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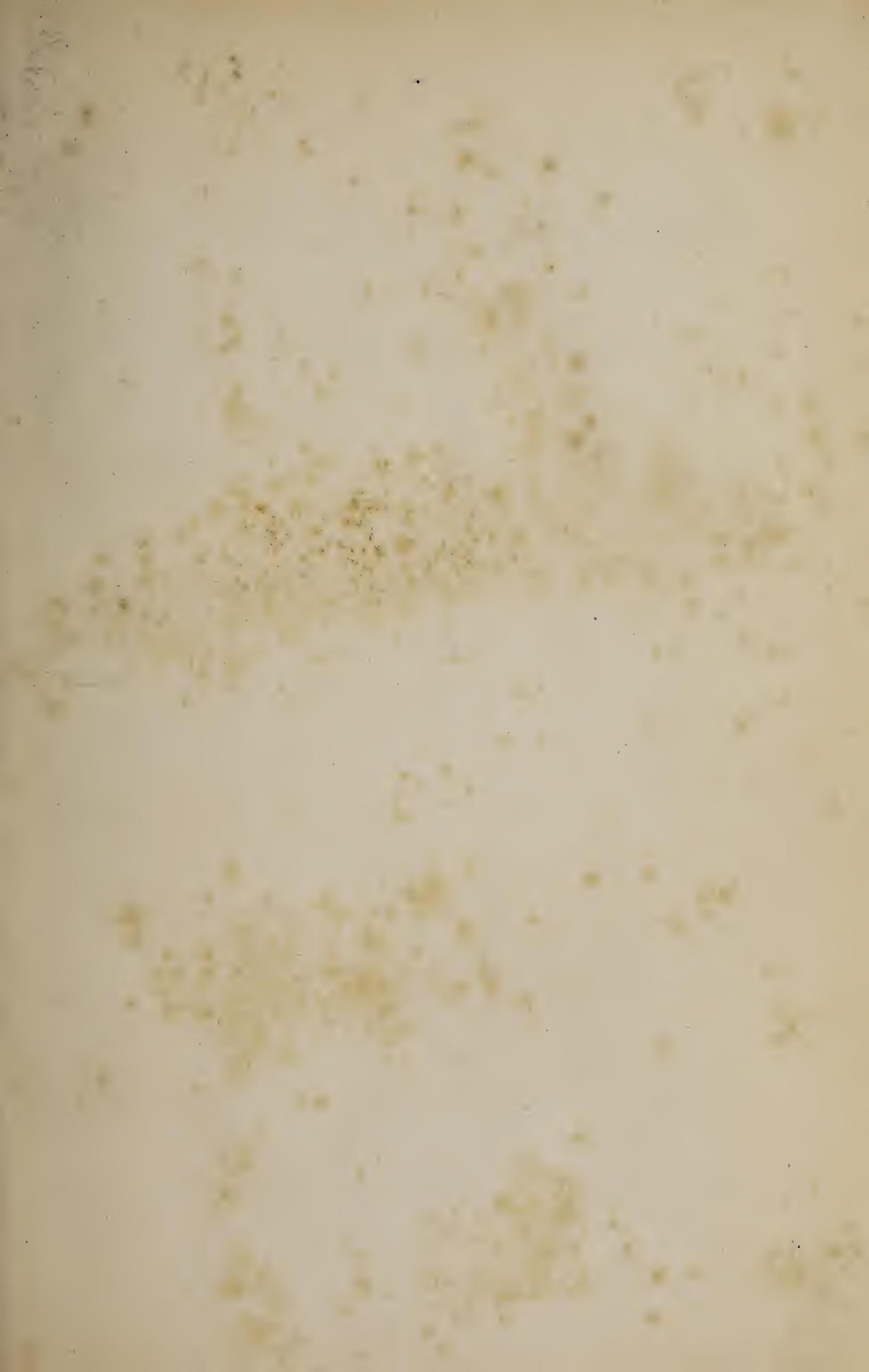
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Received 26 Oct. 1912.





THE  
FLORIST AND POMOLOGIST;

A PICTORIAL MONTHLY MAGAZINE

OF

FLOWERS, FRUITS, AND GENERAL HORTICULTURE.

CONDUCTED

BY ROBERT HOGG, LL.D., F.L.S.,

ASSISTED BY MR. THOMAS MOORE, F.L.S.,

AND NUMEROUS ABLE CONTRIBUTORS.

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1865.

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LONDON:

PUBLISHED AT THE "JOURNAL OF HORTICULTURE" OFFICE,  
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1865.

Gray Herbarium  
26 Oct. 1912

LONDON:  
PRINTED AT THE JOURNAL OF HORTICULTURE OFFICE,  
171, FLEET STREET, E.C.

TO

THE RIGHT HONOURABLE

THE COUNTESS OF HOME,

THIS VOLUME

OF

THE FLORIST AND POMOLOGIST

IS RESPECTFULLY DEDICATED

BY

THE EDITOR.



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No. XXXVII.—JANUARY.

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Fig. F.



Fig. C.

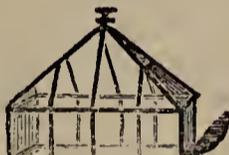


Fig. A.



Fig. B.



Fig. G.



Fig. E.



Fig. D.

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20 in. by 12 in.	16 oz. 18s. 0d.	16s. 0d.	13s. 6d.	11s. 0d.
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6½ in. by 4½ in.	9½ in. by 7½ in.			
7 in. by 5 in.	10 in. by 8 in.			
7½ in. by 5½ in.	10½ in. by 8½ in.			
8 in. by 6 in.	11 in. by 9 in.			
8½ in. by 6½ in.	11½ in. by 9½ in.			



Fig. D.

Fig. A. Hand Glasses.		Fig. B. Propagating Glasses.		Fig. C. Milk Pans.	
	s. d.		s. d.		s. d.
12 inches	5 6 each	3 inches	0 4 each	6 inches	0 5 each
14 "	6 6 "	4 "	0 5 "	10 "	0 10½ "
16 "	7 6 "	6 "	0 7 "	14 "	1 6 "
18 "	8 6 "	10 "	1 2 "	18 "	2 5 "
20 "	9 6 "	12 "	1 6 "	20 "	2 10 "
24 "	11 6 "	16 "	3 0 "	22 "	3 4 "
		18 "	4 6 "	24 "	4 0 "
		20 "	6 0 "		

Fig. D. Hyacinth Glasses.		Fig. E. Hyacinth Dishes.		Fig. G. Rolling Pins.	
Common,	2s. 6d. per dozen.	6 inches	1s. 0d. each.	1½d. per running inch.	
Improved,	3s. 3d. "	9 "	1s. 6d. "		
		12 "	2s. 6d. "		
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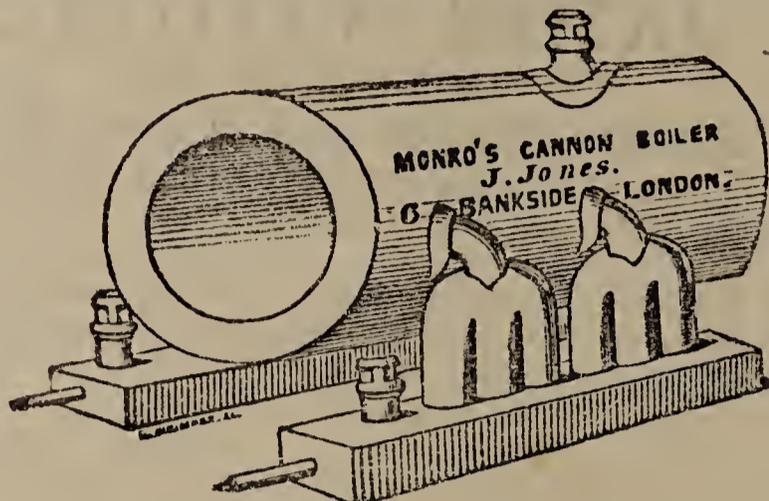
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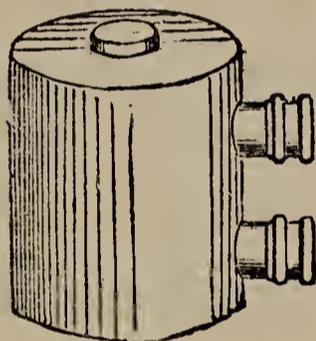
PRICE:—24-inch Wrought Iron, £6 10s.; 36-inch ditto, £8 10s.; 48-inch ditto, £12.

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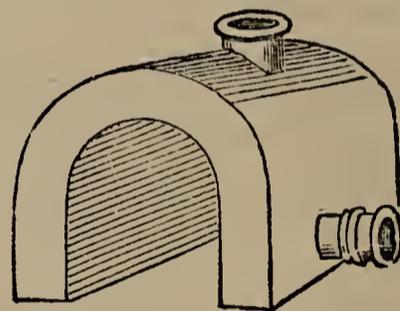
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Size of House.	With Cylinder Boiler.	With Saddle Boiler.
20 feet by 10 feet	£8 10 0	£9 0 0
25 „ by 12 „	10 0 0	10 10 0
30 „ by 12 „	11 10 0	12 0 0
30 „ by 15 „	13 10 0	14 10 0
40 „ by 15 „	16 10 0	17 10 0
50 „ by 15 „	18 10 0	20 0 0

The above prices include Boiler, strong Furnace Doors, Bars, Soot Doors, Cistern, Damper, Hot-water Pipes and Connections, Air Pipes, &c., all ready for fixing, and of the best quality. Parties ordering must send plans, showing doorways, position of boiler, &c.

Full directions for fixing the above, and further particulars, will be sent on application.

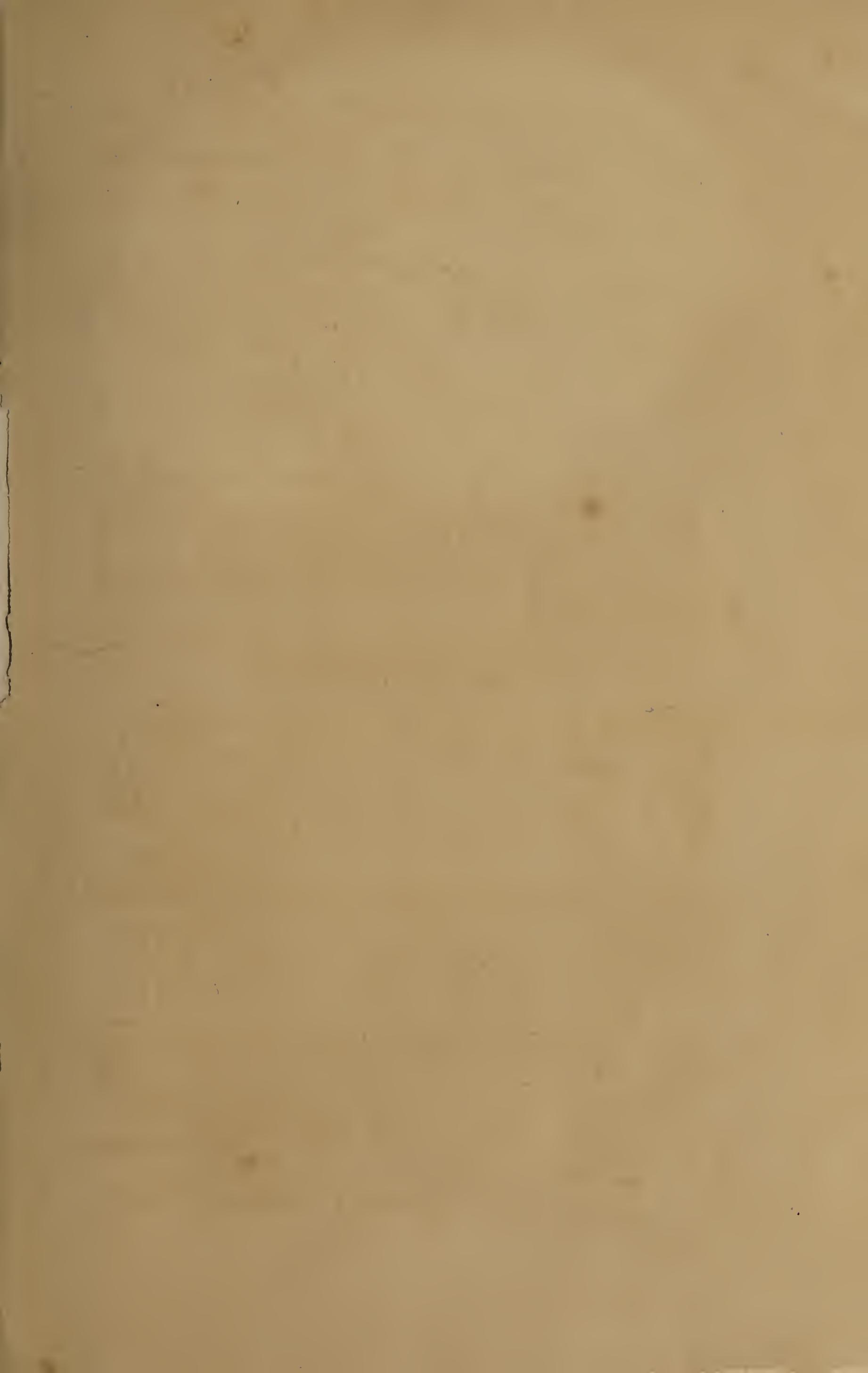
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Indian Yellow Pelargonium.

F. Waller Lith. 18 Hutton Gardens.

THE  
FLORIST AND POMOLOGIST.

---

INDIAN YELLOW PELARGONIUM.

WITH AN ILLUSTRATION.

THE Pelargonium certainly stands in the first rank amongst bedding plants, not only on account of its more manageable habit and greater trustworthiness, so to speak, as compared with most other bedding-out subjects, but also on account of the variety of tints which is afforded by its most prolific blossoms. While the *Verbena* succumbs to mildew, red spider, or thrips, and the *Calceolaria* to paralysis, the Pelargonium blooms on heedless alike of the pluvial or torrefying vicissitudes of weather, simply needing certain slight modifications of treatment, in order to checkmate, as it were, the predominant influences of the season.

The acquisition of new colours amongst the varieties of so popular and useful a flower, cannot be otherwise than agreeable to those who follow up the parterre system of flower gardening. So much progress, indeed, has been made in this direction, that the term "Scarlet Pelargonium" is now made to stand sponsor for varieties furnishing a long catalogue of colours, running through the various shades of scarlet, crimson, rose, pink, salmon, and white. With this progress the name of Donald Beaton will ever be associated in the annals of flower gardening. For many of the later years of his life he devoted himself with much zeal to the cross-breeding of the Pelargonium, mainly with the view of raising new varieties adapted to supply the wants of the flower gardener; and we need do no more than refer to *Stella*, *Cybister*, and *Lord Palmerston*, to show that his labours were rewarded by a fair share of success. Up to the close of his life Mr. Beaton continued these cross-breeding experiments, and a large number of seedlings, bloomed and unbloomed, were left at the time of his death. From these, starting from the vantage ground already gained, a great further advance was expected, and has since been realised. Some few choice sorts had been selected by him for distribution shortly before he was taken from amongst us, and among them was the variety called *INDIAN YELLOW*, of which we now give an illustration. The whole of the seedlings just referred to, bloomed and unbloomed, have passed into the hands of Mr. W. Paul, of Waltham Cross, and it is from the plant as bloomed by him during the past summer that our drawing has been made; while among the more juvenile batch of seedlings many choice novelties have appeared, of which the public will hear more in due time. Thus, from the ordinary race of

scarlets, the bedder-out will have acquired, amongst Pelargoniums, besides the pinks, roses, salmons, and whites he already possessed, a variety of tints which will be invaluable to him—passing off in one direction towards orange and yellow, and in the other towards purple-rose or magenta. These novelties, many of them, combine the prolific bloom of the Nosegay race with the better-shaped blossoms of the more ordinary kinds; and it is to this race of what may be called semi-Nosegays that our present subject belongs.

BEATON'S INDIAN YELLOW PELARGONIUM is a variety of free growth, and of dwarfish habit. It has, as will be seen, zonate leaves, and its flower-trusses are well furnished; the latter were, indeed, rather thin at the time of its first appearance in public, but, as the more natural season of bloom came round, this meagreness was altogether lost, and the plants bore well-furnished trusses as much as 4 inches across, and containing fifty or more of the large well-formed blossoms. The colour has a strongly-marked shade of Indian yellow, which is at once apparent when the plant is brought into contiguity with either a pure scarlet or one of the magenta-tinted race. The colour may be described as an orange scarlet, with a suffusion of golden yellow, or a wash of the same colour overlaid. The variety, indeed, is a most unexpected and valuable addition to the materials for the parterre, all the more welcome as being the first of this colour which will be placed within reach of the flower-gardener.

We may just mention, here, that from the same quarter—namely, Mr. W. Paul's nursery, at Waltham Cross—another yellowish-tinted variety will be sent out. This latter is called *Orange Nosegay*, and is a green-leaved free-growing sort, bearing the enormous trusses of flowers characteristic of the Nosegay race, and with individual blossoms quite in the long-petaled Nosegay style. In this the yellow tint is also strongly marked. Another admirable variety, one of the semi-Nosegay race, with bright purple rose flowers in enormous bunches, is a grand acquisition; this has been called *Amy Hogg*. A third, named *Glowworm*, also a semi-Nosegay, has the upper part of its flowers scarlet, the lower part magenta, the flower-trusses being thus remarkable for the glow of colour they present as the scarlet gradually merges into the rose. A fourth choice semi-Nosegay novelty, named *Rebecca*, has the upper parts orange scarlet, and the lower crimson, with a strong flush of magenta especially apparent towards the centre. All these, which come from Beaton's stock, will be indispensable to those who, in the matter of flower gardening, wish to keep pace with the times. M.

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### CHRONICLES OF A TOWN GARDEN.—No. XII.

HAIL to the "new-born" flowers as well as to the "new-born" year. At my Christmas fireside there will be something more than the "red-berried Holly"—

"That in the wintry blast  
Recalls the hue of spring."

I have, close by me, on this dreary December day, beautiful little Scillas, that "stand dressed in living green" and blue, and near them, in bridal array, sweet little Roman Hyacinths just expanding. They strikingly resemble a white form of the common "Blue Bell;" and so early in blooming are they, that I have seen them in Covent Garden Market for two months past. A right valuable yet unpretending little flower, it is always, and especially just now, when out of doors little else but Holly-berries, and here and there a weather-beaten Christmas Rose, leave a trace of the recent exodus of the great floral multitude that went forth down through the Red Sea of their wintry slumber,

to come up again into the "land of promise" of the approaching spring, that hastens on to meet them in its appointed time. Some pioneers of these on-coming forces thus already find a lodgment beneath my roof. With them is the single Italian Narcissus (about which I have always an approving word to say when they come to me), slowly and silently, but yet unobserved, arraying itself in pure white raiment, to be the Columbine of my domestic floral pantomime—too late for the Christmas revels, but near enough advanced in robing to be able to share in my new-year festivities; and its double Roman kinsman will be the attendant Harlequin.

The finer forms of Polyanthus Narcissus, some of which are earlier than the others, and with them three or four Hyacinths, are pushing on with amazing rapidity, despite my best endeavours to keep them back. *They will grow* (the Polyanthus Narcissus), after they have passed the first week in December. It seems to me that Hyacinths will be early this season generally, judging from what I have seen; still much will depend on the weather that will follow on the track of Christmas. There should be careful attention given that there be no violent alternations of temperature—I speak now of Hyacinths in glasses—such extreme variations often do them great injury. I give mine the coldest part of the room on all occasions, and I never move them from the window except in cases of severe frost, when they might receive injury if allowed to remain there. I have known some persons place their glasses on the mantel-piece, over the fire, and I have lifted the bulbs, observing that the growing spikes looked somewhat unhealthy, and have found a good portion of the water has passed away by evaporation, and what remains emitting a very disagreeable odour. I cannot coincide with those who recommend *rain* water as the best in which to grow Hyacinths. When used, filled as it generally is with impurities, it invariably turns very disagreeable, and the result is a failure of the bloom. Let those who thus fail (and I fear it is a too-frequent occurrence), obtain the purest water at their command; let them place in their glass two or three small lumps of charcoal, and it is highly probable that the water will not require changing more than once, if at all. Another important point is to keep the glasses filled up as fast as the water becomes reduced by evaporation. As a rule, as soon as the shoots of my Hyacinths are from 1 to 2 inches in length, I allow the water to reach half way up the bulbs, in order that the bulb, as well as the roots, should have the benefit of the moisture. I have seen Hyacinths with the surface of the water nearly 2 inches below the base of the bulb, and the roots partly shrivelled in consequence.

Patient, persevering attention is the great requisite. Where there is no love for the flowers, disappointment is a frequent result. Where love and labour link hand in hand, and so go forth to the accomplishment of their task, the coveted result is already half realised, and failure rendered half impossible. He who puts most of his heart into the accomplishment of his set purpose, shall be most blessed with the largest accomplishment of what was sought to be reached.

Quo.

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### GRAPE-GROWING AT MINLEY MANOR, NEAR FARNBOROUGH.

