, is a gardener still in sympathies and interests. HE longs to know what is going on in the gardening world now, and has no means of knowing unless YOU help him. Send him the GARDENERS' CHRONICLE. Keep him in touch with current gardening affairs. He will be most grateful for such an act of friendship. Send us a subscription for half-a-year —8/9—and we will take all the responsibility of sending the paper regularly to your friend, also reminding you punctually if the subscription is about to expire.

Write to us now, and give us his address. 41, WELLINGTON ST., STRAND, LONDON, W.C. 2

The Best Christmas Present.



The following volumes of

PRESENT-DAY GARDENING

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."

EACH VOLUME IS WRITTEN BY AN EXPERT. ILLUSTRATED WITH EIGHT PLATES REPRODUCED FROM COLOUR PHOTOGRAPHS. ❁ ❁

"Everyone who loves his garden should make a point of getting the whole series illustrating 'Present-Day Gardening.'"—*The Country Home*.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS, AND VIOLETS. By WILLIAM CUTBERTSON, V.M.H., and R. HOOPER PEARSON.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With Preface by the Rev. W. WILKS, M.A.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

ROOT AND STEM VEGETABLES. By the late ALEXANDER DEAN, V.M.H., Chairman of the National Vegetable Society.

CARNATIONS AND PINKS. By T. H. COOK, Head Gardener to Queen Alexandra at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. M'LEOD.

RHODODENDRONS AND AZALEAS. By WILLIAM WATSON, A.L.S., Curator of the Royal Botanic Gardens, Kew; with Preface by Sir FRED W. MOORE, M.A., A.L.S., V.M.H. (*The only volume published on this subject.*)

APPLES AND PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of Fruit and Vegetable Committee of the Royal Horticultural Society.

ANNUALS: HARDY AND HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRETLAND FARMER, F.R.S.

TULIPS. By the Rev. JOSEPH JACOB, Secretary of the Midland Daffodil Society.

DAHLIAS. By GEORGE GORDON, V.M.H., President of the National Dahlia Society.

ROSES (double volume 2/6 and 3/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON, with introduction by WM. ROBINSON. Author of "The English Flower Garden." (Double volume 2/6.)

Price 1/10 each (Roses and Climbing Plants, 2/10).

Post Free from—

The PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 4017

No. 1617. Vol. LXII. {THIRD SERIES} SATURDAY, DECEMBER 22, 1917. {Registered as a Newspaper.} PRICE 4d. POST-FREE, 4d.

Subscription—Inland, 19/6; Foreign, 22/- per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

For CONTENTS see page 245

SPECIAL NOTICE TO ADVERTISERS.

Owing to the Christmas Holidays, all copy for advertisements intended for the issue of the GARDENERS' CHRONICLE for December 29 must reach the office on or before Saturday, December 22.

WATERER'S ALPINES AND HERBACEOUS PLANTS.—New Catalogue now ready.

WATERER'S BRITISH GROWN BULBS.—New Catalogue now ready.

WATERER'S WARGRAVE ROSES.—Catalogue and Supplementary List of new and choice varieties now ready.

WATERER'S RHODODENDRONS AND CHOICE SHRUBS.—Catalogue free. All or any of the above Catalogues forwarded post free on receipt of name and address.
JOHN WATERER, SONS & ORISE, LIMITED,
The Nurseries, Baginbun, Surrey, and Telford, Berks.

S A N D E R S, Orchid Growers, St. Albans.

WELLS' CHRYSANTHEMUM CATALOGUE now ready. Post free on application.—**WELLS & CO.,** Merstham, Surrey.

ROSES.—ALLEN'S GOLD MEDAL.—NORWICH ROSES. Our new descriptive price list, with Hints on How to Grow Roses, now ready, post free. Write to-day, A. J. & C. ALLEN, Rose Growers, Norwich (for over 50 years).

BYNARD'S STRAWBERRIES.—Our new descriptive list is now ready, and will be sent on receipt of card.
ALBINE STRAWBERRIES a speciality.
GEO. BYNARD & CO., LTD., Royal Nurseries, Maidstone.

WM. DUNCAN TUCKER & SONS, LTD., Lawnside Road, South Tottenham, St. 15, Conservators, Winter Gardens, Vine Caves, Peach-houses, Portable Buildings, &c. Catalogues gratis.

GREENHOUSE PAINTING & GLAZING.—Vitreolite, superior to White Lead Paint, "Plastone" supercedes putty. Full particulars from **W. GIBSON & SONS,** Grove Works, Battersea. Agents throughout the country.

BARR'S CASH CLEARANCE SALE of CHOICE DAFFODILS, April and May flowering, TULIPS, &c. for in and outdoors. Also Bulbs for late plantings. List free—**BARR & SONS,** King Street, Covent Garden, W.C. 2.

DOBBIE'S Autumn List of Bulbs, Sweet Peas, Roses, Carnations, Seedling and Vegetable Plants, &c., post free—**DOBBIE & CO.,** Royal Florists, Edinburgh.

WANTED, second hand LAWN MOWER.—Shanks or Ransomes, 12, 14 or 16in.—**RECTOR,** Monston, Andover.

FOOD PRODUCTION AT HOME

Consult SUTTON'S CATALOGUE OF FOOD PRODUCTION SEEDS for 1918. Now ready. Order at once from

SUTTON & SONS, The King's Seedsmen, READING, PEEDS' SEEDS.

PEEDS' SEEDS FOR PLENTY.—Peeds' Seed Catalogue, a distributed this week. Customers not receiving a copy are requested to apply at once to **JOHN PEED & SONS, The King's Seedsmen and Nurseries, WEST NORWOOD, S.E.**

J. GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Havers Street, Chelsea, London, S.W. 3. Wire, 201, Western, London, Telephone 201, Western.

HOBBIES, LIMITED, Norfolk Nurseries, DEREHAM—Send for Rose Catalogue, post free.

GISHURST COMPOUND Insecticide and Fungicide. Over 50 years reputation. (Merch. Comm.) **R.H.S.** Southwell controlled. Trials at Wisley, 1914-15. Sold by dealers in Garden Supplies. Wholesale: **PRICES PATENT CANDLE CO., LTD.,** Battersea, London, S.W. 11.

THERE is no more delightful occupation for the long evenings of winter than reading. To make up a good fire, and take in one's hand a favourite book, this represents the same of comfort over a hard day's work. In reading, as in everything else, it is "everyone to his taste", and the garden enthusiast, be he professional or amateur, will choose for his winter evenings a book which deals with the subject nearest to his heart (that of horticulture). And on this theme, old yet ever new, no volume can give so much and so varied information within such a compact as a bound volume of the "Gardeners' Chronicle". On one page it tells of the latest discovery in horticultural science, and describes the rich harvest of new plants introduced into cultivation by intrepid plant collectors from the remotest parts of China and Tibet. On another page it relates the progress of the horticulturists of today in the raising of new plants by hybridizing, and, again, it tells the romantic history of the latest variety in the domain of plant life. The "Gardeners' Chronicle" has been printing such records for over seventy years.

FERN'S FERN'S!—Tree Ferns, Climbing Ferns, Basket Ferns, Stove and Greenhouse Ferns, 1143 Garden Ferns, catalogues free. **J. T. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.**

DAFFODILS and large Trumpet Narcissus for Grass, Shrubberies, and Wild Gardening, 15/- and 2/- 1,000; selected for forcing, 25/- 1,000; as long 15/- per bushel (2,000), 4/- 6d. per bush (500) bulblets. **J. HANDSOMBE, F.R.H.S.,** Feltham Nurseries, Middlesex.

100,000 LARGE GARDEN FERNS.—24 100 Plants, Bag ones, Crotons, Dracaenas, Roses, Ericas, Gloxinias, Lilies, Hydrangeas, &c. catalogues free.—**J. T. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.**

For Advertisement Charges see page 11.

KELWAY & SON, NOW IS THE TIME TO PLANT. The Royal Horticulturalists, LANGPORT, SOMERSET.

are now booking orders for their Choice Hardy Perennial Plants. Plant a Colour Boxer this Autumn, and you will be able to enjoy its exquisite beauty for many years without any additional expense or trouble. Send measurements of your Borders. Potting, Delphiniums, Phloxes, Gladiolus, and other beautiful Boxers, included in our Colour Schemes which provide blooms from early Spring to late Autumn. WRITE NOW to the RETAIL PLANT DEPARTMENT for Reduced Price List.

FOR SALE, a MARKET NURSERY; about 7 acres and 50,000 super feet of Glass, excellent for all markets, south of England, or a partner. It could be cultivated with a thoroughly capable grower with a view to ultimate purchase. Principals only dealt with. **M. H. Box 4, 41, Wellington Street, Covent Garden, W.C. 2.**

WANTED, 1,000 Large ASPIDISTRAS, and other plants, suitable for stock, cash or exchange. See other advertisements, catalogues free. **SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.**

SPORTSMEN, FARMERS, HORSEMEN.—Try our splendid Yorkshire Whipcord Tweed, wears like leather, shaverproof, 7 yards for 21s. Patterns free.—**BRADFORD WHOLELEN, 71, Bradford.**

ORCHID PEAT, 7s. 6d. per sack; Rhododendron Peat, free from bracken, 15s. per sack; 6 to 10 yard trucks, bags 20s. dozen, Linn, Lead Mould, silver Sand and Fibre, (Humbly Road, 10 acres), clumps for forcing, 90s. 100, forcing, 20s. 100. **HAS'S (Champion and Hawkes) Champagne, 8s. 6d. forcing crocus and last. List free. J. HANDSOMBE, The Nurseries, Feltham, Middlesex.**

"PESTITE" destroys all soil pests (worms, slugs, snails, wart disease, &c.). Price 1/6 lbs. 4s. 6d., 50 lbs. 7/- 6d., 10s. 6d. per cwt. 3/- per ton. Carriage paid. **G. LANG & SONS, LTD.,** Hounslow, Middlesex.

COUNTRY BOROUGHS OF GRIMSBY.—Education Committee.

INSTRUCTOR FOR SCHOOL GARDENING.—WANTED, a qualified INSTRUCTOR in GARDENING, commencing salary £140 per year.

Form of application may be obtained from the undersigned on receipt of a stamped addressed envelope from **DOUGLAS CHANDLER, Education Officer, Grimsby, 14th December, 1917.**

EXPERIMENTAL STATION, CHESHUNT, HERTS.

EXPERIENCED and careful GARDENER required early in the New Year to take charge of an experimental Tomato House (about 5,000 plants), and to cultivate according to the instructions of the Director. Experience in a Market Nursery is not essential, help given with potting, staking, &c. Only those eligible for military service need apply. Applications, enclosing copies of two recent testimonials, should be received by the DIRECTOR (from whom further particulars can be obtained) not later than December 29.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

WANTED, HORTICULTURAL IN-
STRICTOR for the County of Bedford for six months, from January 1, 1918. Fee and allowance for expenses, £70.—Apply, SPENCER, Peckering, Harpenden.

WANTED, HEAD GARDENER (WORK-
ING) for Lynton Castle, Kent, no Glas. Apply, stating age, experience, and wages required, ALFRED J. BURROWS, Land Agent, Ashford, Kent.

GARDENER (SINGLE-HANDED) wanted,
must be well up all round and willing to look after pony. Full particulars as to wages (with cottage) required, see, to E. S. WEBB, Wildwood Lodge, North End, Hampstead, N.W. 3.

WANTED, A GARDENER (SINGLE-
HANDED), with occasional help.—Apply, J. H. MASTER, Esq., Montrose House, Petersham, Richmond, Surrey.

WANTED, SINGLE-HANDED GARD-
ENER; male or female, experienced inside and out. State full particulars to H. POTTOS, The Homestead, Rayleigh, Essex.

WANTED, good SINGLE-HANDED
GARDENER, experienced in all branches, no cottage. Write, stating wages required, C. H. HALL, Cottage, Brighton Road, South Croydon.

WANTED, about the middle of January,
a thoroughly experienced WORKING GARDENER, north countryman preferred, to work under Bath's orders, wages 25s. per week, good house and garden; permanent Apply, with references, THE BATHLET, Ruford Hall, near Ormskirk, Lancs.

WANTED, SINGLE MAN, ineligible for
Oussas (London only), one able to take Sunday duty, overtime paid. Particulars of experience to H. KING, Stevenstone Gardens, Torrington, S. Devon.

WANTED, at once, good MAN for the
Village of Gush at gentleman's place, married or single, cottage provided, good wages. Write, LES TEBKAWE, Esq., Morley Manor, Derby.

WANTED, UNDER GARDENER; in-
eligible to work under Head, single; good lodging can be had close to Gardens; wages 30s. per week.—Apply by letter to MAXWELL, Great Comp, Borough Green.

WANTED, UNDER GARDENER; male
and of single, ineligible, good cottage or half-board and vegetable, general work, chiefly outside.—Apply, stating age, wages, etc. to T. HERBERT, The Stone Lodge Gardens, Tarpoley, Cheshire.

WANTED, FOREMAN or good FIRST
JOURNEYMAN, for Inside and Out; wages 20s. and Bulbs, also JOURNEYMAN or strong IMPROVER, Inside and Out; ineligible, wages 20s. and Bulbs, duty and overtime paid.—A. PAGE, The Gardens, Bulzine Court, Hampstead, N.W. 3.

WANTED, FOREMAN or good JOUR-
NEYMAN (class), good wages to competent man, ineligible or discharged soldier.—J. WILSON, Silverdale, Cheshire.

WANTED, FOREMAN (INSIDE) or good
JOURNEYMAN, wages 20s. & Bulbs, &c.; four in the E. BRINTON, Leyswood Gardens, Groubridge, Trowbridge, Wilt.

WANTED, JOURNEYMAN (INSIDE);
for 12 months, 40s. &c. good wages offered; 5s. extra for overtime. T. GIBBS, Saunders—Apply, with references, to F. WALLER, Tredgar Park Gardens, Newport, Mon.

WANTED, JOURNEYMAN, for a first-
class establishment near London; an eligible man or discharged soldier preferred; attractive wages paid. Apply, in the first place, to JOHN FEED & SON, The King's Swalmen, West Norwood, S.E.

WANTED, two JOURNEYMEN for the
Plant and Fruit Houses.—Apply, stating wages required, with Bosh, &c., to C. H. WHEELER, Swanton Gardens, Masham, Ripon.

WANTED, LADY GARDENER early in
January, assist Inside and out; rooms, coal, light, gas, electricity, and attendance, 1 o'clock Saturdays.—Address, "HORTUS," Mere Road, Barbry, Northants.

WANTED, LADY GARDENER for pri-
vate Garden, able to milk cows, 12 miles from London, in Hert's State age, experience, with discharges, with copies of references, to R. W., Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, early January, SINGLE MAN
(ineligible Army) to attend to pigs and poultry and help in Garden.—Apply, letter, to HAMILTON MILLETT, Manor House, Stanmore, Middlesex.

WANTED, several YOUTHS for the
House, live in Bosh, wages according to experience.—Apply, C. H. WHEELER, Swanton Gardens, Masham, Ripon.

WANTED, strong LAD for Garden work,
no Glas; age 15 to 16 years, good wages green, according to experience.—HAYES, St. Seris Lodge, Priory Lane, Roehampton, S.W. 15.

TRADE.

HORTICULTURAL EXPERT required
for extensive Nursery Business, situated in the Lea Valley. Applicants should be qualified to give advice on (1) the culture of Cucumbers and Tomatoes under Glas, (2) the preventive and remedial measures for bacterial, fungoid, insect, and physiological diseases of these crops, (3) the sterilisations of soils, and should be capable of conducting experiments and investigations relative to the above. Salary, £5.0.£5.00 per annum, according to qualifications and experience.—Further particulars on application, R. B., Box 20, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, A GROWER; experienced in
Cucumbers, Tomatoes, and Chrysanthemums.—Please state wages required, with copies of testimonials, to E. Box 17, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, A FRUIT FOREMAN; over
military age, well experienced in all the routine of Fruit Tree growing. Full particulars, with wages, to EDWIN HOLLAMBY, The Nurseries, Groubridge.

WORKING FOREMAN wanted at
Waltham Cross for Market Nurseries, Cucumbers and Tomatoes, good wages to experienced and reliable man, State age, experience, when disengaged, with copies of references, to R. W., Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, WORKING FOREMAN, in-
eligible for Army, for small branch Nursery; Palms, Ferns, and Tomatoes grown; good cottage and fruit house; State age, wages, and experience to E. CURRY, Whishall Lane Nursery, Chingford, Essex.

Two good KNIFEMEN wanted; experi-
enced men only, State wages required, previous experience, and send copies of testimonials. Apply by letter only to W. STABROOK & SONS, The Nurseries, Cheshford.

WANTED, MAN for Nursery (Second);
Apply, HOWOODS, 59, High Street, Chesham.

WANTED, PACKER, for Plants, Seeds
and Bulbs. Please apply, giving particulars of experience and salary required, to JOHN FEED & SON, Swalmen, West Norwood, S.E. 27.

SEED TRADE.—ASSISTANT for Garden
Seed and Bull Department required by well-known firm in the North.—Apply, with copy of testimonials, stating age, experience, and salary expected, to W. C., Box 21, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, an experienced ASSISTANT to
take charge of seeds and sundry department.—Apply, stating age, qualifications, salary expected, &c., DICKSONS, LIMPH, Chester.

WANTED, ASSISTANTS for Court-
work.—A. DAWKINS, 408, King's Road, Chelsea, S.W. 10.

WANTED, young LADY FLORIST; fill
in spare time with Seeds.—Particulars of qualifications and wages required, to W. THOMAS PERKINS, Florist and Seed Merchant, Kettering.

SITUATIONS WANTED.

Twenty-six words for 1/6, and 6d. for each succeeding eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

GARDENER (HEAD), in good estab-
lishment; life experience England and Scotland; 13 years in present situation as Head; excellent references, married; age 48, family two, State wages.—HAWKE, Rivers Palace Gardens, late Polwathen, Penzance, Cornwall.

GARDENER (HEAD); well up in all
branches and life experience, 3 years present; long service previous; age 45; married 12 boys, home, 14 and 11—W. VEALE, Cranage Hall Gardens, Holmes Chapel, Cheshire.

GARDENER (HEAD WORKING); aged 46;
married (5 children); 30 years' first-class experience; expert Fruit and Carnation Grower; good manager; capable of taking charge of large Garden and small home farm; 14 years' first-class character from present employer.—BENBOW, Henley Hall, Ludlow.

HEAD WORKING GARDENER wants
place where five or more are kept; expert all branches (Landscape work), qualified orchid grower; at liberty; North or Midlands preferred.—A. B., Box 25, 41, Wellington Street, Covent Garden, W.C. 2.

GARDENER requires situation, as
SECOND preferred, life experience Inside and out, excellent references; willing and obliging; single; age 40, Class C5.—J. SYMONS, 2, Berkley Cottages, Falmouth, Cornwall.

TRADE.

SEED TRADE.— Situation required as SHOPIAN; all-round knowledge Seed; wholesale and retail Nurseries and Floral Trade; age 25; discharged.—Write, stating wages offered, &c., G. B. Muliner Street, Coventry.

The Gardeners' Chronicle.

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

Ordinary Positions	per page	£	s.	d.
Facing matter and Back Page	10	10	0	0
Half and quarter pages, column and half column spaces, pro rata.	12	12	0	0
4 line space not exceeding 20 words	3	0	0	0
Per inch, single column	7	0	0	0
Per inch, across 2 columns	14	0	0	0
Per inch, across 3 columns	22	0	0	0

Front page (no display allowed) 1/- per line space (Headline counted as two lines.)
For discounts apply to address below.

SITUATIONS WANTED.
26 words 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c. OUT OF EMPLOYMENT.

SUBSCRIPTIONS.
THE UNITED KINGDOM ... 19 6 per annum.
ABROAD ... 22- " "

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telegrams: "GARDHORN, RAND, LONDON."
Telephone: 1548 BERRARD.

Books as Christmas Presents.

There is nothing so helpful to a young gardener as carefully selected books written by successful cultivators in the various branches of gardening.

- Botany, A Year's.** Adapted to Home and School Use. By Frances A. Kitchener. With 195 Illustrations. 8s. 4d.
- China, A Naturalist in Western.** By Ernest Henry Wilson. Illustrated, in Two Volumes. £1 10s. 6d.
- Flora, British, Handbook of the.** By Geo. Bentham. Revised by Sir Joseph Hooker. Seventh Edition. 9s. 5d.
- Fertilisers and Manures.** By A. D. Hall, F.R.S. 5s. 5d.
- Garden, Chemistry of the.** A Primer for Amateurs and Young Gardeners. By Herbert H. Conson, M.A. 1s. 5d.
- Garden Craft in Europe.** By H. Inigo Triggs. £1 15s. 6d.
- Insect and Allied Pests of Orchard, Bush and Hothouse Fruits.** By F. V. Theobald, M.A., etc. 32s Illustrations. 50s. 6d.
- Insects, Injurious and Useful.** An Introduction to the Study of Economic Entomology. By L. C. Miall, F.R.S. 140 Illustrations. 5s. 9d.
- Intensive Culture of Vegetables on the French System.** By P. Aquinas. Illustrated 4s. 5d.
- Johnson's Gardener's Dictionary.** New Edition. 9s. 6d.
- Judging, Rules for.** Issued by the Royal Horticultural Society. Latest Edition. 1s. 6d.
- Landscape Architecture, The Art of.** By Samuel Parsons. A practical and authoritative work. Illustrated. 12s. 6d.
- Lawns.** By Sutton and Sons. Reading. In paper cover. Well illustrated. 1s. 3d.
- Lawns and Greens.** By T. W. Sanders. A Guide to the Formation and Management of Lawns, Tennis Courts, etc. Illustrated Paper. 1s. 10d.
- Lily, Book of the.** By W. Goldring. Illustrated 2s. 9d.
- Little Gardens and How to Make the Most of Them.** By H. H. Thomas. A handy and useful work for the Amateur. Paper. 1s. 3d.; cloth. 1s. 9d.
- Mango, The.** By G. Marshall Woodrow. An account of its Culture and Varieties. 1s. 1d.
- Manures and the Principles of Manuring.** By C. M. Aikman. 6s. 10d.
- Manures for Garden and Farm Crops.** By W. Dyke. Cloth. 1s. 9d.
- Manuring, The Science and Practice of.** By W. Dyke, with introduction by J. Wright. A most practical work for the Amateur, Market and Professional Gardener. 1s. 2d.
- Manuring of Market Garden Crops, The.** By Bernard Dyer and F. W. L. Shrivell. New Edition. 1s. 5d.
- Mendelism.** By R. C. Punnett, F.R.S. New and Enlarged Edition. 5s. 4d.
- Mendel's Principles of Heredity.** By W. Bateson, F.R.S. 12s. 6d.
- Mushrooms, and How to Grow Them.** By John F. Barter. An excellent Treatise. Illustrated. 1s. 2d.
- My Garden in Spring.** By E. A. Bowles, M.A., Chairman of Scientific Committee of Royal Horticultural Society. With Preface by Reginald Farrer. "Mr. Bowles . . . has the time to be his own gardener, and has thereby gained that first hand knowledge of plants without which any writer on horticultural subjects is . . . apt to be neither interesting nor informing." Price 5s. 6d.
- My Garden in Summer.** By the same author. Price 6s. 6d.
- My Garden in Autumn and Winter.** By the same author. 5s. 6d.
- Orchids and their Cultivation.** By James O'Brien, V.M.H., Hon. Sec. of the R.H.S. Orchid Committee. Contains 3 full page Coloured Plates from colour photography. 1s. 10d.
- Orchids: Their Culture and Management.** By W. Watson. Curator, Royal Botanic Gardens, Kew, and H. J. Chapman. Illustrated with 139 Engravings and 20 Coloured Plates. 25s. 9d.
- Orchids, Fertilisation of.** By Chas. Darwin. Illustrated. 3s. 11d.
- Orchid Grower's Manual, The.** By the late B. S. Williams. 60 pages. Numerous Illustrations. 10s. 6d.
- Pansies, Violas and Violets.** By W. Cathbertson and R. Hooper Pearson. With 3 full page Coloured Plates from colour photography. 1s. 10d.
- Pansies and Violets.** By D. B. Crane. Paper. 1s. 2d.; cloth. 1s. 9d.
- Peach, The Book of the.** By H. W. Ward. A Practical Handbook on the Cultivation of Peaches and Nectarines under Glass and Out of doors. 2s. 10d.
- Pears and Plums, The Book of.** By the Rev. E. Barrum, D.D. Illustrated. 2s. 9d.
- Pinus, The Genus.** By George Russell Shaw. Price £2 15s. 6d.
- Plant Breeding.** Being Five Lectures upon the Amelioration of Domestic Plants. By Prof. L. H. Bailey. Illustrated. 6s. 11d.
- Plant Life.** By C. A. Hall. £1 6s. 6d.
- Practical Plant Physiology.** By Frederick Keeble, F.R.S. Illustrated. 5s. 10d.
- Practical Tree Repair.** By Elbert Peets. The Physical Repair of Trees—Bracing and the Treatment of Wounds and Cavities. Illustrated. 7s. 11d.
- Plants and Trees, Diseases of Cultivated.** By George Masson. Well Illustrated. 7s. 11d.
- Plants, A Popular Treatise on the Physiology of.** By Dr. Paul Saranar. Translated by F. E. Weiss, D.Sc. With 33 Illustrations. 9s. 6d.
- Primula, Handbook of the Hardy.** By H. M. Paul. An Illustrated Work on the Culture, Mode of Growth and Utility of Primulas. 1s. 14d.
- Pruning, The Handy Book of.** With Chapters on Grafting and Budding. By James Udale, with introduction by the Right Hon. Viscount Cobham. New Edition. Illustrated. 1s. 9d.
- Rhododendrons and Azaleas.** By W. Watson. With preface by Sir. F. W. Moore, F.L.S. (The first popular volume published on this subject.) 3 full page Coloured Plates. 1s. 10d.
- Rock Gardens.** By Reginald Farrer. With Preface by Dr. J. Bretland Farmer, F.R.S. Contains 3 Coloured Plates. 1s. 10d.
- Rock Garden, The English.** By Reginald Farrer. A complete dictionary of Hardy Plants suitable for Rock Garden Culture. Contains 500,000 words and 500 Illustrations. In 2 Vols. Price, £2 2s. 10d. post free (in the press).
- Root and Stem Vegetables.** By the late Alexander Dean. Contains 8 full-page Coloured Plates. 1s. 10d.
- Rose, The Book of the.** By Rev. A. Foster Melliar, M.A. Illustrated. New Edition. 5s. 5d.
- Roses.** By H. R. Darlington. Contains 8 full-page Coloured Plates. 2s. 11d.
- Roses for the Garden and Greenhouse.** By John Weathers. Description, Culture, Propagation, Manures, etc. Coloured Illustrations. 5s. 4d.
- Roses in Pots.** By Wm. Paul. Ninth Edition. An invaluable Guide to the Cultivation of Roses in Pots, whether for forcing or otherwise. 2s. 2d.
- Salads and their Cultivation.** By T. W. Sanders. How to grow them in the Open, on Hot Beds, and Under Glass, etc. Freely Illustrated. Paper. 1s. 3d.
- Saxifrages or Rockloils.** By W. Irving and R. A. Malby. A practical work on the Culture of Saxifrages. Well Illustrated in Colour and Half tones. 2s. 10d.
- Soil, The.** By A. D. Hall, F.R.S. An introduction to the Scientific Study of the Growth of Crops. New Edition. 5s. 6d.
- Species and Varieties, their Origin by Mutation.** By Prof. Hugo De Vries. Second Edition. 21s. 6d.
- Trees and Shrubs, Beautiful Flowering, for British and Irish Gardens.** By John Weathers. Description, Culture, Planting, Pruning, Propagation, etc. Coloured Illustrations. 5s. 10d.
- Vegetables and Flowers, The Culture of, from Seeds and Roots.** By Sutton and Sons. Reading. New Edition. 5s. 6d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

"Bull's"
THE FOOD FOR PLANTS

THOMSON'S
VINE, PLANT & VEGETABLE
MANURE

Unrivalled for all garden crops. The result of long practical experience in Horticulture. So com- pletely adapted to combine stimulating with feeding. Produces vigorous, healthy and fruitful growth. Also.