Is bottom heat a necessity to outside borders, or any assistance in growing good Grapes in low situations? The only person who has used bottom heat largely and proved at the exhibitions by his fruit that it did no harm *for a time*, if it did no good, is Mr. Meredith. But at the same time equally good fruit have been exhibited by others without this. One of the most successful

exhibitors of late, when his employers would allow him to show, is Mr. Meads, gardener to Raikes Currie, Esq., at Minley. I visited this place in the month of September last, and was exceedingly pleased with the fine bunches and berries in every house, where a crop was still hanging. The Muscats in particular were 4, 5, and 6 lbs., fresh and plump, and yellow as saffron. The situation of these houses is upon a barren moor. Of natural soil there is none, but the material taken out for the border space is a cold clayey gravel. There is no bottom heat used for these borders, and no covering except a little fern for the early house. But what struck me with most surprise, is the indifference shown to the borders. The houses form a range of lean-to's, along the front of which where the border is, and running close up to the front plate, there is a broad gravel walk, and the whole of the inside of these houses is flagged all over. Now, if any situation required bottom heat to bring Grapes to perfection, it must be such a one as this. But if we take a large border with either a flow or return pipe in it, or a common flue at the level of the drains, and surrounded by rubble, we shall find that the heat does not circulate, either along the drains or rubble, but rises immediately through the soil above and carries the nutritive gases of the soil with it, thereby impoverishing the border of what the roots require to feed upon, and exhausting the portions immediately in contact with the influence of this heat. If the borders are inclined to be wet, either from the nature of the soil or from imperfect drainage, it will be found when heat is applied after a season's rest, that the damp has accumulated in them, the influence of the heat is passed up into the soil in the shape of steam, and lodges at that point where the cold soil condenses it, and instead of drying the border makes it more spongy and wet. All our examples of very early Grape-forcing, as far as I know, have no artificial bottom heat, and on this subject we should like to have the experience of those who have tried it upon a large scale. My impression may be wrong that it sooner exhausts the natural properties of soil in outside borders; but we know it does so in small pits, and with pot Vines that are subjected to strong bottom heat. F.

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### THE PROPER STOCKS FOR VINES.

THIS is a subject that has of late been referred to by several writers in the horticultural press, who have given their own experience of the matter, and to whom I, for one, am much indebted, as I considered it of great importance that, by the evidence of facts, some just conclusion should be come to as to the stocks on which our high class but delicate Grapes will succeed best. I have inarched Vines on the Black Barbarossa, and found the Grapes deteriorated—Muscats would not ripen at all; on Lady Downes', West's St. Peter's, and White Muscat, without any improvement, though with no deterioration. On the Black Hamburgh I have only tried Snow's Muscat Hamburgh; but so satisfied am I with the extraordinary improvement in this best of all Black Grapes, that I have this season inarched a number of young Black Hamburgh Vines with it. On its own roots this Grape forms ragged unshapely bunches, the berries swell unequally, and many of them shank and never ripen at all; whereas, on the Black Hamburgh stock I have had bunches 5 lbs. weight, berries equally swollen, and well coloured and finished in every respect. I would strongly advise some enterprising nurseryman to work a stock of plants of this Grape on the Black Hamburgh, for one day it must become a most popular Grape. It grows and ripens in the same house as the Hamburgh, and rivals the White Muscat for flavour. I have inarched the White and Grizzly

Frontignans on Hamburgs this season, influenced by the effect of this stock on the Muscat Hamburg, and am sanguine as to the result.

One caution is necessary for those who may try experiments of this sort—they should take care that they inarch on stocks in good health and vigour. It sometimes happens that a particular Vine becomes, from some cause, unfruitful. To cut this Vine down, and graft it with another sort, and if success did not attend the operation to conclude that the Vine in question was an unsuitable stock, would not be a fair inference, when it is considered that the Vine was unfruitful when the experiment was begun, and might be expected to continue so, no matter what sort might be grafted on it, unless some radical change was wrought in regard to its general circumstances.

The splendid bunches that Mr. Hill, of Keele Hall, showed at the London exhibitions last summer were from the Black Prince on a Hamburg stock, as is well known; in fact all the data that have come under my observation point unmistakably to the Black Hamburg as the best stock for tender Vines. At first sight I would have concluded that the Raisin de Calabre would be an excellent stock. The Vine is hardy, grows and ripens its fruit well in a cool vinery, and is a most vigorous grower; but it seems that it failed with Mr. Fowler, of Castle Kennedy, from excess of vigour, in as far as it sent up more sap than was required by the berries and burst them. Probably this could be avoided by leaving a more than ordinarily heavy crop on the Vine, a very pleasant way of effecting a cure, if it answered. On the whole I think this Vine should have a fair trial, as a stock; it has many qualities to recommend it.

If all who try such experiments would give the results through the press, the matter could soon be settled, and a great boon conferred on Grape-growers.

*The Gardens, Dalkeith Park.*

W. THOMSON.

## CULTURE OF THE CHRYSANTHEMUM.

IN offering a few remarks on the culture of the Chrysanthemum, I do so with all becoming diffidence, knowing that there are cultivators of this plant whose name and experience would carry far greater weight. Still I have no hesitation in offering the following, in the hope that it may prove useful and interesting to some who regard this flower with especial favour.

There are men who have made the culture and study of the Chrysanthemum the chief, if not the sole, matter of importance in connection with their business, and have grown and tested sorts and varieties the names of which would make a lengthy catalogue. This, however, is not the case with me. As a gardener, my time and attention have to be divided equally among plants of various genera. The Chrysanthemum takes its place among these, as a plant useful for its decorative properties at a time of the year which, without it, would be dull in a floral sense; apart from which, it is a plant that is most extensively grown for exhibition, more particularly around the metropolis, where numerous shows are held annually—that is to say, numerous societies have sprung up of late years, the express object of them being to encourage the growth of the Chrysanthemum. Judging from the beauty and excellence of the specimens exhibited, no doubt whatever can exist that these societies produce the desired effect. The same thing is rapidly spreading over the country, and imitators are found in various provincial towns, but as yet they are far behind metropolitan shows. The Birmingham Show this year has been a great improvement on that of last year, and may be better still next. My purpose, however, is not to speak of shows, but, as well as I am able, to point out the manner in which plants and flowers may be produced in a condition fit for public exhibi-

tion. I would, however, wish to have it understood that, however closely such directions as I may give are followed, the production of really good plants or flowers will, and must, depend more on the care and genius of the cultivator than on any directions he may receive—in the same way that a student may be taught the art of painting or sculpture, but nothing but an inborn genius can produce that finish, truth, and life-like expression on which the fame of the artist rests. If this fact is borne in mind there will be less of the too frequent complaint, that after having received directions, so little has actually been learnt from them.

Generally speaking, very few gardeners have the opportunity or even the desire of testing a very large number of sorts; but good growers generally manage to acquire those most suitable for their purpose. This applies more particularly to gardeners who grow for exhibition, and who, as regards the large-flowering sorts, divide them into two classes—that is, such as produce the most compact and best-incurved flowers, when grown with that view, and such as are capable of being grown into the best specimen plants; and, though some of the latter produce reflexed flowers, as *Christine*, *Annie Salter*, or *Julie Lagravère*, there are others, as *Plutus*, *White Defiance*, or *Rifleman*, that give flowers of the best description for showing as cut blooms. A little practical acquaintance will enable any one to discover varieties of the most compact and bushy habit. I will do my best to assist the beginner in selecting sorts for whatever purpose he may desire; but in the first place I think it best to have a word to say respecting the culture of them.

My own practice, as a grower for exhibition, has been very limited. I have, however, found that, for making good specimens, the following are excellent:—Among White ones, *Vesta* and *White Defiance* are very good, also *Lady St. Clair*; Yellow, *Annie Salter*, *Chevalier Domage*, *Sulphurea Superba*, *Plutus*, and *Little Harry*; *Christine*, which is described as a peach colour, and the golden variety of the same, are both good. Among Dark varieties I have generally managed well with *Julie Lagravère*, *Insignis*, *Madame Commerson*, and *Rifleman*, besides an old sort, which, I think, is quite out of date now, called *Duc de Conegliano*, as near as I can recollect.

The process of raising plants with the object of growing good specimens has been often described. That, however, is no reason why I should not give an epitome of my own practice, which is to take the strongest offsets while the old plants are in bloom. These may, or may not, have a little root to them. I put three or four of these round a small pot, using any tolerably good loamy soil, well sanded. These are properly labelled; and I would recommend the propriety of keeping each sort distinct, in a separate pot, in preference to using larger pots, and placing several sorts in one. Having watered the cuttings, place them in a cold frame or pit, or in an open shady part of a greenhouse, by no means endeavouring to excite them into growth by artificial heat, which is a mistake beginners are very apt to fall into. They will strike root in the course of the winter, and may be potted-off into three-inch pots in March, using rather light loamy soil, and little or no manure. Place them in a frame, and shade from the sun until they can bear it without flagging; but do not keep them too close, and avoid urging them to grow fast. It often happens that they may appear to be stationary at that time of the year, but, the fact is, they are busy making roots, which is just what could be wished. When the plants have filled the pots full of roots, pot into six-inch pots, and treat as before—that is, expose them to the open air as much as possible, and protect only from frost or very heavy rains. When about 6 inches high pinch out the tops, and keep the lower part of the stem clear of shoots or offsets. Use in this potting rather strong but sandy loam, and a small portion of very rotten

manure, about one-sixth. In the next potting, which should be into 10-inch pots (the largest allowed, except for single specimens), good strong, but still sandy or sanded, loam should be used, with a still larger portion of manure, but not more than one-third. It is a great mistake to use much manure, or that insufficiently rotted, in potting plants of this kind, or to give it in a liquid state until the pots are filled out with roots.

The plants should receive their largest shift or potting about the middle or latter end of May; and, towards the latter end of June, or about midsummer, they will have filled their pots with fibres, and then is the time they will need a little extra support or stimulus in the shape of liquid manure. This should be given weak at first, and not too often—say once in three days. It is when the plants get into this stage that they will begin to grow rapidly, and must be constantly attended to as regards stopping and tying down, in order to make them dwarf and bushy. The process is more easily seen than described, and is one of those operations that can only be properly understood after a little practice.

The plants must also be plunged either in the ground or any prepared place or bed in an open spot; or the pots may be sunk into larger pots, and the cavity filled with soil, moss, or any material that may happen to be at hand. This latter process of double-potting is convenient where space is any way limited. The plants can be more easily moved about, and may stand in places where it may not be advisable to plunge in the ground. This, however, is just a matter of choice, although the hint may be useful.

From this time forward the main points in growing good specimens are to feed the plants sufficiently, but not too much, with liquid manure. If guano is used, give about half an ounce to the gallon of water, the latter being slightly warm; if cow or sheep dung the strength may be somewhat proportioned. When the plants are in full growth—that is, from the beginning of July till they begin to bloom—this liquid may be given every day, or every two days, at the discretion of the grower. My own practice is to alternate it with one watering of clear water, whether it be once a-day, twice a-day, or once in two days. What is necessary, is (making use of a rather common illustration) to regard the operation somewhat in the light of fattening a prize pig, which is treated to the most fattening diet, and plenty of it. Another point is to attend to the tying-in, using few or no sticks; the object being to get the plant to a good shape, presenting a uniform surface of bloom without exhibiting the twisting and tying. This can only be done by taking the earliest opportunity of drawing-in each shoot; but about a month before the plants open their blooms some sticking and tying will be necessary. My own practice is to use thin willow withs, which, when dried and stiff, answer the purpose admirably. Others, however, use lath sticks painted green, which are not so apt to break off at the surface of the soil. In tying, some little skill must be displayed, in order to avoid any stiffness in the appearance of the plant after the operation. There can be no better guide for beginners than to observe three rules respecting plant-tying—first, use as few sticks as possible; secondly, conceal both sticks and ties as much as possible; and, thirdly, bear in mind the form the plant would assume if left to nature. If these are duly considered, a little practice will soon enable a man to tie plants both neatly and expeditiously; and this, be assured, is no trifling matter with young gardeners, who often incur the displeasure of their employers by fumbling for days and weeks together over a few plants which, when strained and stiffened on innumerable sticks, are a great deal the worse in health and appearance.

When, towards the latter end of October, the plants begin to show bloom, it would be as well to take them into a greenhouse, or other shelter. If for

exhibition, some may be too forward. These may be taken to a northern aspect, and merely covered in case of frost or heavy rains; at other times left entirely exposed. Such as are late may be taken in early, and kept rather close; but all that are in-doors had better be syringed under the foliage at least once a-day, or if twice, let it be early in the day—say the first time about eight in the morning, the second time about 2 P.M.

*(To be continued.)*

F. CHITTY.

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## WHAT SOIL IS BEST SUITED FOR THE PRODUCTION OF SUPERIOR GRAPES?

THIS question, to which Mr. Cramb has directed attention at page 245 of the last volume of *THE FLORIST AND POMOLOGIST*, is one of the very highest importance. It is an indisputable fact that we daily see Grapes of superior quality produced in soils that vary much one from the other. Thanks to the intelligence and skill of the gardeners of the present day, we see Grapes of superior quality produced on the limestone, sandstone, and clay. As we cannot expect to find that which does not exist—a good and fertile soil in every locality throughout the length and breadth of the land, we must deal with matters as we find them. When we have an unfavourable soil, we must improve it by adding to it those constituents of which it is deficient. By this means we can grow good Grapes; but it cannot be expected that Vines grown in borders of this description are longlived; neither are they. The universal experience of all countries has established the fact that a dry and warm soil is the very best for the Vine. Perhaps there are few if any plants that flourish in so great a variety of soils and situations as the Vine. Most of the vineyards of France are in a soil both clayey and calcareous. In other parts the Vine is to be found thriving in granitic and volcanic districts. Where vineyards are cultivated a limestone soil, or one composed of decaying calcareous rocks, is generally esteemed by far the best; but in gardens where the Vine is grown solely for its fruit the soil should be highly enriched. And this brings me to the question, “What soil is best suited for the production of superior Grapes?” If a border for Vines be made of proper soil, it matters little whether the house be a “lean-to” or “span-roofed,” provided there are means for giving plenty of air when required, and an effective heating-apparatus. With plenty of fire heat, and an abundance of air, Grapes are more highly flavoured than where but little fire heat and air are given. The soil for the production of fine Grapes should be dry and light, deep and rich. In former days the borders for Vines were generally made deep, and being often made below the ground level suffered generally very much from rain and snow in winter. In avoiding this evil some inexperienced growers of the present day commit as great an error of an opposite kind in making very shallow borders. In flat low-lying districts where the soil is stiff and heavy and the subsoil retentive, a moderately shallow border is without doubt the best; but in sandy soils where the subsoil is porous, and naturally thorough-drained, a shallow border is according to my humble judgment and experience a very great mistake. In a soil of this nature a border 3 to 4 feet deep will produce superior Grapes for a greater number of years than a shallow border of 2 feet. I am speaking of Grapes that ripen during the months of August, September, and October. A shallow border made of good fibrous turfy loam, with crushed bones and other things added, and copious supplies of liquid manure when the Grapes are swelling, will without doubt produce superior Grapes for a few

years; but a border from 3 to 4 feet deep, properly made on a well-drained bottom, will produce Grapes as good if not superior, and for a considerably greater number of years—a much more satisfactory state of things for a gardener than to be compelled to renew his borders after a few years' bearing, a practice not uncommon at the present day. As to the soil best suited for producing good Grapes, on one point most cultivators are agreed, and that is, that the turf from an old pasture is an indispensable requisite. But turf varies in character according to the nature of the soil in every locality. The substances of which soils consist are but few in number, but every practical man knows how very diversified they are in character. These differences arise from the different proportions in which sand, lime, clay, and the oxide of iron and organic matter have been mixed together. Almost all fertile soils contain a large quantity of silica, a portion of alumina, and various salts of lime, magnesia, potash, and soda. In making a Vine-border we can hardly err in using turf from a soil of this description, as it contains all the elements for building up the plant; and if it has been grazed by sheep it will contain a large quantity of organic matter, which is essentially necessary for the production of fine Grapes. A border made of turf of this description will not for a few years need much manure, as the organic matter which it contains, during its decay will, until exhausted, supply the wants of the Vine—and this shows the fallacy of making very shallow borders, for as soon as the organic matter is all decayed, the wants of the Vine, to produce good Grapes, must be supplied by top-dressings of manure, and by heavy waterings of liquid manure. And here I would observe that I regard the constant watering of Vine-borders—which becomes a necessity with shallow borders after a few years—as a very bad practice, as no matter how clear the liquid may be, it will ere long destroy the porosity and mechanical condition of the soil, and then farewell good Grape-growing. In making borders for Vines I prefer the turf from a good sandy loam—a dry bottom with thorough drainage I regard as indispensably necessary. I prefer a border from 3 to 4 feet deep to a shallower one, and I use good stable dung sparingly and crushed bones. A border made in this manner will for a great number of years yield fruit of very superior quality, provided the Vines are not forced; and after the lapse of a number of years an occasional top-dressing of good rotten manure will enable the Vines to produce superior Grapes for almost any length of time.

The Vine at Hampton Court is an instance of the longevity of the Vine in this country, and yet how rare are old Vines to be met with! What is the cause? There are of course many localities where the soil is unfavourable to its growth and longevity, but there are also many places equally as favourable as Hampton Court. Why, then, do we not see more old Vines in the country than are to be met with? I believe that the reason is, that the Vine has been very often killed by too much pampering, too much mistaken kindness; something in the same way that many men and women spoil and ruin their children by too much indulgence and mistaken kindness in their youth, and are afterwards surprised to find them turn out anything but paragons of virtue. Yet such people will say their children's bad conduct is not their fault, that they used them most kindly and indulgently—alas! good people, you have, too kindly and indulgently. Too much coddling, too much pampering, and too much mistaken kindness have ruined many Vines. A Vine-border from 3 to 4 feet deep made of turf from an old pasture on a sandy soil, when this description of soil can be had, with a moderate portion of good stable manure, crushed bones, and charcoal, will produce Grapes of the highest excellence for a great number of years, provided proper attention is paid to giving plenty of heat and an abundance of air at all times when it can safely be given.

*Stourton.*

M. SAUL.

## OUR LATE PEACH-HOUSE, AND WHAT LED TO IT.

UP to the autumn of 1860, the wall which now forms the back of our late Peach-house was covered with Fig trees, which were killed down to the ground on the 25th of December of that year, when so many fruit trees, Pines, and even old Oaks and Cedars of Lebanon shared the same fate.

My employer asked me what could be done to make the best use of the wall, as it would be the work of years to cover it again with Figs; and I suggested to cover it with glass and plant it with Peaches and Nectarines. The building was commenced the following May, and planted for the summer with Cucumbers and Tomatoes, trained on the trellis put up for the Peach trees; these with a few Melons and some climbing plants trained in the same way gave the house a very gay appearance, as well as added to the interest of it. The Cucumbers and Tomatoes did remarkably well; but not so the Melons, which set their fruit well and grew to a large size, but failed to ripen without the bottom heat, so beneficial to them and many other plants.

In the autumn of the same year the soil inside the house was trenched two spits deep and well manured from an old hotbed; and three-inch drain-pipes were laid the whole length of the house, along the front, 6 inches lower than the soil was moved, and a layer of turf placed over the pipes, the grass being downwards to prevent the soil getting into them. These conducted into a tank 6 feet deep placed outside of the house. This and the troughing which was put along the front of the house and led into the same tank, conveyed the rain water that falls on the house to the tank—an arrangement which should always be made, as it is a great saving of labour, and rain water is far preferable for watering.

The dimensions of the house and its cost I hope may interest some of the readers of the *FLORIST AND POMOLOGIST*. It is 46 feet long, 8 feet wide, 12 feet at the back, and 5 feet in the front, 3 feet of which are glass, and 2 feet boarded. The top board nearest the glass is 11 inches wide and opens the whole length of the house. The top is ventilated by flaps raised upwards by an iron rod to each flap, and which are fastened to an iron bracket in the back wall. Each flap is 40 inches long, two out of every three of the top squares can be raised. This I find good ventilation, as the trees have been free from red spider up to the present day. The house is glazed with 16-oz. glass, 20 inches by 15, and the cost of the whole including the Peach and Nectarine trees did not exceed £37.

The back wall is trellised; the wires are put on strips of deal 2 inches thick. This gives room for the foliage of the trees, and gives more play for the syringe, without which it would be impossible to keep down red spider, thrips, &c. The centre of the house has a trellis 3 feet 6 inches high, 5 feet from the back wall, and 3 feet from the front. The sorts on the dwarf trellis are—1 Bellegarde Peach, 1 Acton Scot ditto, 1 Newington Nectarine, 2 Violette Hâtive. One of these was sent for a Walburton Peach to my great disappointment. On the back wall the sorts are—1 Noblesse Peach, standard-trained; 1 Downton Nectarine, dwarf; 1 Salway Peach, standard; 1 Late Admirable Peach, dwarf; 1 Hunt's Tawny Nectarine, standard. There are ten trees all three years planted. All have borne a heavy crop of fruit this year, and most of them did so last year; the fruit large, of good flavour, and well coloured. The Salway Peach I have an idea is not so sufficiently known as it deserves to be. I find Mr. Ingram showed some fine fruit of it at Kensington in October. I sent the last of the Salway Peaches to the Hall last year on the 10th of November. At the present day, November 7th, we have two dozen of fine fruit by us, six are still on the tree, so there can be no mistake about November Peaches.

Some of them measure 10 inches round, and this in a house not heated. In my opinion it is not necessary to heat a late house, and it should not be more than 8 feet wide, as the whole of the trees are then near the glass. This I think very much better than 16 feet wide for Peaches. A friend of mine has a house double the width of ours, but the width of the house does not improve the fruit in any way. I have been told that a cold Peach-house is of no good whatever, but I find it to be just the reverse, as I consider we have done in three years with only the assistance of glass, what it would have taken ten years to have done the same without, as there is scarcely a single square foot of trellis in the house but what is covered. We have another Peach-house, 30 feet by 10. This we intend to heat with a four-inch flow and return hot-water pipe from an early vinery which joins it, as all through September we were overdone with Peaches, and by doing this I hope to gain at least another six weeks to the Peach season.

Mr. Tillery, at Welbeck, has given an account of his glass case as wall protection. I hope he will favour us with the result, as it would be a step in the right direction to know what is being done in other places.

*Elsenham Hall Gardens.*

WILLIAM PLESTER.

### WINTER-BLOOMING ROSES.

THIS day, November 22nd, I have before me a vase of Roses, a fit and beautiful ornament for the drawing-room. Some of the blooms would warm the heart of the most fastidious rosarian, by their brilliancy of colour and beauty of form. These I have just cut from standards in the open garden, where they have been exposed to all weathers, without the least protection whatever.

I will here give the names of eighteen kinds that are now in good bloom, placing them in their order of merit:—

Senateur Vaisse	Triomphe des Beaux Arts	Souvenir de Lady Eardley
Général Jacqueminot	Madame Boutin	Anguste Mie
Gloire de Dijon	Baronne Gonella	La Reine
Madame W. Paul	Alphonse Damazin	Duchess of Orleans
Murillo	Prince Camille de Rohan	Celine Forestier
Madame Julie Daran	Beauty of Waltham	Victor Verdier.

It will be seen, from the foregoing list, that the introductions of the last few years have generally exhibited more of the Perpetual character, and one more suited to our climate than those we were in the habit of receiving eight or ten years ago. It must be borne in mind that I am writing from a cold district in the midland counties, where two or three sharp frosts have occurred, and where the wind and rain, during the last week, have been very violent. It therefore gives me much pleasure to see that the greater portion of the Roses sent out during the last two, three, or four years are of a more robust growth, with more freedom of bloom, and of a much more hardy constitution than the Perpetual varieties we were formerly acquainted with.

*The Cedars, Castle Bromwich.*

CHARLES JAS. PERRY.

### THE TRUE BLACK ALICANTE GRAPE.

WOULD some of your correspondents have the goodness to state what difference there is between the Black Prince and the Black Alicante Grapes? The former I have known from my boyhood; but in what has been always shown to me as the Alicante I could never see any difference between it and the Black Prince. In some places I visited this season I have had the Black Prince pointed out to me as the Alicante. I believe some authorities say they are synonymous.

I am about to plant three new vineries, and if the Alicante be really different from the Black Prince, and a superior Grape, I would feel inclined to add it to the collection. I will therefore esteem it a favour if some of your correspondents will inform me what difference there is between the two Grapes; and I am certain the information will be acceptable to others as well as myself, who think they are synonymous. Only last week I was told by a first-class practical man that there was no difference between the two—that they were one and the same thing.

M. SAUL.

### OUR MONTHLY CHRONICLE.

ROYAL HORTICULTURAL SOCIETY. — The December Fruit and Vegetable Show, which lasted from the 7th to the 16th, though lacking somewhat in variety, was the most extensive display of the kind which has taken place at South Kensington since 1862. The exhibitions of forced fruit were very scanty, but Apples and Pears mustered in great force; and vegetables were likewise tolerably well represented. The only collections of fruit were those of Messrs. Webber & Co., of Covent Garden, and M. Chevet, of the Palais Royal at Paris, but, unfortunately, the latter did not arrive in time for the first day of the Show. Messrs. Webber had in their collection a dozen Uvedale's St. Germain Pears, weighing collectively 29½ lbs., besides fine specimens of foreign Catillac, Easter Beurré, and Glou Morceau Pears, Reinette du Canada and White Calville Apples, and seven good Pines. In the latter fruit Mr. Ingram, gardener to Her Majesty, sent two handsome smooth-leaved Cayennes, which, when cut, weighed 7½ lbs. each; and in Grapes excellent bunches of Black Hamburgh were contributed by Messrs. Lane, of Berkhamstead, and Hill, of Keele Hall; also of West's St. Peter's by Mr. Tillyard. Of Muscats there were only two exhibitions, but the deficiency in quantity was compensated by excellence of quality, the bunches being large, regular in berry, and very well ripened. They came from Mr. Tillyard and Mr. A. Ingram, Highgrove, Reading. Of dessert Pears the best collections were those from Mr. T. Ingram and Mr. Tillyard, comprising finely-grown examples of Chaumontel, Easter Beurré, Beurré de Rance, Glou Morceau, Passe Colmar, Prince Albert, and Groom's Princess Royal. Kitchen Pears were not remarkable for size; the heaviest dish was Catillac, from Mr. Ross, gardener to C. Eyre, Esq., Newbury. Of Apples there was a long array; the fruit was generally in excellent condition, and, as in the case of the collections from Messrs. T. Ingram, Betteridge, and Cox, in some instances very highly coloured. Blenheim Orange was well shown in most of the collections, as well as that old favourite the Ribston. Of Cox's Orange Pippin, Court-Pendu-Plat, Fearn's Pippin, Cornish Gilliflower, and King of the Pippins, fine specimens were shown in several collections. The first-named proved to be the

best in point of flavour in the class for single dishes. Kitchen Apples were also numerous shown, and most of the varieties grown for culinary purposes figured in one or other of the collections. Mr. Betteridge, of Steventon, was first both for twelve and six dishes; the heaviest five (weight not stated) were Gloria Mundi, from Mr. Lumsden, of Sleaford. Nova Scotia sent a large collection of Apples, among which were good examples of many of the kinds cultivated in this country, as well as several of local reputation. M. Grégoire, of Jodoigne, Belgium, sent seventy-one seedling Pears, but none of them of any merit; and Mr. Hardie, gardener to the Viceroy of Egypt, Pomegranates, Oranges, Lemons, Shaddocks, Custard Apples, Dates, fruit of the Papaw tree, &c.

Among vegetables were several good collections of Potatoes; and Mr. Spary, of Brighton, had 268 tubers the produce of a single Potato. Onions, Leeks, Carrots, Parsnips, Salsafy, Scorzonera, and Horseradish were also well represented; but in salading of all kinds there was a deficiency, by which it was evident that this department of gardening, at least as regards the winter months, is too little attended to. One great feature in this portion of the Show was the stand of Messrs. Sutton, of Reading, which, besides roots and Gourds, contained no less than a thousand kinds of seeds.

The Floral and Fruit Committees met on the first day of the Show. At the former *Manettia cordifolia* major, from Mr. Veitch, and having bright scarlet flowers, was awarded a first-class certificate; and a similar distinction was conferred on *Asplenium Hemionitis cristatum*, a handsome-crested Fern from R. J. Gray, Esq., of Exeter. At the Fruit Committee a new Pear called Prince Consort, from the Rev. John Huyshe, of Clysthydon, received a first-class certificate. It is large and handsome, resembling in shape a very large Marie Louise or Van Mons Léon le Clerc; the skin is yellowish green, the flesh yellowish, firm, very juicy, and rich, partaking of the flavour of Gansel's Bergamot. Mathews' Eliza, from Mr. Mathews, of Clapham, proved the same as Groom's Princess Royal. A good late Melon was also shown by Mr. Short, Clewer Park.

A special general meeting was held on the

13th, to consider the amended bye-laws, with a view to their adoption, W. Wilson Saunders, Esq., in the chair. Mr. Harry Chester, in moving their adoption, pointed out the principal differences between the old and the new bye-laws. The latter only required persons desirous of becoming Fellows to be recommended by two instead of three Fellows as formerly, and provided for their more speedy election; took away the power of the Council to readmit, without election, Fellows who have resigned; and left the Society unfettered as to the number of honorary members which it might elect. The hour of the annual meeting was changed to eleven o'clock in the forenoon, or such other hour as the Council might decide, and the manner of electing the latter was altered. Balloting-lists, distinguishing the cause of any vacancies in the Council, and the persons who are recommended to fill them, and a similar list of the President, Treasurer, and other officers of the Society, were to be prepared before the 15th of January in each year, and circulated among the Fellows, and the latter must, within seven days afterwards, give notice of any proposed deviation from the Council's list. Members of Council were to be incapable of taking any prize at exhibitions; a Committee for the consideration of measures to improve the education of young gardeners was to be appointed, and a report from the auditors of the accounts was in future to be made. Mr. S. H. Godson moved an adjournment for a month, opposed the new bye-laws as giving the Council too much power, and complained that due notice of the meeting had not been given. After a long discussion the new bye-laws were adopted with some alterations, and a resolution was passed requesting the Council to take steps to procure a new Charter, which was carried with but one dissentient.

THE BIRMINGHAM FRUIT AND CHRYSANTHEMUM SHOW, which was held in the Town Hall during the Cattle Show, was well attended by visitors. The plants were tastefully arranged, and the effect was very good, especially when the Hall was lighted up at night—in fact the Chrysanthemum seems even more effective by gas light than by day. Many of the specimen plants, both large-flowering and Pompons, were very creditable; the cut blooms, however, were, as a whole, inferior, many of them having been taken from plants not grown and thinned for the purpose. Of Apples and Pears fine examples of foreign growth were shown by Mr. C. J. Perry, Mr. Pluck, and others, and good collections from the district of fifteen miles round Birmingham.

ABUTILON VEXILLARIUM. — “La Belgique Horticole” for October last contains a coloured plate of a very ornamental Malvaceous plant, introduced from South America, in 1863, by M. Beaufays. It is a branching shrub of tall growth, with lanceolate leaves, cordate at the

base, and sometimes inclining to be three or five-lobed, toothed at the edge. The flowers are produced singly at the axils of the leaves, are pendant, and borne on slender peduncles about an inch in length. The calyx is tubular and almost pentagonal, about three-quarters of an inch in length, of a vermilion colour; the corolla short trumpet-shaped, and composed of five petals, yellow tinged with orange; the stamens dark reddish brown, extending beyond the corolla about four-tenths of an inch. The plant may be grown in any hot-house or greenhouse, and is tolerably hardy, having withstood 7° of frost (25 Fahr.). It likes moisture, and is readily increased by seeds and cuttings. Its specific name, *vexillarium*, is derived from *vexillarius*, or standard-bearer, from the flowers presenting the three colours of the Belgian flag.

NEW POMOLOGICAL ASSOCIATION.—An Association of all the instructors in fruit-tree culture has been established in Belgium, under the presidency of M. Vanden Hecke de Lembeke. Its objects are to establish uniformity in the nomenclature of fruits, and the mode of teaching their culture, as well as a closer study of the varieties. The Association will likewise publish a journal devoted to these subjects.

HOLLYHOCK FLOWERS AS A DYE STUFF.—Near Nuremberg, a variety with almost black flowers is cultivated for the sake of the colouring matter, which is employed in colouring wines and dyeing cotton stuff. It is largely exported to England. A profit of as much as £32 per acre is said to have been realised.

ROGIERA GRATISSIMA.—The November Number of the “Flore des Serres” contains a coloured plate of this very ornamental rosy-flowered shrub, which was shown last autumn by M. Linden, of Brussels, at South Kensington and the Crystal Palace. It was discovered by M. Ghiesbreght in the mountains of Chiapas, on the frontiers of Mexico and Guatemala, and the altitude at which it was growing renders it probable that the plant will flower in the open air if afforded the protection of a greenhouse in winter.

MESSRS. LEE'S NURSERY AT HAMMERSMITH.—We publish with pleasure the following letter which we have received from Messrs. Lee, relative to a notice in our November Number, and which appears to have been misunderstood by some of our readers:—

“Our attention has been called to a paragraph about our Nursery, in your Number for the month of November, which is likely to mislead our friends and correspondents, as it may readily be inferred from the statement that we are leaving Hammersmith altogether, and removing to Ealing and Feltham, where we have established Nurseries. Permit us, therefore, to say that our business will still be carried on as usual at the Vineyard, Hammersmith, where we have been located up-

wards of a century, and where we have still several acres of freehold, upon which are erected our greenhouses, warehouses, and offices.

"The land upon which the buildings you alluded to are being erected belongs to a charity, and our old lease having expired, the Commissioners of Charity would not relet the and for nursery purposes.—We are, &c., J. & C. LEE."

**CINCHONA CULTURE AT DARJEELING.**—The total number of plants in the government plantations on the 14th of June, 1863, was 6350, and the number on the 15th of July, 1864, was 19,516. Since last year the cultivation of Cinchona has been successfully commenced by two private individuals near Darjeeling, the plants having been obtained partly from Ootacamund and Ceylon. In one case the cultivation is carried on on a scale which it is evidently intended to extend with the increase of the plants. An European gardener conducts the operation, and the plants in the nursery already exceed 1000.

#### OBITUARY.

M. KICKX, Professor of Botany at the University of Ghent, died there suddenly on the 1st of September last, in his sixty-second year, after having filled the chair for twenty-nine years, having been appointed to it in 1835. He laboured assiduously for several years on a work on the Cryptogamic Flora of Flanders, and was about to publish it at the time of his death. He is succeeded by his only son, M. Jean-Jacques Kickx.

MR. JOHN LAWRENCE, for upwards of forty-one years gardener to Sir Richard and Sir John Simeon, at St. John's, near Ryde, Isle of Wight, died in the early part of last month. He was a native of Aberdeenshire, and brought up in the Earl of Aberdeen's gardens at Haddo House, in which several excellent practical

gardeners have been trained. How much he was respected is shown by the following extract, in the *Isle of Wight Times*, of a letter written by his master to a friend:—"It is impossible to exaggerate the loss my poor old friend is to me, or to overrate his many admirable qualities. No family was ever more honoured by the service of a more faithful and affectionate friend than he was to my father and myself."

THOUGH we have from time to time looked over numerous foreign periodicals for the losses which the horticultural world has sustained, the names of some eminent botanists have escaped us, and these we take on the authority of the *Gardeners' Chronicle*. Among them are Professor TREVIRANUS, of Bonn, who died in May last; and Dr. HERMANN SCHACHT, Professor of Botany, and Director of the Botanic Garden of the same University, who died in August. He had acted as assistant to Dr. Schleiden, and was the author of a treatise on Botany, and another on the use of the microscope. SIEBOLD, whose name is so well known in connection with his botanic researches in Mexico and Cuba, died in July last, at Havannah; and JUNGHUHN, the Inspector of the Dutch Cinchona plantations in Java, and M. CRUGER, the Superintendent of the Trinidad Botanic Garden, died, the former in April, the latter in February.

Lastly, ere this reach our readers, the year 1864 will have passed away. At its outset foreign war seemed impending, and sore distress prevailed in the manufacturing districts of the north; but happily the one has been averted, the other in a large measure alleviated, and horticulture has not languished, as it is apt to do when the attention of its votaries is distracted by such calamities. 1865 comes with brighter prospects; may it prove to each and all—

A HAPPY NEW YEAR.

## CALENDAR OF OPERATIONS.

### STOVE.

SEIZE spare time to look carefully over the plants for insects; plants are easily cleared of them, if well looked over at this season. Keep the night temperature as low as is consistent with the safety of the plants; in very severe frosty weather 55° will be quite high enough at night. Do not let the atmosphere get too dry from fire heat. Attend very carefully to the watering. Give air on all fine days.

### CONSERVATORY AND SHOW-HOUSE.

As very little fire heat has been required here up to the present time, and the weather during the autumn just passed has been everything we could wish for, plants ought now to be in good condition; they should show, not present growth, but the season's growth thoroughly matured; if in this state we may

confidently look forward for a brilliant display of bloom the coming season. Camellias, Acacias, and other plants in flower, or advancing into bloom, will require to be attended to in watering. Tulips, Hyacinths, and other bulbs, also forced shrubs, should be placed at the warmest end of the house; Heaths, Epacris, and other hardwooded plants in flower, should be placed at the coolest end. The Amaryllis is a charming tribe, and with a little management easily got to flower at this season. *Lueulia gratissima* is a beautiful thing for the conservatory; it should be grown at the warmest end of the house. Epiphyllums, Bletias, Justicias, Euphorbias, Poinsettias, and other stove plants, should be kept at the warmest end. Introduce a good many Primulas, some Cinerarias, a few pots of Mig-

nonette, Violet, and Lily of the Valley. Endeavour to have as many flowers as possible. Have everything staged to the best advantage, and keep every plant and place scrupulously clean and neat. If frosty weather makes much fire heat necessary, take care to keep the atmosphere moist, not wet—the flowers will last longer than in a dry atmosphere. Maintain a temperature of about 45° by night and from 55° to 60° by day. The watering must be regularly attended to. Ventilate daily, if possible, but avoid cold draughts.

## GREENHOUSE.

*Hardwooded Plants.*—As the plants are for the most part at a standstill, the only attention necessary at present is in carefully ventilating, watering, and keeping the plants safe from frost. Every plant requiring to be trained and tied out should now be trained. Prepare now for the busy spring time; get plenty of stakes made and tied up in small bundles of different lengths; get pots cleaned, some crocks broken, and some turf chopped.

*Softwooded Plants.*—Ventilate freely whenever the state of the weather permits. Water carefully. Fumigate for green fly. *Azalas.*—These, when in flower, are beautiful at any season, but at no time are they so much appreciated as they are during the dull winter months, when everything out of doors wears a cold and cheerless aspect. Keep plants in flower rather warm, say a night temperature of about 50°. Retard plants for late blooming, the night temperature should not fall below 40°. Ventilate carefully whenever the state of the weather permits. Water when necessary. *Camellias.*—Plants in bloom should have a temperature of from 45° to 50° by night, and from 55° to 60° by day. Give them plenty of water when they require it. Keep plants for late flowering cool. Give air freely on all favourable occasions. *Cinerarias.*—Many of these will have thrown up their flower-stems; look over and select a few of the forwardest, and place in an intermediate-house for early flowers. A few of the later plants may yet be repotted for late flowering. Look over and remove all decaying leaves, and sulphur such as are affected by mildew. Fumigating now and then is necessary, to prevent green fly. Thin out all small shoots and leaves of specimen plants, and peg down or tie out the stronger, or throw out the middle as much as possible. Keep as near the glass as possible, to prevent their drawing. It is advisable, where large plants are required, to stop them once or twice, which will make the head of flower more dense. *Pelargoniums.*—This is a convenient and proper time for tying out the shoots of plants intended for specimens, so as to admit air and light—precaution should be taken not to allow the shoots to become drawn. Give plenty of room, and air freely on every favourable opportunity. Water carefully, giving only

to those that thoroughly require it, and avoid wetting the foliage as much as possible. The temperature of the house, by night, should range about 42°. Attend to cleanliness. Watch narrowly for green fly, and fumigate directly it is observed. Keep the soil in a good state for repotting the July plants, which should be done towards the end of the month. Let everything be done to keep the plants in a healthy and vigorous state. *Verbenas.*—Now is an excellent time to excite into growth any kinds required to be largely increased, so as to produce young cuttings, which strike freely in sand and gentle heat, and make the best plants.

## FORCING.

In severe frosty weather the linings will require to be frequently attended to, otherwise the heat soon declines in hotbeds. Make and plant fresh beds, to succeed those at present in use. Put some roots of Mint and Tarragon into a little heat to force. Sow Mustard and Cress weekly. Make a slight hotbed, and sow on it some Early Horn Carrots and Radishes. *Cucumbers.*—Plants in bearing will require considerable care and skill for the next six weeks. Water occasionally with liquid manure. Keep the glass clean, so that they may receive all the light possible at this season. Pick off all the male blossoms. Maintain a moist atmosphere. Ventilate daily if possible, but avoid cold frosty draughts. Keep a temperature of about 65° by night and 70° to 75° by day, with an increase by sun heat. Sow for a spring crop; attend carefully to the young plants as soon as they are "up." It is a good plan at this season to sow the seeds singly in pots. *Melons.*—Sow for a first crop a few seeds of some good, hardy, early sort; they are best sown singly in pots at this season. Give them a nice bottom heat; when "up," attend carefully to the young plants. *Peach.*—The artificial heat in the early house may after the middle of the month, be increased 6° or 8° in the day, but not quite so much at night; the night temperature should not rise above nor fall much below 50° whilst the Peach trees are in flower. Keep the atmosphere dry whilst they are in bloom, and ventilate at all times as freely as the state of the weather permits. Start successional-houses. Begin with a night temperature of 40° for the first fortnight and then rise 5°. Syringe two or three times daily. Water inside borders and keep the atmosphere moist. *Pinery.*—Plants that are intended to fruit during the next summer should have the temperature raised gradually to about from 65° to 70° by night, and 70° to 75° by day, with an increase by sun heat. Give them a good watering with tepid water. See they have a steady bottom heat of from 85° to 90°. Give some air when the state of the weather permits. *Strawberries.*—Though the plant is more easily managed later in the season, still at this time of the year, a little

management is required to insure a good crop. Have the plants near the glass. Give them all the air possible, according to the state of the weather, and water carefully when necessary. Introduce a fresh batch of plants every two or three weeks. *Vinery*.—The early house will now be in flower, and care should be taken to keep up a steady temperature and a genial atmosphere. The night temperature should on no account fall below 60°. Look to the covering on the outside borders, and see that the heat does not decline. Attend to the stopping and tying down of the shoots. Thin the berries as soon after they are formed as possible. Start the second house; commence with a night temperature of 45°. Keep the atmosphere moist. Water inside border. *Hardy Shrubs*.—Ventilate freely whenever the state of the weather permits; maintain a moist atmosphere, and keep a steady bottom heat. Syringe in the forenoon on fine days. Introduce plenty of Kalmias, Rhododendrons, and Azaleas, than which there is nothing more beautiful; also some Roses, and a few plants of Lilac, Weigela, &c. Keep a temperature of about 50° by night in severe weather, and 60° by day, with an increase by sun heat.