THOMSON'S SPECIAL TOP-DRESSING MANURE.
AN EXCELLENT STIMULANT

Prices—(Note: Quantities of 50 lbs. and over are supplied in 5 lb. bags).

Vine, Plant & Vegetable Manure. 112 lbs., 24/-; 50 lbs., 15/6; 25 lbs., 7/6; 14 lbs., 4/6; 7 lbs., 2/6. Tins 7/2, 1/-, & 6d. Car. paid on 50 lbs. and upwards anywhere in United Kingdom.

Special Top-dressing Manure. 50 lbs. 20/-; 25 lbs., 11/2; 14 lbs. 6/2; 7 lbs. 3/6.

Tins, 1/2. Car. paid on 25 lbs. and upwards anywhere in Unit of Kingdom.

THOMSON'S STYPTIC,
3/- and 1/6 per bottle.
Sold for Horticultural purposes by all Seedsmen and Nurseries in, or from

SOLE MAKERS
W. THOMSON & SONS LTD. CLOVENFORDS, N.B.

WOOD'S RIVAL TOMATO
WOOD'S RIVAL CUCUMBER
WOOD'S SCARLET RIVAL MELON
WOOD'S GREEN RIVAL MELON

Packets 1/6, 2/6 and 5/- each.

H. J. G. WOOD, Seedsman & Nurseryman, Bracknell.
H. J. Greenwood, F.R.H.S., Proprietor.



SLUGS SLUGS

"SANITAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (d.o.r. London) of all Chemists, Stores and Nurseries.

THE "SANITAS" CO., Ltd.
Limehouse, London, E.

Awarded Medal at Royal Horticultural Exhibition, 1911.

ORCHIDS,
Clean, well-grown and cheap; also Many Rare and Choice Varieties

STOVE and GREENHOUSE PLANTS OF ALL KINDS.
Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.


LAXTONS
BEDFORD
FRUIT TREES
&
ROSES
CATALOGUE & CULTURAL HINTS GRATIS

IMPORTANT: Please write for a Catalogue, as the Paper Commission only allow us to send to those who apply—
LAXTON BROTHERS, BEDFORD.



Sample CRET Pot
FREE with Booklet will convince you that the Drainage Porosity, Healthfulness of CRET'S would help your plants. Write **PETER BAILEY & SONS, Ltd.** 2 Heaton Mersey Pottery, near MANCHESTER.

TOMATO SEED
Bide's "Recruit."
This grand Tomato, for its delicious flavour, uniform size, and heavy cropping qualities, is unsurpassed.
In sealed packets 1/- per packet, direct from the raisers,
S. BIDE & SONS, Ltd.,
ALMA NURSERIES, FARNHAM, SURREY.



A menace to our Food.

THE "nibbling" of the millions of Rats and Mice means in the aggregate a huge food wastage. It is a patriotic duty to kill them.

"LIVERPOOL" VIRUS
EXTERMINATES
RATS AND MICE

Safe and sure. Harmless to human beings and domestic animals. No risk of unwholesome disagreeable smells for the pests come out of their holes to die.

In this ready prepared with bait: for Rats 2/6 & 6/-; for Mice 1/6. Of all Chemists.
Full particulars from
EVANS SONS LESCHER & WEBB LIMITED,
58, Hanover St., Liverpool.

LARGE POPLARS,
12 to 20 feet, GOOD ROOTS.
Consisting of Lombardy, Black Italian, and Ontario. Fine trees for Screen or Shelters.
No reasonable offer refused.
Ground wanted for Potatoes.
R. MANSON, Nurseryman, Gateacre LIVERPOOL.

AUCUBA JAPONICA.
RHODODENDRON PONTICUM.
RHODODENDRON PINK PEARL.
(Finest Named Hybrids.)

All the above 3ft. to 4ft. bushy, good plants for Cover Planting. Must be sold, cheap, to make room for potatoes. If not disposed of must be burned—A BARGAIN!
Particulars from—
R. MANSON, Nurseryman, Gateacre LIVERPOOL.

RIVERS'
Fruit Trees, Roses, Vines, Figs, Oranges, AND Orchard House Trees
ARR OF
First-class Quality.
A Large and Select Stock always on View.
PRICE LIST POST FREE ON APPLICATION.
THOMAS RIVERS & SON
Sawbridgeworth, Herts.
STATION: HARLOW, G.E.R.

SANKEY'S FAMOUS GARDEN POTS
Give the BEST and Cheapest.
State quantity of each size required and have "cartage paid" quotation ("cartage" usually assumed to be half value of goods) or write for Price List free.
SPECIAL POTS of all descriptions. Built Bawls and Fern Pots from 6d. each.
RICHARD SANKEY & SON, LTP.
Dulwell Potteries, NOTTINGHAM.

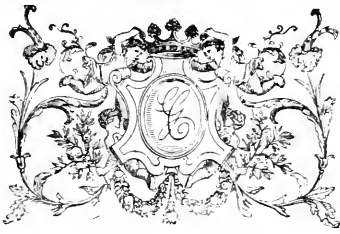
THE BOOK OF THE MOMENT.
Root & Stem Vegetables
By **ALEXANDER DEAN, V.M.H.**

At the present crisis the food problem bulks largely. The question of which vegetables contain the most food is a pressing one, and it is found that root and stem vegetables, such as Potatoes, Carrots, Turnips and Parsnips, contain much higher percentages of food value than green vegetables, valuable though these are as adjuncts.

"ROOT AND STEM VEGETABLES" is a book which treats only of those vegetables the root or stem of which is eaten, and is therefore especially valuable to all who are endeavouring to concentrate their attention on growing the most economical forms of food. It contains eight coloured plates reproduced from photographs.

To be obtained from—
THE LIBRARIAN,
Gardeners' Chronicle, Ltd.,
41, WELLINGTON ST., W.C. 2.
PRICE 1/10 POST FREE.

GARDENING CHARITIES.
GARDENERS' ROYAL BENEVOLENT INSTITUTION.
GEO. J. INGRAM, Sec.,
92, Victoria Street, S.W.
Telephone—Victoria 514



THE
Gardeners' Chronicle

No. 1617.—SATURDAY, DECEMBER 22, 1917

CONTENTS.

Auckland Institute and Museum	211
British Honduras, new plants from	150
Chinese species in King Farm, crops and stock on the home	253
Food production, an increased—	
Continuum cropping	247
Phaseolus of Dutch Bean	248
Potato trial at Kairo	248
Fruit in trees and shrubs	253
Hay, a crop of, in mid-Atlantic	246
Holy Land, botany and geography of	210
Ontario	
Sable, F. C.	251
Water, Walcott	248
Ochid notes and gleanings—	
Blenheim, Orchids from 247	
Cypripedium hybrids 247	

ILLUSTRATIONS.

Gallies, shores of the sea of	271
Getshenaneh, the garden of	249
Jerusalem, to Bethlehem, road from	246
Nazareth, view of the country round	247

ON THE BOTANY AND PHYSICAL GEOGRAPHY OF THE HOLY LAND.

OVER and above the botanical and their religious and historical associations, Palestine and Syria form one of the most wonderful regions in the world. The physical, climatic, and geological characters of the country are so varied that within a tract, with an area of 50,000 square miles, about the size of England or the State of New York, 3,500 species of plants, not going down lower in the scale than Ferns, have been already collected, and in all probability further exploration of the hills on the east side of the Jordan will raise the number to 4,000. The total number of species known in Great Britain is 1,500, and in the whole of Europe 10,000. The whole of the country west of the Jordan has now been well explored at different seasons of the year. A wealthy Swiss botanist who died long ago devoted his life to the study of the Oriental region and published a *Flora Orientalis* in five large volumes, in which he brought together the results of his own explorations, and the work that had been done by his predecessors. Founded upon this, Canon Tristram has drawn up, for the Palestine Exploration Society, a list of the plants of the Holy Land, and still more recently my friend, the late Dr. Post, who was for a long time connected

with the Syrian Protestant College at Beirut, published a flora of Syria and Palestine, in which all the genera and species are described. In the autumn of 1860, Sir J. D. Hooker, in company with the late Daniel Hanbury, paid a visit to the Holy Land and the former wrote for Smith's *Dictionary of the Bible* a general sketch of its botany. One of my latest official acts at Kew was to lay out a large and beautiful set of Palestinian plants gathered in 1897 by a botanist named Bormmuller. In the following notes all the sources of information have been drawn upon. Palestine in its botany combines in a remarkable manner the characters of the East and West. From a physical point of view we have a very remarkable and abnormal feature in the Jordan Valley and the Dead Sea, which form a trench deeply excavated below sea-level, so that if the hills were pierced from the head of the Plain of Esdraon, the waters of the Mediterranean would flow in and form a long, narrow lake like Tanganyika in Central Africa. There is a continuous trench that runs north and south parallel with the sea through 10° of latitude, from Antioch to the Gulf of Akaba. First it forms the Valley of the Orontes, then that of the Leontes, separating the Lebanon from the Anti Lebanon chain of mountains, where it reaches 3,600 feet. Then it descends deeply in the valley of the Jordan, so that the Lake of Tiberias is 680 feet and the D. of Sea 1,500 feet below the level of the Mediterranean. It is continued south along the Wady el Arabah, or the head of which it is a few hundred feet above sea level, and then sinks to the Gulf of Akaba, which forms a long arm of the Red Sea. Whilst the rest of Palestine has a climate like Greece and Italy, this excavation is more like Egypt and Arabia, and the vegetation varies accordingly. We may therefore in Syria and Palestine trace out four different zones of temperature, as follows, viz. —

I. THE SUB-TROPICAL REGION.

This includes the southern deserts and the Jordan Valley. A group of sub-tropical plants adapted to sandy soil and a climate with very little rain extends from Senegambia, through Egypt and Arabia, to the N.W. of India, and many of these which are entirely absent from Europe enter the Palestinian flora in this region. Sir J. D. Hooker writes: "No where can a better locality be found for showing the contrasts between the eastern and western districts of Syria than in the neighbourhood of Jerusalem. To the west and south of the city the valleys are full of the Dwarf Oak, two kinds of Pistacia, Smilax, Arbutus, Rose, Aleppo Pine, Rhamnus, Phyllyrea, Brundle, and Crataegus Aronia. For the first few miles the Olive groves continue, and here and there is a Carob and Lentix or Sycamore, but beyond Bethany they are scarcely seen. On descending 1,600 feet below the sea to the valley of the Jordan, the sub-tropical and desert vegetation of Arabia and West Asia is encountered in full force. Many plants wholly foreign to the Western

district suddenly appear, and the flora is that of the whole dry country as far east as the Punjab. The commonest plant is the Zizyphus Spina-Christi, forming bushes or small trees. Scarcely less abundant and as large is *Balanites aegyptiaca*, the fruit of which yields the oil called by the Arabs "Zuk," which is reputed to possess healing properties. Tamarisks are abundant. *Acacia Farnesiana* is very plentiful and celebrated for the delicious perfume of its yellow flowers. *Capparis spinosa*, the common Caper plant, flourishes everywhere in the Jordan Valley. *Alhagi maurorum* (a favourite food of the camel) is extremely common, as is the prickly *Solanum coagulans*, with purple flowers and globular yellow fruits, commonly known as Dead Sea Apples. On the banks of the Jordan itself the arborescent and shrubby vegetation chiefly consists of *Populus euphratica*, *Osyris alba*, *Periploca*, *Acacia*, *Prosopis*, *Lycium*, *Arundo Donax*, and *Capparis spinosa*. As the ground becomes saline, *Atriplex Halimus* and large *Statice* appear in vast abundance. Other tropical plants of this region are *Zygophyllum coccineum*, *Boerhaavia*, *Indigofera*, *Cassia*, *Gymnocarpum*, and *Nitraria*. In addition to the plants mentioned in the foregoing extract, I may add *Moringa aptera*, *Salvadora persica*, the Betam Broom, and two species of *Ephedra*, and amongst herbaceous types *Anastatica hierochuntica* (the Rose of Jericho), *Ergoniu cretica*, three species of *Mesembryanthemum*, two species of the allied genus *Aizoon*, *Ochradeus hincatus*, *Lippia nodiflora* (a prostrate Verbena), *Cnemis prophetarum* (Jonah's Gourd), *Diemia coriata*, several *Anemone* and members of the *Chenopodiaceae*. The stems of these plants are often prickly, and the flowers inconspicuous. Ferns are almost absent.

2. THE COAST PLAINS.

A tract of level ground 12 or 15 miles in breadth extends between the sea and the hills through Judaea and the southern half of Samaria. In the south it includes the ancient lands of the Philistines and in the north it is called the Plain of Sharon. At the north end of it the limestone promontory of Mount Carmel juts out into the sea with the village of Haifa beneath it on the north side. North of Mount Carmel the Plain of Esdraon extends for some distance inland, past Tyre and Sidon and Beirut, the hills come up close to the sea, but further north, past Tripoli and Latakia to Mount Cassius, there is a level plain, and also north of Mount Cassius from Antioch inland. The coast plains consist of rich, loamy soil, and are the most fertile portion of the Holy Land. The Philistine plain is described as follows (Smith's *Concise Dict. of Bible*, p. 671): "The whole plain appears to consist of loamy soil, light but rich, and almost without a stone. It is to the absence of stone that the disappearance of its ancient towns and villages is to be traced. It is now, as when the Philistines possessed it, one enormous cornfield; an ocean of Wheat covers the whole expanse between the hills and the

... of the ashore without interruption of ... break or hedges, hardly even a ... Olive tree. Its fertility is marvellous, for the prodigious crops which it raises are produced, and probably have been produced almost

Amaranus, and on the east of the Jordan the hills of Moab and Gilead. On the west of the Jordan the hills are all limestone and chalk, but on the east side this is much mixed with basalt. The average rainfall of Beirut is 36

At Beirut and Damascus, the temperature is considerably higher than at Jerusalem, with as great a difference between summer and winter. The highest peak in the Holy Land, Mount Hermon, does not reach the limit of perpetual snow, which is about 10,000 feet in Central Europe.

The plants of this zone, like those of the one below it, closely resemble those of the Mediterranean basin, and especially of the hills of Greece and Italy. The prevalent orders are Compositae, Leguminosae, Gramineae, Labiateae, Umbelliferae, Cruciferae, and Boraginaceae. This zone and the one below it show the Mediterranean characteristics of often having a large number of species to a genus, which is a rare thing in Britain, of *Astragalus*. Taking Syria and Palestine as a whole, there are 132 species; of *Centauria* 47, of *Allium* 42, of *Euphorbia* 41, and of *Salix* 39—nearly 500 species to five genera. The common trees of the hill slopes are Gall Oak, *Valonia* Oak, *Pinus halepensis*, *P. Pineae*, Olive, *Terebinth*, *Plane*, *Bay Laurel*, *Styrax*, *Cedrus*, and *Crataegus Aronia*; there are no Beech, Ash, Birch, English Oak, Chestnut, Elm, Holly, and Yew. Of shrubs the most notable are the *Carob* (*Cerastonia*), *Arbutus Unedo*, and *Andrachne*, the *Judas tree*, which, with its red flowers, is very handsome in spring; *Rhus Coriaria*, *Clematis crrhosa*, *C. flammula*, *Paliurus aculeatus*, *Myrtle*, *Ray*, *Calceolome*, and other shrubby *Genistas*, *Laurel*, *Pistacia*, and *Cistus*. The *Vine*, *Fig*, *Pomegranate*, *Orange*, *Mulberry* and *Walnut* flourish. Fences are often made of *Prickly Pear* (*Opuntia*), and its fruit is eaten, but, like *Agave americana*, the *Opuntia* has been introduced from America, so that artists should be warned against introducing it into Biblical pictures. Amongst the beautiful spring flowers of this zone are *Anemone coriaria*, red and blue *Cyclamen persicum*, *Hyacinthus orientalis*, *Ranunculus asiaticus*, *Tulipa Oculus solis*, *Puschkinia*, *Lily-of-the-valley*, *Muscari comosum*, *Crocus hysmalis*, and *Gaillardetia*. There are considerable numbers of species peculiar to the Holy Land, belonging principally to the larger Mediterranean genera.

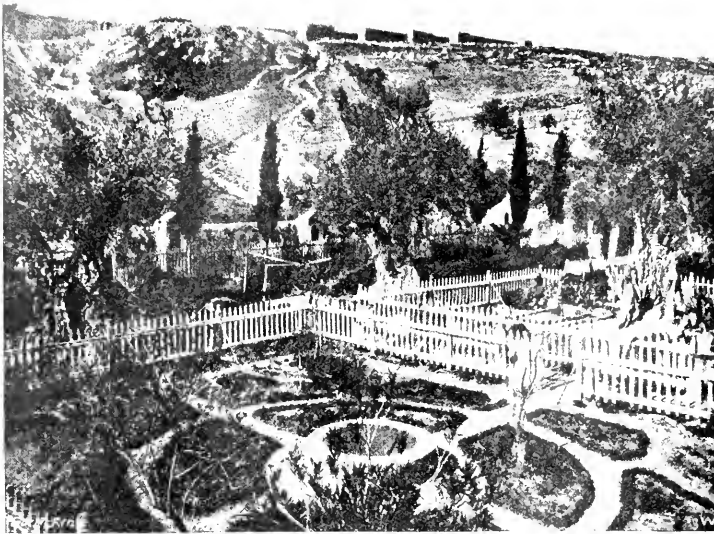


FIG. 93 THE GARDEN OF GETHSEMANE AS AT PRESENT LAY-OUT AND ENCLOSED

year by year for the last forty centuries, without any of the appliances which we in England find necessary for success." Wheat is the principal grain; sometimes the variety with compound spikes so well known in Egypt. There are also Maize, Barley, Rice, Tobacco, Hemp, and Sesamum. May is the harvest month, and after that through the dry season up to October the country looks brown and desolate, as there are no meadows or pastures. About the towns and villages there are groves of Olive, Sycamore, *Plane*, *Date*, *Palm*, *Walnut*, and *Grapes of Eschol*. The wild plants of the region are very much like those of the plains of Greece and Italy. Amongst the common woods are blue *Nigellas*, scarlet *Adonis*, crimson *Poppies*, many *Delphiniums*, species of *Euphorbiaceae*, *Borraginaceae*, and *Cruciferae*, red and blue *Pimpernels*, purple *Specularias*, great yellow *Margarites* (*Chrysanthemum coronarium*), and such grasses as *Darnel digitaria*, *Setaria*, and *Panicum Crus-galli*. The *Mandrake* (*Mandragora*), to which many kinds of mystical properties have been credited, is as common now as when *Reuben* gathered a basketful of its red berries like *Potato Apples* and gave them to his mother. There are a great many interesting plants on the sandhills. A large proportion of *Bornmüller's* collection was made on the sandhills about *Jaffa* in March and April, but taken as a whole the plants of this region are much fewer and less interesting than that of the next.

5.—ZONE OF THE HILLS UP TO 4,000 FEET

This is the most extensive and botanically the richest of the four zones. At *Hebron* the hills reach a height of 3,990 feet above sea level. At *Jerusalem* the *Mount of Olives* is 2,663 feet above the *Mediterranean* and 4,000 feet above the *Dead Sea*. The *Samaria* and *Gililee* the watershed ridge between them reaches 2,375 feet east of *Samaria*. It is but in *Mount Tabor*, 1,600 feet in the *Galilee* (Galilee) spur. Northward this region includes the *Lebanon*, *Nassairy* chain, which borders the *valley of the Orontes* on the west, and the slopes of *Lebanon*, *Anti-Lebanon*, *Cassius*, and

includes; that of the *Lebanon* is estimated by *Dr. Post* at 59 inches, of the *Anti-Lebanon* at not more than half of this last figure, and of the hills on the east of the *Jordan* at 19 or 12 inches. The mean temperature of *London* is 48° F., sink

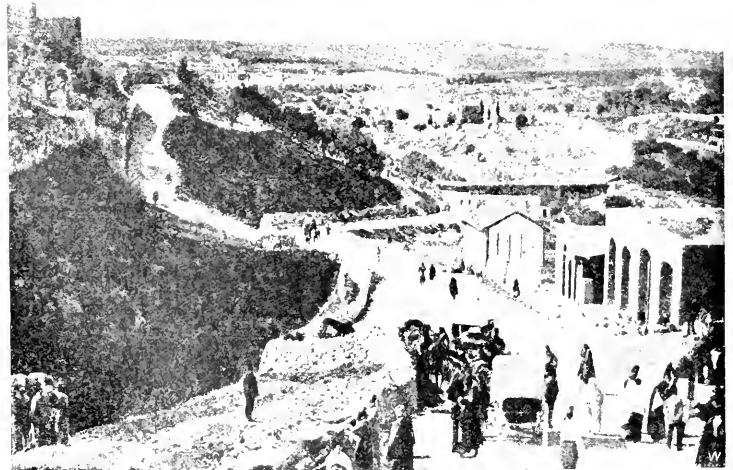


FIG. 94 PALESTINE: ROAD FROM JERUSALEM TO BETHLEHEM.

ing to 37° in *January* and rising to 62° in *July*, with a difference between the two of 25°. The mean temperature of *Jerusalem* is 62°, sinking to 48° in *January* and rising to 77° in *July*, with a difference between the two extremes of 29°.

4.—THE REGION OF THE MOUNTAINS OVER 4,000 FEET.

This includes a long ridge on *Lebanon* and *Anti-Lebanon*, another equally long ridge of

Mount Amanosa, north of Antioch, the southern end of Mount Cassius and the two highest peaks of the Jebel-el Doring range, which forms a semicircle round the head waters of the Jordan. The highest peak of Lebanon rather exceeds 10,000 feet. Mount Hermon, at the S.E. of Anti-Lebanon, which forms a conspicuous object from Galilee and the plains of Damascus, reaches 6,400 feet. There is nothing over 4,000 feet in Palestine proper—i.e., Judaea, Samaria, and Galilee. The great peculiarity of this mountain region of the Syria flora is that, as in mountains of tropical Africa, the ordinary Arctic-alpine types so abundantly represented in Britain, the Alps, the Pyrenees, and Carpathians, do not enter it, although many of them reach the Caucasus, the mountains of Armenia, the mountains of Central Asia, and the Himalayas. The plants of the mountains of Syria are either the common plants of Britain and Central Europe or endemic species of Central European and Mediterranean genera. Sir J. D. Hooker describes as follows the ascent of the Lebanon range:—The Oak forms the prevalent arboreous vegetation below 5,000 feet. *Quercus pseudo-Coccifera* and *infectoria* (a variety of *lunata*) are not seen much above 3,000 feet, nor the Valonia Oak at so great an elevation, but above these heights some magnificent species occur. At the same elevation Junipers become common, but the most remarkable plant of the upper regions is certainly the Cedar. At the elevation of 4,000 feet on the Lebanon many plants of the Middle and Northern latitudes commence. Amongst the most conspicuous are Hawthorn, dwarf Elder, Dog Rose, Ivy, Butcher's Broom, a variety of the Barberry, Hornsuckle, Maple, and Jasmine. A little higher, 5,000-7,000 feet, occur *Cotoneaster Nummularia*, *Rhododendron ponticum*, Primrose, *Daphne obsides*, several Roses, *Potentilla*, *Juniperus communis*, *J. foetidissima*, and Cedar. Still higher up, 7,000-10,000 feet, there is no shrubby vegetation. At the elevation of 3,000-9,000 feet the beautiful silvery *Oxyria canescens* forms large tufts of pale blue where scarcely anything will grow. The most boreal forms are confined to the clefts of rocks or patches of snow. *Pteris aquilina*, which we look on in Britain as marking the upper limit of cultivation, ascends Lebanon to 6,000 feet.

PLAIN OF ES-BALLOS.

The Plain of Esraheon extends from the coast to Jordan valley, forming a triangle with its apex to the west. It takes its name from the old royal city of Jezreel, where Ahab built a splendid palace and formed a large park. The three sides of the triangle are from 12 to 18 miles long. This was the scene of the victory of Gideon and the overthrow of Saul and Jonathan. Mount Gilboa overlooks it. It is very fertile, but now, through Turkish misrule is totally desolate and uncultivated. It was at Jezreel where Naboth had his vineyard.

Above 9,000 feet are *Draba arenaria*, a small *Potentilla*, *Raabis alpina*, and others, and *Oxyria reniformis*, the only decidedly Arctic plant in the whole country. There is no Calluna, no Gorse, no Erica, no Sphagnum, no Foxglove, no Birch, no Anemone, no Wood Hyacinth, no Bilberry, no Nardus, no *Juncus squarrosus*, no Luzula, so that it is very different from a mountain in England or Scotland. Of common English plants to be seen here, but not lower down, I may mention Beech, Hazel, Yew, Primrose, Wild Strawberry, *Festuca ovina*, *Carex remota* and *C. sylvatica*, *Nephradium*, *Filix mas*, *Osmunda*, and *Aspidium angulare*. As instances of endemic or rare Oriental species I may mention *Ribes orientale*, *Ranunculus*, *Fritillaria hermontica*, *Crocus hermonensis* and *C. zonatus*, *Vilca libanotica*, *Vilca libanotica*, *Rosa Thuretii*, *Polygonum libani*, *Potentilla Kotschyana* and *P. libanotica*. J. G. Baker, F.R.S., F.L.S.