#### KITCHEN GARDEN.

All wheelbarrow operations should be done in frosty weather, when the ground is hard and frozen. Look carefully over Lettuce plants in frames, also over Cauliflower plants under glasses and in frames; pick off the decaying leaves, and dust with lime or soot to prevent the attacks of slugs. When the ground is in a nice working state sow some Early Beans and Peas on a warm sheltered border.

#### FRUIT GARDEN.

*Hardy Fruit*.—Prune and regulate fruit trees generally. Prune and nail wall trees in favourable weather. Scrape moss, and thoroughly clean the stems and branches of standard Pear and Apple trees. Wheel some manure, and spread it round the trees and fork it in. Plant in mild weather.

#### FLOWER GARDEN.

In favourable weather forward all alterations that are in progress, so as to get them completed before the busy time of spring arrives; this is a good time to make new walks, dig turf, and plant edgings. Protect everything requiring it. Dig all beds and borders, and let the soil remain in a rough state for the frost to act on it. Sweep and roll when necessary. *Cold Frames*.—After the late fine autumn everything here should be in a state of perfect rest. Give little or no water during the month, if possible; take advantage of every favourable opportunity to give all the air possible. Take care to have everything well covered up in frosty weather. *Pleasure Grounds*.—Sweep and roll walks and lawns in open weather. Do everything that

possibly can be done at the present time so that routine matters may not be interfered with by-and-by. Plant trees in mild weather. Muleh well round the roots of choice and valuable specimens. Forward with all possible dispatch all alterations—such as the changing of walks, the formation of new ones, the levelling of ground, laying down of turf, &c.

#### FLORISTS' FLOWERS.

*Auriculas*.—The old foliage will now continue gradually to decay, and should be removed as quickly as possible, when once the leaves turn yellow; care must be taken not to injure the plants whilst so doing. At this season the Auricula has nothing very interesting in its appearance, being almost devoid of foliage. Water sparingly, and do not excite the plants to cause growth before February, at which time water may be given freely. *Carnations and Picotees*.—The soil intended to bloom these should be kept frequently turned and exposed to the action of the weather, especially frost. The plants should be kept dry, and the dead foliage cleaned off as required. *Dahlias* require much attention. Carefully examine the roots, particularly those from the open ground, to see they are not decaying at the crown; if they appear to be rotting downwards set them at work at once in a gentle heat, that they may not be entirely lost. Roots from those that have been grown in pots, or, as they are generally termed, pot-roots, will keep sound longer than those from the ground, and are consequently better adapted for exportation or transmission to a distance, and if not required for use, to produce cuttings for the purpose of propagation, make excellent early strong plants, by starting them in gentle heat the beginning of April. *Hollyhocks*.—Roots potted from the ground in autumn for the purpose of producing cuttings may be excited with a little heat; it should however, be gentle at first. When the shoots have attained the length of about three inches, cut them off similar to the method adopted in propagating Dahlias. The cuttings should be put into thumb-pots, using sandy soil, and place in mild bottom heat. The plants struck now will flower well in September. Seeds sown in heat, and the plants grown under glass until late in May, will flower in the autumn. *Pansies*.—Prepare the soil, and keep it dry for repotting those intended for blooming in pots, which operation should be performed towards the beginning of February, if the weather is mild. Seedlings should be looked after, pressing the soil and roots of those that may have been loosened by worms, &c. Should severe frost set in a little covering will be necessary, but grow Pansies as hardy as possible. *Pinks*.—But little will have to be done this month. If the frost should loosen the plants, press them firmly in the ground after a thaw, and prepare rich soil for top-dressing in March.

# FLORIST AND POMOLOGIST ADVERTISER.

## No. XXXVIII.—FEBRUARY.

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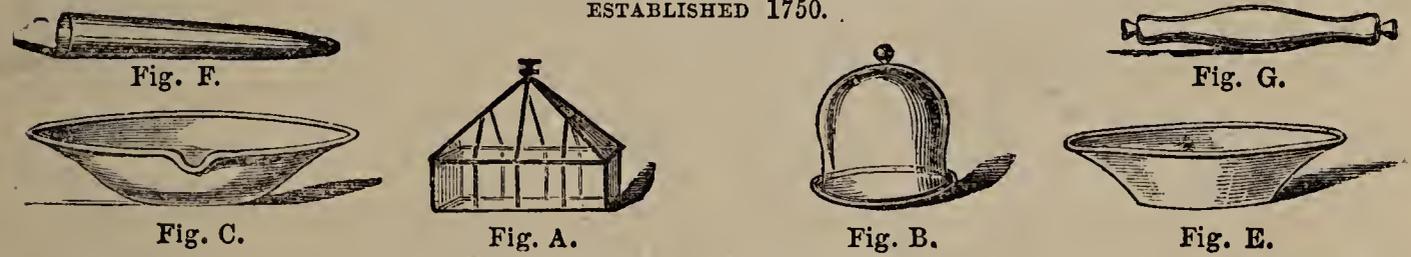
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A DESCRIPTIVE CATALOGUE of which, with Select Lists of other choice Show, French and English Spotted and Fancy Pelargoniums, will be published in a few days, and forwarded to all previous customers and applicants.

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S. B. regrets the stock is this year too limited to make any reduction to the Trade. Packets of 6 seeds, 1s. 6d.; of 12 seeds, 2s. 6d.

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Well adapted for Covering

Verandas, Trelliswork, Walls, Porticos, Pillars, Festoons, &c.

CLEMATIS JACKMANNI—First-class Certificate.

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Awarded by the Royal Horticultural Society, August 4th, 1863.

Patronised by Her Majesty the Queen—the Nobility and Gentry.

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HAVE much pleasure in offering to the public, for the first time, their beautiful rich-coloured, free-flowering, and vigorous-growing CLEMATISES, that they can with confidence recommend, being convinced, when known, they will occupy a very high position in Climbing Shrubs. Orders will now be taken, and the plants at once sent out strictly in rotation. For further particulars of "their sterling merits" read our large advertisement in "Florist and Pomologist" Magazine, September Number, 1864.

Strong Plants 21s. each.—The usual allowance to the Trade.

Two Coloured Drawings, by Andrews, may be had post free for Twenty-four Stamps.

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**DESCRIPTIVE AND PRICED SEED CATALOGUE**

CAN BE HAD POST FREE ON APPLICATION.

It contains all Novelties worthy of notice, with a full description to each, and a few Hints for the Guidance of Amateurs.

The following LIST of KITCHEN GARDEN SEEDS is worthy of notice; the prices are affixed as low as possible for the finest samples that could be procured:—

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Mushroom Spawn, superior quality, 5s. per bushel. Strong Asparagus and Sea-kale Roots.

**COLLECTIONS OF KITCHEN GARDEN SEEDS,**

TO SUIT GARDENS OF VARIOUS SIZES,

10s. 6d., 21s., 42s., 63s., and 84s. each.

PARADISE AND VICTORIA NURSERIES, HOLLOWAY, LONDON, N.





Annie Verbena .

## ANNIE VERBENA.

WITH AN ILLUSTRATION.

THIS strikingly beautiful Verbena came twice before the Floral Committee in the course of last season. On the first occasion, when shown in the cut state, it was granted a second-class award; but, when again staged on the 13th of September, in the form of a well-grown freely-bloomed plant, it received a first-class certificate, as it well deserved. In our opinion it is the best striped Verbena we have yet obtained, the habit being healthy, the trusses both abundant and good, and the colour pleasing and attractive. It is a blush white at the margin (rather too deep in our plate), with a broad wedge-shaped stripe of carmine in the centre of each segment. The marking is, in fact, analogous to that of *Striata perfecta*, only in a different colour. Mr. Cooling, of Bath, is the fortunate possessor of this pretty acquisition, and we are indebted to him for the specimen from which Mrs. Dix has prepared the accompanying very charming figure.

A striped variety of similar character, but in which the ground colour was whiter, and the markings of a much paler pink, and less regular and constant, has been shown by Mr. Turner under the name of Princess of Wales. It does not, however, approach our present subject in regard to merit.

We borrow from a contemporary some remarks bearing on the subject of these striped Verbenas:—

“Amongst the manifest improvements which have been effected in the varieties of garden flowers, and the deviation from a normal condition, it is somewhat remarkable that we have as yet obtained so few really good striped Verbenas. There is the old *Striata perfecta*, now familiar to most growers of choice flowers, a constantly marked and really beautiful variety, with the limb-segments of its flowers bluish lilac, regularly and distinctly margined with white. During the past season a variety has been brought into notice by Mr. Cooling, of Bath, which has flowers of the same character as those of *Striata perfecta*, only the ground colour is carmine. This variety is called Annie, and is a most welcome addition to the class of striped flowers, which we trust to see still further enriched by the addition of other colours marked in a similar way.

“If there is a scarcity of good striped Verbenas, there is no lack of bad ones. Those who have visited Chiswick during the past season, or have attended the summer exhibitions and meetings, or have visited the nurseries in which this class of flower is cultivated, will probably have seen a long series of them with a set of most unpronounceable Italian names, which outdo, if possible, the unmanageable titles borne by some of the French Roses. The set of Verbenas we are now referring to, is, it appears, of Italian origin, and we are sorry to say that in the whole series we have not met with one which was worth growing as a garden flower. They have poor, paltry, misshapen flowers, inconstant colours, and inveterately bad habits. Perhaps our cross-breeders may make something of them, and we trust they may, for a greater variety of good-striped Verbenas is very desirable. These Italian striped varieties are unevenly flaked with purple or red upon a white ground, as in the case of Carnations, not bordered with white, like the English varieties before alluded to.”—(*Gardeners' Chronicle*, 1864, 1251.)

Our own English varieties, *Striata Perfecta*, Annie, and Princess of Wales, seem to offer the best chances of obtaining this process, which we quite agree it is desirable we should realise.

M.

## CHRONICLES OF A TOWN GARDEN.—No. XIII.

By patient and hopeful daily attention, do I *gradually* bring on my company of “active principles,” as Wordsworth has termed every “form of being” in “flower and tree,” and to whom he assigns

“properties that spread  
Beyond itself, communicating good,  
A simple blessing.”

I like to regard a few pet flowers in this truly noble relationship. They *can* be made to become “simple blessings” for him who loves the subjects he cultivates. Such labour must be humanising in its influence. To such a one *Labor ipse voluptas—Toil itself is a pleasure*, is indeed a compensating principle, that holds good, it is to be righteously hoped for, in every department of daily life. A dozen Hyacinths in glasses, and double the number of pots filled with a few roots each of some of the many varieties of spring-flowering bulbs, a vase or two, glass, or earthen dishes, &c., do not require, just now at least, much attention; but the little labour bestowed on them each day imparts to me much pleasurable emotion, such as can alone be appreciated by those who have a capacity to perceive how much they can contribute to fill up the measure of joy God has placed it in the power of every human heart to contain.

“Your voiceless lips, O flowers! are living preachers,  
Each cup a pulpit, every leaf a book;  
Supplying to my fancy numerous teachers,  
From every vale and nook.”

Had the past month inherited more of sunshine and less of gloom and cold, I should have had Hyacinths in bloom ere this, that were only started the last week in November. Days ago a slight tinting began to show itself on the buds, which has slowly and gradually gathered in intensity, till presently, each chrysalis-like prison-house of beauty shall open to give liberty to a lovely, waxy bell, fashioned by the hand of that Great Artist of which the noblest triumphs of art are as yet but feeble copies. Daily attention do these Hyacinths require and receive. Any dust is carefully cleansed from the “grass” or leaves, side-shoots are gently removed, without injury to the bulbs, or the fast-developing spike, so that its vigour be not impaired; and the bulbs are kept half immersed in water, and the most equable temperature is maintained. They are in the window, and are turned occasionally to prevent their being drawn on one side, and they are not removed from this post unless frost is imminent. *Now* is a critical state of development; ill-developed flowers, and stunted spikes may result if there be not careful treatment, and these slight attentions can by no means necessarily become irksome. Should it be so, Heaven has not destined you, my friend, to grow flowers.

Tulips are as yet sealed up in their emerald encasings. I do not want them to be in flower till the sun’s rays have greater power than at present, as I am debarred of a warm greenhouse to bring them on in. Therefore, I require the aid of such a “helpmeet” as the sun, to bring out the flowers vigorous and beautiful. I like to have them early, it is true; but I also like them lusty and well-matured; and so, secure from frost, they are yet in a cool place, where they can be induced to grow strong and healthy. At this stage but little water is required; if necessary, it should be slightly lukewarm, and administered sparingly. Avoid a chill at the roots, a kind of paralysis ensues; and, therefore, if the pots are placed in a cellar, it should be dry and warm, a damp and cold situation is often prejudicial to the bulbs.

Polyanthus Narcissus, and also some of the other varieties are so robust in growth as to be veritable giants compared with their lesser colleagues. I leave them pretty much to themselves, for they *will* prosper; and unless the bulbs

are diseased, or they are treated very injudiciously indeed, they will be sure to flower, and that freely. For winter and spring in-door gardening, they are indispensable, only they are so fragrant, that to many persons their presence in a sitting-room becomes unbearable. My pots promise me a fine head of bloom. So strong are they that the rootlets thrust the bulbs up out of the soil. Gently and firmly I press them down again, and when this is done, they rarely evidence signs of another uprising. I generally pot lightly; I do not like that the roots of any of the strong-growing bulbs, especially, should be cramped for want of room; if the bulbs rise when the rootlets go downward, the pressing down again is a very simple and conclusive process, whilst the light potting allows of a free drainage, and thus prevents what often injures early-flowering bulbs—stagnant water about their roots.

So far all is preparatory; next month I hope to enact a first scene or two of the drama now in rehearsal.

Quo.

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## ON STRAWBERRY CULTURE.

THERE are a few leading principles in the cultivation of this delicious fruit which I am inclined to believe would be more generally acted upon if they were better known. I do not presume to teach our leading gardeners, who, of course, have nothing to learn on the subject; but there are many whose practice is altogether so desultory, that they do not obtain half the produce and pleasure which they might enjoy, if they would follow out the cultural practice which I purpose to set forth as shortly as I can. These leading principles will consist of the soil, and its preparation for planting; the method of preparing the plants, and planting in the bed; the after-management of the plants and beds; and though last, not least, the rotation of cropping the ground.

**THE SOIL.**—If we could always choose our soils, we should in this case select a strong, deep, hazel loam; but in the absence of that, the practice should be directed to the attainment of a soil as near as possible to such in condition and texture; thus, soils of a very light and sandy nature should be largely mixed with a compost of heavy land approaching to the condition of clay, and also a moderate proportion of rotten manure. Heavy lands, on the contrary, will be benefited by dressings of any light and silicious composts calculated to open and improve their texture; this is, of course, pre-supposing extreme cases, but the generality of soils are probably neither one nor the other, and are capable of growing tolerable crops, but all require dressing with compost, and whatever may be the condition of the soil, the dressing should be regulated in accordance thereto. In preparing the soil for planting, it should first be trenched up roughly at least 2 feet in depth, and exposed for some time to atmospherical influences. A week or so previous to planting, let the surface of the bed be knocked over and levelled with a Canterbury hoe, or three-tined tormentor, and apply the dressings of compost and manure, and prick them in with a steel fork, taking care to incorporate the natural soil and the composts well together, leave the surface tolerably level, and when it is sufficiently dry not to adhere to the shoes, let it be well trodden over in both directions. And let the operator throw the weight of his body into every tread, the object being to consolidate the top soil to a certain depth; then rake the surface level, and the bed is ready for planting.

**THE PREPARATION OF THE PLANTS.**—In this case time is everything; many cultivators only begin to think about plants when the time comes for

planting the beds, which is bad economy, as a very fair season is gained by promptitude on this point, it being quite possible to take a very fair average crop the first year after planting in the autumn, if only time is taken by the forelock in preparing the plants. I am aware that this is contrary to the opinion of some of our celebrated Strawberry growers, but I know it can be done in at least four seasons out of five, and that without any detriment to the plants. I have plants now standing which were planted early in September, 1863, from which I had a good average crop of splendid fruit in 1864, and the plants are very strong indeed, possessing more than an average of ten plump flower-buds to each plant. The practice is, about the middle of June, when plenty of pots are at liberty from bedding purposes, to fill as many four-inch pots, as plants will be required for the new beds, with a compost of loam, rotten manure, and a slight admixture of sand, press it down firm in the pots, and let there be more than the actual number required, as some of the runners invariably degenerate, and will not form flower-buds; these must be rejected, and only healthy foliage and large plump buds be selected for planting. These pots may be placed out of doors in any vacant spot near the beds, so that a few can be taken at any time with little trouble, and as soon as a runner or runners, as the case may be, is ready to lay, place a pot, and peg it on the top of the compost, not plunge it, place the pots in rows as near as possible, for the convenience of watering, and *quite open to the sun*. Do not wait until there are runners enough to peg down all at once in the pots, but take them a few at a time, and as soon as ready. I repeat, time is everything; and a runner being placed in favourable conditions will root in the soil immediately, but will not do so if left loosely sprawling about. Water must be freely applied in dry weather, and as soon as the pots are full of roots, they should be separated from the parent plant, and placed in a situation exposed to the sun all day, water freely, and shade for a day or two, and afterwards apply water and liquid manure alternately for a week or two, whilst the beds are being prepared for transplanting.

**PLANTING THE BEDS.**—By the end of August the plants in most seasons will be ready for planting out, and the beds having been previously prepared as before recommended, mark them out in rows 30 inches apart, and the plants the same distance apart in the rows, the plants in the second row should be opposite to the *centre* of the plants in the front row, quincunx fashion. Turn the plants out of the pots, and keep the balls entire, take out a hole with a trowel rather larger than the ball, place the plants therein, and take care that the hole is not so deep but that the crown shall stand *level* with the surface when finally pressed down into position, which is best effected by the planter placing a foot on each side of the ball under the foliage, and by the weight of the body sending it down firm.

The pots should be well soaked previous to planting, and the after-watering required will depend upon the state of the weather; in any case much will not be required.

**THE AFTER-MANAGEMENT.**—The young plants will soon begin to throw out runners, and through the autumn these must be kept removed as fast as they appear, and for that season shallow stirrings of the surface with a hoe to keep down seed weeds is all that will be necessary. In the spring the same process is to be followed up, and for the same purpose; and about the time the plants come into bloom, the whole of the surface must be covered with long green grass (not short grass from the pleasure grounds, by any means); previous to which, however, if the weather is dry, a thorough good soaking of water should be applied, but as a rule, and with a tolerably stiff, retentive soil to deal with, I do not hold with too much water, believing that it injures the

flavour, and causes premature decay in many of the berries. Commence removing the runners as soon as they appear, and persevere in keeping them removed all through the season, except such as are required for propagating-purposes.

Late in September give the beds a thorough revision; take away the mulching, and remove all leaves which have performed their office and are decaying. Prick up the soil to the depth of 2 inches, and cover the whole surface with a good coating of rotten manure; this will strengthen the plants, and cause them to make a good foliage for the protection of the crowns during winter. The same process will have to be repeated through the three following seasons, and this brings me to my last, though not least, leading principle, that of ROTATION.

I hold that the utmost time that ought to be allowed for Strawberry-beds to stand on the ground is the fourth season from bearing, including that year; they may be maintained until that time in abundant productiveness, if only they are planted *far enough apart*, and liberally treated. One great reason why Strawberry-beds become so soon unproductive is that the plants are crowded too near together in the beds, and thus rob each other both of the necessary nourishment, and also of that most powerful agent for success, the light of the sun. As soon, therefore, as the bearing season of the fourth year is over, that bed should be destroyed, and the ground cropped with something else, and should not be occupied by Strawberries again for three years, at the least.

In order to simplify this routine of management, I divide the ground necessary to keep a supply into four equal parts, one of which is destroyed every year, and a new one planted at the other end of the plot; and in order to secure a variety of sorts, and also for succession, I plant single rows of the most useful kinds every year, and of the others only in alternate years. For economical reasons the ground occupied by Strawberries ought to be all in one piece, not in detached portions here and there; and it is worth while to make some sacrifices in order to effect this object. My reason is twofold; first, the economy of working, and next, that to secure good and perfect fruit netting must be used to keep away birds *of all sorts*, and when only one large piece is to be covered, one-third of the amount of netting will be saved by following out a plan which I have adopted with very great success, and at no great cost in the long run, because netting, with care, will last four years at least. I drive in stakes at about 10 feet apart all over the beds, which should stand from 3 to 4 feet out of the ground; to the top of these stakes I tie, with rope yarn, long slender rods of ash or hazel in all directions, and the netting is stretched over all, which makes it cover so much more space than it would if merely laid over the plants. I use the four-yards-wide herring net, one-inch mesh, and fasten them together with long slender twigs of hazel or birch; they are thus easily fastened or separated, and the plan altogether is one which every gardener who is obliged to use netting will find it most advantageous to adopt.

*Redleaf.*

JOHN COX.

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## THE CULTURE OF THE FIG TREE.

THE Fig tree, it is well-known, produces one of our most wholesome fruits, and those who relish it, I find, are generally sanguine in the appreciation of its merits, although it is not relished by some. I consider it is a great acquisition in the dessert, and it can be successfully forced even to more advantage than most fruits, for two crops can easily be obtained in the same season from the same tree.

I do not mean at the present time to enter into the cultivation of Figs, either in pots or out of doors. My chief object for consideration is to make a few remarks regarding the growth of Fig trees planted under glass—I mean such as are planted out in the border, either of Fig-houses, or on the back wall of vineries. I see that in a great many places there is an abundant crop of leaves and wood, but fruit is rare to be seen to any extent. Why is this? I consider that the predominating evil is, the Fig tree has got too much good ground to luxuriate in, the result of which is a gross and superfluous wood. The Fig being a native of Asia, it must have a due share of sunlight, to organise and elaborate its juices, before any success can be attained. I consider that to grow the Fig perfect, it should be planted in a house by itself, although I am convinced very good Figs may be grown in a vinery, where the Vines are confined under each rafter. I have in one of our vineries here, which is started in February, a single tree of the Brown Ischia, which covers all the back wall of the house. I have had thirty dozen fruit for a first crop from that tree. When the young shoots have grown about 5 inches long, I pick out their points, and stop their growth; that strengthens and encourages the first crop, and prepares wood for the next or second crop. The fruit is not so large in the second crop. I have represented the fruiting process, but I have not assigned or given my opinion why I think the most of Fig trees in vineries are unfruitful. Indeed, a very similar fault attends the most of our Fig trees grown out of doors. Firstly, the Fig tree naturally and particularly, if grown in rich soil, there is a large white core of pith, that should by all means be guarded against; for without firm and short-jointed, solid, matured wood and buds, we need not look for success. The Fig tree grown out of doors in Scotland will bear fruit more readily if the tree were growing in a crevice of an old-limed wall than growing in a rich border—a natural lesson I need not explain. But I mention this in exemplification of the propriety of growing the Fig tree with its roots confined to a given space.

The finest crop and most productive Fig tree I ever saw was in a small vinery planted in an elevated brick box above the surface of the border; the tree covered all the back wall. The brick box or small pit it was planted in was only about  $2\frac{1}{2}$  feet wide, 9 feet long,  $3\frac{1}{2}$  feet deep, 15 inches of drainage at bottom; the bottom concreted, but holes made at the sides to allow the water to escape at the bottom. The soil used for this system should be of a porous nature, to allow of a liberal supply of water to be administered, of a stimulative nature, when the fruit is swelling. The soil should be composed of a good hazelly loam, lime rubbish and burnt earth, and a liberal mixture of bones.

*Dalmeny Park.*

WM. MELVILLE.

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### ALICANTE AND BLACK PRINCE GRAPES.

YOUR correspondent Mr. Saul in the FLORIST AND POMOLOGIST for January wishes to know if the above Grapes are distinct, if so, what is the difference? In the first place, they are as decidedly distinct as a Ribston Pippin Apple is to the Blenheim. The Black Prince is what I should call a summer Grape. We never can keep it later than October. As Mr. Saul has known this from boyhood, it is useless to say any more about it. The true Black Alicante—the Grape Mr. Meredith exhibited on the 14th of last month at South Kensington—is one of the best very late Grapes we have. The form of bunch resembles Black Hamburgh—broadly shouldered; berries large, oval (nearly twice the size of Black Prince), of a beautiful blue-black colour. The

Vine is a vigorous grower; foliage very distinct, and covered with down. I should certainly advise Mr. Saul, or any one else, to plant the true Alicante if they want a really handsome late black Grape.

*Keele Hall.*

WILLIAM HILL.

YOUR correspondent, Mr. Saul, in the *FLORIST AND POMOLOGIST* for last month, asks what difference there is between the Black Prince and Black Alicante Grapes. The answer I shall give him is, As much difference as there is between the Black Hamburgh and Black Prince. In the first place, there is a very great difference in the two Vines even in a dormant state; the outer bark of the Black Prince is quite smooth, whilst that of the true Black Alicante is rough, and has a white downy appearance. The foliage is also quite distinct from that of the Black Prince, being covered with a delicate white down. The berries in size and colour are more like Plums, and covered when ripe and well-grown with a beautiful jet-black bloom. It is in appearance not unlike Lady Downes', with this difference that it is much handsomer bunch, being better shouldered, and producing longer and larger berries. It is also a much freer setter than Lady Downes', and will hang longer in good condition on the Vine. It is well-known that Black Prince will not hang long after it is ripe without shrivelling, whereas the true Black Alicante will hang in fine condition four months or more after it is quite ripe; then again the Alicante retains its foliage on the Vine fresh and green, long after the Black Prince has shed its leaves; in fact, I know of no other Grape Vine that retains its foliage so long as the Alicante. I should strongly advise Mr. Saul to plant it largely in his new vineries, as I consider it one of the very best Grapes in cultivation.

*Oulton Park.*

J. WILLS.

IN the present volume of the *FLORIST AND POMOLOGIST*, page 11, Mr. Saul invites information respecting the Black Alicante and Black Prince Grapes. Like himself, I have known the latter since boyhood, and can state with confidence that there is but little resemblance between the two. I have seen good crops of the Black Alicante in this quarter, especially at Lord Woodhouse's, Kimberly Hall; and Mr. Lee, the intelligent gardener there, sent me the following account of that late-keeping Grape:—

“The Black Alicante is what I call a large-shouldered, compact bunch, larger berries than the Black Prince; also the Vine is stronger, and the under side of the leaves more downy, and hangs longer than the Black Prince. The best quality of the Black Alicante is its long keeping.”

Although out of place, I may mention, that Mr. Saul at page 8 has given some very useful hints concerning Vine-borders, especially deep and shallow ones. The borders here are about 4 or 5 feet deep; in one of which, the Vines have been fruitful upwards of forty years. Some of their stems are a foot round, and the produce of last season was as good as that of thirty years ago. The borders were made nearly upon the surface soil, according to the late Mr. Crawshay's plan, who excelled in Vine-culture.

*Cossey Park.*

J. WIGHTON.

[We have been favoured by Mr. Lee, of Kimberley Hall, with a bunch of the Black Alicante to which Mr. Wighton refers, and on comparison we found it, if not identical, at least so similar to Mr. Meredith's, exhibited on the 21st ult. at Kensington, that we could not distinguish the difference. The bunch is large and shouldered; the berries long, oval, jet black; the skin tough, and flesh tender, and of excellent flavour. We believe this to be a perfectly distinct Grape from the Kempsey Alicante, or Cox's Alicante, which we have no doubt is the same as Black Morocco. Mr. Hill sent us a bunch of each of these (Kempsey

and Cox's), and, although, under his skilful cultivation, they were well coloured, we had no difficulty in deciding they were not only both alike, but that both were identical with Black Morocco.—Ed. F. AND P.]

## KITCHEN GARDEN DECORATION.

(Continued from page 220.)

ALTHOUGH we have only treated of detached arches of fruit trees over kitchen garden walks, there are a great many other means of bringing the present taste for dwarf-fruit-tree-growing within the convenient range of

almost every garden, and still keep the ornamental object in view. A well-trained dwarf fruit tree is very similar to a specimen exhibition plant. It must be seen all round to be appreciated; it should also have, for the sake of the repeated attention it requires, a situation easy of access at all times for either the amateur or gardener, neither of which is gained by planting these in squares of the kitchen garden, along the back of borders, or in dwarf orchards.

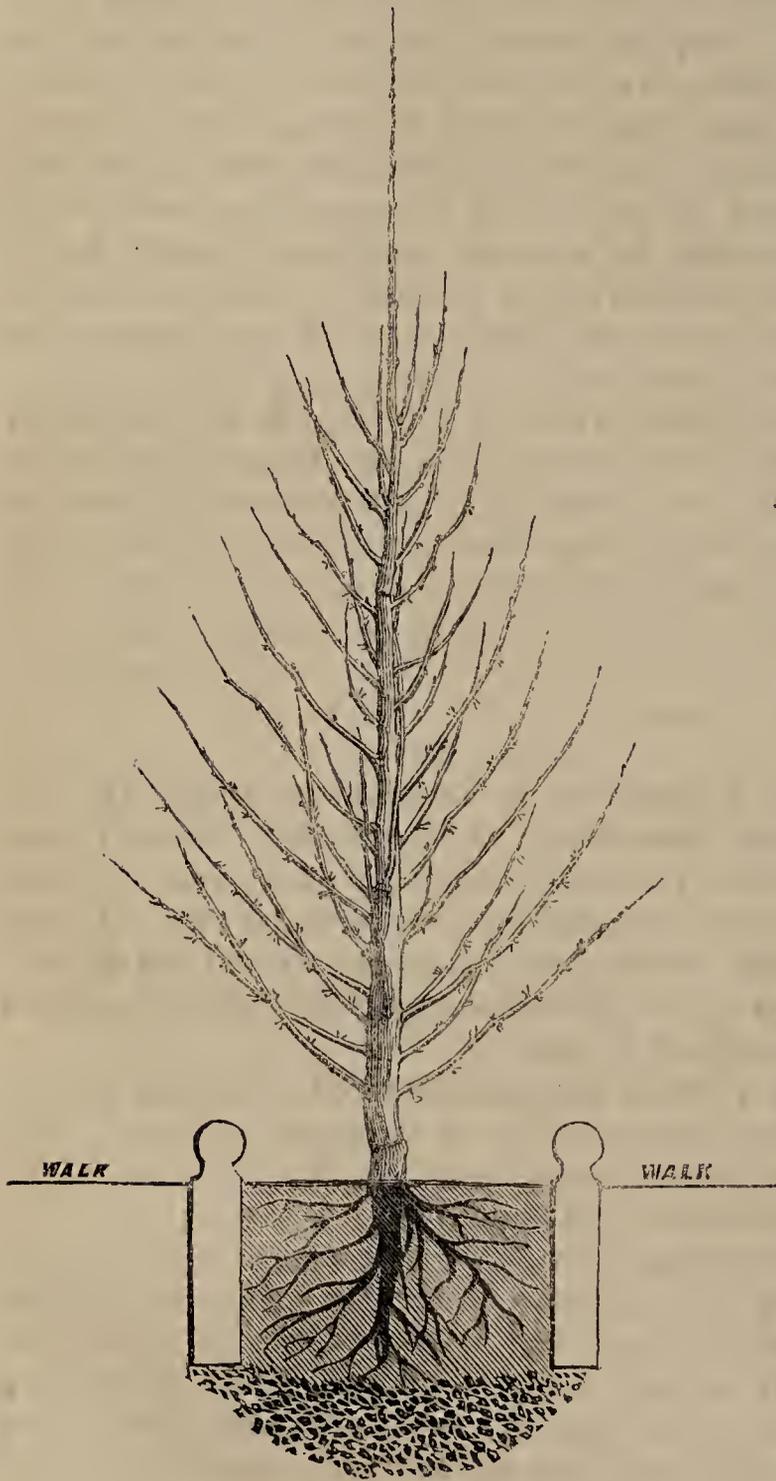
This has also led us to the conclusion that if we were going to lay out a kitchen garden where a large amount of this culture was required, we would, instead of centre walks make centre borders (see fig.) 6 feet wide, with 3 ft. 6 in. walls in the ground, and a walk along each side.

If proper care is taken with the bottom, we have not only the handsome tree standing clear, but root-pruning and training made easy. The wall and the bottom being impervious to the roots, a trench can with little trouble be taken out in the space between the trees, and fresh soil added at pleasure. It would scarcely be possible under these circumstances to give the tree the severe check which careless

root-pruning invariably does. We have adapted this for Cherries, and nothing can be more satisfactory; it enables us to cover them from the birds, and it would also, in the case of Pears, allow the more tender to be arranged together in one border, when temporary covering for protecting the blossoms in spring is made more convenient. An artificial stone curb upon the wall of the border would add greatly to its appearance.

*Cliveden.*

J. FLEMING.



## CULTURE OF THE CHRYSANTHEMUM.

*(Continued from page 8.)*

WHAT I have said with regard to growing specimen Chrysanthemums refers to the large-flowering sorts, but is equally applicable to Pompons, the only difference being that the latter are of a more compact habit. I do not know that anything of importance can be added at present; but whatever I may discover, in the course of my practice, I shall be happy to relate. I am aware that some growers, or those who assume to be growers of the Chrysanthemum, recommend growing the plants in the ground—that is, in beds or borders—until the buds begin to open, and then to take them up and pot them, by carefully cutting the roots and allowing them to produce fibres again. Now, I never tried this plan, consequently I am not prepared conscientiously to recommend it, or the contrary. This, however, I can say—I know several gardeners who make it their system of growing Chrysanthemums, and, judging from the specimens they produce, I will neither adopt it myself nor recommend it to others; and, further, I will undertake to grow better specimens in the manner I have described, than I could ever grow, or I have ever seen so grown, in the open ground, and repotting them.

Having extended this part to a greater length than I intended, it will be necessary to be a little more brief in speaking of growing large blooms. The process, however, is so simple that a lengthy description would probably be considered tedious. The cuttings, or offsets, may be taken off and potted at the same time, and in the same manner, as before described, or they may be left till March, the side-shoots being simply taken off and potted, or pricked out into a bed in a cold frame. It is better, however, to cut them off above the surface, and strike them, as they will afterwards grow more freely and vigorously, and are less likely to throw up a quantity of suckers. They may be struck by dibbing them close together, and placing a hand-glass over them, or potting them in the usual manner. When rooted, the young plants may be planted pretty close together against a wall, in a bed of soil that has been properly dug and manured. As the plants grow they can be trained up with clear stems—that is, picking off side-shoots—allowing each eventually to break into three, and each of these three shoots to support one flower, picking off the rest as soon as they can be got at. When the buds begin to open some sort of shelter will be necessary, which may be supplied in the form of a coping to the wall; but the more transparent it is the better, provided it is waterproof. Even a garden mat will do, but this will look neither gardenly nor ornamental, and should not be used unless it happen to be in an out-of-the-way place.

Some of the best growers, however, demur at growing their flowers in a border, on the ground that the colour of some of them does not become what it should be. This is, I think, straining a point; for I have found the colour generally all that could be desired, and the form of a flower is as likely to be defective in a pot as in a border; still, in many cases, it may be more convenient to grow them in pots. The process, then, is to have young plants, properly labelled and established, in small pots in April; pot them on as required, and at the last potting three or four plants may be grown in a 12 or 13-inch pot, or one in a nine-inch pot. Let such plant grow with a single stem. Plunge in an open place, give a little liquid manure occasionally, and let each plant bear no more than three or four blooms.

When the flowers begin to develope they must have some shelter, and if that of a greenhouse can be given nothing can be better; but if a large

quantity of blooms, all at one time, is desired, one of two things must be done—either to grow a great number of sorts, or to scheme a little, in keeping some back, and bringing others on; the former being accomplished in a cool and shady place, the latter with a little heat. Care, however, will be required; for a little extra sun or heat will soon cause the petals to fall back, and spoil the best flowers. In all cases where good blooms are to be grown, whether the flowers are to be large and incurved, reflexed or Anemone-like, something of the same treatment may be given, the object being to throw the whole strength of the plant into a limited number of flowers; but it does not always follow that if you limit the number of blooms to the smallest quantity they will invariably be the better. I have sometimes found better blooms on a plant bearing six or seven than on one bearing only two. Possibly this may be merely accident; but the mere possibility of it may suggest a useful fact. A plant with half a dozen blooms on it is more ornamental than one having only two or three, and is better adapted for conservatory decoration, consequently a decorative plant may be grown at the same time that good blooms are a consideration. In growing large blooms a most important matter is to have really good sorts. I do not profess to be able to go far into this matter, but have no fear of recommending the following as a good selection:—*White*, Defiance, Formosum, Mrs. W. Holborn, Vesta, and Lady St. Clair; *Yellow*, Plutus, Jardin des Plantes, Yellow Formosum, Golden Trilby, and Yellow Perfection. *Dark*, Doctor Rosas, Aregine, Sydenham, Progne, Nil Desperandum, King, &c. Among *Blush*, *Pink*, &c., Queen of England and Alfred Salter may be grown very large; also Lady Harding, Novelty, Beauty, Hermione, Trilby, and others. *Orange*, &c., as Dupont de l'Eure, General Bainbrigge, Orange Perfection, Lord of the Isles, &c. I have grown many other sorts that are likely to be admired, but cannot call them to mind at present, but may refer to them at some future time. Those who live in remote parts of the country need experience no difficulty in getting them. It is only necessary to send address and stamps to those who advertise, as I have found in dealing with Bird, of Stoke Newington; cuttings have been promptly returned, and they are very easily struck.

In a future paper I hope to have a word to say respecting the height, size, shape, and sorts best adapted for growing for conservatory decoration.

In growing Chrysanthemums for conservatory decoration, it is necessary to keep in view the internal arrangement of the building in which the plants are to be displayed. I have had to grow them very tall and thin for standing on the ground amongst other plants; so that the flowers would show out amongst the foliage. For this purpose I have found such sorts as Aimée Ferriere, King Christian, Vesta, Formosum, and the like tall-growing sorts very useful, the culture of them being the same as formerly described for growing large blooms; only where the size of bloom is no great object, it is better to allow as much flower as the plant will bear, the size of pots, &c., being a matter of convenience. I have seldom found it necessary to use larger than nine-inch; but of course the larger the pots the greater the masses of bloom.

For this purpose standards also come in very useful, and as these are rather more difficult to grow, I may as well describe the process in detail. Pompones are rather better adapted to this style than the larger sorts, on account of their making a more compact head. There is some difficulty, however, in forming the stocks; there are some sorts that will do so better than others, as Cedo Nulli, Mrs. Dix, Brilliant, Canary Bird, &c. The only way to make sure of them is to take the tallest offsets you can get, with a little root to them, pot singly in small pots; place in a greenhouse, where they are likely to

grow a little during the winter, shift or pot on as required, until they are in the largest it is intended to have them. When they are of the desired height, stop them, and allow three or four shoots to grow at the top, keeping the stem clear of shoots, but not of leaves, from these downwards, and clearing away carefully all suckers or offsets from the roots. When the top shoots have grown a few inches, stop them again, and draw them down gently, with matting tied either to the pot or to sticks placed in the pot. The stopping must proceed as it is found necessary until the beginning of August. This would throw them late into bloom, were it not that starting them a little earlier, or allowing them to grow during the winter, counteracts it.

It will be necessary to plunge the pots during dry or hot weather, otherwise the roots are too readily acted on by the drying influence of the air, which is detrimental both to the appearance of the foliage and the rapid growth that is desired. If standards are well grown in this way, the ties may be removed about the end of August; the weight of the branches will bear them down. One straight firm stick should be placed in the centre, and the stock securely tied to it; more sticks than this would be undesirable and unornamental.

The larger sorts of *Chrysanthemum* more readily furnish good shoots for stocks, but being longer-jointed, the heads will not be so compact; but the blooms being larger, they will make quite as good an appearance. Sorts of the most bushy habit and brightest colours are the best to choose for the purpose, such as *Chevalier Domage*, *Little Harry*, *Julie Lagravère*, *Lady St. Clair*, *Progne*, *Etoile Polaire*, &c. These when well grown are very ornamental, and fit for public exhibition, being considered of equal merit with good dwarf specimens.

The cultivation of pyramid plants also has its merits as well as uses for decorative purposes. To get *Chrysanthemums* to this form must be more a matter of taste than anything else. Growing the plants, as regards root treatment, is the same as before described for dwarf specimens or standards; but while growing they must be carefully tended, for it is next to impossible to get a *Chrysanthemum* to form a leader and assume the pyramid form like a Fir tree. Each plant must undergo a course of training from the first. A quick trainer will, however, make no difficulty of it, and can easily keep a dozen plants in order. Some few sticks must be used, and these should be deal in preference to willow, which would scarcely last. Pyramid plants, whether Pompones or large-flowered, are very ornamental to place on broad shelves or stages, and are very effective when massed one upon another.

One of the most useful forms of growing *Chrysanthemums* I have found is to have a quantity of small plants in five or six-inch pots, which for furnishing shelves in a conservatory are more effective than large specimens, admitting, as they do, of a greater variety of colour, and are easily moved and changed about.

The mode I have usually adopted in growing these is—take the old plants of the preceding year, either in the pots or turned out into a bed. About the latter end of May cut off the young tops, and place them thickly under a hand-glass, or in a frame and shade, as is usual for cuttings; they strike readily. When rooted, pinch out the tops or not, according to the form it is desired to have them in. The dwarfer they are required, the more they must be stopped. Pot them up singly into three-inch pots, and when they require it, into five or six-inch pots, and if necessary give them liquid manure when they have filled out these pots with roots. If it is desired to have them smaller, they can be struck a month or even two months later. If the tops are put in as cuttings, they will be sure to flower, even if the buds are showing when struck. They require no extra heat to strike them.

In decorating flower-borders in the open ground, my usual practice has been to plant out the old stools from pots. These, especially from such small plants as last spoken of, make the best border plants. There are some sorts that are supposed to flower better in borders than others. But, as a rule, more depends on the season than on the sorts; for that reason I do not consider it worth while to name any particular sorts for that purpose; but where there are borders to furnish, it is better to renew them every year with plants that have been grown in pots the previous season, and raise fresh ones every season for pot culture.

It is never desirable to stop those grown in borders for the reason that it is supposed to retard the flowering, but if the stopping is done early in the season, they cannot be greatly affected in that way; but if they can be tied or pegged down, it would be better every way than the manner in which they are often treated by branching together round one stick.

Chrysanthemums are not at all particular as to soil, as they will grow more or less on any kind, but a good holding loam, with a trifling addition of rotten manure, is about the best to grow them in.

F. CHITTY.

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### A FEW REMARKS ON ARBORICULTURE.