(To be concluded.)

ORCHID NOTES AND CLEANINGS.

CYPRIPEDIUM HYBRIDS.

Flowers of the following four fine hybrids are sent by Mr. R. Windsor Rickards, Usk Priory, Monmouthshire:—

CYPRIPEDIUM FRENCHAY, first shown in December 1914, and recorded in error as between *C. bellatulum* and *C. Lawrebel*, is really the result of a cross between *C. Antigonae* and *C. Lawrebel*. The broad dorsal sepal has a whitish ground tinged with rose and bearing many branched purple lines from the base to the apex. The broad petals are coloured like the dorsal sepal, with the addition of a green shade on the inner halves and dense chocolate purple spotting over the whole surface. The lip is greenish-white, with a purplish base.

CYPRIPEDIUM RAYONATUM, obtained by Mr. R. W. Rickards from the Walton Orange collection, has a fine white dorsal sepal with emerald green base and ascending spotted lines of deep purple colour. The petals are very broad, purplish-chocolate on the upper halves, and greenish yellow on the lower halves, with dark spotting at the base.

Mr. Smith also sends a two-flowered inflorescence of the rose pink *Brassia Cattleya Maroniana* (B. C. Madame Chas. Maron × C. Insi), in which the latter parent gives the form of the lip, and *Laelia Cattleya Gouhaerea* (L. C. Gottaiana × C. Dovianna) aerial, of good size, and a remarkable colour. Both the *Brassia Cattleya* and the *Laelia Cattleya* have previously been recorded from Blenheim.

ON INCREASED FOOD PRODUCTION.

CONTINUOUS CROPPING OF VEGETABLES ON THE SAME SITE.

On p. 216, J. E. refers to Onions which have occupied the same border for 25 years. Another instance of continuous cropping was mentioned by Mr. Brotherton in the issue for June 2 last, when he stated that Brussels Sprouts had occupied the same ground for 20 years in succession. In this neighbourhood Celery has been grown for 20 years on the same plot. Mr. Beckett has stated that he has grown Onions and Potatoes on the same piece of land for many continuous years. Doubtless other trustworthy instances of

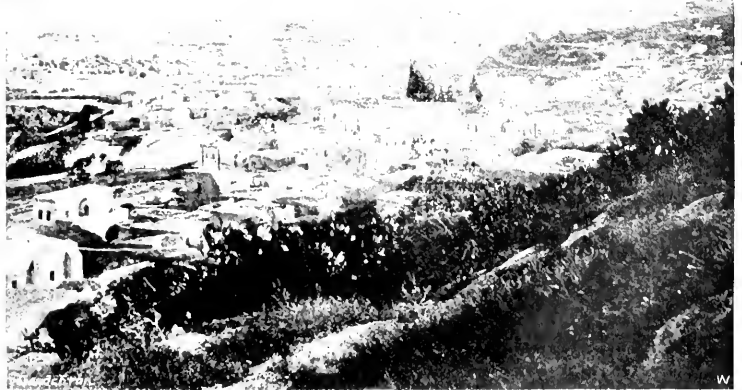


FIG. 95. PALESTINE: NAZARETH FROM THE NORTH EAST, SHOWING THE SURROUNDING COUNTRY AROUND.

CYPRIPEDIUM, var. BEAR KNIGHT, between Hea Enryades and Mrs. Wm. Mestyn, has the white dorsal sepal heavily blotched with chocolate purple, the larger basal blotches being almost black. The petals and lip are similar to *C. rayonatum*, but narrower and much darker in colour.

CYPRIPEDIUM, var. BEAR KNIGHT, between Hea Enryades and Mrs. Wm. Mestyn, has the white dorsal sepal heavily blotched with chocolate purple, the larger basal blotches being almost black. The petals and lip are similar to *C. rayonatum*, but narrower and much darker in colour.

ORCHIDS FROM BLENHEIM.

MR. JAS. SMITH, Orchid grower to the Duke of Marlborough, Blenheim, Woodstock, sends a flower of *Cypridium Mauvrii*, a cross between *C. Maudiae* (*Callousm Sanderae* × *Lawrenceanum* × *Villosum*) and *C. viridissimum* (*laureum* × *Villosum*). The bloom measures 7½ inches across. It is whitish green with a white margin to the dorsal sepal, some indistinct purple lines also appearing on it and the petals, and there is a tinge of brown on the lip.

continuous cropping could be cited, but enough have been given to make one question whether rotation is necessary. The following queries are in my mind as I ponder the above citations: (1) If a few vegetables can be so grown, why not all? (2) If vegetables, why not farm crops? (3) What becomes of the supposed necessity and virtue of cropping in rotation? In accepted standard works on agriculture and horticulture we have been (and still are) taught (1) that insect and fungus pests are more liable to attack crops grown continuously on the same ground; (2) that such crops lose vigour and are consequently less able to withstand attacks; (3) that a variation of cropping minimises, if it does not altogether withhold, the food of particular insects; (4) that alteration in cropping is most economical from a manurial standpoint, because some crops require more of one kind and others more of another kind of food; (5) that shallow-rooting crops should be followed by deep-rooting crops; and (6) that the rotatory system ensures a better tillage and cleaning of the ground—each crop getting that particular cultivation best suited to its needs.

Now, what are we to say to this teaching of rotation on view of the above unquestionably successful examples of cropping by repetition of the same crop? It is not merely a book question, but farmers have taught their young men and farmers their students that cropping by rotation is the better way. Either such teaching is necessary and sound or it is not. If a crop will grow satisfactorily on a given site year after year, it need be moved? C. Turner, *Amphill Park Gardens, Bedfordshire.*

POTATO TRIAL AT BARROW-IN-FURNESS.

A TRIAL of twenty-four varieties of Potatoes conducted by Mr. W. H. Christian, Parks Superintendent at the Public Park, Barrow, gave the following results:—

Twelve well-sprouted whole sets of each variety were planted on April 25, 1917, 15 inches apart, in drills 6 inches deep and 2 feet 6 inches apart; the sides and bottom of the drills were well sprinkled with wood ash before planting, and when the plants were 4 inches high sulphate of ammonia was applied at the rate of 3 ounces per square yard. Early varieties:—Eclipse, 40g lbs.; Sharpe's Express, 35g lbs.; Improved Ring-leader, 22 lbs.; May Queen, 22 lbs.; Webb's Improved Ashlet, 16g lbs.; Middleton Early, 15 lbs.; Harbinger, 14g lbs.; Pioneer, 12g lbs. Mid-season and late varieties:—Great Scot, 62 lbs.; Scotch Russet, 56 lbs.; Heather Bonnet, 52g lbs.; Lord Amavster, 52g lbs.; British Queen, 50g lbs.; King Edward VII., 48 lbs.; Leach, 46 lbs.; Goldsaber, 44 lbs.; Golden Wonder, 42g lbs.; Come to Stay, 42 lbs.; Victory, 40g lbs.; What's Wanted, 32g lbs.; Arcan Châtel, 31 lbs.; Up-to-date, 30 lbs.; Factor, 28g lbs.; Snowdrop, 28 lbs.

A trial of artificial manures was also made. Great Scot Potatoes being used. In each case the cost of the manure was 6d., and the manure was used for 24 sets of Potatoes applied before planting, which took place on April 25, the details of planting being the same as already named. The crop was lifted on September 6, the results being as follows, viz:—

No.	Weight of set of Manure	Manure.	Weight of Potatoes lifted.
1	11a	Equal parts, Superphosphate of Lime and 80 parts of Ammonia	7 7
2	7	Barrow Corporation No. 1 Artificial Manure	7 5
3	2g	Sulphate of Ammonia	6 12
4	4g	Equal parts, Superphosphate of Lime, Sulphate of Ammonia, and Wood Ashes	6 12
5	7	Barrow Corporation No. 2 Artificial Manure	6 8
6	9	Wood Ashes	5 12
7	4g	Superphosphate of Lime	5 8
8	—	No manure	4 9

PHASEOLI'S OR DUTCH BROWN BEAN.

THROUGH the kindness of Mrs. E. Labouchere, of Billing Hill, Northampton, who was good enough to send us a little more than ½ lb. of seed last spring, we were afforded the opportunity of growing and testing the quality of the dwarf Dutch Brown Bean. The seeds were sown during the second week in May, on a south border, and the plants harvested immediately the crop was ripe; they were hung up, head downwards, in a dry, airy shed. We have now shelled them, and find the yield to be 24 lbs. I have had the opportunity of testing their culinary value cooked much in the same way as Haricot or Butter Beans, and with a little butter, pepper and salt they are very delicious and appetising. I hope to grow this Bean on a much extended scale during the coming year. When better known it should do much to stimulate the important industry of harvesting dried Beans in this country. The cropping qualities of the plant are excellent, and there was very little worthless seed in the yield. *Edwin Beckett*



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

SEED POTATOES.—Tubers intended for planting, either in pits or early borders, should be selected and placed eyes upwards in shallow boxes with a little delay as possible. Some early varieties are already making growth, and if not placed in a favourable position at once, weak, spindly shoots will be the result. It is advisable to procure as many seed Potatoes from another district as possible, and to place them where they will receive the full benefit of light and air without exposure to frost or cold draughts. Tubers intended for planting in heated pits should be placed in gentle heat at once, so that short, stocky shoots may be produced before planting takes place. Seed Potatoes intended for later plantations should be laid out thinly before growth commences.

RHUBARB.—A supply of fresh roots of Rhubarb should be placed in gentle heat every fortnight. If only a small quantity is required Rhubarb may be forced under a greenhouse stage or in a Mushroom house, provided the roots are covered with fine soil and not allowed to become dry. At first, more we force Rhubarb on beds of leaves in a slightly heated pit. The mild heat produced by the leaves is very suitable, and the same bed of roots, providing the bed is shaken up and a little fresh material is mixed with it when a fresh lot of roots is introduced. The present is a good time to trench and manure ground for new plantations of Rhubarb. If time will permit the ground should be trenched to the depth of 2 feet and a good dressing of farmyard manure applied, leaving the surface as rough as possible until March, when the plantation should be made.

WINTER SPINACH AND OTHER GREEN CROPS.

Spinach will benefit by the frequent use of the hoe during favourable weather. Remove all decaying leaves or plants, and keep the ground free from weeds. The same remark applies to young Cabbages, which should be hoed and all blanks made up. Cabbage plants which still remain in the seed-bed should be transplanted into light, sandy soil with a view to spring plantations; allow 4 inches between the plants each way.

PARSLEY.—A few box frames or spare lights should be placed over a part of the Parsley bed in order to make quite certain of a supply in case of snow. Remove all decaying leaves and other rubbish from between the rows, and stir the soil lightly with a hoe. Parsley in pits must be freely ventilated and the soil kept free from weeds.

MUSHROOMS.—Continue to collect and prepare manure for making up new Mushroom beds. Turn the material every second day, and never allow it to become sour through placing large quantities together. Beds from which spores are being gathered should be kept as near 55° as possible. Maintain a moist atmosphere by frequently damping the walls and floor of the house with a syringe. If this work is carefully carried out very little will be necessary to the bed in the way of watering, as watering is frequently detrimental to young Mushrooms. A covering of clean straw over the surface of the bed does much to keep the surface from becoming dry.

ROOTS.—A quantity of Parsnips, Jerusalem Artichokes, and other roots should be lifted and placed in store for immediate use, and sufficient protective material secured for covering the beds in case of sharp frost.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Galtton Park, Reigate.

PHALAENOPSIS.—The species of Phalaenopsis are among the most difficult to manage during the winter months. The succulent nature of their leaves, and the absence of pseudo-bulbs, make them especially susceptible to injury, and ex-

trême care and watchfulness on the part of the cultivator are necessary. *P. amabilis*, *P. Stuartiana*, *P. Sandersoniana*, and the hybrid *P. leucorhoda*, are now developing their flower-spikes. Watering should be done with the greatest care during the winter months, as an excess of moisture at the roots may cause decay in the leaves. The plants should be examined each morning, and if the Spaghnum-moss is dry it should be lightly sprinkled, as soon as the temperature of the house rises above 65°. At the same time damp the sides of the receptacles, and the roots that are clinging to them, with tepid rain-water. Care must be taken that water does not lodge in the centres of the plants or in the axils of the leaves. The spikes should not be allowed to remain on the plants long after the flowers are developed, or the plants will be weakened and permanently injured. The plants should be placed in a light position, but not exposed to direct sunshine. Green-leaved varieties, such as *P. violacea*, *P. speciosa*, *P. Sumatrana*, *P. Marie*, and *P. Luddemanniana* are still growing actively, and should be afforded sufficient water to keep the Spaghnum-moss fresh and green. The surroundings of the plants should be damped morning and afternoon, regulating the amount of moisture according to the weather. The temperature of the house during mild nights should be about 65°, with 5° increase during the daytime. Admit fresh air on all favourable occasions, but cold draughts must be prevented.

CALANTHE.—Deciduous *Calanthes* of the *vestita* section, and their hybrids, are opening their flowers. When about two-thirds of the number on the spikes are expanded the plants should be removed from their warm growing quarters to the Cattleya house. Placed among the other occupants of the house they will make a cheerful display for some weeks. After the inflorescences are cut, the plants should be allowed a complete rest on a dry shelf near the roof-glass, well exposed to the light. The temperature should not fall below 55°. Withhold water from the roots until the plants start into growth again in the spring.

PHAIUS.—From now onwards until the early spring the species and hybrids of *Phaius* will require very little water at the roots, provided their surroundings are kept moist. *P. Cooksonii*, *P. Norman*, *P. Marthaia*, and *P. amabilis* are freely-flowering hybrids, and require less room than plants of the *P. grandifolius* and *P. assamicus* varieties. *Phaio-Calante* *Sanderiana*, *P.-C. Berriana*, *P.-C. Colmanae*, and *P.-C. Arnoldiae* should be accorded similar treatment to the above. The plants are subject to attacks of thrip and scale insects, which should be kept in check by sponging the leaves frequently with an insecticide. They should be grown in an intermediate temperature, and afforded plenty of fresh air at all times.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEY, Abbots Wood, Godalming, Surrey.

WALNUTS.—On many estates most of the Walnut trees are old, and a few trees should be planted to succeed them. Walnut trees grow very rapidly, and make valuable timber if planted and staked. When planted on park or meadow land the branches should be kept about 7 feet from the ground, to allow cattle to walk or graze under them. One variety known as *Mayette-Charbette* produces very large nuts of fine flavour. *Ingram Fertilis* is of dwarfer habit of growth; the shells are thinner, and the Nuts ripen 10 days earlier. These trees are satisfactory as isolated specimens or planted in groups of five or seven at not less than 12 to 15 yards apart. When planted in groups they are better able to withstand wind storms, as single specimens are liable to be injured by gales.

FILSBERTS AND COBR can now be pruned; standard trees should have some of the inner branches pruned out. Close and short-jointed wood produces the best results. Keep the heads of bush trees shapely. Fork over the surface of the soil and keep it free from weeds and suckers. Do not allow Moss and Lichen or Ivy to grow on or near the stems. By way of top

dressing, spread some old potting-shed refuse over the roots. When making new plantations Cobnuts should form the larger portion, as they are more valuable from an economic point of view.

THE STRAWBERRY BED.—On light, sandy soils it is necessary to go over the plantation after frost to see if the young plants have been loosened. Well tread the soil down around them, and see that there are no weeds. A good top-dressing of garden refuse from the fire heap can be applied this season with much benefit to the plants. The present is a good time to prepare a plot of land for a new bed next year. This should be well trenched and left rough for exposure to the weather. It may be forked back for spring planting, or, if not required in the spring, the ground need not be idle until next season, as a crop of early Peas or Potatoes can be got off it before July.

THE FRUIT ROOM.—Apples are keeping well this season, and King of the Pippins, Cox's Orange Pippin, and Blenheim Pippin are in prime condition. Keep a little air circulating to dispel damp and prevent a musty smell. Pears *Gloii Mouceau*, Winter Nelis and Nouvelle Fulvie for dessert, and Catillac for stewing, are now in season. Cobnuts will never be in better condition for use than now, but they can be kept yet for a considerable time. They should be stored in their husks in large pots or earthenware vessels in a dry room.

GENERAL WORK.—Continue the pruning of all kinds of trees, excepting Peaches, Nectarines and Apricots, as the weather permits. Tying, nailing, top-dressing, root pruning and spraying should also be pushed forward. This last operation should be done very thoroughly, and if possible a second time, as I have found several living specimens of the Lucky Moth after a first spraying. Where there are evidences of a plentiful supply of bloom, cut the shoots well back, with due regard to a proper distribution of the branches, especially of young trees. If a branch is required to fill a vacant space, prune one of the shoots either above or below the vacant spot (whichever is the stronger) to the base, and then train in two shoots from the break next season. In the case of a fan-shaped tree, rearrange the whole of the branches. Be on the alert for sparrows taking the bark from 4-woodbushes and Currants in cold weather, and take preventive measures. Lime or soot mixed with petroleum, sprayed over the trees, is a good preventive, or other may be applied in a dry form, but this is quite to be done often, as heavy rains will wash off the material. Small ornamental trees may be protected with black cotton or thread with good results.

FRUITS UNDER GLASS.

By Jas. HENSON, Head Gardener at Ginn's-bury House, Acton, W.

OLD CHERRY TREES UNDER GLASS. These trees should be pruned forthwith, and if the growth has been too luxuriant the roots should also be pruned a little. Then let the house be thoroughly cleaned and the trees be lightly dressed with a safe insecticide against dormant insect pests. After that work is completed fork the border lightly and apply a top-dressing of rich loam mixed with fine mortar rubble. When the whole of the work is completed throw the house wide open.

YOUNG POT VINES.—Examine the soil of pot vines to see if moisture is needed, for it must not be allowed to become excessively dry. I prefer to grow the plants out-of-doors, with the pots plunged to safeguard them from damage by frost. Cut the roots back to within 2 feet of the pot. Meanwhile prepare soil for potting them into their fruiting pots soon after the turn of the year. The soil should be in a fairly dry condition, and consist chiefly of good turfy loam with a little finely sifted forward manure and sifted mortar rubble. Select the fresh pots and wash them in good time. Do the final pruning rather in advance of the potting, cutting back to a prominent eye at the base. After the vines are potted they should still be kept cool for a few weeks. They may be started in

a Melon pit, but bottom heat should not be employed for some time to come—in fact, it may be dispensed with altogether.

LATE GRAPES.—Pay constant attention now to bunches still hanging on the vines. Three times a week they should be examined for diseased berries and signs of drip. Wind a little wadding round the point of a small stick, and when a berry is taken out, wipe the adjoining berries. Remove all leaves as they fall, and keep the house as dry as possible, with just sufficient warmth in the pipes to dispel any damp. Make it a practice to use these bunches first that show any signs of shrivelling. In order also to extend the supply reduce the quantity cut each day to the lowest acceptable minimum. Get the bottles in readiness for bottling the crop soon after Christmas Day. Clean the bottles well, and place some small pieces of paper in each bottle, filling them with rain-water. As soon as these late Grapes are cut the vines should be pruned. Apply styptic to each cut; it may not at present be needed, but it will help to check bleeding when the sap rises again. Thoroughly soak the border and clean the vines, prick over the surface, and add a top-dressing of good, loamy soil. Then throw the house open to the wind and weather if possible. Late Grapes have kept better than usual this autumn, especially late Muscats and Gros Colmar.

FIGS IN POTS.—The young roots of Figs are susceptible to injury by frost. Keep them in a temperature above freezing point if possible, or, failing this, bed them in cool ashes. Do not use litter, or the shelter thus given will be taken advantage of by rats and mice. The latter do a great deal of damage to the stems by gnawing them. If any Figs have been attacked by scale insects, dress them with an insecticide. A good method is to lay the pots on their sides, and so prevent the liquid from running down the stem. Cleanse the walls, the paint and the trellis work, removing at the same time the surface soil of the borders, and lightly top-dress them with turfy loam and charcoal sifted mortar rubble.

PLANTS UNDER GLASS.

By F. G. WYSTON, Gardener to Lady Northwick, Eastwell Park, Kent.

PRIMULA SINENSIS. Plants now commencing to show up their flower spikes should be encouraged by a pinch of artificial plant food, and a little weak manure water or soot water applied about once a week. Keep the temperature of the house from 50° to 55°; the lower figure will suit quite well for the night temperature. Give a little air when the temperature rises above 55°, and let the heat run up to 60° by sunshine before increasing it further.

PRIMULA OBCONICA. This thrives best in a damp atmosphere, such as a cool frame or cold bed, but as the flower spikes develop the plants should be removed to the conservatory or flowering house. When established in the flowering pots, and well rooted, a good supply of water is required. Dryness at the root in a dry atmosphere, or a high temperature, will soon cause shabby foliage and stunted flower spikes. Gentle stimulants should be afforded as recommended for *P. sinensis*, and this will tend to keep the plants flowering over a long period.

P. MALACOIDES AND P. KEWENSIS.—Both these species, and the one above, are excellent plants for the amateur grower, as they all succeed in similar conditions. *P. kewensis* has clear yellow blooms, and makes a change from the range of colour found in the other varieties. It throws up a good spike, and if well treated will remain in good condition for several months. All *Primulas* which thrive in cool treatment are very much at home planted under the stages of the greenhouse, fairly close to the path.

GENERAL REMARKS.—In bad weather, when work out-of-doors is at a standstill, thoroughly clean and rearrange the plant houses. Wash the wood and ironwork, and limewash back walls and the brickwork over the stages. A little paraffin oil in the limewash is of great value in making the wash more adhesive, and it also increases the cleansing value, by penetrating

holes and crevices, which are often the winter haunts of insect pests. If small gravel or spar is used on the stages this should be washed, or replaced with fresh material. If the house contains climbers trained to the roof or pillars the plants should be examined, all superfluous growth cut out, and the remaining shoots cleaned. After the house is thoroughly cleaned the plants should be carefully rearranged. Above all things, do not crowd the plants at this season. It is better to devote time and space to growing six plants well than to have double or treble the number of poor specimens. Foliage plants will be much benefited by sponging their leaves; such plants as *Palms*, *Cedraums* (*Crotons*), and *Dracenas* should be sponged once or oftener during the next month or two. The greatest care is necessary in sponging fine-foliage plants to prevent splitting or crumpling the leaves. The smaller plants, which may be required for use as table specimens, are best kept together on a shelf near the roof-glass, where they will be fully exposed to sunlight.

THE FLOWER GARDEN.

By W. J. GRISSE, Gardener to Mrs. DEBRIERE, Kew Hall, Staffordshire.

PERENNIAL ASTERS.—There is no advantage in retaining the old clumps of *Michaelmas Daisies*, as much better results are obtained by lifting and dividing the plants every two or three years. Select small pieces from the outside of the old clumps; the centre portions are usually weak and exhausted, and should be discarded. Surplus plants can be used to furnish vacant spaces in shrubberies, or a reserve bed can be planted to furnish cut flowers for decoration. *Aster multiflorus grandiflorus* is a very rich blue colour, and dwarf in habit, and is sometimes mistaken for *Erigeron* species. It is excellent for decorative purposes, and lasts a long time in water. Grouped in the foreground of herbaceous or mixed borders the plants are very effective.

LILYUM. In cold, wet districts it is safer to pot up directly they are received, bulbs of *Lilium auratum*, *L. longiflorum*, and *L. speciosum*. Place them in a cool house or frame, and keep them rather dry until growth commences. By March they should be ready for planting in their flower or quarters outside. Many Liliums are handy, and may be planted now. A deep, moist loam, in which will decayed manure, peat, and leaf-mould have been incorporated, will suit them. Suitable positions and aspects must be selected for the various species and varieties. Care in planting is an important detail, especially with the stem-rooting varieties. Liliums are moisture-loving plants, but they will not tolerate stagnant moisture or sour soil.

PROTECTING SPRING BEDDING PLANTS.—It will be advisable at this period to afford some slight protection to spring bedding plants, especially Wallflowers. In many gardens last winter nearly all the Wallflowers were killed by frosts and winds. Suitable protection may be obtained by netting, branches of Yew or other evergreens about 2 inches in length round the inside of the covers. When dealing with large beds it will be necessary to place a few branches among the plants about 2 feet apart.

HARDY HEATHS. Soil containing lime does not suit *Phloxodendrons* or Hardy Heaths. The ground for these plants should be prepared some time in advance, and dug to a depth of at least 12 inches. Incorporate a liberal quantity of well-decayed manure and leaf-mould. Peat may be used with advantage, but it is not necessary where the soil is loamy and free from lime. Leave the surface as rough as possible for several weeks before planting; the levelling process can then be done with a wooden rake. On no account should the ground be forked over, as firm planting is essential. Heaths are excellent plants for covering banks, but the best effect is obtained by planting bold, irregular groups along woodland walks. A selection of varieties may be made that will give flowers through the greater part of the year. *Erica curma* and the white variety, *E. hebecea*, also should be included in any selection.

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would oblige us by sending answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHERS; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 36.5.

ACTUAL TEMPERATURE.—Gardens' Office, 41, Wellington Street, Covent Garden, London. Thursday, December 20, 1917. Bar 29.7, temp 35.5. Weather Thick fog.

At the present time, when so much interest in the Potato is centred upon the Food Value of the Potato, it may be recalled that it took many years after its introduction to Europe in the sixteenth century for the tuber to be recognised as one of the chief foods. In the early days the doctors joined with the public in looking askance at the newcomer. It was accused of being a generator of leprosy, and Lemery, in his *Traité des Drogues Simples*, referred to the Potato so contemptuously that the "noble tuber" remained up to the end of the 18th century under a cloud of suspicion.

It was urged against the Potato that it provokes flatulence, that it could never be cleaned of its "impurities," that it caused those who fed on it to grow stout and lazy. On the contrary, Parmentier and Vauclavaux vaunted the value of the Potato in scarcely less extravagant terms, ascribed to it medicinal virtues, and averred that it possessed the power of conferring fertility on peoples, citing as "evidence" the rapid increase in population in Germany and the large proportion of twins in Ireland.

The Press of the period joined in the denunciation of the Potato, and the French Government was overwhelmed with petitions calling for the suppression of all cultivation of the Potato.

In order to settle the matter, in 1792, the Contrôleur Général de Finance, addressed a letter to the Faculty of Medicine

on February 26, 1771, inviting its members to inquire into the allegations. Thus the Potato was put upon its trial.