It is perhaps expedient that I should explain to the amateur readers of this work my reasons for introducing the subject announced, seeing that many will consider it is no branch of floriculture. But we must recollect that the *FLORIST AND POMOLOGIST* has always contained themes upon different garden subjects. To the first-rate gardener the knowledge of forestry, both practical and theoretical, is of the utmost importance; and I therefore pen these lines, in the hope that they may prove acceptable. If we refer to Loudon's *Encyclopædia*, we shall see that he treats this art as a branch of horticulture, and we find the beauty of our trees and shrubs is of the highest importance in our scenes of floral decoration. To it, then, we propose to turn our attention for a short time.

While the art of horticulture, aided by the talents of Knight, Sabine, Loudon, Lindley, and many others has made so great advancement, and its sister art, agriculture, has been equally fortunate, alas! for arboriculture, its star is not yet risen! We could much wish that the Royal Horticultural Society, with its ample means and extensive patronage, would endeavour to rescue this useful art from the low condition in which it is found. Our nobility and gentry have all, or nearly all, of the finest tracts of timber and country in their possession, but the great majority of those to whom they are entrusted do not understand their management. A great number of those appointed as their stewards, too, undertake the care of woods without any previous instructions, and can we wonder that there are failures? I have known many eminent breeders and corn-growers who have failed in forestry, whilst they excelled in their knowledge of stock, and they were unrivalled in all their farm operations.

Thirty years ago I lived as gardener and forester to the late Earl of Jersey, at Middleton Park, Bicester, for nine years. It was a most unpicturesque place, upon the stone brush of Oxfordshire, and as wretched a soil as could be conceived. It was planted throughout upon the Scotch system, with Larch, Scotch and Spruce Firs and Oaks, with Birch and Thorns. It presented the most perfect monotony; its sameness was most tiring. There was one wood of good old Oaks, with Hazel underwood, upon a tract of deep clay; but the rest of the place, although planted with Oaks, would not grow one. All the woods were in a state of nature, not having been touched from the time they were

planted, some thirty years before. In thinning them it was necessary to use great caution—*i. e.*, to be moderate, as many of the Oaks when exposed fell to one side, and would do no more good, but we went through the whole of it, and when I left it, it was in as good a state as a place could be which had been so mismanaged. Had my exertions been followed up with attention, it would have ended pretty well, but it has not been so, and all is again in a state of neglect.

I have already alluded to the sameness of effect produced by the repetition of the same variety all over the place; I will now proceed to show the happier effects of a contrary practice. At Blenheim the Oak is planted in large bodies, there is no frittering. If the general mass is at all broken, it is done by a large body of another distinct kind of tree, which contrasts well, and increases the variety. The planting here was done by that consummate artist Brown, and Repton says that in its first arrangement he had in view to make a fac-simile of the arrangement of the troops at the battle of Blenheim. But whatever were his intentions, he has succeeded in producing a sublime scene, abounding with unity of expression. We cannot help thinking that in laying out a great place, it is correct in principle to avoid the indiscriminate mixture of trees, and to take either the Oak, the English Elm, or the Beech as the prevalent tree, according to the soil. At Nuneham the English Elm prevails in one part of the park; it there forms the most glorious groups. Passing through these trees, you enter a grove of Beeches, and leaving this you come to very picturesque Oaks, and a beautifully varied scene of hill and dale. The Oak woods are well furnished with Hazel for underwood, and where the sides run out to the Park, the fences are carried in a good way, and the marginal trees are grouped together in irregular lines, presenting only the appearance of a natural forest. To attain this end, there should be a careful pruning with a sharp knife, and a bill should never be used. When the trees produce laterals, they should be spurred in like an Apple stock, and when they shoot again, a portion of the spurs may be cut off closely and keenly. The trees outside the fence will only require pruning up to the height of the browsing line, and may be occasionally left two or three together, but those which are inside and are to form timber should be pruned up to 15 feet in height, and regularly thinned. With regard to thinning, I would make it a rule to allow every tree full exposure to light; for I believe fully that the overcrowding of the *Nurses* has been a source of irreparable injury, where otherwise there would have been fine trees. There are some places in this country where the Firs form the principal attraction of the place, and most fitly so, upon the extensive sand hills which constitute the princely domain of Woburn, where they prevail in magnificent masses, giving character to the place, and acting in this way as the Oaks at Blenheim. The Beech tree, too, forms beautiful masses, particularly on the lofty Chiltern Hills, but it has one great objection, no undergrowth will exist with it. Shardeloes and Ashridge, both planted by the immortal Repton, afford fine specimens of *sub tegmine Fagi*; in fact, nothing can be finer. Repton has, too, planted some groups of Limes here, which are very beautiful and effective; but the finest sight of this kind which I have ever seen was at Althorpe, the seat of Lord Spencer, where the two sides of a straight walk are planted with this tree, now getting very old, and forming with their outstretched tops a magnificent archway, resembling the long aisle of an old cathedral.

In establishing woods of Oaks in parks, we should recommend planting them only at rather more than the usual distance apart, and then filling up with Hazel plants. After the Oaks have stood two years, they should be cut down to the ground, and when they shoot, the strongest growth should be selected to make the future plant, carefully pruning in the laterals, as advised for the Elm.

The Hazel should be cut over once in seven years, and will thus yield plenty of useful stuff, and form a good covert for game (always a desideratum). I have too frequently seen the Hazel shoots chopped off by rabbits, and the stools gnawed and killed by these vermin. They ought therefore to be well looked after.

We now come to speak of the important part which good drainage secures alike to the progress of all vegetable crops. It is particularly important in the case of trees; but covered drains must be avoided, as they soon become choked by the masses of roots which insinuate themselves into them in search of moisture. Therefore before you commence planting, find out the lowest part of the ground, and commence digging your drains, which are simply to be open trenches, with sloping sides of grass, which may occasionally be cleaned out. Continue these drains all over the ground, and when they are finished, proceed to the planting.

Repton has observed that the contour of the English Elm is very suitable to the Gothic style of architecture, and we were struck with the beauty of the trees at Magdalen College, Oxford, under these circumstances. He also remarks upon the unfitness of surrounding Gothic villas with Fir trees. We think him right in this remark, and cannot reflect upon some of the scenes which it has been our fate to have seen without a shudder.

Having written thus far, we hasten to conclude, sincerely hoping that what we have penned may be the means of doing good, by pointing out what is erroneous and substituting better things. May it lead those who are proprietors, and are about to form places, to make them perfect whole; and although they may be of a different scale, may they bear in their artistic arrangement comparison with the noble works of a Brown and a Repton.

*Amersham.*

HENRY BAILEY, C.M.R.H.S.

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### HEATING VINE BORDERS.

I WILL in as few words as possible indorse part of what your correspondent "F." remarks with respect to heated Vine-borders.

First. I believe the heating of Vine-borders will prove to be an evil; and that more Vines will be spoiled by that system than many people are at present aware of. If piping in any quantity is used under the borders, after a few years it will have a tendency to dry all the moisture out of the whole of the bottom part of the border to a depth of 2 feet or more. We all know how difficult it is to get water to penetrate the soil that has become very dry, even when it is easily applied; but when 18 inches or 2 feet of the bottom part of a Vine border becomes dry, how are we to get water to it? That good Grapes can be grown without bottom heat I know from my own experience, and from a personal inspection I know that some of Mr. Meredith's finest Grapes have been grown without it; for instance, those wonderful Hamburgs shown at the Crystal Palace last September were grown without bottom heat; then again, those extraordinary Barbarossas and Black Alicantes mentioned in the *FLORIST AND POMOLOGIST* for December, I saw growing in a very flat lean-to house;\* and what is more remarkable still, facing the north. In this house there is merely a bank of soil placed against the front wall about 5 or 6 feet wide, and 4 feet deep. In this the Vines are planted. There are, if my memory serves me right, three rows of four-inch pipes placed on the surface of the soil. The Vines in this house, Mr. Meredith told me, had only been planted two years. In this house I had an opportunity of seeing Lady Downes' and Black Alicante side by side, and was much struck with the immense superiority of the latter in every point, although Lady Downes'

\* This house was formerly used as a potting-shed; it is about 90 feet long, and 18 feet wide. It is on the northern extremity of Mr. Meredith's ground, and is partly overhung with trees.

is a most excellent Grape. The thought struck me on seeing these extraordinary Grapes grown under conditions so unfavourable to them, and without bottom heat, and where a gleam of sunshine scarcely ever falls on the house, that this ought to prevent any one from incurring a useless expense, which would I think only end in disappointment.

*Oulton Park.*

J. WILLS.

["F." and Mr. Wills's statements are borne out by the wonderful exhibition of Mr. Miller, of Coombe Abbey, at Kensington, on the 21st ult., when he exhibited six bunches of Barbarossa, weighing 36 lbs.—the largest being 7 lbs. exactly! These were produced on a Vine which has borne fruit only for the second year, and which is planted in an unheated border. We should like to hear a few more ideas on this subject.—ED. F. and P.]

## THE FORCING OF HARDY SHRUBS,

WITH A SHORT LIST OF PLANTS SUITABLE FOR THE PURPOSE.

WITH a proper house or pit for forcing, and a good stock of plants, a supply of forced flowers may be had during the dull, dark, and cheerless months of winter and early spring, without any great expense. In general it is usual to have a stock of prepared plants ready for the purpose, but when this is not done, a supply of plants can always be procured from the nurseries. The best time for potting the plants is as early in October as possible.

Well-rooted and well-shaped plants should be selected; a good sandy loam with a little leaf mould will suit most kinds of plants, except Rhododendrons and other kinds of American plants, which should be potted in sandy peat. When the plants are all carefully potted, they should be plunged in old tan, rotten leaves, or ashes, in an open but sheltered situation. If the weather be dry, they should have a good watering; and at no time should the soil in the pots be allowed to get too dry. Forcing may commence any time after the middle of November, but the plants that are best-rooted and established in their pots should be selected for the first batch; if forced several seasons previous, they will be all the easier excited. A good steady uniform bottom heat is indispensably necessary for the successful forcing of flowers, and if this be not supplied by pipes, a bed of tan or leaves must be prepared to plunge the pots in. A bottom heat of  $70^{\circ}$  is sufficient; it should on no account exceed  $75^{\circ}$ .

The largest plants should all be plunged in this bed, the small plants will in general do pretty well on shelves near the glass. The plants should be well watered when they require it, and be syringed two or three times a-day—a moist atmosphere must be maintained, but a high temperature is not necessary; indeed it is more or less injurious at all times, but more particularly during the winter months. For the first fortnight after the plants are housed, a night temperature of from  $45^{\circ}$  to  $50^{\circ}$ , and a day temperature of from  $55^{\circ}$  to  $60^{\circ}$ , will be sufficient. At the end of two or three weeks, when root-action commences, the temperature should be raised  $5^{\circ}$  higher at night; also during the day with an additional increase of  $8^{\circ}$  or  $10^{\circ}$  by sun heat. Later on in the season the temperature may be raised  $5^{\circ}$  more both by night and by day.

Air should be given abundantly at every favourable opportunity. It should always be given as early in the forenoon as it can be with safety, so that the house or pit may be shut up early in the afternoon.

Fresh plants should be put into the house every week or ten days, so as to have a continual succession of plants. All plants coming into flower should be removed to the conservatory before they are fully expanded, and they should be carried in a covered vehicle to protect the tender flowers from the injurious effects of the cold air; and when they are placed in the conservatory, they should not be exposed to cold draughts. When the plants go out of flower, they should not be set at once out of doors, and have no further care bestowed on them, as is sometimes the case, but they should be placed either in a cold vinery, or pit to complete and harden the young wood. Their flowering next season will greatly depend on the treatment they receive after they have done flowering. The end of April or begin-

ning of May is as early as they can safely be placed out of doors, and then the situation should be a warm, well-sheltered one. When the young wood is well ripened, they should be all plunged in old tan or rotten leaves, covering the pots about 2 inches to keep the soil from drying too much. They should have little or no water given to them after this, as it may cause them to start into fresh growth, a thing which should be carefully guarded against.

The whole of the plants enumerated in the following list are well adapted for forcing:—

Andromeda angustifolia	Rhododendron mytifolium	Spiræa
floribunda	odoratum	bella
formosa	Rhodora canadensis	callosa
polifolia	Deutzia gracilis	Douglasii
Kalmia angustifolia	scabra	prunifolia plena
glauca	staminea	Reevesiana var. plena
latifolia	Ribes sanguineum	Syringa (Lilac)
myrtifolia	Prunus	common blue
Daphne cneorum	sinensis flore pleno	common red
Azalea pontica	Amygdalus (Almond)	common white
glauca	common	new dark
scabra	double-blossomed	Persian blue
early white	Roses, of sorts	Persian white
Taylor's Red	Weigela	Cratægus (Hawthorn)
Nosegay	amabilis	scarlet
scarlet	rosea	double white
Rhododendron ponticum	Van Houttei	double pink
ponticum album	Philadelphus	large-flowered
ponticum varieties	(syringa or Mock	Cherry
catawbiense	Orange)	double-blossomed
catawbiense varieties	common	
<i>Stourton.</i>		M. SAUL.

## FRUIT TREES IN POTS.

HAVING grown about 300 fruit trees in pots this summer, perhaps a few remarks on their culture may be of interest to those interested in orchard-houses. The erection they grew in is a glass case of wall about 800 feet in length, and 7 feet in width, and the sorts grown consisted principally of Cherries, Plums, Pears, and Apples. No Peaches, Nectarines, or Apricots, were grown in pots in this long range, as plenty of these fruit are produced larger and finer from trees planted out in the border on the back wall. The Pears and Apples were principally of small bushes, potted from the borders in February and March, and consisted of some of the best dessert sorts—the Pears on the Quince and the Apples on the Paradise stocks. The Cherries and Plums had been potted two years before, and some of them had been forced early in a Peach-house in 1863.

The following sorts of Cherries and Plums I found to be the best setters and bearers, and all were excellent in flavour. Cherries—Belle d'Orleans, May Duke, Jeffrey's Duke, Black Tartarian (or Circassian), Cleveland Bigarreau, Bigarreau Napoleon, Ohio Prince; and for late sorts, Late Duke and the Florence. Plums—Kirke's, Jefferson, Cox's Emperor, Felleberg, Green Gage, Black Gage, Angelina Burdett, and Golden Drop. The Washington Plum I have discarded, as I found it a strong grower, but not a good bearer in a pot—excellent out of doors on the walls.

The following is a list of Pears I tried in pots, as the best for flavour and bearing. They are arranged according to their season of ripening—Doyenné d'Été, Citron des Carmes, Williams' Bon Chrétien, Beurré Giffard and D'Amanlis, Gratioli of Jersey, Bonne Louise, Marie Louise, Comte de Lamy, Fondante d'Automne, Beurré de Capiaumont and Diel, Duchesse d'Angoulême, Glou Morceau, Huyshe's Victoria, Beurré Clairgeau, Winter Nelis, and Easter Beurré. The Duchesse d'Angoulême, Beurré Clairgeau and Diel produced fruit very much larger and better coloured in pots than I ever grew before on the walls. The little

bushes, however, that grew them were very high fed in the summer months with weak liquid manure made from deers' dung, and the fruit suffered in consequence in flavour, which I fancy all large Pears do, even those from France, where not grown in pots. Old standard Pear trees, or even young ones, produce higher flavoured fruit than wall trees of the same kinds. The best flavoured and juiciest Pears I ever tasted were grown on a standard Marie Louise that had grown to a great height in an orchard. The tree seldom bore fruit, but when it did, no wall fruit of the kind could compare with them for the fine russet colour and flavour. The highest flavoured of my Pears in pots this year was the Glou Morceau, which was delicious, and the fruit very large and clear in the skin, like the foreign-grown.

The Apples grown in pots consisted of the following varieties, and are likewise arranged according to their season—Early Red, Margaret, Devonshire Quarrenden, Irish Peach, Kerry Pippin, King of the Pippins, Scarlet Pearmain, Cox's Orange Pippin, and the Margil, an old high-flavoured variety, and a great bearer. The Apples grown were of the earliest dessert sorts, as plenty of the late kinds could be had out of doors for the winter supply.

WILLIAM TILLERY.

### CRASANNE D'HIVER (BRUNEAU) PEAR.

It is of no consequence where this Pear comes from—its history is of no importance; its parentage equally valueless. Twelve years ago I was induced to purchase several plants of this kind from the flaming account given of its good qualities in a nurseryman's catalogue, which lays great claim to infallibility. So high were its merits, the possession of it was made a *sine quâ non*.

People who describe the quality of fruit should be very careful not to foist it upon the public without a due examination of its character, as it is no light matter to discover after years of patient cultivation, that we had been nursing an insignificant object. I have now had this variety in a fruitful state for eight years past, and during that long period we have not had a single fruit fit for dessert. This is the only season that it has condescended to offer any symptoms of softening, and then it is quite as floury and dry as mealy Potatoes, and as repulsive to the taste as an old woolly Turnip. I observe that it has been transferred in some fruit catalogues to the section of stewing Pears. Why not expunge it at once? What use is it there, while we possess so many varieties in that class, such as Léon le Clerc de Laval, Uvedale's St. Germain, Catillac, and Bellissime d'Hiver? We all willingly admit that soil and situation exercise a potent influence over the quality of fruit: hence it is but just that I should mention the conditions under which the fruit I condemn has been grown. The border is well drained, and made of turfy loam, about 2 feet deep. The trees are trained horizontally against a wall on a south-east aspect. Now what shows off the inferior character of Crasanne d'Hiver (Bruneau) so strongly arises from the fact that Beurré Diel, Ne Plus Meuris, and Bergamotte Esperen are grown side by side, exactly under the same conditions, and these yearly yield very superior fruit.

Tortworth Court.

ALEXANDER CRAMB.

### STOCKS FOR VINES.

MR. THOMSON'S excellent article in the January Number of the FLORIST AND POMOLOGIST cannot fail to be interesting to the majority of the cultivators of the Vine, and it behoveth us to be somewhat cautious in treating on the subject after such an authority, whose opinions carry weight with them, being founded upon extensive practice. That the stock influences the graft to a more or less extent, seems from the experiments hitherto tried, to be most conclusive: hence arises the necessity of ascertaining the most suitable stock for the most tender and difficult kinds. We are naturally led to look to those strong-growing, robust, constitutional kinds, of which the Barbarossa is a true type, as the very identical kind whereupon to graft our tender varieties; but practice

seems to condemn them, at least so far. What light future experiments will throw upon the subject remains to be seen.

In the selecting of stocks, three important considerations present themselves to my mind—viz., hardy constitution, free rooters, and prolific bearers—the last I consider of great importance. The Black Hamburgh has all these properties; for grafting Black kinds I certainly would advocate its superiority. The old Sweetwater and the Muscat of Alexandria for working White kinds I would prefer to such gross growers as the White Nice, Syrian, Trebbiano, &c. I would be more sanguine of success in working the precarious Canon Hall on the Muscat than the Muscat on the Canon Hall, robust grower as it is, but it is rather a shy bearer and indifferent setter; and if these bad properties can be improved by grafting, a great object is gained. There is again the Golden Hamburgh, which seems to defy a good many growers from bringing it at all to perfection; suppose this was worked on the Muscat or Sweetwater, I certainly anticipate good results would follow. There is another kind I would briefly advert to as being a most prolific bearer, but otherwise so far worthless; I mean Hardy Prolific Muscat. I fancy this kind would be a suitable stock for some of the shy-showing White kinds.

As this is a subject of importance to the Grape-growers generally, I think it is only our duty in practice and opinion to bring whatever evidence we can to bear upon the subject. I further expect that in a short time such a mass of evidence, founded upon actual practice, will be brought forward that will at once set us all right.

*Wrotham Park, Barnet.*

JOHN EDLINGTON.

[We shall be very pleased to get as much information as possible on this all-important subject—the influence of the stock on the graft. Already we have had some startling facts recorded in our pages, through the acute observations of Mr. Thomson, of Dalkeith, and Mr. Hill, of Keele Hall; and we shall be glad if these gentlemen, and all who are engaged in Vine culture, will continue their observations, and favour us with the result.

Mr. Hill, a short time ago, sent us a bunch of Lady Downes' from a Vine grafted on Gromier de Cantal, and it was remarkably fine both in bunch and berry, and the flesh was very hard and firm. The same variety grafted on Black Eagle, a small black Grape, though not so large in the berries, was infinitely superior in flavour to the preceding, and the flesh was quite tender and delicate, sweet, and remarkably rich. One of the most striking instances we have met with of the decided influence exercised by the stock, and almost reorganisation of the graft, was in the large vinery at Chiswick last autumn, where the Barbarossa, grafted on the Black Hamburgh, produced fruit that coloured two or three weeks earlier, was nearly as large again, and more highly flavoured than that grown on a Vine on its own roots; but the most remarkable feature in the experiment was the foliage of the grafted Vine—instead of dying off purple, as is natural in the Barbarossa, turned to that clear yellow that distinguishes the Black Hamburgh.—ED. F. AND P.]