It was decided to submit it to trial by ordeal—of chemical analysis. As a result it was discovered that Potatoes contain a white powder similar to the starch of cereals, woody fibre, a mucilaginous juice with no special properties, and a large quantity, 75 per cent., of water. From that time the Faculty took the Potato under its wing. Tissot, the celebrated French doctor, writing to the Swiss agriculturist, Herzel, assured him of the value of the Potato and its edibility—you can eat it as often as you can eat bread—and the same authority maintained that it is the best of all diets for nervous women.

At about the same time another savant—and it is interesting to observe that savants can exaggerate like unlearned folk—expatiated on its anti-scorbutic properties. Those properties the Potato indeed possesses, and having regard to the fact that Potatoes make up a large proportion of the fresh food of large sections of the community during winter, they are undoubtedly important. Yet, according to the most recent researches, the Potato is inferior to many other vegetables—Onions, Cabbage, and others—in anti-scorbutic property.

The hymn of Potato praise chanted by the learned continues. Saint Hilaire proclaims it a specific against insomnia, and states that he had tried it with good effect on his servants; though some may incline to the observation that the malady of insomnia is not now prevalent among domestic servants! Parmentier expresses himself as doubtful. He thinks that the sedative effects would be likely to wear off as the domestic became accustomed to Potatoes; but admits that a Potato diet is "calming."

The Italian doctor, Filippo Baldini, studies the influence of the Potato on the circulation, and claims that it is a good corrective of "acidity." Later on the potato salts contained in the Potato were regarded as the purifying elements.

The most recent attack on the Potato is perhaps the gravest. It is claimed in the *Brevière de la Branté*—composed by a lady, that all who wish to remain young and pretty must eschew the use of the Potato; but the doctor's championship has prevailed—combined with the poor quality of war-bread—to induce even the youngest and prettiest among us to go on eating Potatoes and risk the consequences.

The last word on the subject was said long ago by the poet, Heinrich Heine: "Pourquoi chanter la rose? Que le poète chante la pomme de terre qui nourrit le peuple."

NEW PLANTS FROM BRITISH HONDURAS.—Mr. S. F. BLAKE describes, in *Contributions from the Gray Herbarium of Harvard University*, new series No. LII, a number of novelties from this still little known British Possession. *Mylonearpa paniculata*, an arboreal member of the Urticaceae; *Millopauglia biophylla*, a third species of a genus of Polygonaceae peculiar to

the region; a number of Lauraceae, Mimosaceae, and various other families make up a total of nearly 50 additions. *Belandra* is a new genus of Apocynaceae, allied to *Echites* and *Odontadenia*.

A CROP OF HAY IN MID-ATLANTIC.—The vegetation of remote islands offers many anomalies and many surprises. Ascension is an ocean peak with a forty-square-mile base and no climate worth mentioning, and little visible vegetation in its lower parts. Suddenly, as we learn from the *Kew Bulletin*, a grass has appeared in the great abundance in the lowland plain, and the crop this season was so heavy that many tons of hay might have been saved had the authorities been prepared for it. As it was, a small stack was made as an experiment, and horses and mules of the garrison were turned out to graze. "Whether," the Kew correspondent writes, "the grass is a perennial and really useful remains to be seen; but the animals are very fond of it." Beautiful rains, the first experienced for a generation, preceded this heavy crop of a single species of grass. Dr. STAFF has identified the grass as *Enneapogon mollis*, which has not previously been recorded from Ascension; but it is scattered over a wide area in dry districts of tropical Africa, and has also been collected in Madagascar and the Punjab. A photograph illustrates the article showing the hayfield and haymakers.

CHINESE SPECIES MAKING.—"W. B. H.," in the sympathetic obituary notice of the late DAVID OLIVER, which he has contributed to the *Proceedings of the Royal Society**, recounts several curious instances which go to show the confounding nature of some systematic botanists, and to confirm BRET HARTE'S diagnosis that

"For ways that are dark,
For tricks that are vain,

The heathen Chinese is peculiar."

As an illustration:—Among A. HENRY'S Chinese plants was a specimen with leaves like an *Eschulus*, and terminal clusters of Viburnum-like flowers. On this specimen was founded a new genus, *Actinotinus*. A little later another botanical puzzle presented itself. This time papilionaceous flowers and foliage, unlike that associated with the Leguminosae, presented themselves. The specimens were shown by OLIVER to BOTTING HEMSLEY and N. E. BROWN, the latter of whom recognised that the species was made by the art of man and not by Nature. Reference to the specimen on which *actinotinus* was founded revealed a like evidence of guile. Dr. BOTTING HEMSLEY confesses that he also was victimised in a similar manner some years later, when he described the leaves of a *Daphniphyllum* and the flowers of a *Rhododendron* as a new species of the latter genus, but in that case Justice ALBERT tardily came to the assistance of British botany, for once again the same Chinese hand tried its cunning, this time with Mr. E. H. WILSON, and lost three weeks' wages in the transaction.

BLINDED SOLDIERS' CHILDREN.—In connection with the Sir ARTHUR PEARSON'S fund in aid of the children of blinded soldiers, a special branch of the fund has been inaugurated to cover the seed and allied trades. Mr. ARBYN TREVOR-BATTYE, Ashford Chase, Petersfield, Hants, has the matter in hand, and he states that Messrs. SUTTON AND SONS have promised fifty pounds. This fact encourages the hope that other prominent horticultural firms will shortly follow suit. The cause is so well known to our readers through the columns of the daily press that we need not reproduce all the details supplied by Mr. TREVOR-BATTYE, but we feel that such a deserving fund is certain to receive due support from those to whom this special appeal is made. Letters should be sent to Mr. TREVOR-BATTYE at the address given above.

VITAMINES: NATURE'S PREVENTIVE MEDICINES.—When Captain Cook cured his men of scurvy by providing them with fresh vegetables he made a discovery the importance of which, masked by the banality of the medicine, it has taken a hundred years to estimate. It is now known that the vegetables which exorcised the scurvy did so by reason of the fact that they contain minute quantities of definite chemical substances—of unknown kind—which are Nature's indispensable and infallible preventive medicines. A dish which lacks these remarkable substances, no matter how generous it may be in respect of fats and carbohydrates and protein, no matter how liberal its allowance of calories, is nothing else than a negative poison. Not only does an animal or human being fed on such a vitaminless diet fail to thrive, but

aleurone grain layer of the Wheat or Rice or Maize grain, but rather and chiefly in the germ or embryo. Now in the modern method of milling every ingenuity has been expended in separating not only the chaff from the Wheat, but also in removing the embryo, with the result that machine-made white flour is seriously deficient in those vegetable preventive medicines—the vitamins—the presence of which in food is essential to the maintenance of health. Whole meal bread, on the contrary, contains the embryo or germ of the Wheat grains, and hence the vitamins. That these are flour facts has been amply proven by actual investigation and the authors, Miss CHICK and Miss HUME, have carried our knowledge further by demonstrating the fact that it is the vitamins contained in the germ of cereal grains

unless they are accompanied by a sufficient ration of food which contains the vitamins they lack. In the case of theberi vitamin, it is satisfactory to learn that this, one of the gentler health, is not destroyed by an exposure to boiling point (100° C.) for two hours. Hence bread or biscuit, provided they contain the germ as well as the endosperm of the Wheat grain, will retain its vitamins unimpaired.

WAR ITEMS. M. ALEXANDRE DERASIN, son of M. DERASIN VALETTE, Vice-President of the French National Horticultural Society, was killed in action on September 5.

M. MAURICE BLOU, eldest son of M. FRANÇOIS BLOU, a foreman in the employ of Messrs. VILMORIN, ANSELIN and Co., rue de Reuilly, Paris, has also been killed in action.



FIG. 36.—PALESTINE. DATE PALMS, OPUNTIAS, AND OTHER PLANTS GROWING AT LIBERTY ON THE SHORES OF THE SEA OF GALILEE (1870, p. 250).

it contracts diseases such as scurvy and beri-beri, to which it rapidly succumbs. Furthermore, the vitamin or natural preventive medicine which protects the body from beri-beri appears to be quite distinct from that which protects it from scurvy. The occurrence of such diseases as those just mentioned among our expeditionary forces has caused attention to be directed yet more closely to the vitamins, and to the rations supplied to these forces. The most recent investigations* show that the vitamin which is the natural preventive of beri-beri, is contained not so much in the bran (pericarp and

which are responsible for deterring the body from the diseases already mentioned, and that it food substances are deprived of their vitamins, disease-subjects. The authors in a subsequent paper† have investigated the effect of temperature in the beri-beri vitamin, and conclude from their researches that the vitamins are as fragile as they are fateful. If food substances are heated for even a short time to a temperature 20° above boiling point, the vitamins disappear, and the healthfulness of the food is in consequence impaired. In so far therefore as preserved foods are prepared by processes involving such high temperatures, their use as a main source of food is to be deprecated.

THE FIRST FIFTY YEARS OF THE AUCKLAND INSTITUTE AND MUSEUM.—The citizens of Auckland (New Zealand), have celebrated the jubilee of their scientific foundation by the issue of a condensed illustrated history of its development, from the sympathetic pen of Mr. T. F. UHLESMAN, secretary and curator almost from the inception of the establishment. The "New Zealand Institute" has now branches in the leading towns of the Dominion, but the Auckland branch is twice as numerous as the next highest. It was started, and has been maintained, by private and civic enterprise. At the close of its first year it had a roll of 63 members; its total revenue amounted to the same number of pounds, and there was a small balance at the end of the year. Now there is a membership of nearly 300,

* "The Distribution in Wheat, Rice, and Maize Grains of the Substance the Deficiency of which in a Diet Causes Beri-beri in Man," by Harriette Chick and E. M. Hume, *Proc. Roy. Soc. B.*, 20, No. 13, 1924.

with an income of £1,700, and invested capital of about £1,000. This sounds like a prosperous condition; but larger premises are urgently needed, and Mr. CRUISEMAN'S report is an appeal for funds. The Maori Collection is a very valuable section of the Museum, and irreplaceable; yet it is not safely housed.

SHOREA AND GORDONIA.—The Straits Branch of the Royal Asiatic Society Journal, No. 76, contains two or three articles by Mr. J. H. BENNETT, Director of the Singapore Botanic Gardens. In "Notes on Dipterocarps" the

TREES AND SHRUBS.

BERBERIS VIRESCENS.

THE profusion in which new species of *Berberis* have come into cultivation in this country, ought not to lead to the neglect of some of the older kinds. *Berberis virescens* was found by Sir Joseph Hooker in Sikkim so long ago as 1849. It is deciduous and not to be highly esteemed for its flowers, which are pale greenish yellow (whence its specific name), nor for its red fruit, which it declines to ripen with me. But it is an

it was introduced by Wilson, from China. In an old issue of the *Kew Bulletin*, entitled "A Published List of Plants introduced to Cultivation, 1876 to 1896," the species is mentioned as having been figured in the *Florist and Pomologist* in 1884, and is also included in the first *Kew Hand List of Trees and Shrubs*, 1894. In *Trees and Shrubs Hardy in the British Isles*, Mr. Bean states that it was first introduced to St. Petersburg about 1830 from Manchuria, and from China by Wilson in 1900. The Chinese form is, according to Mr. Bean, superior to the typical kind, and is known



FIG. 97.—*LONICERA MAACKII*: FLOWERS CREAMY-WHITE.

author describes and figures the seeds and their germination of some species of *Shorea*. *Gordonia* is represented by two species on the Atlantic seaboard of North America, namely, *G. Las othius* and *G. pubescens*, and about 20 species widely spread in tropical Asia. Both the American species are, or have been, in cultivation in this country; but *G. pubescens* is said to be extinct in a wild state. *G. axillaris*, a *G. las othius* group, was in cultivation at Kew in 1812, and it was figured in the *Botanical Magazine*, t. 17, p. 249. A figure of the same species appeared in the *Gardeners' Chronicle* on June 11, 1917.

exceedingly pleasing object at this season of mid winter, for the gracefully arching stems are of a bright, ruddy orange, much the same hue as the upper branches of an old Scots Pine, but smooth and shining. I know but one private garden, besides our own, where it grows; I should be sorry to be without it in the short, dark days. *Herbert Maxwell, Monmouth.*

LONICERA MAACKII

THIS shrubby Honeysuckle (see fig. 97), which is so highly spoken of by Mr. H. Kempshall on p. 242, was known in this country before

as variety *podocarpa*. Franchet. He refers to it as one of the most beautiful of bush Honeysuckles. An interesting feature connected with this *Lonicera* is that it was given an Award of Merit by the Floral Committee of the Royal Horticultural Society on June 7, 1907, and again on June 8, 1915. It is one of the few instances in which the same award has been made twice to a plant. *Hydrangea Madame Emile Mouillière* is one of that limited number. *W. T.*

PUBLICATIONS RECEIVED.—*Around the Year in the Garden*. By Frederick Frye Rockwell. (London: Macmillan & Co.) Price 10s. net.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

CROPS AND STOCK ON THE HOME FARM.—I am much interested in the articles by Mr. E. Molyneux on farm matters; they are very helpful to the many gardener backbits. What has been done this year with the land by the working-classes clearly shows what they would do if given greater opportunities. The Royal Horticultural Society has given good advice through its panel gardeners to the large class of very small cultivators. I should like to see every cottager able to keep his pig, with a garden to support the same (and his family). *L. R. Adams, Watlington Park, Oxon.*

FRUITING TREES AND SHRUBS (see pp. 226, 242).—*Lagerstroemia indica* is fully deserving of all the praise bestowed upon it by Mr. Kempshall, and the specimen at Abbotsbury must indeed be a beautiful one. There is a very good tree in these gardens, which passed through last winter quite unharmed, and though I have not had the pleasure of seeing it flower it is a real gem when in its autumn garb. Another shrub of great value in the same manner is *Andromeda arborea*. *Liquidambar styraciflua*, generally recognised for its beautiful autumn tints, excelled itself this autumn, and the specimen at Fota, which, when last measured, was 52 feet high, with a girth of 7 feet at 4 feet from the ground, made a pleasing sight. *Parrotia persica* is carrying nut-like clusters of fruit, and this season's flower-buds are just expanding. Two other shrubs carrying solitary fruits are *Osmantinus Delavayi* and *Hex Pomei*. *Drimys aromatica* carried a profusion of clusters of black fruits not unlike *Privet* berries, and *Azara microphylla* fruited freely. On the morning of the 3rd inst. we had 12" of frost, which completely spoilt our *Hydrangeas*, both blue and pink-flowered, but which had up till then retained much of their freshness of colour. Similarly *Carotus Gloride Versailles* suffered, but *Lapageria rosea* flowering on a north wall entirely unprotected is not one bit the worse for the cold. *Kenneth Bickett, Fota Gardens, Queenstown.*

SOCIETIES.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

November 15. *Committee present*. The Rev. J. Crombeldine in the chair, Messrs. R. Ashworth, D. A. Cowan, J. C. Cowan, J. C. Whyler, A. G. Ellwood, J. Evans, P. Foster, J. Howes, A. J. Keeling, J. Lupton, D. M. Good, F. K. Sander, W. Shackleton, H. Thorp, and H. Arthur (secretary).

GROUPS.

The following medals were awarded to collectors: Silver Gift Medal to R. Ashworth, Fota, Newchurch (for *Mr. Devonport*). Large Silver Medals to Col. Sir J. Bethune-Gordon, Bart, M.P., Blackburn (for *Mr. J. Lupton*); and T. Worsley, Esq., Haslington (for *Mr. T. Wood*). Silver Medals to JOHN HORTLEY, Esq., Morley (for *Mr. Cooper*); MESSRS. CYFFER AND SONS, Cheltenham; and MESSRS. SANDERS, St. Albans.

AWARDS.

FIRST CLASS CERTIFICATES.

Odontoglossum Golden Owl and *Sophro-Cathepa Dorca magnifica* (*C. aurca* × *S. C. Davis*), both from S. GENTRIX, Esq.

Odontoglossum Edna van Beauty (*Rosen* × *ardentissimum*), *Laelia Cattleya Gothroyi* (*C. Titania* × *L. C. St. Gothroyi*), both from P. SMITH, Esq.

Cyclopogon Gen. Albany (*Alca Corgels* × *Bonal George*), from T. WORSLEY, Esq.

Cattleya Falcata albo-Regina, from Messrs SANDERS.

AWARDS OF MERIT.

Cattleya amoenilliflora, *Ashworthae* (*regina* × *Mendleyi*), *C. Falcata alba* var. *Ashworthiae*, *C. var. schlandensis*, *C. lobata Briggs Bury*, *Laelia*

Cattleya Hadrian Ashworthae, *L. C. Orion Ashworthae*, and *Brassia-Laelio-Cattleya Ashworthae* (*B. L. C. Cooksoni* × *C. lobata*), all from R. ASHWORTH.

Cyclopogon Gen. Pushing (*Alca-Lanman* × *regina splendens*), and *C. Horrocksum* (*Alca-Lanman* × *S. C. Davis*), both from T. WORSLEY, Esq.

Laelia Cattleya West Point var. L. C. Capper (*C. C. Capper*), and *Cyclopogon Golden Albany* (*Alca West Point* var.), both from S. GENTRIX, Esq.

Odontoglossum crispum Septah, from Dr. CRAVEN MOORE.

Cattleya Trilobata (*C. Tronca Grand Monarch* × *C. Clifton*), from P. SMITH, Esq.

FIRST CLASS AWARD OF APPRECIATION.

Odontoglossum Dorothae (*Doris* × *crispum*) from Dr. CRAVEN MOORE.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

DECEMBER 10.—The monthly meeting of this society was held in the R.H.S. Hall on Monday, the 10th inst., Mr. Charles H. Curtis presiding. Seven new members were elected.

The sick pay for the month on the ordinary side amounted to £77 10s. 11d., and on the Station side to £26 10s., and maternity claims to £4 10s.

Obituary.

FRED C. SMALE. We regret to record the death, on the 30th inst., of Mr. F. C. Smale, son of Mr. W. B. Smale, nurseryman, of Torquay. Deceased, who was fifty-two years of age, had assisted his father to a considerable extent in the management of the nurseries. He took an especial interest in the cultivation of *Chrysothamnus*, and was in the habit of lecturing on the subject and judging at the exhibitions. Besides his work in the nursery, he was in the habit of writing for a number of magazines.

WALTER T. WARE. We learn with deep regret of the death of Mr. Walter T. Ware, at Burrow Castle, Bath. Mr. Ware had been ill for about two years, and on Friday, the 14th inst., he had a stroke, which terminated fatally two days later. Deceased, who was sixty-two years of age, was the son of Mr. F. S. Ware, who established a business at Totterdown.

Mr. Ware engaged an interest in his own account, and subsequently became one of the largest flower growers in the trade. In the development of the British bulb-growing industry Mr. Ware occupied a very prominent position, at 1, 4, and 5, Inglescombe, in Lincolnshire, and in Wiltshire, he had a large area under *Daffodils*, *Tulips*, *Lily-of-the-Valley*, and other flowers. As a grower and exporter of Tulips he had no superior and few equals. In recent years he became an enthusiastic racer of Tulips, and during 1916 and 1917 he exhibited a number of excellent seedlings, notably *Empire*, *Nivama*, *Winner*, *Lady Love*, *Inglescombe Manye*, *Zella*, and *Asturias*; these varieties secured the Award of Merit of the Royal Horticultural Society. Mr. Ware's enthusiasm for Tulips was almost equalled by his interest in new *Daffodils*, of which he purchased many for the purpose of raising stocks. Few men could so speedily appraise the value of a new Tulip or Daffodil in the market point of view. For many years Mr. Ware was a member of the R.H.S. Narcissus and Tulip Committee, and during the present year he was the holder of the Peter Barr Memorial Cup, awarded unanimously by the Committee for good work done in connection with Daffodils. He was also treasurer of the London Daffodil Show Fund until his health began to fail, and he was rarely absent from the London and Birmingham shows. He was also a member of the Committee of the British Wholesale Florists' Federation and a generous supporter of its work, and a member of the Horticultural Club. The burial took place at Locksbrook Cemetery, Bath, on Thursday last.

CROPS AND STOCK ON THE HOME FARM.

HEDGES.

Now is the time to trim, cut down, and relay hedges where they are overgrown. Many an Out crop last harvest was retarded in its ripening and drying owing to the high hedges, which prevented a free circulation of air, wind, and sunshine, especially in the case of the sheaves near the hedges. Some discrimination is, of course, necessary in cutting hedges around pasture fields where cattle are grazed, as in such fields thick hedges are of the utmost value in providing shelter for the animals during wet or cold weather.

Where a hedge has become thin at the base, and it is desired to produce a closer growth, it should be cut within 6 inches of the ground, unless it is required at once as a shelter. In such cases it should be splayed, i.e., partly cut through and laid to the height required for a foundation.

In the case of cereal or Clover fields, it is wise to cut the hedges down to within a few inches of the ground, unless it is imperative that there should be a cattle fence around the fields.

Ditches for draining the surplus water from wet land should be closely attended to and cleaned well below the pipes or open drains which connect with the main outlet. Waterlogged soil is detrimental to the Wheat plant, especially in the autumn and winter, when late-sown plants are coming through the soil.

SWEDES.

On the whole, the growth of Swedes is satisfactory in bulk. Where the seed was sown too early, however, there are already signs of premature decay of the roots, especially among plants affected by mildew during October. The period of sowing the seed varies much in different counties. In the North of England and Scotland Swedes are sown during the first half of May, while in the South of England the middle of June is early enough. Indeed, those sown at the end of the month often keep best, and if not so large in the root, are of better quality, and less liable to decay or to run to seed.

Mildew is generally caused by the plants having attained their full growth by the time a spell of drought sets in in August and September. The growth is then at a standstill, and the plants more liable to a fungous attack. In some parts "pitting" the roots in the field is a general practice, especially where they are required as early spring food for ewes and lambs on the fields. With such severe weather as that experienced last winter the "pitted" Swedes were a boon to those who took the precaution to prepare them. Many acres were spoilt by frost, and much valuable sheep food lost.

The method of "pitting" the roots is quite simple. Pull them up without interfering with the tops or roots, throw them into round, conical heaps of about four bushels each, and cover them with 6 inches of soil. The "pitting" also checks the spring growth, which lowers their quality as food for April and May. The roots should be thrown out of the pits several days before they are required by the sheep to allow the blanching shoots to wither. The shoots are not wholesome for sheep, often causing scour. *E. Molyneux.*

CATTLE AND HORSE FEEDING.

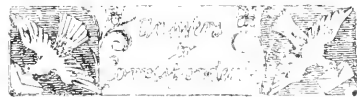
The President of the Board of Agriculture draws attention to the danger of using as food for horses or cattle any foods or mixtures containing poisonous seeds, such as Castor seed, Rangoon Bean, *Lathyrus*, etc. Seeds that have been removed from those required for crushing in oil mills are sometimes sold for use in the composition of feeding stuffs, but in order to avoid the risk of poisoning stock it is necessary that all grains of unusual appearance, especially foreign grains, should be submitted to qualified experts for identification before being used for this purpose. It should be borne in mind that a seller of a feeding stuff which contains deleterious ingredients is not only liable to prosecution under the Fertilisers and Feeding Stuffs Act, 1906, but may also be held liable for injury caused to stock by the use of such food.

FARMING OUTLOOK.

The monthly agricultural report of the Board of Agriculture states that, except in Wales and the north-west, the weather during November was favourable for autumn cultivation and the sowing of crops, especially on the eastern side of the country. Sowing in the important corn-growing counties has consequently been pushed on rapidly, and is more forward than last year, and, in the north-east more particularly, is often more advanced than usual. In the west, where the season has been much later, work is not so well advanced, but progress was made during the latter part of the month.

About 70 per cent. of the area intended for wheat has already been sown, and, as compared with December 1 last year, the area actually sown appears to be from 10 to 15 per cent. greater, this percentage being exceeded in the north-east. Generally speaking, most of the work was done in favourable conditions, and where the crop is up, it is everywhere a healthy and satisfactory plant. In some parts of the west and Wales, however, much of the land was too wet to be worked. Other autumn-sown crops also appear quite satisfactory. Of Winter Barley and Beans rather less is reported to have been sown, and of Oats and Rye about the same, as at this time last year, but, as with Wheat, slightly more has been got in the east than in the west.

Potatoes have now practically all been harvested, except in some western districts; and, with the same exceptions, the tubers are generally sound. The total production on farms is returned at 3,540,000 tons—835,000 tons, or 33 per cent., more than last year, and the largest crop raised since returns were first collected in 1885. The yield per acre, 6.57 tons, is also very good. Turnips and Swedes produced 12,164,000 tons, or 12.55 tons per acre; this is below the average, owing to a shortage mainly in the north-eastern counties. The quality of these roots is variable; Turnips being frequently rather poor, but Swedes are, in most districts, better. Mangolds are a large crop, and generally of good quality; their yield amounts to 8,492,000 tons, or 21.99 tons per acre, which is 2½ tons above average. The total production of these roots is thus greater than last year, Turnips and Swedes being 820,000 tons less, but Mangolds being 1,140,000 tons more.



ALLOTMENTS: *J. T.* Write to the Secretary, Scottish National Union of Allotment Holders, 1, Rutland Square, Edinburgh.

APPLES AND PEARS SPOTTING: *H. O.* Presumably you refer to spotting by scab. It is useless to spray in the winter unless there is scab on the wood, and even then it is doubtful. Scabby shoots should be cut off below the diseased parts, the cuttings being burnt. After the blossoms are set, spray with Bordeaux mixture or lime-sulphur of summer strength, again a fortnight later, and a third time three or four weeks later, still if scab shows on foliage or fruit. Once spraying is not sufficient. In the United States lime-sulphur has proved at least as effective as Bordeaux mixture, and it is less likely to injure the foliage of tender varieties of Apples. For Cox's Orange Pippin only a very weak solution of either specific is safe.

ASPIDIOTHA LEAVES SPOTTED: *H. H. S.* The injury has been caused by some external agency, and is not due to fungous disease. The appearance of the spots suggests damage by a corrosive fluid. Leaves are often spotted in the same manner in summer by burning, through the sun's rays falling on drops of moisture, which act as lenses, and focus the rays in the same manner as a magnifying glass.

CULTURE OF PLANTS: FRUIT TREES: *E. S. M.*

Wages vary so greatly in different parts of the country that no fixed rate can be given. But as an able-bodied man employed on the land is legally entitled to at least 25s. per week, and pruning is skilled work, 3d. per hour would not be excessive. A jobbing gardener should now get at least 6d. per hour when he works all day in the same place, and at least 3d. per hour if he goes for only half a day or less at a time. In some parts of the country these rates are exceeded.