## GATHERING PEARS AND KEEPING THEM IN ICE.

IN the FLORIST AND POMOLOGIST for 1863 I made some remarks on the utility of gathering Pears at different times, instead of gathering the whole crop at once, which were in accordance with Mr. Tillery's observations upon the same subject. By adopting this plan, especially with some kinds of Pears, they will keep longer. For instance, my first and second gatherings, Marie Louise, are consumed, and the third nearly so, while a thinned crop of them hangs upon the leafless trees, on a wall of south aspect, this 28th of November. I may state the same respecting Napoleon, and some other kinds, which often ripen too fast for consumption. Besides, the quality of all the later, or winter kinds, of both Pears and Apples is greatly improved by letting them hang longer upon the trees than is usually done, especially at the end of favourable autumns. But of course, all the late kinds do not hang alike. Beurré de Rance and Chaumontel soon drop, while Suzette de Bavay and Joséphine de Malines, hang long upon the trees, and seem to take no harm from slight frost. This reminds me to take notice that during the past autumn, I preserved the following, which are bad-keeping Pears, about five weeks in ice:—Gansel's Bergamot, Seckle, Belle et Bonne, Aston Town, Golden or Brown Beurré, Louise Bonne of Jersey, Hacon's Incomparable, and Swiss Bergamot.

This was the second time I had had a store of Pears upon ice, covered about 2 feet deep with leaves; and in both cases they were nearly as hard and sound as when gathered. After the stores were kept a while in a hothouse, there seemed little difference in their quality from that of the crop to which they belonged; and by this plan of keeping them I was enabled to exhibit sixty different kinds of Pears at Norwich Horticultural Show on the 23rd of November. Amongst them were—Beurré Bachelier, Soldat d'Esperen, Beurré Superfin, Beurré Delices, and some other French kinds, which were excellent in quality—while in bad seasons they were the reverse. This shows that the fault depends principally upon the seasons. There are some kinds, however, which are seldom bad, such as Thompson's and Broom Park. I may notice, that on Christmas day, I had some sound Marie Louise and Winter Nelis Pears, which hung upon the trees until the 1st of December, and also good specimens of Belle et Bonne that were kept in ice as noticed above. I have grown this Pear both upon a wall and espalier, and have also seen good crops of it on dwarf standards; it is a great bearer, but in general is deficient in quality. I had it some years back from Jersey, under the name of Merveille d'Eté, but the time of its ripening does not accord with the name; the true one, however, Belle et Bonne, is given under an excellent description and figure of it, in the *FLORIST AND POMOLOGIST* for 1864. I hope that what I have said will not be compared by any one to the story of the Highlander, whose Plums took two seasons to ripen.

J. WIGHTON.

### OUR CONTEMPORARIES.

*FLORE DES SERRES ET DES JARDINS DE L'EUROPE.* No. 172.—This stands first in the rank of illustrated horticultural publications for the fidelity and beauty with which the figures of plants and flowers are executed. For many years past, during the period that M. Van Houtte was perfecting the process by which these plates are produced, this work appeared like angels' visits, few and far between; and we were apt occasionally to forget that the work was still in existence by the long intervals that intervened between the appearance of the parts. Now, however, that the arrangements have been completed, it comes upon us with a rush; and since the 25th of November last we have received three parts, each containing seven richly-executed representations of ornamental plants. The part just received, and which was issued on the 10th instant, contains plates of the following:—

*Gymnostachium Verschaffeltii.*—This is a plant very similar to that introduced by Mr. James Veitch under the name of *Eranthemum rubro-venium*, so similar indeed that M. Van Houtte at first considered them identical. He has since discovered, however, that the leaves of the former are larger, longer, and more robust, and those of the latter more round in their form. The figure is beautifully executed, and exhibits to perfection the beautiful venation of the leaves.

*Dendrobium nodatum.*—A pretty Orchid from Moulmein sent to Messrs. Low and Co., of the Clapton Nursery, by Mr. Parish. The sepals and petals are of a sulphur or citron yellow colour, and the projecting lip has a deep blood-coloured spot at the base of the side lobes, and the very large middle lobe is deep orange, with a white margin and apex. This is the *Dendrobium Aphrodite* of the *Gardeners' Chronicle*, 1863, p. 6.

*Eranthemum sanguinolentum.*—Another of those lovely-foliaged plants, with crimson venation, to which the chromolith process of M. Van Houtte does such ample justice. It was introduced by Mr. Veitch from Madagascar, and may be grown in a greenhouse. Its shoots being successively pinched at the points, this species, which branches freely, will be one of the most useful as a decorative plant.

*Codonopsis gracilis.*—This is a native of India, and has not yet been introduced into Europe. The figure is taken from Hooker and Thomson's "Illustrations of Himalayan Plants," and represents a beautiful campanulaceous twining or trailing plant, with funnel-shaped flowers about 1½ inch long, and of a beautiful light blue colour.

*Pyrus floribunda.*—This is not the *Pyrus floribunda* of Lindley (*Bot. Reg.* t. 1006) which belongs to the *Aronia* section of the genus, but a totally distinct

plant, nearly related to *P. spectabilis*, *Ait.* It was introduced from Japan by Dr. Von Siebold along with others of the same genus, and has been cultivated by M. Van Houtte in his nurseries at Ghent for some years without (much to our astonishment) having attracted any special attention until now. The trees are already 12 to 15 feet high, and the representations of them in the two plates given in this part of the "Flore" convey the idea of something more gorgeous in bloom than what, it may be thought, exists in reality. It is not so, however; for when we had the pleasure of visiting M. Van Houtte's extensive establishment last April, our attention was arrested by the great profusion of bloom of what appeared to us to be a variety of *Pyrus spectabilis*, *Ait.*, but which was designated *P. floribunda*, and is as infinitely superior in every respect as an ornamental plant to *P. spectabilis* as the Lilac Charles X. is to the old common purple Lilac. M. Van Houtte has given two figures of the perfect tree, one showing it just in the bud and the other in full bloom, and each exhibits a beauty of its own.

LA BELGIQUE HORTICOLE.—The part for November and December is illustrated with good figures of *Clematis Jackmanni* and *Deutzia crenata*, reproduced from those published in our last year's volume. It contains a continuation of an elaborate paper on the genus *Pyrus*, by Dr. Koch of Berlin, in which he treats of every species in detail, and which will be very useful to all lovers of this beautiful and interesting genus. There is also a notice of De Candolle's herbarium, which we have abridged and inserted in the next page.

REVUE DES JARDINS.—The January part is adorned with plates of *Bouvardia leiantha* var. *splendida*, a hybrid raised by M. Lemoine of Nancy, and which has fine brilliant red flowers in corymbs produced on a scale of much greater size than in the species.

*Delphinium Triomphe de Pontoise*.—This is a variety of *D. elatum*, raised by M. Remy at Pontoise, which produces a dense spike of double flowers, 2 feet in length. The flowers are perfectly double, and have the deep blue outer petals larger and broader than those of the centre, which are rosy violet with an iridescent hue. These two colours, coupled with the density and length of the spike, render this one of the most ornamental varieties in cultivation.

THE FLORAL MAGAZINE. No. 57.—The first plant figured in this part is *Vallota eximia*, but we are not informed by what botanist this specific name has been founded. We should have considered it a variety of *purpurea*, with larger flowers than in the species, and with a pale or nearly white throat to the tube of the perianth. It was awarded a first-class certificate by the Floral Committee of the Royal Horticultural Society, but the flower exhibited at the meeting was a brilliant scarlet, and not the dull brick red that is represented in the plate.

The second plate is a good representation of *Clematis Jackmanni*, which has already been figured and described at page 193 of our last year's volume.

The next illustration is *Calceolaria Bird of Paradise*, a new bedding plant in the possession of Mr. Williams, of the Paradise Nursery, Holloway. It is described as being of a bright orange red colour, with a margin of yellow, the former a colour we fail to detect in the plate. It is said that the whole flower is "minutely punctured"—a peculiarity which we believe has never been observed in any other variety; and we can imagine how a flower of *Calceolaria* "minutely punctured" with holes like a piece of minutely perforated cardboard must have an interest attached to it that cannot fail to render it one of the most popular varieties.

The fourth plate is devoted to three varieties of the *Tree Carnation*, for sale by Messrs. Henderson & Son, of Wellington Road. *Delicatissima* is "a very pretty pink flower, having the petals thickly barred with a deep pink or light crimson." *Victoria* "is a beautiful light crimson, flaked with dark crimson approaching to black;" but we fail to see the resemblance between the light crimson of *Victoria* and the light crimson of *Delicatissima* in the plate. *Princess Alice* "is a bright yellow, with red bars and flakes, forming a very pretty and attractive flower."

The Editor seems to describe the colours correctly enough, but the artist fails to represent them.

## OUR MONTHLY CHRONICLE.

ROYAL HORTICULTURAL SOCIETY.—From the January Number of the "Proceedings" it appears likely that considerable changes are to be effected in the Council at the annual general meeting, which is to be held on the 14th of this month at 2 P.M. The three members recommended by the Council for removal are Sir Wentworth Dilke, Bart., Mr. J. Clutton, and Mr. J. Lee, in place of whom the following are proposed—viz., Sir Joseph Paxton, Sir Arthur Buller, late President of the Horticultural Society of Bengal, and Mr. B. T. Brandreth Gibbs, of Half Moon Street, Piccadilly, well known in connection with the Agricultural Society. There are, besides, two vacancies caused by the resignations of Sir Daniel Cooper, Bart., and Mr. S. H. Godson; and to fill these Mr. G. F. Wilson and Mr. A. Murray are recommended by the Council, the latter having resigned the Assistant Secretaryship, in which office he is to be replaced by the Hon. Edwin Portman.

Great dissatisfaction has lately been felt by the members of the Fruit and Floral Committees in consequence of an attempt on the part of the Council to induce them to alter their days of meeting from Tuesday to Friday, to suit the weekly Saturday Shows; but the day was so inconvenient to the members of the Committees that, if insisted on by the Council, there was every probability of the unanimous resignation of both Committees. The result of their representations has been that the Tuesday is to be retained as their day of meeting as heretofore. Judging from the Saturday Shows which have been held, these are not likely to be of much interest. Thus, at the first, Primulas were the flowers specially invited, and of Primulas there were only two exhibitors; and at the second Cyclamens, and of Cyclamens a like number.

LARGE BANYAN TREE.—At a meeting of the Linnean Society an account by Dr. Shortt was read of an enormous Banyan tree existing near the village of Pussumboor, Madras Presidency. It covers a space of 4800 square yards; its extreme height is 83½ feet, and it has about 2000 aerial roots, descending from a height of 60 feet. When viewed from a distance the tree resembles a well-wooded hill.

CALCUTTA BOTANIC GARDEN.—The valuable collections of fruit trees and plants existing at these gardens, as well as the beauty of the gardens themselves, have been destroyed by the late terrible cyclone. It is stated that it will take years to repair the damage done.

DE CANDOLLE'S LIBRARY AND HERBARIUM AT GENEVA.—The library is very complete, containing almost every work really useful to the botanist, as well as several rare and expensive ones, such as Sibthorp's "Flora

Græca," of which only forty copies were printed in the first instance, but a second edition was afterwards published at £60 each. "I have often been asked," said M. De Candolle, "how it was possible for me to remember the mass of facts recorded in my 'Botanical Geography.' It is easy, but much arrangement is required, for my memory is very bad. Every work, as it arrives, is sifted—all that is new noted, and these notes thrown into a drawer. At the end of the year these notes are arranged, and pinned to pieces of paper. These are placed in covers, so that on opening that devoted to any particular subject, all the works touching upon it, and any scattered observations, are at once seen." The herbarium fills five large rooms. It was commenced in 1794, with a collection of plants found near Geneva, and it rapidly increased. In 1799 it consisted of 3500 specimens, and in 1802 the number was 16,600; in 1810 it had increased to 32,250, in 1818 to 47,200, and at the end of 1862 there were 245,674 specimens, representing upwards of 100,000 species. The herbarium is divided into two parts—the Prodrômus herbarium, which consists of all the plants described in that great work; and the other division comprises all the plants which have been since added to the herbarium. This is under the care of Dr. Müller. The most important collections which it contains are those of Hooker and Thomson, from India; Preiss, Drummond, F. Müller, Cunningham, and others, from New Holland. Among the African collections are those of Commerson, Boyer (Madagascar), &c.; from South America those of Schomburgk, and many from North America. A cabinet contains fruits too large for the herbarium, specimens of woods, seeds, &c. An immense register contains the names applied by botanists to different genera, and the years in which they were given, so that it is impossible to use the same name a second time, and the right of priority is preserved.—(*Abridged from La Belgique Horticole.*)

BRUSSELS HORTICULTURAL CONGRESS.—An account of that held last year has just been published, forming an octavo volume of 500 pages. It contains among other matter, reports of the different sittings, the communications read, and the observations made by the principal horticultural Journals.

## OBITUARY.

THE LATE MR. WILLIAM COLE.—We much regret to announce the death of Mr. W. Cole, of Fog Lane Nursery, Manchester, who has occupied a high position as a plant-grower during a period of twenty-three years. Those who had watched him for the last three or four years saw that hard work and mental anxieties

were telling upon him. The up-hill work of establishing a large nursery business, and maintaining a world-wide reputation as a most successful plant-grower and exhibitor, was no ordinary task, and, as with thousands of others, Nature gave way, but the name will long remain in the memory of plant-growers. Erysipelas and fever laid hold of him, and after a brief illness a peaceful death awaited him. He died December 28, aged 52. Originally following another pursuit, circumstances led him to adopt that of gardening, and he at once placed himself under Mr. Robinson, gardener to — Delafield, Esq., Tunbridge Wells, with whom he remained three years. He then went into Messrs. Cormack's Nursery at New Cross, and we believe Mr. Charles Turner, of Slough, was in the establishment at the same time. Both have become eminent, each taking a lead in the two sections of plant-growing, and continuing fast friends. In 1841, he went as gardener to — Lewis, Esq., of Blackheath, and here began his career as an exhibitor. Commencing with Fuchsias, and being encouraged by Mr. Lewis, he followed with Heaths, &c. In 1845 he became gardener to H. Collyer, Esq., of Dartford, and remained with him until Christmas, 1853. During that period he fought many a hard battle at Chiswick and the Regent's Park with the late Mrs. Lawrence, and being well matched, Mrs. Lawrence, who at that time stood high for plant culture, found in Mr. Cole sometimes a defeating opponent. As a sound, practical plant-grower, William Cole stood in the foremost rank. He was the friend of such men as Barnes, Stanley, Green, Fraser, May, Dodds, and others, whose names are well known. Few men have brought into the exhibition-tent more specimen new plants than he did. He sought eagerly for new things when at Dartford, and then did his best to bring them out as exhibition plants. We believe we are correct in saying that he was the first to bring out in this way Rollisson's variety of *Ixora javanica*, *Genetyllis tulipifera*, *Franciscea eximia* and *confertiflora*, *Ixora alba* and *salicifolia*, *Rogiera amoena* and two other kinds, *Allamanda neriifolia*, *Hebeclinium ianthinum* and other plants. We well recollect how he experimented with *Stiffitia chrysantha*, a promising-looking subject as it appeared in the illustrations of a Belgian periodical, but which fairly baffled him. In 1853 he was strongly recommended by Mr. Turner as the manager of the Fog Lane Nursery, Manchester, then just started; soon after he became the proprietor, and year after year he fought his way as the most successful exhibitor at the floral exhibitions in the Midland and Northern Counties of England. Manchester, York, Bishop Auckland, Ripon, Leeds, Bradford, and many other towns owe much to him, for Cole's plants not only helped their shows, but spurred gardeners on to similar successes. He was occasionally blunt in his manner, but

we are certain that regret for his death will be universally felt. The expression used in a letter to the writer of these remarks by a well-known exhibitor in Scotland, who defeated Mr. Cole at Glasgow last August, will be shared by many, especially by those who knew him best, "We have lost a truly clever man." He has left sons, three of whom will carry on the business as usual, for the benefit of the widow and family.

M. EDOUARD VAN HOORDE, head gardener of the Botanic Garden at Mechlin, died there on the 8th of December, in the 42nd year of his age.

DR. HERMANN SCHACHT.—We have already noticed the death of this distinguished naturalist, which took place on the 20th of August last, but recur to the subject to give some particulars of his life. He was born on the 15th of July, 1814, at Ochsenwerder, a village on the Elbe, near Hamburg, and of which his father was the Lutheran clergyman. Schacht received his education at home, which he left in 1829 to study pharmacy at Altona. Botany was his favourite study, and especially physiology and morphology, for which he early evinced a strong predilection, and an extraordinary skill in preparing the most delicate subjects for the microscope. The theory of Schleiden as to the fecundation of Phænogams especially attracted his attention, and when, in 1847, the Dutch Academy of Sciences offered a prize for the best and most extensive work on the origin of the embryo of Phænogams, illustrated with figures, and accompanied by the objects from which these figures had been drawn, Schacht obtained it. He left in 1846, to act as assistant to Dr. Schleiden, then Professor of Botany at Jena. In 1849 he left that University to reside at Berlin, and in the following year he took the degree of Doctor of Philosophy, and commenced to act as a private teacher of botany. Here he attracted the attention of Humboldt, and the two soon became intimate friends. Whilst at Berlin, he was on several occasions entrusted by the Government with important agricultural and arboricultural inquiries. Previous to this he had given up pharmacy. About this time he published a treatise on botany, and works on the Potato disease, Beetroot, and textile substances. Having been charged with an inquiry into the structure and physiology of forest trees, he obtained materials for a work on the structure and life of trees, which went through two editions in Germany, and was translated into French and Russian. This most popular work, however, was an admirable treatise on the use of the microscope. It went through three editions, both in Germany and England, and was likewise translated into French. In 1860 he was appointed Professor of Botany at the University of Bonn, as well as Director of the Botanic Garden at that place. Pre-

vious to this his health had long been failing, and partly to relieve his asthma, and partly for scientific purposes, he went to the Canary Islands for two years. His health seemed re-established, when death unexpectedly snatched him away.

## CALENDAR OF OPERATIONS.

### CONSERVATORY AND SHOW-HOUSE.

THE mildness we have had during the winter, has continued almost up to the present time, and has produced the best effects on winter-flowering and forced plants, which are blooming freely, owing to the large amount of air which the season has permitted to the conservatory and forcing-house. Guard against damp and cold cutting winds, but in other respects keep down the night temperature to  $45^{\circ}$ , unless you have a mixture of stove plants in the house, when  $5^{\circ}$  more may be allowed.

### GREENHOUSE.

*Hardwooded Plants.*—Winter flowering Heaths and Epacrises should have a light situation; *hiemalis*, *Wilmoreana*, *rubra calyx*, *mutabilis*, *vernix*, are valuable at this season. Look well over New Holland and Cape plants to prevent damp. Keep the surface soil free from moss and lichens, which prevent evaporation, and ultimately ruin the plants. Water only when dry, and then effectively. Keep the house cool and rather dry, and do not allow the plants to get excited into growth for some time. *Softwooded Plants.*—Guard against the attacks of green fly by timely fumigating. Shift *Cinerarias*, *Calceolarias*, and *Pelargoniums*, for late blooming; these plants should be kept rather warmer than the above. *Azaleas and Camellias.*—We class these together, for although there are several points of variance in their culture, they do well enough together for the present. *Camellias*, if at all forward, will now be coming into bloom; to retain these in perfection for some time, keep the air of the house as dry as possible, and shaded from bright sun, as the least damp or drip will soon spoil the blooms of the light-coloured varieties. *Camellias* at this season, if full of flower-buds, should be watered with weak guano water, alternately with common soft water; this will much improve the size of the blooms, and induce the plants to break stronger when their annual growth commences. *Azaleas* for blooming in May and June should be retarded as much as possible; bring on a succession in the forcing-house by introducing a few free-blooming varieties every fortnight. The common white, *Triumphans*, *Optima*, *Rosea punctata*, *Speciosissima*, *Vivicans*, *Duke of Devonshire*, *Murrayana*, we find among the best for forcing, while the *Variiegata* class are more difficult. *Azaleas*, like *Camellias*, are benefited by weak guano water when very prolific of bloom. *Calceolarias*, shrubby or half shrubby, will now propagate freely from old stock plants. Those intended for specimens should

be struck in autumn, stopped now, and receive a liberal shift as soon as they have broken. Herbaceous seedlings should now be repotted. *Cinerarias.*—Continue to thin out all superfluous leaves and small suckers from show plants, and peg down or tie out, so as to admit the light and air freely to the centre of the plants; keep them on a nice cool bottom in a pit that is heated, as near the glass as possible, or if the pit is too deep, place them on inverted pots, so that the air may have free access to the foliage. Fumigate occasionally and with great care, as the young shoots and flowers are tender at this season. Sulphur immediately on the appearance of mildew. A little weak liquid manure may now be given to such as are full of roots. Throw the lights open every favourable opportunity. *Pelargoniums.*—The specimens intended to flower early, if not already done, should be tied out to their proper shape. Increase the temperature a little as the season advances, and water more freely; be careful that enough is given at a time to penetrate the ball. Air should be admitted daily, the state of the weather permitting. Take care to close early in the afternoon, with a little sun heat if possible. Plants that have been wintered in small pots should now have their final repotting; and, if convenient, a little fire heat will greatly assist the bad-growing sorts, and especially the fancies, in giving them a gentle start in the fresh soil. Also this is a good time for stopping plants to flower late, that are established in their blooming pots. Seedlings should be well looked to, giving them sufficient room, not to draw each other up weakly.