GRUBS ON CYCLAMEN: *D. R., Newton.* The grubs are those of the ordinary weevil. You should take the plants out of the ground or from their pots, shake them free of soil, and plant them again in fresh soil, spraying the roots with bisulphide of carbon. If you find the beetles into which the grubs turn after a while, group the plants in pots all together on a greased sheet of paper, and at night come suddenly into the house where they are with a bright light. This will cause any insects feeding on the leaves to drop off, and they can then be destroyed.

JERUSALEM ARTICHOKE AND SUGAR BEET: *Ignorance.* The tops of the Jerusalem Artichokes may be cut off and burned. The roots are perfectly hardy, and frost will not injure them, but if the soil is water-logged in winter there is a danger of their rotting. The tubers may be lifted, placed in a heap, and covered with fine soil to make a pile. The Sugar Beet may be lifted and stored in dry soil or sand, as in the case of the Red King.

KEEPING FRUITS AND POTATOES: *C. P.* Apples keep best in trays in a frost-proof fruit chamber. Pears the same, but they will not keep long after they are ripe. Plums cannot be kept many days after they are ripe, unless in a refrigerating store, and they quickly rot after being taken out. Grapes keep best on the vines. Nuts should be spread out thinly on the floor of a loft. There are numerous varieties of Apples and Pears which keep over Christmas, and some Apples keep till March or April, including Bramley's Seedling, Newton Wonder, and Dumbow's Seedling. Any fruit nurseryman's catalogue will give you lists of varieties of Apples and Pears which will indicate keeping qualities. All Potatoes keep best in clamps, covered with straw and earth, with a wisp of straw or a drain-pipe on one side of the clamp near the top to act as a ventilator.

LONDON MANURE: *Enquirer.* If you will send us your name and address, we will give you the name of a firm which will probably be able to supply you with manure from London.

MELBA PIG ON VINES: *E. C.* As you cannot obtain methylated spirits, try the following specific: Take one part coal tar and six parts clay; dry the clay and powder it so that it may be passed through a 4 inch sieve. Work the tar and clay together thoroughly, adding sufficient boiling water to make the mixture of the consistency of paint. The specific should be smeared on the vines, filling all the crevices, but avoiding coating the buds. The best method of destroying mealy bug on vines is that of fumigating with hydrocyanic gas.

MITRARIA COCCINEA AND GURISIA COCCINEA: *T. J. H.* *Mitraria coccinea* may be grown in pots, but it needs a cool, shady situation. The soil should consist of moderately close, fibrous peat, mixed freely with sand. The flowers are scarlet, about 1½ inch long, and are developed singly in the axils of the leaves on pendent, slender pedicels. The leaves are small, ovate in shape, and serrated. *Gurisia coccinea* has also scarlet blossoms, and they are about the same length as those of *Mitraria*. The spike grows from 6 to 12 inches high, and bears about 3 or 10 drooping tubular flowers. The plant is best grown as a ground creeper in a cool house. Shade is necessary, for hot, dry conditions are fatal to success.

NAMES OF FRUITS—In the naming of fruits, we desire to oblige our correspondents as far as we can, but the task would become too costly and too time-consuming were there no restrictions. Correspondents should observe the rule that NOT MORE

THAN SIX VARIETIES be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. The fruits should be just approaching ripeness, and they should be properly numbered, and carefully packed in strong boxes; cardboard is often smashed in the post. A leaf or shoot of each variety is helpful, and in the case of Plums, Peaches and Nectarines, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. By neglecting these precautions, correspondents add greatly to our labour and run the risk of increased delay and incorrect determination. We do not undertake to send answers through the post, or to return fruits. Fruits and flowering plants must not be sent in the same box. Delay in any case is unavoidable.

F. W. H. Norfolk Beefing.

NAMES OF PLANTS.—Correspondents not answered in this issue are requested to be so good as to consult the following number.

B and Son. *Cyprissus macrocarpa.* — *F. S. M.* 1, *Cypridium insigne*; 2, *Cypridium Harrisonianum* (villosium × bartianum); 3, *Cypridium nitens* (insigne × villosium), which may have been imported or home-raised. — *E. E. S., Bath.* 1, *Francoa appendiculata*; 2, *Browallia elata*; 3, *Nephrolepis exaltata.*

POTATO SALE: *H. P. W.* The farmer or grower requires no licence to sell Potatoes grown by him. Clause 4 of the Potatoes Order, 1917, states: "Except a grower selling his own Potatoes no person shall after September 30, 1917, sell Potatoes by wholesale either on his own account or as agent on commission unless he is entitled to and has applied for registration as a wholesale dealer, or by retail unless he is entitled to and has applied for registration as a retail dealer under Part II. of this Order, and except a grower selling his own Potatoes, no person shall after October 31, 1917, sell Potatoes by wholesale either on his own account or as agent on commission unless he holds a certificate of registration as a wholesale dealer under Part II. of this Order for the time being in force or by retail unless he holds a certificate of registration as a retail dealer under Part II. of this Order for the time being in force. Provided that this clause shall not prevent a wholesale dealer from selling direct to consumers in quantities of not less than 1 cwt." Thus the farmer or grower requires no licence to sell Potatoes grown by him. But a dealer requires to obtain a licence him.

RASPBERRIES AND CURRANTS: *Ignorance.* These small fruits may be planted in favourable weather, but if the ground is cold with frost delay the work until the ground is warmer. If the Currant plants are lifted with a good ball of soil at the roots and planted immediately, they will doubtless bear satisfactorily next season, but in the case of the Raspberries, cut the canes down to within one foot of the ground, to encourage the plants to develop strong suckers next year.

"STINGFOLLOW" METHOD OF PLANTING FRUIT TREES: *F. T.* This method is well known in America, and a book on the subject has also been published in France, entitled *La Pomologie Nouvelle*. Experiments made in Kent have succeeded well. The method should be called the "Laurence" method, as the Rev. J. Laurence practised and recommended it in Tudor days.

TREE STUMPS: *J. G.* There is always a possibility of fungous diseases spreading from decaying stumps to young trees newly planted in ground that was occupied by old trees. As a rule the fungus enters the injured roots of the fresh trees, the spores and mycelium of the fungus finding an easy means of entry through the wounds. Uninjured roots and branches are, as a rule, safe against attack. You need not fear any serious trouble in the case of the trees you mention.

Communications Received.—*Sir H. V.—T. W. B.—W. A. H.—H. G. E. W. T.—G. Henslow.—T. S. M.—Laverpool.—J. S.—E. T. Humphreys.—W. F. R.—B. E. F.—J. A. B.—W. T. Coppl. White.*

MARKETS.

COVENT GARDEN, December 22

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eds.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.	Ericsa, con.—	d. s. d.
Aralia Sieboldii, per doz.	5 0-6 0	— hymenalis alba	48" ... 18 0-21 0
Asparagus plumosus, per doz.	10 0-12 0	— melanthra, 4 1/2	36 0-42 0
— Sprengeri	8 0-10 0	— Clemen, 4 1/2	per doz. ... 24 0-30 0
Aspidistra, green, per doz.	30 0-36 0	Ferns, in tubs, per 100	... 12 0-15 0
Begonia, Gluire d'Or, per doz.	15 0-24 0	— per 100 in small and large 60"	24 0-30 0
— 60"	7 0-9 0	— in 48", per doz.	7 0-8 0
— 72"	5 0-6 0	— in 32", per doz.	15 0-18 0
Cacti, various, per tray of 15"	4 0	— dozer, sort 48", per doz.	10 0-12 0
— per tray of 12"	5 0	— Geonoma gracilis, 6 1/2	per doz. ... 6 0-8 0
Chrysanthemums—		— larger	30 0-35 0
— white, 4 1/2	8 0-12 0	— Frostaria, 6 1/2	8 0-10 0
— coloured, 4 1/2	8 0-12 0	Lilium longiflorum, per doz.	36 0-45 0
Cocos Weddelliana, 4 1/2	15 0-20 0	— lancifolium	24 0-30 0
— 6 1/2	8 0-10 0	— album	21 0-30 0
Ericsa, per doz.	5 0-6 0	— Solanum	12 0-18 0

Cut Flowers, &c.: Average Wholesale Prices

	s. d. s. d.	Lilliums, con.—	s. d. s. d.
Arums—		— rubrum, per doz. long	3 0-3 6
— (Richardia), per doz. 1 1/2	10 0-12 0	— short, per doz. blooms	3 0-4 0
Azalea, white, per doz. bunches	5 0-6 0	Narcissus Sieboldii, per doz. long	10 0-12 0
Camellias white, per doz.	3 0-6 0	— Cyprilium	2 6-3 0
Carnations, per doz.	3 0-6 0	Orchids, per doz.	10 0-12 0
— blooms, best American var.	5 0-6 0	— Cypripedium	2 6-3 0
Chrysanthemums—		Pearlgoniums, double scarlet per doz. bunches	12 0-18 0
— white, per doz.	3 0-6 0	— Permettia, per doz.	10 0-12 0
— bronze ...	2 6-5 0	Poinsettia, per doz.	18 0-21 0
— pink ...	3 0-5 0	Roses— per doz.	
— yellow ...	3 0-6 0	— Liberty ...	8 0-10 0
— coloured, per doz. bunches	12 0-24 0	— Melody ...	5 0-10 0
— white ...	15 0-30 0	— Mme. A. Chatenay ...	5 0-8 0
Croton leaves, per bun.	1 3-1 6	— "White" Molly	5 0-8 0
Gardenias, per box	8 0-10 0	— Sharmian Crawford	5 0-8 0
Heath, white, per doz. bun.	6 0-9 0	Tuberous pergonous blooms ...	15 0-
Helleborus albus, per doz. blooms	2 6-5 0	Violets, per doz. bun.	5 0-8 0
Lilium longiflorum, long	5 0-5 6	— French Parma	6 0-7 0
— lancifolium album, long	3 0-3 6		

Cut Foliage, &c.: Average Wholesale Prices.

	s. d. s. d.	Berberis, per doz. bun. <th>s. d. s. d.</th>	s. d. s. d.
Adiantum (Maidenhair Fern) best, per doz. bun.	7 0-8 0	Carnation foliage, per doz. bunches	4 0-5 0
Asparagus plumosus, long trails, per half-dozen	2 6-3 0	Cycas leaves, per doz.	3 0-6 0
— medium, per doz. bunches	12 0-18 0	Ivy leaves, per doz. bunches	2 0-2 6
— Sprengeri	8 0-10 0	Moss, gross bun.	6 0-7 0
		Smilax, per bun. of 6 trails	1 6-2 0

REMARKS.—The severe weather is reducing the supply of cut flowers for the Christmas trade. The supply of Arums is limited; prices are already much higher. Very high prices are likely to be maintained for our nations during the next few days. Lily-of-the-Valley, on the contrary, is more plentiful and lower in price than for some weeks past. Circumstances point to the supply of Chrysanthemums being limited, and high prices are likely to be made for good spray white and hybridized blooms. Spray yellows appear to be the most plentiful in household kinds. There is no guarantee as to the arrival of French flowers during the next few days. A few pads of paper white Narcissus and bunches of scarlet Ranunculus are fetching high prices. Parma Violets also find a ready sale immediately they arrive. Poinsettias, scarlet Pearlgoniums, and scarlet Carnations are the leading lines in "scarlet" offered for the Christmas trade. Tulips, early Daffodils, and several other flowers will be in season this year, and there will not be much selection for buyers. Several boxes of Christmas Roses are being received in good condition.

Vegetables; Average Wholesale Prices.

	s. d. s. d.	5 s. d. s. d.	
Artichoke, Chinese (Stachy) per lb.	1 0-1 2	Lettuce, Cabbage and Cos, per doz.	0 6-2 0
— Jerusalem, per 4 bunch	8 6-3 0	Mustard and Cress, per doz. punnets	0 10-1 0
Asparagus (English), per bundle	10 0-10 6	Onions, per cwt.	24 0-28 0
— (Paris Green), per bundle	6 0-7 0	— spring, per doz. bunches	1 6-2 0
Beans—		— Valencia, per case (4 tiers)	43 0-45 0
— French (Champe), Islands, per lb.	1 9-2 0	— (5 tiers)	43 0-45 0
Beetroot, per bun.	2 0-2 6	Parsnips, per bag	4 0-5 0
Brussels sprouts, per 1/2 bus.	2 6-3 0	Peas, per lb.	2 0-
Cabbage, per tally	4 0-6 0	Potatoes, new, per lb.	1 0-1 2
Carrots, new, per doz. bunches	3 0-4 0	Radishes, per doz. bunches	1 6-2 0
Cauliflowers per doz.	4 0-6 0	Rhubarb, forced, per doz.	3 0-3 6
Celery, per doz.	4 6-5 0	savoy, per tally	6 0-10 0
Celery, per bundle	2 0-2 6	Scaris, per punnet	2 0-2 6
Cucumbers, per doz.	9 12-10 0	Shallots, per doz. lbs.	3 0-12 0
Endive, per doz.	1 0-2 0	— new, per doz.	5 0-6 0
Garlic, per lb.	0 10-1 0	Turnip tops, per bus. 2	16-2 6
Greens, per bag	0 6-1 6	Watercress, per doz.	0 6-0 0
Herbs, per doz. bun.	4 0-5 0		
Horseradish, per bunch	1 0-5 0		

Fruit: Average Wholesale Prices.

	s. d. s. d.	5 s. d. s. d.	
Almonds, per cwt	17 0-0	Lemons, per case	100 100 0
Apples, various, cooking, per bus.	6 0-12 0	Mollars, per 1/2 bus.	3 0-4 0
— dessert (English), per bus.	6 0-12 0	Mushrooms, cultivated, per lb.	2 0-2 0
Cranberries, per case (3 punnets)	4 0-0	Nuts, Brazil, new, per cwt.	14 0-0
Dates, per box	1 4-1 0	— Cob, per lb.	1 2-1 3
Grapes, Alicante, per lb.	1 8-2 6	Oranges, per cwt.	110 0-
— Almerias, per barrel (14 doz.)	4 0-50 0	Pears, per 1/2 bus.	120 150 0
— Canon Hall, per lb.	2 0-2 6	Tomatoes, English per 12 lbs. or less	12 0-20 0
— Gros Colmar, per lb.	1 6-3 0	Walnuts, French (greenable), per long (16 lbs.)	18 0-20 0

REMARKS.—The supply of English Apples is plentiful. Britain's seedling, Diamond's Seedling, and Blenheim Pippin especially. American dessert varieties a fair supply of Cox's Orange Pippin is available. Pears now available are the Worcester and Easter Parrot. Fair supplies of Gros Colmar, Black Alicante, and Muscat of Alexandria are available. Nuts, oranges, lemons, and pears are comparatively scarce, and after the week there will probably be no more. Tomatoes, the following foreign vegetables are available: Scotch Asparagus, Peas, Dwarf Broad Beans, Peas, Broadbeans, and Kidney Beans. There is very little of these as a rule. Apples, both English and French, and flowers are limited in supply, but other outdoor vegetables are plentiful. F. H. R., Covent Garden Market, December 22, 1917.

GARDENING APPOINTMENTS.

Mr. Chas. Frost, Gardeners to H. A. Thorpe, Esq., W. Chiswick, Middlesex, and Mr. J. H. S. Pines, Esq., Broomfield House, Burnham, Buckinghamshire.

Mr. N. K. Clarke, as Gardener to Colonel White, 3, D. St., Great Hill, Gains, Essex.

'MY GARDEN' SERIES

MY GARDEN IN SPRING.

By E. A. BOWLES, M.A.

Acting Chairman of the Scientific Committee of the Royal Horticultural Society.

MY GARDEN IN SUMMER.

By the Same Author.

MY GARDEN IN AUTUMN AND WINTER.

By the Same Author.

Price 5 6 each post free from—

THE LIBRARIAN,
THE "GARDENERS' CHRONICLE," LTD.,

41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

IN PRAISE OF THE GARDENERS' CHRONICLE.

THE GARDENERS' CHRONICLE

is the only gardening paper with seventy-six years of history behind it. It was founded in the dawn of what is commonly termed the scientific age. It has seen the rise and development of the railway, and its partial supersession by motor road-traffic; the discovery of the power of electricity, and its application to a bewildering multiplicity of every day affairs; the economic emancipation of women, and their entry into industrial life; and, last of all, the discovery of the flying machine—so long believed to be impossible. The GARDENERS' CHRONICLE has not remained static through all these marvellous changes. It has grown, developed, expanded. It has remained throughout its whole career completely in sympathy with its readers. It has advanced with them, explored with them the realms of experiment, examined with them in a spirit of intelligent sympathy every new theory of botanic or horticultural science, provided a medium whereby they have been enabled to communicate with each other and make their discoveries known. It has recovered for its great age, yet respected for its modernity; it has the experience of years and the elasticity and progressiveness of youth. Through the storm and stress of the past three years it has stood unmoved, and it looks forward in full confidence to the enjoyment of the ampler scope and increased opportunities which the termination of the war will bring.

AN ADMIRER.

By Special Appointment to



His Majesty The King.

MACKENZIE & MONCUR, LTD.,

HOTHOUSE BUILDERS,
HEATING AND ELECTRICAL ENGINEERS, etc.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

LONDON—8, Camden Road, N.W.

GLASGOW—121, St. Vincent St

EDINBURGH (Registered Office and Works)—Balcarres Street, Morningside.

Telegrams: "GLASSHOUSE, CAMROAD, LONDON," and "HOTHOUSE, EDINBURGH."

Present-Day Gardening Series

Edited by R. HOOPER PEARSON, Managing Editor, "Gardeners' Chronicle."



1/6 net
per
Volume.

Each Volume is written by an Expert. Illustrated with Eight Plates Reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S. :: ::

17 Vols.
Now
Ready.

ORCHIDS. By JAMES O'BRIEN, V.M.H., Secretary of the Orchid Committee of the Royal Horticultural Society.

APPLES and PEARS. By GEORGE BUNYARD, V.M.H., late Chairman of R.H.S. Fruit Committee.

ANNUALS HARDY & HALF-HARDY. By C. H. CURTIS, late Hon. Sec. of the National Sweet Pea Society.

IRISES. By W. R. DYKES, M.A., with preface by Prof BAYLEY BALFOUR, F.R.S.

SWEET PEAS. By HORACE J. WRIGHT, late Secretary and Chairman of the National Sweet Pea Society. With Chapter on "Sweet Peas for Exhibition," by THOS. STEVENSON.

PANSIES, VIOLAS and VIOLETS. By WILLIAM CUTHBERTSON, V.M.H., and R. HOOPER PEARSON.

ROOT and STEM VEGETABLES. By ALEXANDER DEAN, V.M.H.

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the Rev. W. WILKS, M.A.

CARNATIONS and PINKS. By T. H. COOK, Head Gardener at Sandringham; JAMES DOUGLAS, V.M.H., and J. F. McLEOD.

TULIPS. By the Rev. JOSEPH JACOB.

CHRYSANTHEMUMS. By THOMAS STEVENSON, with Chapters by CHARLES SHEA and C. HARNIAN PAYNE.

LILIES. By A. GROVE, F.L.S., with preface by H. J. ELWES, F.R.S.

ROCK GARDENS. By REGINALD FARRER, with preface by Dr. J. BRET-LAND FARMER, F.R.S.

DAHLIAS. By GEORGE GORDON, V.M.H.

RHODODENDRONS and AZALEAS. By W. WATSON, with preface by Sir F. W. MOORE, M.A. (the only volume published on this subject).

ROSES (double volume 2/6). By H. R. DARLINGTON, Joint Secretary of the National Rose Society.

CLIMBING PLANTS. By WM. WATSON with introduction by WM. ROBINSON, Author of "The English Flower Garden." (Double volume 2/6.)

Each Volume 1.10 post free (ROSES & CLIMBING PLANTS, double volumes, 2/10) to be obtained from
THE PUBLISHER, "GARDENERS' CHRONICLE," 41, Wellington Street, Covent Garden, London, W.C.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No. 4018

No. 1618. VOL. LXII. {THIRD SERIES} SATURDAY, DECEMBER 29, 1917. {Registered as a Newspaper.} PRICE 4d. {POST-FREE, 4jd.}

SUBSCRIPTION—Inland, 19/6; Foreign, 22/- per annum. Entered at New York Post Office as second-class matter.

Postal Address—41, Wellington Street, Covent Garden, W.C. 2.

Telegraphic Address—"Gardchron, Rand, London."

Telephone—Gerrard 1843.

For CONTENTS see page 255

LATEST TIME FOR ADVERTISEMENTS.

Advertisers will please note the pages of the "Gardeners' Chronicle" are made up on Wednesday evening each week. All advertisements intended for insertion the same week must reach this office not later than 5 p.m. on Wednesday, otherwise they will be held over until the following week.

NOW IS THE TIME TO PLANT

KELWAY & SON.

The Royal Horticulturists, LANGFORD, SOMERSET.

are now looking orders for their choice, Hardy Perennial Plants. Plant a Colour Border this Autumn, and you will be able to enjoy its exquisite beauty for many years without any additional expense or trouble.

Send measurements of your borders.

Roses, Delphiniums, Phloxes, Galardias, and other beautiful flowers, included in their Colour Schemes, which provide flowers from early Spring to late Autumn.

WRITE NOW to the LLETJAL PLANT DEPARTMENT for Reduced Price List.

DOBIE & CO., Royal Seedsmen, Edinburgh, will send a copy of their 1918 Catalogue and Guide to Gardening, free, if this paper is mentioned.

HOBBS, LIMITED, Norfolk Nurseries, Dereham. Send for Rose Catalogue, post free.

BARR'S CASH CLEARANCE SALE OF CHOICE DAFFODILS, April and May flowering, TULIPS, &c., for in and outdoors. Also Bulbs for large plantings. List free. **BARR & SONS,** King Street, Covent Garden, W.C. 2.

GISHURST COMPOUND has over half a century's reputation for effectiveness in preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, American Blight, Green and Brown Fly, &c. Sold in boxes about 1s. 3/6, and 12/6, by Dealers in Garden Sundries. Wholesale PRICES. **PATENT CANDLE CO., LTD.,** Battersea, London, S.W. 11.

GREENHOUSE PAINTING & GLAZING. "Vitrolite" superior to White Lead Paint. "Plastine" superior to Putty. Full particulars from **W. CAWSON & SONS,** Glass Works, Battersea, Acting throughout the country.

SANDERS, Orchid Growers, St. Albans.

WM. DUNCAN TUCKER & SONS, LTD., Lancaster Road, South Tottenham, N. 15, Conservatories, Winter Gardens, Nurseries, Peach-houses, Portable Buildings, &c. Catalogues gratis.

WELLS' CHRYSANTHEMUM CATA LOGUE NOW READY. Post free on application. **WELLS & CO.,** Merstham, Surrey.

WANTED, 1,000 LARGE ASPIDISTRAS old plants, suitable for stock, cash or exchange. See other advertisements; catalogues free. **SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

FOOD PRODUCTION AT HOME.

Consult SUTTON'S CATALOGUE OF FOOD PRODUCTION SEEDS for 1918.

Now ready. Order at once from **SUTTON & SONS, The King's Seedsmen, READING.**

PEEDS SEEDS FOR PLENTY. Peeds Seed Catalogue is distributed this week. Customers not receiving a copy are requested to apply at once. **JOHN PEED & SONS, The King's Seedsmen and Nurserymen, WEST NORWOOD, S.E.**

ROSES—ALLEN'S GOLD MEDAL NORBRIK ROSES our new descriptive paper No. 1411 is on How to Grow Roses, new 1918, published. Write to **A. J. & C. ALLEN, Rose Growers, Northwick Road, W. 10.**

THERE is no more delightful occupation for the long evenings of winter than reading to make up a good fire, and take in one's hand a "Gardeners' Chronicle," this represents the name of comfort, even a hard day's work in reading, as in every thing else, it is "everyone to his taste," and the garden enthusiast, be the professional or amateur, will choose for his winter evenings a book which deals with the subject nearest to his heart that of horticulture. And on this theme, old yet ever new, no volume can give so much and such varied information within a short compass as a bound volume of the "Gardeners' Chronicle." In one page it tells of the latest discovery in horticultural science, and describes the rich harvest of new plants introduced into cultivation by intrepid plant collectors from the remotest parts of China and Tibet. On another page it relates the progress of the horticulturists of to-day in the raising of new plants by hybridation, and, again, it tells the romantic history of the latest recruit to the legion of plant pests. The "Gardeners' Chronicle" has been printing such facts for over seventy years.

TO THE TRADE. COOPER TABER & CO., LTD., 30 and 32, Southmark Street, London, E.C. 4, send their Wholesale Catalogue of Seeds to all who request it. If no preserved envelope copy will be sent on application.

100,000 LARGE GARDEN FERNS. **BRANTON, ROSE, BARRS, GARDNER, LINES, HEDDERLEY & CO.,** Catalogues free. **J. E. SMITH, London Fern Nurseries, Loughborough Junction, London, S.W.**

WANTED, second-hand LAWN MOWER. Shanks or Ransomes, 12, 14, or 16 in. **RECTOR, Monton, Andover.**

"PESTITE" destroys all soil pests (caterpillars, grub, wire, wart disease, &c.). Price, 2/6 per lb.; 5/6 per 5 lb.; 10/6 per 10 lb.; 20/6 per 20 lb.; 40/6 per 40 lb. exchange paid to **LANG & SONS, LTD.,** Bournemouth, Hants.

FOR SALE, a few cases of Horticultural Glass, 20g., 14g., 20 D. H. Box 24, 41, Wellington Street, Covent Garden, W.C. 2.

For Advertisement Charges see page ii.

WATERER'S ALPINES AND HERBACEOUS PLANTS.—New Catalogue now ready.

WATERER'S BRITISH GROWN BULBS.—New Catalogue now ready.

WATERER'S WARGRAVE ROSES.—Catalogue and Supplementary List of new and some varieties now ready.

WATERER'S RHODODENDRONS AND CHOICE SHRUBS.—Catalogue free. All of any of the above Catalogues forwarded post free on receipt of name and address. **JOHN WATERER, SONS & CO., LTD., The Nurseries, Bagshot, Surrey, and Twyford, Berks.**

FERNS!—Tree Ferns, Climbing Ferns, Basket Ferns, Stone and Greenhouse Ferns, Hard Garden Ferns, catalogues free. **J. E. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.**

J. GRAY, LTD., Builder of Conservatories, Greenhouses, &c., and Heating Engineers, Lancaster Street, Chelsea, London, S.W. 3. Wire, 201, Western, London, Telephone, 201, Western.

SPORTSMEN, FARMERS, HORSEMEN. Buy our splendid Yorkshire Whippet Tweed, suits like ladies', showerproof, 7 yards for 21s. Patterns free. **BRADFORD WOOLLEN CO., LTD., Bradford.**

ORCHID PEAT, 7s. 6d. per sack; Rhododendron Peat, free from blacken, 15s. per yard. Also: Bird traps, large 30s. dozen; Beam, Leaf Mould, silver Sand, and Fibre, Rhubarb Roots (10 acres), clump for forcing, 30s., 100, forcing, 20s., 100; Daw's Champion and Hayes's (Cambridge); Sea Kale, forcing crock and safe. Write to **J. HANDSCOMBE, The Nurseries, Feltham, Middlesex.**

DAFFODILS and large Trumpet Narcissus for Glass, Shrubberies, and Wild Gardening, 15/- and 21/-, 1,000; selected for forcing, 25/-, 1,000; as dug, 15/- per bushel (2,000), 4s. 6d. per peck (500 bulbs). **J. HANDSCOMBE, F.R.H.S., Feltham Nurseries, Middlesex.**

BRITISH CORRESPONDENCE SCHOOL OF HORTICULTURE, PENNINGTONS, 251, Oxford Road, Manchester. — Complete courses for B.H.S. Senior, Junior, Teachers', and National Diploma of Horticultural Examinations. Fees moderate.—Write, SECRETARY.

DORSET COUNTY COUNCIL, Education Committee.

COUNTY INSTRUCTOR IN HORTICULTURE. APPLICATIONS are invited for the post of County Instructor in Horticulture, Salary £150 per annum, rising by annual increments of £10 to £200 per annum, with travelling expenses according to scale. Candidates must be eligible for an exempt from military service. Applications must be made on forms, to be obtained from the undersigned, to whom they must be returned completed not later than 15th January, 1918.

CLYDE & BONE County Offices, Dorchester.

SITUATIONS VACANT.

Four Lines 3s. (Head-line counted as Two), 6d. for each succeeding line.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

COUNTY BOROUGH OF GRIMSBY.

Education Committee

INSTRUCTOR OF SCHOOL GARDENING.

WANTED, a qualified INSTRUCTOR OF GARDENING, commencing salary £140 per year.

Forms of application may be obtained from the undersigned on receipt of a stamped addressed envelope from

DOUGLAS CHANDLER,

Clerk to the Education Committee, Education Offices, Grimsby, 14th December, 1917.

WANTED, HEAD GARDENER (WORKING). This vacancy, as lately advertised, has now been filled up. Thanks to numerous applicants—THE ESTATE STEWARD, Dalkeith House, Reading Road, Housley-on-Thames.

WANTED, GARDENER; ineligible; married; wife to help in house; girl and other help given; man (good) make himself generally useful; first-class references; indispensable; rooms, fire, and garden. State lowest combined salary expected; country, Kent. Write "GARDENER," c/o Segg, 289, Regent Street, London, W.

WANTED, SINGLE MAN, ineligible, for outside Garden work; one able to take Sunday duty; overtime paid—Particulars of experience to H. KING, Stevenstone Gardens, Torrington, N. Devon.

WANTED, JOURNEYMAN, for a first-class establishment, near London; an ineligible man or discharged soldier preferred; attractive wages paid.—Apply, in the first place, to JOHN FEED & SON, The King's Seedsmen, West Norwood, S.E.

WANTED, strong LAD for Garden work, no Glass; age 15 to 16 years; good wages given, according to experience.—HAYES, St. Seris Lodge, Priory Lane, Roehampton, S.W. 15.

TRADE.

WANTED, a PROPAGATOR and GROWER, with a knowledge of Cucumbers and Tomatoes and Pot Plants.—Please state wages required, with copy of testimonials (permanent place) to A. Box B, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, a GROWER; experienced in Cucumbers, Tomatoes, and Chrysanthemums.—Please state wages required, with copies of testimonials, to B. Box 17, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, GARDENER for Greenhouse work, &c., ages 30s. TAYLOR, 5, Hook Road, Epsom.

WANTED, WORKING FOREMAN, ineligible for Army, for small branch Nursery, Palms, Ferns, and Tomatoes grown; good cottage and firing fund.—State age, wages, and experience to E. CURRY, Whitehall Lane Nursery, Chingford, Essex.

WANTED, a FRUIT FOREMAN; over military age; well experienced in all the routine of Fruit Tree growing. Full particulars with wages, to EDWIN HOLLAND, The Nurseries, Groombridge.

WANTED, for Greenhouses, a person with a good knowledge of sowing, potting, one with knowledge of hard-wood plants preferred. State age, wages, experience, and references to V. N. GAUNTLETT & CO., LTD., Chobhamford, Surrey.

TWO good KNIFEMEN wanted; experienced men only. State wages required, previous experience, and send copies of testimonials.—Apply by letter only to W. SEABROOK & SONS, The Nurseries, Chelmsford.

WANTED, CLERK (male or female) for responsible position with wholesale Seed Merchants in the country, must have had good office experience and be thoroughly reliable.—Apply, stating full particulars and wages required, to R. K. Box 29, 41, Wellington Street, Covent Garden, W.C. 2.

WANTED, PACKER, for Plants, Seeds and Bulbs.—Please apply, giving particulars of experience and salary required, to JOHN FEED & SON, Seedsmen, West Norwood, S.E. 27.

SITUATIONS WANTED.

Twenty-six words for 1s. 6d. and 6d. for each succeeding Eight words or less.

Gardeners desiring their Advertisements repeated must give full particulars, otherwise no notice will be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. On no account should they enter into communication with unknown correspondents who require a fee beforehand.

Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the Postal Authorities and returned to the Sender.

PRIVATE.

GARDENER (HEAD) or Gardener and Small Estate Management where required. The experience in all branches, inside and out; early and late leaving; several years' Head in good gardens; thoroughly reliable. Highly recommended, married (no children).—WOODHURSE, Posingworth Gardens, Cross in Hand, Sussex.

GARDENER (HEAD), in good establishment; life experience England and Scotland, 13 years in present situation as Head, excellent references; married; age 48, family two. State wages.—HAWKE, Riviera Palace Gardens, late Polwarthen, Penzance, Cornwall.

GARDENER (HEAD); well up in all branches and life experience; 3 years present, long service previous; age 45; married 12 boys, home, 14 and 11.—W. VEALE, Cranage Hall Gardens, Holmes Chapel, Cheshire.

GARDENER (UNDER); good all round knowledge, inside and out; age 21; Army discharge; 3 years at Oldbells Hall, excellent references; seeks re-engagement; both preferred. Write, stating wages, &c., to WM. BRIGAN, 2, London Road, Burgess Hill, Sussex.

TRADE.

ADVERTISER seeks re-engagement as MANAGING CLERK, age 45, lifelong experience in Nursery and Seed Trade, Accountancy, Book-keeping, and organization—formerly distinguished seed credentials.—"JANUARY," Box 25, 41, Wellington Street, Covent Garden, W.C. 2.

CLIMBING PLANTS

(Present-Day Gardening Series)

By WILLIAM WATSON.

(Introduction by William Robinson.)

A Practical Handbook on the Treatment of Climbing Plants, both hardy and tender species. Illustrated with 24 full page plates, 8 of which are reproduced in colour.

Price 2/10 post free from:

The PUBLISHING DEPT., 'GARDENERS' CHRONICLE' OFFICES, 41, Wellington Street, Covent Garden, W.C. 2

THE BOOK OF THE MOMENT. Root & Stem Vegetables

By ALEXANDER DEAN, V.M.H.

At the present crisis the food problem bulks largely. The question of which vegetables contain the most food is a pressing one, and it is found that root and stem vegetables, such as Potatoes, Carrots, Turnips, and Parsnips, contain much higher percentages of food value than green vegetables, valuable though these are as adjuncts.

"ROOT AND STEM VEGETABLES"

is a book which treats only of those vegetables the root or stem of which is eaten, and is therefore especially valuable to all who are endeavouring to concentrate their attention on growing the most economical forms of food. It contains eight coloured plates reproduced from photographs.

To be obtained from—

THE LIBRARIAN, Gardeners' Chronicle, Ltd., 41, WELLINGTON ST., W.C. 2. PRICE 1/10 POST FREE.

The Gardeners' Chronicle.

SCALE OF CHARGES FOR ADVERTISEMENTS.

Advertisements intended for insertion in the next issue MUST reach THE PUBLISHER not later than WEDNESDAY, 5 p.m.

	£	s.	d.
Ordinary Positions per page	10	10	0
Facing matter and Back Page	12	12	0
Half and quarter pages, column and half column spaces, pro rata.			

	£	s.	d.
4 line space not exceeding 20 words	3	0	0
Per inch, single column	7	0	0
Per inch, across 2 columns	14	0	0
Per inch, across 3 columns	1	10	0

Front page (no display allowed) 1/- per line space. (Headline counted as two lines.)

For discounts apply to address below.

SITUATIONS WANTED.

26 words 1s. 6d., and 6d. for every additional 8 words or fewer.

These Advertisements must be prepaid, AND APPLY ONLY TO GARDENERS, &c., OUT OF EMPLOYMENT.

SUBSCRIPTIONS.

THE UNITED KINGDOM	19	6	per annum.
ABROAD	22	"	"

Cheques and P.O.s to be made payable to "GARDENERS' CHRONICLE," LTD

41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C. 2.

Telegrams: "GARDCHRON, RAND, LONDON." Telephone: 1642 GERRARD.

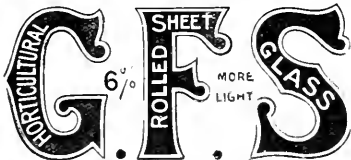
TURF LOAM.

Very Fibrous Yellow Turf Loam

For VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS, FRUITS UNDER GLASS, etc., etc.

Quotations Carriage Paid or Divered.

A. B. JOHNSTON,
New Park, Cranleigh, SURREY.



A SUBSTITUTE for ordinary 21 oz. glass, which is now so scarce. The new British Rolled Sheet is about 1/8 in. (or equal to stout 21 oz.) in thickness, can be supplied to buyers' sizes, at favourable prices, delivered free and sound in the country in quantities. We also offer ordinary 21 oz. British Sheet Glass, under the same conditions.

Manufacturers of

GENUINE WHITE LEAD PAINT.

"BLACKFRIARS BRAND," Mixed ready for use. In 14lb. tins and 1 cwt. wide-neck cases.

AND **BEST LINSEED OIL PUTTY.**



Complete Price List of

Paints, Colours, Varnishes, &c., on application.

GEORGE FARMILOE & SONS, Ltd.,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.
Quote GARDENERS' CHRONICLE.



TOMATO SEED

Bide's "Recruit."

This grand Tomato, for its delicious flavour, uniform size, and heavy cropping qualities, is unsurpassed.

In sealed packets 1/- per packet, direct from the raisers.

S. BIDE & SONS, Ltd.,
ALMA NURSERIES, FARNHAM, SURREY.

ORCHIDS,

Clean, well-grown and cheap; also Masoy Rare and Choice Varieties.

STOVE AND GREENHOUSE PLANTS OF ALL KINDS. Gladly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.



IMPORTANT: Please write for a Catalogue, as the Paper Commission only allow us to send to those who apply—

LAXTON BROTHERS, BEDFORD.

RIVERS'

Fruit Trees, Roses,
Vines, Figs, Oranges,
AND
Orchard House Trees
ARE OF
First-class Quality.

A Large and Select Stock always on View.

PRICE LIST POST FREE ON APPLICATION.

THOMAS RIVERS & SON
Sawbridgeworth, Herts.

STATION: HARLOW, G.E.R.



Sample **CRET** Pot FREE with Booklet will convince you that the **FRANCE FORESTS** Healthfulness of **CRETs** would help your plants. Write.

PETER BAILEY & SONS, Ltd.
2 Heaton Mersey Pottery,
near MANCHESTER.

LARGE POPLARS,

12 to 20 feet, GOOD ROOTS.

Consisting of Lombardy, Black Italian, and Ontario. Fine trees for Screens or Shelters. No reasonable offer refused.

Ground wanted for Potatoes.

R. MANSON, Nurseryman, Qatacro LIVERPOOL.

AUCUBA JAPONICA.

RHODODENDRON PONTICUM.

RHODODENDRON PINK PEARL.

Finest Named Hybrids.

All the above 3ft. to 4ft. bushy, good plants for Cover Planting. Must be sold, cheap, to make room for potatoes. If not disposed of must be burned.—A BARGAIN!

Particulars from

R. MANSON, Nurseryman, Qatacro LIVERPOOL.

VINES

Extra fine Canes are offered of

- Appley Towers
- Black Hamburg
- Bowood Muscat
- Foster's Seedling
- Madresheld Court
- Mrs. Pince
- Muscat of Alexandria
- Prince of Wales

and all other leading sorts.

From 10/6 to 2/- each.

GEO. BUNYARD & CO., LTD.,
The Royal Nurseries,
MAIDSTONE.

WOOD'S RIVAL TOMATO
WOOD'S RIVAL CUCUMBER
WOOD'S SCARLET RIVAL MELON
WOOD'S GREEN RIVAL MELON

Packets 1/6, 2/6 and 5/- each.

H. J. G. WOOD, Seedsman & Nurseryman, Bracknell.
H. J. Greenwood, F.R.H.S., Proprietor.

'MY GARDEN' SERIES

MY GARDEN IN SPRING.

By E. A. BOWLES, M.A.

Acting Chairman of the Scientific Committee of the Royal Horticultural Society.

MY GARDEN IN SUMMER.

By the Same Author.

MY GARDEN IN AUTUMN AND WINTER.

By the Same Author.

Price 5/6 each post free from—

-- THE LIBRARIAN,

THE "GARDENERS' CHRONICLE," LTD.,

41, WELLINGTON ST., COVENT GARDEN, LONDON, W.C. 2.

ROYAL GARDENERS' ORPHAN FUND

B. WYNNE, Sec.,

19, Bedford Chambers, Covent Garden, London, W.C.

EVERY GARDENER KNOWS THAT

Clay's gets there and makes the Garden gay all the year round

Sold everywhere for horticultural purpose. In TINS at 6d. & 1s., and in BRANDED & SEALED BAGS: 7lbs. 2s. 6d.; 14lbs. 4s. 6d.; 28lbs. 7s. 6d.; 56lbs. 13s. 6d.; 112lbs. 24s. Or direct from the works Carriage paid in the United Kingdom for Cash with Order (except 6d. TINS). Quantities of 50 lbs. and upwards are supplied in 28 lb. bags.

CLAY & SON, Manure Manufacturers & Bone Crushers, STRATFORD, LONDON, E.



IT IS THE STANDARD FOOD FOR PLANTS.

The Bull Specialities

Supplied by all Seedsmen and Nurserymen throughout the United Kingdom.

Vaporising Superseded.

No Methylated Spirit or Apparatus required.



Mr. W. SMITH, gardener to the Earl of Durham, writes:—"Please to post me 8 lbs. Fumigating Shred, the same as I had before. It is excellent for fumigating Carnations."

MESSRS. GODFREY & SON, of Exmouth, write:—"Enclosed please find cheque and send at once 12 packets Fumigating Shred. We find it the best of all."

MR. H. WHATELEY, of Kenilworth, writes:—"Will you please send on another ½ cwt. of Shred for fumigating."

Sold in Sealed Packets.

Sufficient to fumigate	1,500	cubic feet of space,	6d.
"	3,500	"	1/-
"	10,000	"	2/6

Above double strength, specially recommended to large growers—

1 lb. Sufficient to fumigate 20,000 cubic feet of space, 5/-.

Bull's Food for Plants, Fruit & Vegetables



A SINGLE DAY'S CONSIGNMENT.

Per cwt. 24/-; 56 lbs., 13/6; 28 lbs., 7/6; 14 lbs., 4/6. Also in Tins, 6d., 1/- and 2/6.

Bull's Fumigating Compound

(LIQUID.)

No. 1 bottle, containing sufficient for	40,000	cubic feet of space,	20/-
No. 2 " " "	20,000	" " "	10/6
No. 3 " " "	10,000	" " "	5/6
No. 4 " " "	5,000	" " "	2/10

Half gallon, sufficient for 160,000 cubic feet, 63/- One gallon, sufficient for 320,000 cubic feet, 120 -.

SOLE MANUFACTURERS -

BULL'S PLANT FOOD CO.,

536, KING'S ROAD, CHELSEA, LONDON, S.W. 10.



THE

Gardeners' Chronicle

No. 1618.—SATURDAY, DECEMBER 29, 1917.

CONTENTS.

Beans, Dutch Brown .. 291	Gardening lectures for school teachers .. 258
Books, notices of—	Ground operations .. 290
Botanical Magazine .. 257	Holy Land, botany and geography of the .. 290
Co-operative milk depôts 255	Potato-spraying campaign .. 258
Cross-breeding for increased production .. 257	Primula chionantha .. 256
Farm, crops and stock on the home .. 261	Vanda teres .. 260
Food production, on increased—	Week's work, the—
Allotments in France 256	Flower garden, the .. 259
Fruit walls, the colour of 261	Fruits under glass .. 259
Fuel, economy in the use of .. 266	Hardy fruit garden, the .. 259
Galloway garden, notes from a .. 255	Kitchen garden, the .. 259
	Orchid houses, the .. 259
	Plants under glass .. 259

ILLUSTRATIONS.

Oreocharis Forrestii .. 255
Primula chionantha .. 256

NOTES FROM A GALLOWAY GARDEN.—XIV. AND LAST.*

IT would be difficult to find any term in horticulture which covers so many degrees of good, not so good, and bad as "the herbaceous border." Much mischief has been wrought since hardy perennials became the fashion by aiming at effects similar to those produced by bedding out. Now, the decorative character of bedding out was the result of the continuous flowering of certain half-hardy exotics, which ensured a brilliant display for three or four months out of the twelve. Gardeners found that nine employers out of ten were easily gratified by breadths of showy colour, and competition grew keen who should produce the brightest blaze. But the system held within it the seeds of transition. It excited the eye, but left the imagination cold. Neither interest nor association could attach to plants that had to be flung on the waste heap after the first frost, and the sweet of the year was robbed of part of its charm when every garden was drilled into servile repetition of a hundred others. Wherefore, when Mr. Robinson raised the standard of revolt in the early seventies, an eager band of reactionaries rallied to him, which now includes practically everyone who takes an understanding part in the ordering of a flower-garden.

But whereas it is not every owner of a garden who has either leisure or knowledge

* Previous articles appeared in the issues for Jan. 15, Feb. 17, Mar. 10, April 14, April 28, June 2, June 30, July 21, Aug. 18, Sept. 8, Sept. 29, Oct. 20, and Nov. 19, 1917.

to apply to the cultivation of flowers, the management and arrangement of hardy perennials must be left in most cases in the hands of professional gardeners, and it is to that class that I venture, greatly daring, to address a word of warning, lest the blight of monotony, which killed bedding out, should prove as deadly to the flower gardening which has taken its place. Bedding out, with all its monotony, was never dismal; but dismal effect is inevitable if the present tendency to treat hardy perennials in the formal arrangement appropriate to bolders gains ground.

And they are being so treated in certain large gardens. "Come and look at my herbaceous border," said a lady to me recently. It was certainly, to use a colloquialism, "very fine and large." It was about 140 yards long, straight as a line could lay it, and devoid of a single feature to vary its shadowless uniformity. Every half-dozen yards of it was an exact replica of every other half-dozen—a clump of Asters, of Torch Lily, and Helianthus in the back row, with plants of descending stature arranged with mathematical precision towards the front. Examination of the first few yards left one without any inducement to go further. True, it was chill October; Asters glimmered uncertainly amid tarnished Torch Lilies and the Helianthus flashed a few stars over the dreary scene; no doubt there may have been plenty of colour in July, but none of the mystery—none of the surprise—which enhance the attraction of a well-chosen collection. Neither was there any suggestion of permanence, which is one of the chief merits in hardy perennials; to maintain the rigid discipline prevailing in this border, these herbs must be taken up and replanted so soon as they betray the least tendency to liberty.

Let me cite another example. This time it was not long past midsummer; to describe the weather of the time tempts one to borrow from that master of perverse phrase, Lewis Carroll:

'Twas brillig, and the slithy toves
Did gyre and gimble in the wabe;
All mimsy were the borogoves,
And the mome raths outgrabe.

It was an old Scottish garden, four-square and spacious within lofty walls of red sandstone. Everything was rectangular; broad grass walks crossed at right angles in the centre and the flower beds were but wide strips of border in front of the kitchen stuff. Not a romantic design, you will say; and, indeed, there was no straining after effect; but age had so dimmed the intrusive line of the masonry, ancient, moss-grown Apple trees broke so tenderly the border-lines, casting cool shades across the paths; there were such fascinating nooks within the ample space, with here a choice shrub and there a breadth of Bell-flower or scarlet Lychnis, that the critic of garden design should have been dumb. The special glory of this garden was the Madonna Lily. It had spread into wide mats, sending up sheaves of five-foot stems, with leaves untarnished by the foul fungus that wrecks so many hopes, and with crowded flower-trusses that gleamed like friendly ghosts in the summer gloaming.

But the place changed hands; a new laird and a new gardener undertook to renovate the grounds; money was freely spent, and when I last saw the garden, gone were the ancient Apple trees; the borders were filled with spoil from distant lands, all scrupulously labelled; and at measured distances among them were the Lilies, broken up into little clumps and withering sadly with botrytis. It will take two generations of men to restore the tranquil beauty of that old pleasure.

Happily, there are many examples of felicitous disposal of herbaceous plants. The first inkling I received of it—fifty years ago, alas!—was in the grounds of the Oxford College so paradoxically called New (it was founded by William of Wyckham in 1380!), and the impression has been revived and checked by hours spent among the borders of St. John's College, so lovingly tended by the Rev. H. J. Bidder, where lofty trees cast slanting shadows across glades of immemorial turf and lowlier treasures lurk in the bays to offer glad surprise to him who strolls into that secluded Eden.

Let it not be supposed that I underrate the attention needed to keep a herbaceous border in condition. To do so requires far more varied knowledge and more constant care than the bedding-out system. But perfection can never be approached if the plants are constantly being shifted. Some of them must be taken up and divided at short intervals if the best is to be got out of them, such as Asters, Chelone and Perennial Sunflowers; but Lilies and many deep-rooting herbs intensely resent removal. The average life-term of forest trees has been pretty accurately ascertained; but who can estimate the duration of a clump of Christmas Roses or Hepatica? It is the permanence of such lowly growths, linking one generation with another, that imparts a peculiar charm to the herbaceous border—a charm that vanishes under the treatment which prevails in some large gardens.

There is, of course, a risk of the enthusiast falling into the other extreme—of cherishing every new exotic simply because it is new and rare. Of the myriad species which intrepid collectors have sent home during the last five and twenty years, the majority are only suitable for a botanical garden, though it is true that in the minority are plants of surpassing beauty and interest.

"All very well," I hear some critic murmur, "but what has all this to do with a Galloway garden?" The rebuke is just. I have wandered from the theme for which I have been accorded space in these columns far out of proportion to the modest demesne that has furnished the notes. The year wanes; the reader perhaps yawns, and I lay down the pen in earnest hope that some fresh hand will take it up and ply it; for it is from records of experience and observation under various conditions of soil and climate that we make progress in the craft that Andrew Lang once described as "a device of Providence for the pottering peace of virtuous old." *Herbert Maxwell, Monreith, Wigtownshire.*

ON INCREASED FOOD PRODUCTION.

ALLOTMENTS IN THE YEAR 1795 AND IN 1917

It is curious how often history repeats itself. The remains of ridge and furrow on common land long ago gone back to grass, yet persisting as an eloquent memorial of the food crisis of the Napoleonic wars, and the present-day turning up of grass land to meet an impending food shortage. Similarly may be found a like historical repetition in the conversion of public parks into vegetable plots. As it was in the year 2 (of the French Revolution: 1795), so is it again now. Then, as now, it was decreed

was reaching France from England, Holland, or Germany. Hence, in order to educate the public it was decided that the public gardens should be converted into allotments, and the flowers replaced by vegetables. It was not that the Committee of Public Safety hoped to feed Paris with the allotment produce, but that it did hope—and the event justified it—that public example would encourage private practice, and that everyone with vacant ground would be led to do for his part what the State regarded as good for all. That officialdom then as now sometimes suffered—or rather caused others to suffer—from excess of zeal is evident from the reproof which was administered at the plaint of "le Citoyen Georget" to the Commissioner of his

Jens. Then, as now, there was a tendency to overdo the planting of Potatos to the exclusion of other vegetables, and then, as now, it was necessary to take steps to prevent pilfering of the allotments; although history does not record that the pilfering went so far in the year 2 as it has sometimes gone this year, when adroit thieves have gone, as it were, tickling for Potatos—running their hands along the rows and picking out the half-formed tubers—a crime of the same order as seething the kid in the mother's milk! The question of seed for the Potato crop was a burning one in the year 2, as it was in 1916-17, but in both cases it was solved in a similar way—by the purchase of seed in districts a long way off.

As a result of the experiment of year 2, many thousands of town bred citizens made the acquaintance for the first time, outside a green-grocer's shop, of such vegetables as Turnips, Radishes and Artichokes. Crowds went to see the Maize and Beans, the Haricots and Lentils, and the rest of the vegetables growing in the Tuileries, and learned from the labels that these things had names like themselves. The war bread of year 2 helped to rub in the lesson, but the description "the crumb is only fit for rabbits," was more flattering than that which has been passed on its modern counterpart.

So as it watched the experiment the Convention grew well content with the results, and judged that the expenditure (12,000 livres for 165 toises) was well spent, for thousands of those who went to see would go home and do likewise. The 1916 repetition was, we fear, less happy; it gave an opportunity for silly questions in the place where they are so often asked; but should these lines meet the eye of the First Commissioner of Works, perhaps he will be emboldened to do on a large scale, and with large labels, what he began to do last year—make demonstration gardens after the model of the Tuileries and Luxembourg allotment gardens of the year 2.

Yet after all, the silly questions were asked by the citizens of year 2. They claimed that this public park gardening was nonsense, asking whether it was not true that a field of Oats was worth all the produce of the Tuileries, and so it will be to the end of things. Men will struggle and subdue Nature, and explain that all innovation is vain, and obstruct—and succeed—"Plus ça change, plus c'est la même chose."

PRIMULA CHIONANTHA.

PRIMULA CHIONANTHA (fig. 98) is a noble species, belonging to the nivalis section. The plant is a native of Yunnan, China, where it was found by Mr. Forrest on the mountains of the Chungtien plateau at an altitude of 12,000 to 15,000 feet, in open, alpine meadows. It is very robust in habit, with a tuft of leathery leaves, each 8 inches or more long, and 2 inches wide at the broadest part, from which are produced the stout stems, rising from 12 inches to 20 inches in height. Like the under part of the leaves, the stems, pedicels, and calyx are coated with a golden meal. Strong stems bear two or more whorls of flowers; those shown in fig. 98 have 27 flowers in each whorl. The flowers are ivory-white, nearly 1 inch in diameter, and produced on drooping pedicels varying from $\frac{3}{4}$ of an inch to 2 inches in length.

Seeds of this plant were received at Kew from Mr. J. C. Williams in 1915, and a good batch of plants were raised. Many of them flowered in May of this year in a shady position, and some plants produced flowers in November. Notwithstanding the vast number of Primulas recently introduced to Europe, *P. chionantha* is likely to prove one of the most popular species. W. L.



FIG. 98.—PRIMULA CHIONANTHA: FLOWERS IVORY-WHITE.

by the Committee of Public Safety, that the borders of the Paris parks, including the ancient Luxembourg Gardens of "Monsieur" and "Madame," should grow not flowers but Potatos and legumes generally.

And when the First Commissioner of Works determined to start demonstration gardens in the Royal parks he was consciously or unconsciously adopting precisely the same procedure, and from the same causes as that adopted on 13th Vendose 1795 by Messieurs Barrère, Carnot, Robespierre, and their colleagues of the Committee of Public Safety with respect to the gardens of Paris.

The world was at war with France. Food was scarce, and but little of the usual supplies

section. The Commissioner evidently was the revolutionary replica of the whole hogger of modern times, and wanted to make Citoyen Georget dig up his fruit trees and grow Cabages instead. Citoyen Georget objected, and the Convention supported his objection, voting penalties against those "evil doing spirits who would tear up a tree in order to plant a—Cabage." Trop de zèle then could, of course, be matched by a like complaint now, and doubtless this defect of the quality of enthusiasm will always remain with us.

Three days after the decree of the 13th Vendose of the year 2, instructions were issued for the conversion of the flower beds at the Tuileries, Luxembourg, and other public gar-

EDITORIAL NOTICE.

Editors and Publisher.—Our correspondents would oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which they desire to bring under the notice of horticulturists.

Letters for Publication.—As well as specimens of plants for naming, should be addressed to the EDITORS, 41 Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent early in the week as possible, and duly signed by their writers. If desired, the signature will not be printed, but kept as a guarantee of good faith.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, S.E.

ACTUAL TEMPERATURE.—*Gardeners' Chronicle*, 1011, 41, Wellington Street, Covent Garden, London, *Thursday*, December 27, 10 a.m. Bar, 30.2; temp., 36.0. Weather—Fine.

It is a well-established fact that in certain plants—Maize, for example—hybrids produced by cross fertilisation show a marked superiority in productiveness over the parents between which the cross was made.

Hence the suggestion has often been made that it should be possible in the case of food plants which are habitually self-fertilised and are easily cross-fertilised by artificial means, to raise seed each year by cross-artificial fertilisation, and thereby obtain first-generation hybrids which would repay the trouble by their extra yield.

One of the plants which lends itself readily to experimentation along these lines is the Tomato. It is self-fertile, and yet can be easily crossed by artificial means. In ordinary conditions of cultivation it is almost, but not quite, always self-fertilised. In the open, at all events, occasional crosses occur. Hence it might be supposed that this plant, grown year after year from self-fertilised seed, might be all the better for occasional or regular crossing. Against this idea, however, is the striking fact that the yield from the best varieties of Tomato is already remarkably high. It is, for example, not uncommon for Tomatos grown under glass in the Lea Valley and elsewhere to yield so much as 40 tons to the acre, and this amount is said to be exceeded occasionally.

In spite of the apparent improbability of obtaining yet higher yields, it is most desirable that the question should be answered by the authoritative method of experiment. Trials made at the beginning

of the war at Wisley, where the varieties Sunrise and Merivale were crossed with one another, gave only negative results. The hybrid was as good as either parent, but no better so far as yield was concerned. Unfortunately, the trials had to be broken off owing to the exigencies of the war. In the meantime the subject has been taken up independently by Messrs. Hayes and Jones,* with results which cannot fail to be of interest to the Tomato grower.

As a preliminary the yields resulting from self-fertilised seed of selected varieties were ascertained over a period of several years, and it was found that self-fertilisation during three or four years caused no noteworthy diminution of yield. All that happened was that a number of types was isolated, some of which were of higher, and some of lower-yielding capacity. In other words, self-fertilisation gives an opportunity to the grower to select seed from the higher-yielding strains. This, of course, is what good growers already do. But, in spite of the fact that there was no falling-off in yield in self-fertilised strains, it was ascertained experimentally that in the case of some varieties the result of cross-fertilisation was to produce a definite superiority of yield over either parent. Thus in the case of the cross Stone and Dwarf Champion the first-generation hybrid gave a regular 8 per cent. over the parental average. This, in terms of yield per acre, would mean an extra ton and upwards to be obtained at the very slight expenditure of time and trouble required for the work of artificial fertilisation. That operation is of the simplest. When the plants are growing under glass the chance of accidental fertilisation may be ignored. All that is required is that the ring of stamens should be lifted off before they burst. This may be done with the point of a penknife. Pollen from the other parent should be dusted in the stigma of the emasculated flowers which are marked by a coloured thread and left to set their fruits. If absolute certainty is required, the emasculated flower may be covered with a paper bag so as to prevent any pollen other than that of the variety chosen as the male parent from reaching the stigma. In Messrs. Hayes and Jones' experiments with the two varieties already named (Stone and Dwarf Champion), not only did the first-generation hybrid show an 8 per cent. increase in weight over the parental average, but it also produced about the same number of fruits as the better parent, so that producing as many, or nearly as many, fruits as the one parent, and as heavy, or nearly as heavy, fruits as the other parent, the superiority of the first-generation hybrid over the better parent was not 8 but 15 per cent. In the course of the four years during which the experiment was conducted the superiority of the hybrid ranged from 11 to 17 per cent.

It must be borne in mind that the

* *The Effect of Cross and Self-Fertilisation on Tomatos*. Report of the Connecticut Agric. Exp. Station, New Haven, Conn.

hybrid seed must be raised artificially each year, for hybrid vigour only manifests itself to the full in the first generation.

It is also to be remembered that it is not to be expected that any two varieties mated together will inevitably produce so good a result as that yielded by Stone and Dwarf Champion. Thus the authors found that when Lorillard and Best of All were crossed together the hybrid gave no higher yield than that given by the better parent.

No less interesting, and possibly of greater practical importance, is the observation made by Messrs. Hayes and Jones that when two varieties of Tomatos differing with respect to earliness are crossed with one another, the first-generation hybrid is earlier than either parent, whereas in the actual experiment the earlier of the parent varieties (Dwarf Champion) produced 55 per cent. of its crop by a given date, the first-generation hybrid produced 59 per cent. of its crop by that date. The importance of a market-gardener being able to modify in this way the time at which his produce is marketed is self-evident. As the authors point out, the vigour imparted to the hybrid as a result of crossing differs from vigour induced by specially favourable external conditions; for whereas the latter tends to prolong the vegetative and delay the fruiting stage, hybrid vigour hastens the stage of fruit formation.

Messrs. Hayes and Jones have also extended their experiments to Cucumbers, with similar results. The varieties used for the purpose were: Early Russian, White Spine, London Long Green, and Fordhook Famous. In all the crosses the first-generation hybrid exceeded the more prolific parent by an average of from 1.5 to 8 fruits per plant—that is, from 6.27 per cent. The smallest result was obtained from the cross London Long Green and Fordhook Famous, which two varieties are of very similar habit and character. Where, as was the case in the other crosses, the parents differed markedly from one another, the hybrid vigour of the first-generation hybrid was pronounced.

BOTANICAL MAGAZINE.—The following plants are illustrated and described in the issue of the *Botanical Magazine* for July, August and September:—

Pinus tiberi-plata, tab. 8,717.—This species was first illustrated and described by the late Dr. Masters in *Gard. Chron.*, December 19, 1885, p. 795, from a specimen furnished by Mr. Baker, of Bayfordbury, from his Pinetum. A portion of a branch of this tree, bearing over forty cones, is still preserved in the museum at Kew. The native habitat of the species is Western North America, where it is known as the Knob Cone Pine. It was discovered by Haerweg in 1847. The species usually makes a tree 20 to 25 feet in height.

Ophitoglossum platycheilum, tab. 8,718.—This species was illustrated and described in *Gard. Chron.*, May 7, 1892, when the plant received an Award of Merit from the Orchid Committee of the Royal Horticultural Society.

Oreocharis forrestii, tab. 8,719 (fig. 99).—This new Chinese plant was illustrated in *Gard. Chron.*, October 30, 1915, fig. 97, under its

synonym of *Rottlera Forrestii*. It forms rosettes of leaves about 5 inches in diameter after the manner of *Ramondia*, and bears scapes about 6 inches high with yellow, cylindrical flowers.

SINOFRANCHETIA CHINENSIS, tab. 8,720.—This plant has been named *Holboellia cuneata* and *Puryata chinensis*; it is a member of the *Berberidaceae*. It forms a wide climbing shrub, with twining stems; specimens raised at Warley Place, Essex, flowered and fruited in their third year, and proved perfectly hardy. The inflorescence is a long raceme bearing small, flesh-coloured blossoms; these are succeeded by pinkish-mauve fruits about the size of hazel-nuts.

RHODODENDRON CUFFIANUM, tab. 8,721. This species is named in honour of the discoverer, Lady WHEELER CUFFY, who met with it on an elevation of 6,000 feet in Upper Burma. The flowers are white, with a little orange-yellow colour in the throat, and form a bold truss of fragrant blooms.

BERBERIS AGGREGATA, tab. 8,722.—This Bar-

ODONTOGLOSSUM CHIRIQUENSE, tab. 8,725.—This plant has been regarded as a variety of *O. coronarium*, but it is readily distinguished from that species by its larger and very undulate flowers. It is particularly handsome, with rich orange-coloured flowers.

ORESTROPHI RUFIFRAGA, tab. 8,726.—An illustration and description of this plant were given in *Gard. Chron.* for April 14, 1917, p. 155. It is the solitary member of the genus, which belongs to the N. O. Saxifragaceae.

RHODODENDRON NERIIFLORUM, tab. 8,727.—Originally discovered by the Abbé DELAVAY in Yunnan, this charming *Rhododendron* was introduced into cultivation by Mr. G. FORREST. The plant forms a dwarf shrub, flowering when less than 18 inches in height. In the wildings the flowers vary in shade from rose-colour to crimson or scarlet, and provide brilliant patches of colour.

ASTER FUSCENSIS, tab. 8,728.—This plant is a hardy perennial, growing about 2 feet high, and is recommended as a good garden plant. Its

the plant was originally described by Mr. J. G. Baker.

DAPHNE GERALDI, tab. 8,732.—Named after Pere Gerald, who discovered the species in China, this shrubby, dwarf plant has small corymbs of golden-yellow flowers.

PRINUS SUBHIRTELLA, tab. 8,733, var. *autumnalis*, tab. 8,733.—This plant is sometimes met with in gardens under the name of *P. Miqueli-ara*.

MEGACARPAEA POLYANDRA, tab. 8,734.—See *Gard. Chron.*, July 2, 1892, fig. 4, and May 13, 1916, figs. 107 and 108.

PRIMULA NUTANS, tab. 8,735.—See *Gard. Chron.*, May 13, 1916, fig. 110.

RHODODENDRON FARGESII, tab. 8,736.—See *Gard. Chron.*, July 6, 1912, fig. 4.

SARCOCHILUS SOLOMONENSIS, tab. 8,737.—This plant is like a *Phalaenopsis* in habit, but differs greatly in the inflorescence and floral details. The petals and sepals are pale buff colour spotted with brown.

SECHUM EDULE, tab. 8,738.—An old plant in gardens, and one frequently described in *Gard. Chron.* The fruit is illustrated in the issue for December 22, 1900, figs. 144 and 145.

SYRINGA WILSONII, tab. 8,739.—A species closely allied to *S. tomentella*; it is valuable because it flowers later than other Lilacs.

CRYPTOPHORANTHUS DAYANUS, tab. 8,740.—This plant was named *Masdevallia Dayana* by Reichenbach, and is generally known by that name in collections. The openings at the sides of the flowers are known as "windows," which gave rise to the name of "Windowed *Masdevallia*."

GREVILLEA OLEOIDES, tab. 8,741.—A shrub of New South Wales, having leaves in threes and pairs, and racemes of bright carmine flowers.

CO-OPERATIVE MILK DEPOTS.—A scheme for the establishment of a number of Co-operative Milk Depots in England and Wales is being promoted by the Board of Agriculture through the Agricultural Organisation Society.

GARDENING LECTURES FOR TEACHERS.—The Board of Education has circularised education authorities on the importance of training elementary teachers in gardening, with a view to increasing the output of garden produce in the coming year. In consequence of this suggestion special courses are to be arranged during the spring and summer for L.C.C. teachers.

A POTATO-SPRAYING CAMPAIGN.—Afringe' agents are practically complete for the Food Production Department's winter educational campaign in connection with the spraying of next year's Potato crop, and the new scheme for the distribution of Knapsack Sprayers and chemicals will shortly be in operation. The scheme will be worked through the trade. Dr. KEEBLE, the Director of Horticulture at the Department, and Lieut. ASCROFT, the spraying officer, as the result of a series of meetings with the leading manufacturers of Knapsack spraying machines, representatives of the Ironmongers' Federation, the National Association of Implement Dealers, and the Wholesale Hardware Association, have completed arrangements for the widespread and economical distribution of sprayers and materials in good time for next year's campaign. The provisional price of a Knapsack Sprayer is 70s., but it may be necessary to raise this figure in the near future. Arrangements are being made for the manufacture of thousands of tons of the necessary chemicals and for a very large number of machines, but the transport facilities are likely to be heavily taxed in spring and summer, and the sooner buyers get delivery of the goods the better. The price of copper sulphate will probably be Government controlled, and a reduction made on early purchases. The country is being mapped out into county areas for purposes of organisation, with an Organiser and Sub-Organiser in each area, to cooperate with and help the existing authorities.

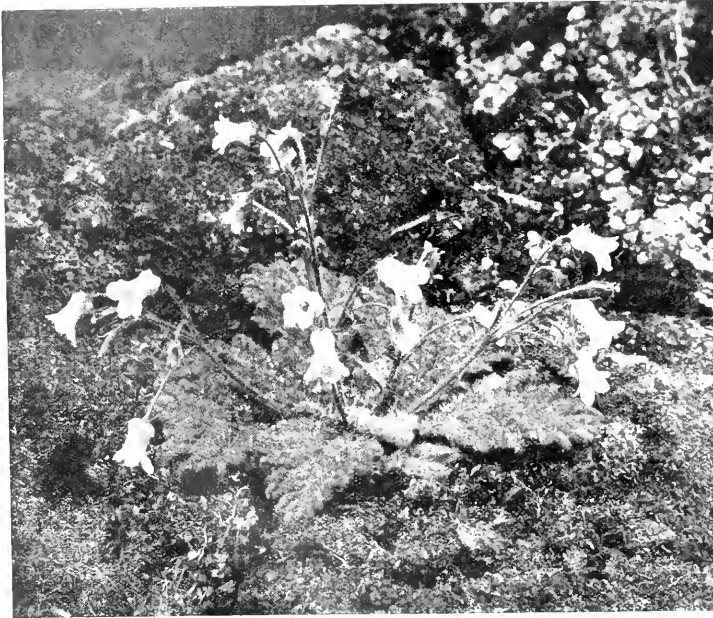


FIG. 99.—*GREOCHARIS FORRESTII* FLOWERS YELLOW.

berry is one of the numerous new species discovered recently in Western China, and is attractive both in flower and in fruit. It forms a shrub some 5 feet high, and produces congested racemes of flowers, succeeded by clusters of coral-pink berries.

BULBOPHYLLUM THAIENSEM, tab. 8,723. This Orchid has been for a long time in cultivation in gardens in this country, and was included in the collection given by the late Lady LAWRENCE to Kew Gardens. The inflorescence forms a dense spike of rose-tinted flowers, with crimson and purple spots.

POLYGONUM GRIFFITHII, tab. 8,724.—This Knot-weed was discovered in 1857 by Dr. W. GRIFFITH, in Bhutan, but it remained for Mr. G. FORREST to introduce it into cultivation in 1904. Judging by the illustration, the species could make a good garden plant, and as its height is only about 18 inches it would be suitable for the rock-garden. The arching racemes of bright coral-red flowers are exceedingly attractive.

habitat is China, whence it was introduced into this country by Messrs. BEES, through their collector, Mr. F. KINGDON WARD. The inflorescence forms a corymb about 6 inches across; and the stalked flowers make a lax head. The colour of the florets is rosy-mauve.

The following plants are illustrated and described in the monthly parts for October, November, and December:—

PLEIONE PUDICI, tab. 8,729. This new species of *Pleione* is named in honour of Mr. W. F. Price, who, with Mr. H. J. Elwes, discovered the plant in Formosa. The sepals and petals are rosy-lilac coloured; the large, whitish lip is blotched with pale brown, and has yellow ridges.

CASILLEJA MINIATA, tab. 8,730.—This old garden plant was illustrated in *Gard. Chron.*, July 8, 1916, fig. 4, from a specimen in Mr. Elwes' garden. Mr. Elwes gave an account of its history and cultivation in "Notes from a Cotswold Garden" in the same issue.

ORPHROSANTHUS CHIMBORACENSIS, tab. 8,734. See *Gard. Chron.*, 1876, Vol. VI., p. 67, where



THE KITCHEN GARDEN.

By J. DUNN, Foreman, Royal Gardens, Windsor.

FRENCH BEANS.—A sowing of French Beans may be made now with good prospects of the plants yielding a successful crop. The plants will not be in flower until the days lengthen considerably. Large pots should be carefully crooked and filled to within 3 inches of the rim with a rich compost, which may consist of three parts loam from an old Melon bed, and one part old Mushroom-bed manure. Make the compost moderately firm with the hands, and sow a sufficient number of seeds in each pot to ensure a full crop, as it is an easy matter to remove a plant or two if they are too numerous. Place the pots in a house having a temperature of 60°, and when the plants are well through the surface expose them fully to the sunlight. When growth is sufficiently advanced a top-dressing of rich soil may be applied, and a few twigs placed in each pot to keep the growth in an upright position. Syringe the foliage twice daily in favourable weather, and give frequent applications of weak liquid manure from the farmyard. The Belfast is an excellent Bean for forcing.

CUCUMBERS.—Young Cucumber plants raised from seed sown at the beginning of the present month should be carefully potted in 4-inch pots before they become stunted. Put lightly placed in a small stick to each plant, and plunge the pots in a gentle bath within 18 inches of the roof glass. Leaf mould and rich loam in equal parts will form a suitable rooting medium. Cucumber plants which will furnish fruits through the remainder of the winter require very careful attention in regulating the growth. Very little stopping of the plants will be necessary, but the growth must never be allowed to become crowded. Remove all rough leaves and deformed fruits, and only leave sufficient fruits on the plants to keep up the supply. Top-dress the roots lightly as often as young roots show through the surface, as this is the best means of promoting healthy growth. Maintain a moist atmosphere, and when water is necessary at the roots let it be given in sufficient quantity to moisten the whole of the soil. The temperature should be 70° at night in mild weather, rising to 80° by day with sun heat. In very cold weather the temperature may be allowed to drop 5°.

CARROTS IN PITS.—As soon as young Carrots are through the surface soil the lights should be opened to admit air. Examine the bed, and, if necessary, water the soil with rain water through a fine rose. Keep a close watch to slugs, which would soon ruin the plants. Successional sowings of Carrots should be made to maintain an unbroken supply of roots.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLEMAN, Bart., Ganton Park, Beigate.

TRICHOPILLIA.—The various species of *Trichopillia* flower at different times of the year, and, for that reason, their potting should be carried out at intervals, the proper time being when roots begin to develop from the base of the new pseudo-bulbs. *T. sauis* is the most handsome species, and is most commonly grown. *T. coccinea*, *T. tortilis*, *T. sanguinea* and *T. Backhouseana* are other good garden species. Most of the plants have finished growing, and must not be watered so frequently as hitherto, or their pseudo-bulbs and leaves will soon become spotted. So long as the pseudo-bulbs remain plump very little or no water is required, but if they show signs of shrivelling a moderate amount of moisture should be afforded the roots. During their resting period the plants should be suspended near the roof glass in a dry position in the intermediate house. Expose them to the light, but provide shade from direct sunshine; rather deep Orchid pans form the best receptacles in which to grow them. *T. fragrans* is a white, sweet-scented species, and is now showing its flower spikes. The

plant thrives best in the warmest part of the Odontoglossum house.

MILTONIA.—Plants of *Miltonia vexillaria* and its hybrids are growing freely. Sufficient water should be given to keep the Sphagnum-moss on the surface in growth. An intermediate temperature is most suitable to these Orchids in winter, as the compost will not become dry quickly in a house where little fire-heat is employed. Stand the plants in a light position and allow them to develop their growths steadily. The young leaves frequently adhere to each other, and should be separated by means of the thin part of the handle of a budding-knife. A brown, damp-looking outer sheath at the base of the young growth often clasps the stem so tightly that the roots push upwards instead of growing into the compost. This brown covering should be slit in several places and removed in small pieces, without causing injury to the plant. If the leaves show signs of damping at the tips give the roots rather less water and ventilate the house rather more freely. The foliage should be sprayed on all favourable occasions to keep down attacks of insect pests. The above remarks apply also to *Miltonia Bleiana* and its hybrids.

THE HARDY FRUIT GARDEN

By W. A. COOK, Gardener to the Hon. ARTHUR J. DAVEN Abbas Wood, Godalming, Surrey.

GENERAL REMARKS.—If the weather continues frosty make a large garden-fire to burn tree prunings and rubbish. When the base of the fire is red-hot place on all rakings and weeds from the fruit quarters. These latter will smoulder, and there will be no risk of a blazing light at night, which is prohibited in these times. When thoroughly burned the whole mass should be turned and mixed together; it will form useful material for future planting and top-dressing. Composts should be got ready, mixed and turned several times in a dry shed; stakes of all kinds and sizes prepared, and labels tied in bundles. Large stakes should be stripped of the bark and either painted or treated with creosote. Shires should be cut in lengths and afterwards soaked in a nicotine preparation to prevent insects lurking in them. Tools should be ground or otherwise sharpened. The store-room should be put in order at least once a year and the stock taken. Walls may be whitewashed, nets overhauled, and notes made of anything that will be required for next season.

THE FRUIT ROOM.—Fruit required for current use should be handled carefully, and taken from the fruit room in a covered basket to a warm atmosphere 24 hours before being sent to table for dessert. Carefully look over all fruit and remove any that are the least specked. Make notes of the keeping qualities of various fruits, especially of new varieties.

FRUITS UNDER GLASS.

By JAS. HUTTON, Head Gardener at Gunnersbury House, Acton, W.

POTTING LOAM. A plentiful supply of good loam is essential in almost all phases of gardening, and in none is it more needed than in fruit culture under glass. I prefer to renew the stock of loam at this season of the year, if the weather is open. Trimmings from the road sides in country districts furnish a good material for adding to the main bulk of loam obtained from heavy loam, being sharp and zesty. Caution in the use of this material is, however, needed, now that tar is used to lay dust. I have had no difficulty in obtaining good loam for years past. For fruit culture choose a calcareous loam with plenty of fibre in it. If the soil be too heavy or retentive, add road scrapings in making up the stack. Old mortar rubble is a valuable material for adding to the loam in preparing special composts. Stack the loam where rains will not permeate it and make it sodden. The soil yard should be open to light and air. A few cart loads of well-decayed farm-yard manure should be sown whenever it is possible, and it should be stacked in such a manner as to throw off rains. A calculation should be made as to the requirements for another sea-

son with respect to the quantities in any given case. Do not make shift with soil that is known to be of inferior quality.

LEAVES FOR HOT-BEDS.—Where fallen leaves are required for making hot-beds a supply should be secured and stacked, but not in large heaps, or they would ferment and lose their heat. Oak and Beech leaves are the best. Now that stable manure is not so plentiful as formerly leaves should be made the most use of. Where early varieties of Figs, such as St. John's, are being forced for the first early crop, the leaves will prove useful at once. I stand the pots on a bed of leaves for the first few weeks, and when fresh growth is plainly in evidence plunge them lightly in the leaves. Fallen tree leaves, spread over the surface of inside vine borders, will help to create a genial atmospheric moisture. In no case do I advise their use for either Peaches, Nectarines, Plums or Cherries, for these fruit trees require a somewhat drier atmosphere.

PLANTS UNDER GLASS.

By J. G. WISDOM, Gardener to Lady Northmore, Eastwell Park, Kent.

FREESIAS.—Early plants of *Freesia* are in bloom, and the house should be kept somewhat cooler, as the flowers develop. Successional batches should be grown in a light position and allowed plenty of room for the foliage to develop steadily. *Freesias* do not require much water before they have made considerable roots. Plants that were potted at a late date should be kept in frames for the present for flowering late in spring.

EARLY-FLOWERING GLADIOLI.—The corns of early-flowering *Gladioli* should be potted or planted in boxes as soon as they come to hand. If the spikes are required especially as cut blooms answer admirably, and there is saved a lot of labour. As decorative plants *Gladioli* should be grown in 4½ to 6 inch pots. The compost should consist of two parts turfy loam and one part leaf-mould, with sharp sand added. Place a little sand under the base of each corn, arranging six to twelve of the latter in each pot, according to their size. Leave a good margin of room in the pot for watering. *G. Colvilei* The Bride will furnish a good quantity of white flowers. Other excellent varieties for pot culture are Queen of Holland, Delicatissima, Crimson Queen, Pink Perfection, Ackermannii, and Rosy Gem. After the plants are potted, place them in a cool frame on a layer of ashes, and cover the tops of the pots with Cocoa nut fibre refuse or fine leaf-mould. The corns will quickly start into growth, and later the covering material may be removed. Only a little water is required at the roots until top growth is well advanced. Introduce fresh batches in gentle warmth as required. Give similar treatment to that recommended for *Freesias*.

THE FLOWER GARDEN.

By W. J. GIBB, Gardener to Mrs. DEMSTER, Keble Hall, Staffordshire.

PROTECTING PLANTS AND SHRUBS.—Many plants and shrubs need a little protection from severe frosts and cutting winds; but in open weather only slight coverings are necessary. Tufts of dry Bracken placed round the stems and bases will carry many plants safely through very cold weather. Branches of Yew or Spruce may be placed around the heads of shrubs in exposed situations. In very cold districts *Olearias*, *Buddleia madagascariensis*, *Cordylines*, *Andromedas*, *Eupatorium Weinmannianum*, *Phoradendrons*, and *Toxarium botanicum* should have protection of this description. *Tiffany* forms a suitable covering for wall plants, as it can be removed quickly during a spell of mild weather. *Magnolias* should not be exposed to cold winds, which are often more injurious to them than frosts. Place tufts of Bracken amongst the branches of climbing and standard Roses, and Yew for Tea and other dwarf Roses. Give a mulching of stable litter or leaves to all newly-planted trees and shrubs. Place half-decayed leaves round the bases of tender Alpine and herbaceous plants, with the exception of *Delphiniums*, *Phloxes*, *Gypsophylas*, and *Hollyhocks*; for these, sifted ashes will afford sufficient protection.

ON THE BOTANY AND PHYSICAL GEOGRAPHY OF THE HOLY LAND.

(Continued from p. 247.)

TREES OF SYRIA AND PALESTINE.

Nothing shows the delicate gradations of climate better than the trees, which are above ground all the year and have to bear both the winter cold and the summer heat and drought. The trees of the Holy Land are as follows:—

There are nine species of Tamarix, of which that most familiar to us in England (*T. Gallica*) is not one. They are mostly confined to the coast of Southern Palestine and the lower part of the Jordan valley. There are no Limes (*Tilia*), and the Horse Chestnut, which is wild in the mountains of Greece, is also absent. There are three species of Maple, *Acer lycanum*, *Monspensulanum*, and *syriacum*, the two first confined to the northern hills. *Pistachia vera* is commonly cultivated for its nuts, and is probably wild in the Lebanon district, and the Terebinth (*P. Terebinthus*) and its variety, *Palaestina*, are common from north to south. These have compound leaves, like an Ash. Next to the Gall Oak the Terebinth is the commonest tree in the hills. Holly has been found lately in one place on Mount Amanus. *Moringa aptera*, a sub-tropical type from the seeds of which oil is extracted, is confined to the Dead Sea and Sinaitic peninsula. The Carob (*Ceratonia siliqua*) is everywhere common, reaching a height of 50 feet, and swine are fed on the husks. The Judas tree (*Cercis Siliquastrum*) is common in rocky places, flowering before the leaves open in April. There are six *Acacias*, but these, like the *Moringa*, are almost confined to the Dead Sea and southern desert. The Almond (*Amygdalus communis*) is common, both wild and cultivated. The Plum is said to be wild in the northern mountains, and the word Damson is derived from Damascus. Apples and Pears do not succeed well, but there is a wild Pear (*Pyrus syriaca*) which is sometimes eaten. The Rowan tree is absent, but three other species of the same subgenus (*Sorbus Aria*, *terminalis*, and *trilobata*) are found wild in the northern hills. The Medlar (like the Quince) is cultivated, and is said to be wild in Samaria. There are four species of *Crataegus*, of which monogyna, our English Hawthorn, and *Azarolus*, with a haw as large as a Cherry, are common. The place of the Lilac with us in gardens is filled with the Persian Lilac, *Melia Azadirach*. The Elder (*Sambucus nigra*) is cultivated, and a drink used in fevers made from its berries. *Adiantum Uredo* and *Andrachne* are both frequent. There are three species of Ash (*Fraxinus excelsior*, *oxycarpa*, and *Ornus*), confined to Lebanon and the northern hills. The first and last reach a height of from 50 to 60 feet. The Olive is cultivated everywhere for the sake of the oil from its fruit, and is found wild among the northern hills. The Bay Laurel is common, like the Myrtle, from the coast to the middle zone of the mountains. The Silver Berry (*Elaeagnus hortensis*) is common, both wild and cultivated. Our common Elm is confined to the extreme north, about Aleppo and Aintab, *montana* being unknown. *Celtis australis* (the Hackberry, or Nettle tree) is common in cultivation as a shade tree, and is wild among the northern mountains. The Black and White Mulberry (*Morus nigra* and *alba*) are both commonly cultivated. *Ficus Carica* (the Fig of commerce) is common, both wild and cultivated. *F. sycomorica* (the Sycamore into which *Zarbuscus flumbosus* is a common shrub-tree in the south. The Baywan and Indiarubber are both sometimes cultivated. *Platanus orientalis* is common, ascending to the sub-alpine zone of the mountains. The Walnut (*Juglans regia*) is everywhere cultivated for the sake of its nuts and timber. An Alder, "Abraham's Oak," near Hamme, of which Sir J. D. Hooker gives a sketch, has a trunk with a girth of 25 feet, and a crown

with a diameter of 90 feet. In the winter of 1856-57, when the snow lay for many days in the streets of Jerusalem, a branch of this was broken off. Mr. Finn, the Consul at Jerusalem, wished to have this, but owing to a superstition that anyone who cut it would lose their firstborn son, had great difficulty in getting anyone to saw it up. Finally this was done, and several camels were loaded with the wood of this single limb. It is valued alike by Jews, Christians, and Mahometans. It extends to Spain and Portugal, and is the commonest tree in the hill region of Palestine.

Ahus orientalis is common on the banks of streams. Two Hornbeams (*Carpinus duensis* and *Ostrya carpinifolia*) are found wild amongst the northern hills. Our common *Corylus avellana* is found wild in Cassius and Amanus, but does not reach further south. There are six Oaks, of which two, *Quercus coccifera*, *Q. aegætopis* (the Valonia Oak), of which the very large acorns are used by tanners; *Q. Cerris*, and *Q. lustrantica* (*infectoria*) are less common. *Q. Ilex* is confined to the Syrian coast, and of the British *Q. sessiliflora* there are two varieties in the woods of the middle zone of Lebanon. The Beech (*Fagus sylvatica*) is wild in the middle zone of Amanus, but the Sweet Chestnut, which might probably be introduced with advantage, is absent, although it extends from Europe to Japan and the Himalayas. There are eight Willows, of which *Salix alba* and *fragilis* are frequent, the Egyptian *S. Salsaf* is confined to the sub-tropical zone, and *S. caprea* and *nigricans* are rare in the north. *Populus alba* is common, *P. nigra* and *pyramidalis* are rare, and *P. euphratica* common on the banks of the Jordan and other lowland streams. The Cypress is wild in the middle zone of the mountains, and the congested variety is often, as in the Mediterranean regions, planted in cemeteries. There are five Junipers, of which the common European *J. communis* is not one. The Yew is found only on Mount Amanus. There are two Pines, *Pinus Pinea* and *halapensis*, both common, but *P. sylvestris* is absent. *P. Pinea*, as in Italy, is often trained into the umbrella shape so familiar to us in Turner's pictures. The Cedar of Lebanon is not, as is often supposed, confined to the sub-alpine zone of Lebanon, but occurs also on Amanus and many of the mountain ranges of Asia Minor. The Larch is unknown. *Abies cilicica*, allied to the Spruce, forms forests in the sub-alpine zone of Lebanon and Amanus, reaching a height of 60 or 80 feet. The Date Palm is cultivated in the south of Palestine, and ripens its fruit at Jaffa. The celebrated Date Palm groves of Jericho have been destroyed. The Egyptian Doum Palm (*Hyphaene thebaica*) is found in a few places in the Sinaitic peninsula, but does not reach the Dead Sea or the Jordan valley.

It will be seen that the common trees of Britain and Central Europe are, with slight exceptions, only found in the middle zone of the mountains of Syria, and do not reach Palestine, and that in Palestine their place is filled by more southern types, many of which have a wide range in Southern Europe.

FERNS OF SYRIA AND PALESTINE.

Nothing can well show more forcibly the difference there is in climate between Britain and Palestine than the presence and distribution of the Ferns. The Filmy Ferns are entirely absent as are also the Woodstias. *Cystopteris fragilis* is frequent on Lebanon and the northern hills. *Pteris aquilina* is common up to 6,000 feet on Lebanon. *P. longifolia*, a cosmopolitan species, that does not reach Britain, is common on the banks of streams. *Lomaria Spicant* is confined to Lebanon and the northern hills. *Scelopendrium vulgare* is common up to the alpine zone, and the Mediterranean *S. hermonitis* is confined to the middle and alpine zones of the Lebanon range. *Adiantum Capillus-Veneris* is common in damp caverns and about the mouths of wells. *Cheilanthes fragrans*, common throughout Southern

Europe, is frequent in the clefts of limestone rocks in the hill region. Of the *Asplenium*, *Trichomanes* and *Adiantum-nigrum* are common. *Bourgaei*, *Ruta maritima*, and *septentrionale* are on Lebanon and Amanus. The Lady Fern is not known south of Amanus. *Ceterach* is frequent amongst the limestone hills. *Polystichum angulare* is confined to the northern hills. *Louchitis*, of course, like *Allosorus crispus*, is entirely absent. Of the *Lastræ* there are only three. *Filix-mas* and *rigida* frequent amongst the limestone hills. *Thelypteris*, rare on the anti-Lebanon. *Oreopteris*, *dilatata*, *spinulosa*, *recurva*, are absent. Of the *Polypodium*, *vulgare*, which is the only species, is common on shady rocks. *Notholaena lanuginosa* occurs at Nazareth and around the Sea of Galilee, *N. marantæ* only on the limestone rocks of Cassius and Amanus. *Gymnogramme leptophylla* is associated with *Adiantum* in caves along the coast. *Osmunda* grows in damp woods of the middle zone of Lebanon. *Oploglossum vulgatum* has been found in grassy pastures on the anti-Lebanon. There are no *Lycopodiums*. *Selaginella denticulata* is found on rocks along the coast. And, finally, there are also two *Equisetums*, *Telmateia*, and *ramosissimum*, both common.

This gives us 23 Ferns for Palestine and Syria, against 62 for Britain. Of the 23, eight species are unknown in Britain, of which all but one are widely dispersed throughout Southern Europe. *J. G. Baker, F.R.S., Kew.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

DUTCH BROWN BEANS.—I was most interested in the remarks of *G. H. H. W.*, on p. 216, on Haricot and other Beans, and especially the Dutch Brown Bean. Since that date the R.H.S. has sent out to its Fellows a very favourable report on this Bean, including its analysis. As regards weight of crop, I can record a much heavier yield than *G. H. H. W.*. He gives his crop as 27½ pints from ¾ pint of seed. I had 80½ pints from 1 pint of seed, exclusive of, perhaps, 2 pints given away and consumed before weighing. The bulk of the crop was grown under glass, as I considered the date (June 4) too late to risk outside sowing in our Scotch climate. I sowed one row out-of-doors, and the plants gave a fair crop, but, with other Beans, they were destroyed by frost on October 7. The Beans grown under glass were a splendid sample. *E. S. L., Berricks Hill.*

GROUND OPERATIONS (see pp. 179, 200, 231)—I have dug and trenched light ground early for many years, and always have secured good results. I have been told Mr. Edwin Beckett trenches light ground early, and heavy ground in the spring, when preparing ground for Onions. I should be greatly obliged to Mr. Beckett if he would state which is his practice. Many are pushing on the work of digging and trenching, on account of the scarcity, no matter what is the nature of the soil. Is heavy ground, trenched now, in a fit state in the spring to receive Onions, Leeks, and Cauliflowers raised under glass? Also is heavy soil sufficiently warm and dry for the plants to make satisfactory growth at the commencement? *C. Davis, Holy Wells Park Gardens, Ipswich.*

ECONOMY IN FUEL.—It behoves all to consider what can be done to economise fuel in the present scarcity of coke and coal, as well as enhanced prices. In some instances wood can be advantageously used, and choice fruits need not be forced so early as usual. *H.*

VANDA TERES. This Orchid requires a different treatment from others of its family. The plants have finished their season's growth, and should be given a long season of rest, affording only sufficient water to prevent the stems and terete leaves from shrivelling. They should be placed in a light position in a house having an intermediate temperature. Plants of *V. Hookeriana* and *V. Miss Joaquim* are still growing freely, and should be allowed to remain in their present quarters until growth is completed. *C.*

CROPS AND STOCK ON THE HOME FARM

RENOVATING PASTURES.

With a reduction of the grass average owing to the necessity for increasing the total crops, it becomes all to improve the remaining grass land, thereby increasing the feed for cows and hay for the winter.

Where grass fields are not too wet there should be no difficulty in procuring a full crop of grass or hay as required. Wet pastures may be improved by draining.

The present is a suitable time to undertake the work of renovating such pastures that have become impoverished owing to poverty of soil.

Many persons start renovating their pastures three months too late, and because an extra yield of grass is not obtained at once they are apt to blame the manure. Especially is this the case when applying basic slag; they do not stop to consider, or perhaps they do not know, that this manure is slow in action, and requires double the time to show its effect than most other fertilisers.

There is a wide choice of artificial manures well adapted for pastures. Farnyard manure, properly prepared and applied, is an excellent stimulant for grass, especially when mixed with wood ash, decayed vegetable matter, and road-side refuse. If the manure is not well decayed, allow the heap to remain for a month before spreading the material over the land. This compost forms a valuable, insulating fertilizer for grass, and should be spread evenly over the surface at the rate of 15 tons per acre. In a month, if the weather is dry, draw sharp-toothed iron harrows over the field to disintegrate the pieces and, by scratching the surface of the grass, the manure will come quicker into contact with the roots. The harrowing should be repeated at intervals until the whole of the manure disappears. Afterwards collect all stones and sticks, and finally roll the pasture to obtain a smooth surface for the grass cutter.

Of artificial manures for improving pastures basic slag is one of the best for lasting on almost any land, with the exception, perhaps, of sandy soils. Basic slag alone has the effect of inducing a free growth of clover among the grass, which is a valuable addition to the crop. When the subsoil is chalk, basic slag is usually effective, giving good results for five years afterwards. This fertilizer does not appear to be equally effective in all districts, but when kainit is added at the rate of 2½ cwt. per acre to every 5 cwt. of basic slag its effect is a large increase of grass. Some apply basic slag at the rate of 10 cwt. per acre. I prefer to apply that quantity in two applications with a four-year's interval.

The higher grades of basic slag may contain as much as 31 per cent. of soluble matter, and by using the higher grades there is a saving of labour in sowing, as less bulk is required. I am experimenting this season with some containing 42 per cent. of soluble matter.

Before sowing the slag it is well to harrow the surface, thus enabling the manure to more quickly reach the roots.

If the meadows cannot be shut off from cattle until March basic slag cannot be economically applied, therefore recourse should be had to some other stimulant, such as a good quality superphosphate of say, not less than 35 per cent. purity. This manure should be applied in March or the early part of April at the rate of 5 cwt. per acre. If the weather in May or June is dry this dressing may not show much effect on the hay crop, but it will stimulate the aftermath, which usually continues good right into the autumn and will be valuable in adding increased milk production. To give an immediate flip to the hay crop, sow 2 cwt. of sulphate of ammonia per acre evenly in April. This manure adds the growth of the finer grasses, thus adding to the quality of the hay.

Nitrate of soda, good though it is, is difficult to obtain, and sulphate of ammonia, a quick acting manure, is the best substitute.

For sandy soils guano and bone meal are valuable fertilisers, the former sown at the rate of 4 cwt. per acre in February or March and the latter in November, as it is slow of action, but lasting in its effects. E. McIvneuz.

MARKETS.

COVEY GARDEN, December 26

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quantity of the samples, the weights, which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eds.

Plants in Pots, &c.: Average Wholesale Prices.

Table listing various plants in pots and their average wholesale prices, including Aralia Sieboldii, Aspidistra plumosum, and Begonia Fochre de Lorraine.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their average wholesale prices, including Anemone, Ranunculus, and Tulips.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their average wholesale prices, including Viburnum, Camellia, and Aspidistra.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their average wholesale prices, including Artichoke, Cabbage, and Carrots.

Fruit: Average Wholesale Prices.

Table listing various fruits and their average wholesale prices, including Apples, Lemons, and Muscatels.

Obituary.

Mrs. BULL.—We regret to announce the death, on Saturday last the 22nd inst., in her 74th year, of Mrs. Bull, widow of the late William Bull, founder of Messrs. Bull's Nurseries, Chelsea.

GARDENING APPOINTMENT.

Mr. W. East, late Gardener to Sir Samuel Royle, Bart., Coppy Hill, Totteridge, Hertfordshire, as Gardener to Sir Philip Walehouse, Trosley Towers, Wokingham, Kent.

ANSWERS TO CORRESPONDENTS.

COLOUR OF FRUIT WALLS: J. J. C. Although black materials absorb the most and reflect the least amount of sun-heat, it is not wise to paint fruit walls black, for the trees would push into flower early, and be liable to a check in cold springs. Moreover, experiments have proved that trees grown against black walls do not ripen their fruit earlier than those on walls of ordinary colour. If the wall is full of crevices, offering hiding places for insect pests, the mortar should be repaired, and holes in the brickwork filled in. After this is done coat the brickwork with the following mixture: One peck of lime, half a peck of soil, and a quarter of a peck of sulphur, mixed in petroleum and skim milk in equal proportions, to the consistency of paint.

ORCHID LEAVES SPOTTED: Variegata. Orchid spot disease results in the collapse of the tissues affected, causing brown or blackish spots on leaves or bulbs. Imperfect nutrition from lack of healthy roots is a frequent cause of the disease, and every effort should be made to keep the plants clean and vigorous. If a plant is badly diseased it should be destroyed, but if only slightly affected it can often be restored to health by propagation, which grows the new parts of the plants from the worn out back portions. It is also beneficial to change the position of the plants in the house. Do not use paraffin emulsion or any paraffin spray.

PRUNING ROSES AND FRUIT TREES: J. A. Christie. The National Rose Society's Selected List of Roses and Instructions for Pruning, price 5s. 5d., and The Hand Book of Pruning, by James Udall, price 1s. 6d., would be suitable for your purpose. The books may be obtained from our Publishing Department at the prices given, which include postage.

SPRAY FOR APPLE SCAB: J. L. C. Lime-sulphur is as effective as Bordeaux mixture for Apple and Pear scab, and less likely to injure the foliage of tender varieties. See reply to W. O. in the last issue, p. 254.

WOOD ROT: W. B. It is rather difficult to know what is meant by your question. Wood rot is a diseased condition of the wood. We presume from the term "pickled wood" that cross-bred wood is referred to. If you wish to cross-bred wood against rot, the cross-bred may be procured from Messrs. English Bros., Ltd., Wisbech. Cross-bred wood is treated with oil of tar as a preservative.

Communications Received: H. I. W. R. W. R., W. E. W. T. H. J. G. W. J. F. S. A., (many thanks), C. O. L. P. J. E. C. E. F. & P. H. W., J. O. R. E. M., F. H. W. H.

Books as Presents

There is nothing so helpful to a young gardener as carefully selected books written by successful cultivators in the various branches of gardening.

- Botany, A Year's.** Adapted to Home and School Use. By Frances A. Kitchener. With 185 Illustrations. 5s. 4d.
- China, A Naturalist in Western.** By Ernest Henry Wilson. Illustrated, in Two Volumes. £1 10s. 6d.
- Flora, British, Handbook of the.** By Geo. Bentham. Revised by Sir Joseph Hooker. Seventh Edition. 9s. 5d.
- Fertilisers and Manures.** By A. D. Hall, F.R.S. 5s. 5d.
- Garden, Chemistry of the.** A Primer for Amateurs and Young Gardeners. By Herbert H. Cousins, M.A. 1s. 5d.
- Garden Craft in Europe.** By H. Inigo Triggs. £1 15s. 6d.
- Insect and Allied Pests of Orchard, Bush and Hothouse Fruits.** By F. V. Theobald, M.A., etc. 328 Illustrations. 30s. 6d.
- Insects, Injurious and Useful.** An Introduction to the Study of Economic Entomology. By L. C. Miall, F.R.S. 100 Illustrations. 3s. 9d.
- Intensive Culture of Vegetables on the French System.** By P. Aquatias. Illustrated 4s. 5d.
- Johnson's Gardener's Dictionary.** New Edition 9s. 6d.
- Judging, Rules for.** Issued by the Royal Horticultural Society. Latest Edition. 1s. 6d.
- Landscape Architecture, The Art of.** By Samuel Parsons. A practical and authoritative work. Illustrated. 18s. 6d.
- Lawns.** By Sutton and Sons, Reading. In paper cover. Well Illustrated. 1s. 3d.
- Lawns and Greens.** By T. W. Sanders. A Guide to the Formation and Management of Lawns, Tennis Courts, etc. Illustrated. Paper, 1s. 10d.
- Lily, Book of the.** By W. Goldring. Illustrated 2s. 9d.
- Little Gardens and How to Make the Most of Them.** By H. H. Thomas. A handy and useful work for the Amateur. Paper, 1s. 3d.; cloth, 1s. 9d.
- Mango, The.** By G. Marshall Woodrow. An account of its Culture and Varieties. 1s. 1d.
- Manures and the Principles of Manuring.** By C. M. Aikman. 6s. 10d.
- Manures for Garden and Farm Crops.** By W. Dyke. Cloth, 1s. 9d.
- Manuring, The Science and Practice of.** By W. Dyke, with introduction by J. Wright. A most practical work for the Amateur, Market and Professional Gardener. 1s. 2d.
- Manuring of Market Garden Crops, The.** By Bernard Dyer and F. W. L. Shrivell. New Edition. 1s. 3d.
- Mendelism.** By R. C. Punnett, F.R.S. New and Enlarged Edition. 5s. 4d.
- Mendel's Principles of Heredity.** By W. Bateson, F.R.S. 12s. 6d.
- Mushrooms, and How to Grow Them.** By John F. Barter. An excellent Treatise. Illustrated. 1s. 2d.
- My Garden in Spring.** By E. A. Bowles, M.A., Chairman of Scientific Committee of Royal Horticultural Society. With Preface by Reginald Farrer. "Mr. Bowles has the time to be his own gardener, and has thereby gained that first-hand knowledge of plants without which any writer on horticultural subjects is apt to be neither interesting nor informing." Price 5s. 6d.
- My Garden in Summer.** By the same author. Price 5s. 6d.
- My Garden in Autumn and Winter.** By the same author. 5s. 6d.
- Orchids and their Cultivation.** By James O'Brien, V.M.H., Hon. sec. of the R.H.S. Orchid Committee. Contains 8 full-page Coloured Plates from colour photography. 1s. 10d.
- Orchids: Their Culture and Management.** By W. Watson (Curator, Royal Botanic Gardens, Kew), and H. J. Chapman. Illustrated with 180 Engravings and 20 Coloured Plates 25s. 8d.
- Orchids, Fertilisation of.** By Chas Darwin. Illustrated. 3s. 11d.
- Orchid grower's Manual, The.** By the late B. S. Williams. 800 pages. Numerous Illustrations. 16s. 6d.
- Pansies, Violas and Violets.** By W. Cuthbertson and R. Hooper Pearson. With 8 full-page Coloured Plates from colour photography. 1s. 10d.
- Pansies and Violets.** By D. B. Crane. Paper, 1s. 2d.; cloth, 1s. 9d.
- Peach, The Book of the.** By H. W. Ward. A Practical Handbook on the Cultivation of Peaches and Nectarines under Glass and Out of doors. 2s. 10d.
- Pears and Plums, The Book of.** By the Rev. E. Bartrum, D.D. Illustrated. 2s. 9d.
- Pinus, The Genus.** By George Russell Shaw. Price £2 15s. 6d.
- Plant Breeding.** Being Five Lectures upon the Amelioration of Domestic Plants. By Prof. L. H. Bailey. Illustrated. 8s. 11d.
- Plant Life.** By C. A. Hall. £1 0s. 6d.
- Practical Plant Physiology.** By Frederick Keeble, F.R.S. Illustrated. 5s. 10d.
- Practical Tree Repair.** By Elbert Peets. The Physical Repair of Trees—Bracing and the Treatment of Wounds and Cavities. Illustrated. 7s. 11d.
- Plants and Trees, Diseases of Cultivated.** By George Massee. Well Illustrated. 7s. 11d.
- Plants, A Popular Treatise on the Physiology of.** By Dr. Paul Srauer. Translated by F. E. Weiss, D.Sc. With 33 Illustrations. 9s. 6d.
- Primula, Handbook of the Hardy.** By H. M. Paul. An Illustrated Work on the Culture, Mode of Growth and Utility of Primulas. 1s. 1d.
- Pruning, The Handy Book of.** With Chapters on Grafting and Budding. By James Udale, with introduction by the Right Hon. Viscount Cobham. New Edition. Illustrated. 1s. 9d.
- Rhododendrons and Azaleas.** By W. Watson. With preface by Sir. F. W. Moore, F.L.S. (The first popular volume published on this subject.) 8 full-page Coloured Plates. 1s. 10d.
- Rock Gardens.** By Reginald Farrer. With Preface by Dr. J. Bretland Farmer, F.R.S. Contains 8 Coloured Plates. 1s. 10d.
- Rock Garden, The English.** By Reginald Farrer. A complete dictionary of Hardy Plants suitable for Rock Garden Culture. Contains 500,000 words and 300 Illustrations. In 2 Vols. Price, £2 2s. 10d. post free (in the press).
- Root and Stem Vegetables.** By the late Alexander Dean. Contains 8 full-page Coloured Plates. 1s. 10d.
- Rose, The Book of the.** By Rev. A. Foster-Melliar, M.A. Illustrated. New Edition. 5s. 5d.
- Roses.** By H. R. Darlington. Contains 8 full-page Coloured Plates. 2s. 11d.
- Roses for the Garden and Greenhouse.** By John Weathers. Description, Culture, Propagation, Manures, etc. Coloured Illustrations. 5s. 4d.
- Roses in Pots.** By Wm. Paul. Ninth Edition. An invaluable Guide to the Cultivation of Roses in Pots, whether for forcing or otherwise. 2s. 2d.
- Salads and their Cultivation.** By T. W. Sanders. How to grow them in the Open, on Hot Beds, and Under Glass, etc. Freely Illustrated. Paper, 1s. 3d.
- Saxifrages or Rocklofts.** By W. Irving and R. A. Malby. A practical work on the Culture of Saxifrages. Well Illustrated in Colour and Half-tones. 2s. 10d.
- Soil, The.** By A. D. Hall, F.R.S. An introduction to the Scientific Study of the Growth of Crops. New Edition. 5s. 5d.
- Species and Varieties, their Origin by Mutation.** By Prof. Inigo De Vries. Second Edition. 21s. 6d.
- Trees and Shrubs, Beautiful Flowering, for British and Irish Gardens.** By John Weathers. Description, Culture, Planting, Pruning, Propagation, etc. Coloured Illustrations. 3s. 10d.
- Vegetables and Flowers, The Culture of, from Seeds and Roots.** By Sutton and Sons, Reading. New Edition. 5s. 6d.

Complete New Catalogue sent Post Free on application to—

THE LIBRARIAN,
41, Wellington Street, Covent Garden, W.C. 2