### FORCING.

No better plan of procuring forced *Asparagus* economically exists than by taking up three or four-year-old plants and placing them in pits or frames over a gentle bottom heat. Where beds are arranged to admit of linings being applied to the roots, and the surface protected, now is a good time to begin to have the Grass early in March. Bring forward succession of *Sea-kale* and *Rhubarb*, and plant a quantity of good forcing kinds of early *Potatoes* in a little heat, to sprout ready for transferring to frames towards the end of the month. *Shrubs.*—There is nothing in this way half so beautiful as forced *Roses*, which are universally admired. If you wish to succeed well, strike the plants yourselves from cuttings, or at any rate buy plants on their own roots. Our plan is to grow these in a good open situation for two or three years, till they get to a good size, and then take up

and pot in very rich soil. If this is done in October, and the pots are plunged in a frame, with a little bottom heat for the roots, they will answer admirably the first season, if not worked too hard. Add Honeysuckles, the common and scarlet Thorn, Sweet Briar, and Mock Orange. The hardy Chinese Azalea amoena, and seedlings from it, are among the prettiest and freest to flower of all forced shrubs. *Peach*.—Disbud the early house when forward enough, doing a little at a time. Fumigate if green fly appear. After the fruit is fairly set, the trees may be syringed with tepid water daily. *Pinery*.—A brisk heat must be maintained to fruiting plants to get them up, say 70° night temperature, and rising 10° or 15° during the day. Pines in bloom should have a very dry temperature at this season, to cause the blooms to open regularly and form handsome fruit hereafter. Keep succession plants in a mild growing temperature, that they may start into growth as slowly as possible. Give as much air as you can every opportunity, and do not allow the bottom heat to decline, or the plants will get a cheek, which may throw them into fruit in April. *Strawberries*.—The first batch will bloom this month; as they show their trusses, increase the heat slightly, to draw the flower-stems out from the foliage. Keep the plants near the glass, and free from green fly. As the blooms open, raise the temperature to 60° by night, and give air on all occasions. Water sparingly when in bloom, but as the fruit sets, increase the supply. Manure water will not be needed till later. Bring on successional crops in pits or frames as gently as possible, and remove them to more heat and air when the trusses appear.

#### KITCHEN GARDEN.

A busy time is approaching, and it will much facilitate the operation of sowing and planting, and benefit the future growth of the crops, if the ground has been previously well prepared by deep cultivation. All ground for spring cropping, if not already dug, should at once be dug or trenched, as requisite, adding the necessary manure for incorporating with the soil during the operation. Cabbage and Lettuce may be planted out on warm borders, if not done in the autumn. Sow also Peas and Beans, Radish, and Horn Carrot, in sheltered situations. When the quarters are clear, trap all the slugs you can, by laying down a few leaves here and there, or half a shovelful of fresh grains, to entice them; this step will save much trouble and annoyance hereafter. Plant Rhubarb, Sea-kale, and Artichokes, on deep-trenched and well manured soil. As these are plants intended to remain for some time on the same ground, a good preparation is necessary.

#### FRUIT GARDEN.

*Hardy Fruit*.—Filberts may be pruned towards the end of the month, when the

blossoms appear. Cut out all very weak and unproductive wood, allowing a good share of the male catkins to stay on. Where new fruit trees are wanted, lose no time in procuring and planting them. Our pages contain much valuable information on making borders, &c., and also of lists of the most suitable kinds for various parts of Britain. Pruning and nailing should be forwarded at once. Bush fruits, after pruning, should have good dressings of manure spread over the surface, to allow the rains to wash it in.

#### FLOWER GARDEN.

A fine time now for carrying out any alterations in this department. Prepare soils for the beds, to be ready for digging in in March. Take care of Crocuses and other early bulbs, of which mice are very fond. *Cold Frames*.—Now will commence a busy time for the propagator of bedding stuffs, which at present we presume are wintering in frames. The stock should be looked over, and of any kinds likely to prove short of the expected demand, remove to where there is a gentle heat, to force them into growth for cuttings; this will be more immediately the case with Verbenas, Petunias, Ageratums, and Lobelias.

#### FLORISTS' FLOWERS.

*Auriculas*.—There has of late been sufficient moisture in the atmosphere for these plants, but as the days lengthen, more water will be required. Towards the end of the month they may be placed on the blooming stage, if not wintered there; our plan being to keep them cool during the two first months of the year, that the plants may swell gradually, and not be brought prematurely into bloom. Top-dress, and keep clean of insects and dead foliage. *Carnations and Picotees*.—These are also on the move, from the mildness of the season. However, be sparing with water for a time: but towards the end of the month let them have a good washing, should there be a mild rain. The frames should be kept open as much as possible. As potting-time is at hand, and the soil prepared, care should be taken not to let it get too wet. Early potting is preferable, but planting in beds must be deferred till March. Old pots should be washed before using. *Dahlias*.—Roots, particularly ground roots, have kept very badly this season; but as the propagation will now have very generally commenced, the extent of the losses will have been ascertained. Cuttings will now strike readily, but should the roots be secured by being started, the forcings should be moderate, not to exhaust the root, as March is the best time for making healthy plants easily; some make sufficient by dividing the root only. Pot roots should not be started for a month to come or seed sown. *Pansies*.—Plant into large pots, from those they have been wintered in such as are intended to bloom in pots. A month hence will do for planting beds.

# CHOICE NEW VARIETIES OF

# VEGETABLE SEEDS

EXTRACTED FROM

**STEPHEN BROWN'S CATALOGUE,**

**SUDBURY, SUFFOLK.**

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- 220 **LETTUCE—THE LONGSTANDER**, a very crisp and excellent summer cabbage lettuce, most remarkable for duration without running. Several of the plants grown this season were found to stand full four weeks longer than any other of the longest standing sorts in cultivation, having been tested with them on the same ground. The quality is fine. p pkt. 1s.
- 1 **PEAS—FIRST CROP** (Carter's), stated to be earlier than any pea ever offered in previous years, and also has another advantage over all other early varieties in being the most prolific early pea in cultivation. Height about 2½ feet, and the haulm is literally covered with pods. p qt. 2s. 6d.
- 375 „ **ESSEX RIVAL** (Eley's), hardy, very prolific and early, in use about four days after Sangster's No. 1, and superior in flavor as an early pea. p qt. 2s. 6d.
- 12 „ **ADVANCER** (Mc Lean's) a dwarf blue wrinkled marrow, of fine flavor, long pods well filled, very prolific, and nearly as early as Sangster's No. 1.—the earliest and best of the wrinkled peas. p qt. 1s. 8d.
- 14 „ **PRINCESS ROYAL** (Mc Lean's), a very large white variety, second early, produces abundance of very large well filled pods p qt. 1s. 6d.
- 22 „ **PRINCE OF WALES** (Mc Lean's), one of the most prolific white wrinkled pea in cultivation, producing pods from near the root to the top, in use same time as Scimetars p qt. 1s. 6d.
- 24 „ **YORKSHIRE HERO** (Dixon's), a splendid variety of the wrinkled marrow 2½ feet in height, very branching and abundant bearer, requires sowing very thin on good rich soil, and will produce from 50 to 70 well filled pods, delicious flavor, full 10 days or a fortnight earlier than Veitch's Perfection. p qt. 4s.
- 76 **BROCCOLI—OSBORNE'S WINTER WHITE**—a new self-protecting Winter Broccoli, it forms fine heads, is as white as a cauliflower, and superior to Snow's Winter, inasmuch as it is self protecting, and comes in before it. Sown early in March, it is ready early in November, and by successive sowings, may be had in use up to April and May p pkt. 2s. 6d.
- 39 **BEANS—BECK'S GREEN GEM**, very prolific dwarf green p qt. 1s.
- 135 **CAULIFLOWER—HAAGE'S DWARF EARLIEST**—one of the best, if not the best in cultivation for early forcing and the open ground, habit quite dwarf, leaves very small, a space of 1 to 1½ feet, sufficient to grow it, producing very large and firm heads of the finest white colour, it will prove first-rate in worst seasons; no other sort so hardy, and the earliest of all varieties p pkt. 1s. 6d.

**Vegetable Seeds, New Varieties, continued.**

105 **ALBERT SPROUTS**—The Albert Sprout raised by Mr. Melville, Dalmeny Park, is one of the most successful efforts of this ingenious hibridizer, and will prove a most useful vegetable. It is a hybrid between the Drumhead savoy and Brussels sprout. The stems are long, studded with Hearting sprouts, and having a top resembling a small savoy. As a late hardy winter vegetable it will be found most invaluable, being fit for use when other sprouts are over, and vegetables scarce.

per pkt. 1s. 6d.

“Coming in between the time when Brussels sprouts are over, and the coming in of young cabbages, makes it doubly valuable.—*Scottish Gardener*, June, 1864.

“The flavor after cooking was all that could be desired, being mild and mellow, without any kind of coarseness.”—*Gardener's Chronicle*, 23rd April, 1864.

104 **DALMENY SPROUTS**—A new Vegetable, raised by Mr. Melville, of Dalmeny Park, Edinburgh, and is the result of a CROSS BETWEEN THE COMMON HEADING CABBAGE AND BRUSSELS SPROUTS. The growth is the same as that of Brussels Sprouts, being a tall stem, a foot high, thickly set with sprouts or small cabbages, and terminated by a cabbage of medium size. It differs from Brussels Sprouts in being altogether a cabbage: while the latter is a form of Savoy. It was AWARDED A FIRST-CLASS CERTIFICATE BY THE ROYAL HORTICULTURAL SOCIETY. The flavor is that of the Cabbage, and free from the Savoy Sprout taste. After the tops are cut off, a fine succession of Sprouts is obtained for a lengthened period. Sow the end of February or beginning of March.

per pkt. 1s.

147 **CELERY—DIXON'S NEW MAMMOTH WHITE**, said to be the largest and sweetest grown, and wherever exhibited has gained the first prize.

per pkt. 1s.

208 **LEEK—HENRY'S HYBRID PRIZE SCOTCH**, a fine thick growing sort

per oz. 1s. 6d.

107 **CABBAGE—FEARNOUGHT** (Melville's), a hybrid between the early dwarf cabbage and the heading Scotch Cale or Borecole; forms compact and hard heads, which, when cooked, are tender and well-flavored, recommended for its extraordinary hardness, and was awarded a first-class Certificate from the Royal Horticultural Society. By two sowings—20th of March and 8th of April—it may be had in use from November till Spring Cabbages come in.

per pkt. 6d.

106 „ **LITTLE PIXIE**, very early, small, and delicate flavor.

per oz. 1s.

47 **KIDNEY BEANS—HILL'S INCOMPARABLE**, pods very long, most abundant bearer, and good flavor

per qt. 2s. 6d.

322 **MOORE'S VEGETABLE CREAM MARROW**—an improved small cream-colored oval Vegetable Marrow, of an extremely delicate flavor.

per pkt. 6d.

*The following are select and very fine, of which considerable quantities have been sold, and given unqualified satisfaction.*

110 **FURRELL'S EDWARDSTONE CABBAGE**—large, of very close and firm growth and fine.

per oz. 1s.

134 **SUDBURY EARLY IMPROVED CAULIFLOWER**—large, beautifully white and handsome

per oz. 2s.

280 **SUDBURY TRIPLE PARSLEY**—extra fine

per oz. 8d.

55 **BEET—ATKING'S MELFORD HALL**, very fine and handsome, with dwarf foliage, flesh bright light purplish crimson.

per oz. 1s.

57 „ **NUTTING'S SELECT DARK**, fine dark blood color.

per oz. 8d.

214 **SUDBURY IMPROVED LARGE WHITE COS LETTUCE**—very fine, closes in well, and best without tyeing, extra.

per oz. 1s. 6d.

**CUCUMBERS**—several very splendid sorts—see List of Cucumbers.

**MELONS**—see also several splendid sorts described.

## FLOWER SEEDS.

# NOVELTIES FOR 1865,

## ENGLISH & CONTINENTAL.

Abbreviations—h.a. hardy annuals ; h.h.a. half hardy annuals ; g h.a. greenhouse annuals ;  
h.p. hardy perennials ; g.h.p. greenhouse perennials ; st. stove.

- |     |   | Price per pkt. |
|-----|---|----------------|
| 378 | <b>Ageratum Prince Alfred</b> , the best for bedding, exceedingly dwarf and compact, very free bloomer, of a rich deep blue   | h.a. 6d.       |
| 379 | <b>Agrostemma Coeli rosa dwarf fringed</b> , a fine variety of <i>Agrostemma Coeli rosa</i> , of a dwarf compact growth (8 to 10 inches high), thickly branched and vigorous, very free flowering, of a tender but fresh and lively rose, centre rosy white, the borders of the petals finely denticulated and fringed, giving to the whole plant a delicate and graceful aspect                | h.a. 6d.       |
| 380 | <b>Antirrhinum Majus Tom Thumb</b> , quite a new feature in this class, a dwarf and compact globular bush, of about 4 to 5 inches high, above which the flowers rise well with a small densely covered flower stalk ; seed, if sown the end of February, will bloom free and profusely the same season, forming small dwarf beds, or ribbons in the first or second row ; a most useful variety | h.p. 1s.       |
| 381 | <b>Aquilegia Elegans pleno</b> , a rich double dark blue with distinct white tips, flowering in great profusion, very attractive and beautiful  | h.p. 1s        |
| 382 | <b>Campanula attica</b> , a splendid species of the <i>Campanula</i> , beautiful dwarf habit, flowers dark violet in the way of " <i>Whitlavia</i> ," free and very long flowering, admirably adapted for small borders and edging  | h.a. 6d.       |
| 383 | <b>Clarkia Integripetila flora pleno</b> , one of the finest of this genus, the bloom is very double, large, of a rich magenta colour, and produced in the greatest profusion   | h.a. 1s.       |
| 384 | <b>Clarkia pulchella pumila alba</b> , a dwarf white selected out of <i>Clarkia pulchella</i> Tom Thumb rose. It is of the same dwarf compact habit, flowers in profusion, and will prove a very valuable acquisition for borders, &c.  | h.a. 6d.       |
| 385 | <b>Chrysanthemum Carinatum atrococcineum</b> , flowers in various shades from scarlet to the darkest red, in color like the " <i>Zinnia coccinea</i> " and <i>cermisina</i>   | h.a. 1s.       |
| 386 | „ <b>Carinatum Purpureum</b> , flowers of a purplish violet   | h.a. 1s.       |
|     | <i>The above two Chrysanthemums are splendid acquisitions, valuable by their compact habit, about 1½ to 2 feet in height, their long duration of flowering, the flowers of a bright color, very useful for Bouquets, &amp;c., can be justly recommended.</i>  |                |
| 387 | „ <b>Tricolor Dunnetti fl. pleno</b> —the colour of the flowers is snow white, and its great charm consists in its immense superiority over the other varieties of tricolor in being perfectly double, even as the <i>Truffants Pæony Aster</i> , and blooming at a time (June to August) when the <i>Aster</i> shows foliage only  | h.a. 1s.       |

**Novelties continued.**

- 388 **Collinsia Verna**, a beautiful new species from Kentucky, quite distinct from any other, growing about 1 foot high, with sky blue and white flowers. If sown from end of August to end of September, it will flower in profusion in April and May. Full instructions for raising sent with seed h.a. 1s.
- 389 „ **Corymbosa**, a *Collinsia* of an eccentric and peculiar character, blooming in a corymbose or disc-like form, whereas all the other varieties are pyramidal, colour pale lilac ... h.a. 1s.
- 390 **Datura fastuosa Huberiana**—this is a grand acquisition as a single specimen or for larger groups; it attains the height of 5 feet by an enormous circumference of 15 to 18 feet. The robust growing stalk is of a deep purple, the flowers of the same size as the *Datura arborea*, the back of the flowers a dark lilac, the inner side of a clear white with a green throat, extra fine ... 6d.
- 391 **Elychrysum Nanum Atrococcineum**—colour a rich deep scarlet, another fine and beautiful variety, of the same dwarf habit as *nanum atrosanguineum*, of last season's novelties ... h.h.a. 6d.
- 392 **Gilia Minima Cœrulea**—another interesting addition to this numerous and pretty race of flowers, colour pale blue, height 3 inches ... h.a. 1s.
- 393 **Godetia Reptans alba**—new Mexican perennial, a charming trailing plant, running close upon the ground, producing blossoms in the greatest profusion, especially in the second year of growth; colour similar to that of the beautiful *Godetia rosea alba*, viz., pure white with a crimson blotch at the base of each petal; said to be well adapted for rock-work, baskets and banks, and being a perennial, it increases in beauty each succeeding year. For decided novelty, prettiness, and general effect, considered one of the best introductions of late years ... h p. 1s.
- 394 **Godetia Reptans Purpurea**, another new Mexican perennial, exactly similar to the above, with the exception of colour, which in this instance is a rose pink, with a purple blotch on each petal, very charming ... h.p. 1s.
- 395 **Godetia Lindleyana flora pleno**—a startling novelty among this much admired profuse blooming class of plants. The first real double *Godetia* ever introduced, its colour like that of its parent. *G. Lindleyana* is a rich rosy purple, the blossoms are perfectly double, and produced in the greatest profusion, strongly recommended h.a. 1s.
- 396 **Helipterum Corymbiflorum**—Illustrated in Regel's *Flora*: a handsome everlasting flower introduced from Australia, silver leaves and white star-like blossoms, most adapted for small groups and parterres, or for edging of *perilla nankinensis*, or similar dark-leaved plants. ... h.h.a. 6d.
- 397 **Lobelia erinus Princess of Wales**—this new and beautiful variety of *Lobelia speciosa* is entirely distinct from any other; a more robust and closer grower than *speciosa*, spreading close to the ground, the flowers larger and of a rich deep blue, with a very bold white eye, thus rendering it a most attractive variety for bedding purposes h.h.a. 1s.
- 398 „ „ **Speciosa alba**—a variety raised by Mr. Gordon, of the Crystal Palace Gardens; the lower petals, which are large, are pure white, and the upper part faintly tinged with blue, a fine variety h.h.a. 1s.
- 399 **Nastertium King of Tom Thumbs**—said to be by far the finest of all the Tom Thumb *Nastertiums* yet offered as a bedding plant. It is not to be surpassed. The lustrous blue green foliage, contrasting vividly with the intense scarlet of the blossoms, produces an unequalled blaze of brilliance, and the plant must become a universal favourite ... h.h.a. 1s.
- 400 **Nemophilla Maculata purpurea**—an extremely pretty variety of this well-known tribe, the old variety of which is generally considered the handsomest of its tribe; colour purple, with a dark violet blotch at the apex of each petal, altogether a very novel and desirable acquisition ... h.a. 6d.

**Novelties continued.**

- 401 **Nolana lanceolata**—a native of Chili, and is one of the prettiest of annuals, with trailing branches, bearing a profusion of large blue convolvulus-like blooms of the most lovely tint, the throat being white, giving the flower a very striking appearance. It is quite distinct, and very much larger than *N. paradoxa*, which belongs to the same section; one of the most useful and admired annuals for rock-work, hanging baskets, &c., ever introduced ... .. 1s.
- 402 **Oenothera Diversiflora**—another beautiful variety, similar in habit to *Godetia Reptans alba* and *Reptans purpurea*, producing its flowers sometimes white, sometimes rosy pink of various shades, but always with a crimson blotch at the base of each petal, extremely pretty ... .. h.p. 1s.
- 403 „ **Parviflora**—a very neat small blooming variety, totally distinct from any other; colour of flowers, violet .. .. 1s.
- 404 **Primula chinensis fimbriata Crimson Emperor**—a novelty with rich dazzling crimson flowers, the finest primula in cultivation g.h.p. 2s. 6d. & 5s.
- 405 **Phlox Drummondii Isabellina**—the first pure yellow variety which has been introduced of this favourite and ornamental tribe, an interesting novelty ... .. h.h.a. 1s. 6d.
- 406 „ „ **Atropurpurea**—quite new, of the finest dark blood red ... .. h.h.a. 1s.
- 407 **Ricinus Nanus Microcarpus**—a genuine dwarf *Ricinus*, only 2 to 3 feet high, the seeds are only half as large as those of all the other species .. .. h.h.a. 6d.
- 408 **Senecio elegans nana cupreata pleno**—a fine variety, of a copper or crimson red colour, and very double, the habit of the plant being exceedingly dwarf, like the two beautiful varieties offered amongst the novelties of last season, and excellent as a low bedding plant ... .. h.a. 6d.
- 409 **Sweet Pea—The Invincible Scarlet**—This fine pea is a splendid and very striking novelty and may doubtless be considered the gem of the season. The upper petals are of the most intense scarlet, with a very slight variation in the lower ones, which have a deep crimson tinge. This must become a universal favorite and will no doubt be grown by every lover of flowers who has a garden.  
S. B. being the raiser of this pea, the stock is entirely in his possession, and the quantity being at present limited, no allowance can this season be made to the trade.  
h.a. pkts. of 6 seeds 1s. 6d., or 12 for 2s. 6d.
- 410 **Stock Dwarf German, Victoria Scarlet**, a novelty of a fine rich colour. h.h.a. 1s.
- 411 **Tropeolum Prince of Wales**—a free growing deep golden yellow with dark maroon spots, the colour being bright and very constant, rendering it very desirable for bedding purposes. ... .. h.h.a. 1s.
- 412 „ **Elegans Superba**, a large rich scarlet close compact habit very free bloomer, a decided improvement on the well known *Elegans*, and a first-class bedding plant. ... .. h.h.a. 1s.
- 413 **Verbena Auriculiflora**, a most splendid novelty, large and well formed, blooms in various shades, with a very distinct eye of white or rose, and properly called *auriculiflora*, as the size comes near the *polyanthus* and *auricula*, extra fine. g.h.p. 1s.
- 414 **Veronica Glauca**, a pretty little annual speedwell from Greece, of very hardy character, and of dwarf densely branched habit, neat, small, fleshy, toothed foliage, often marked centrally with brown, and numerous blue flowers, rather larger than those of *V. Syriaca*, produced in spikes; it succeeds well sown in Autumn, and then flowers from April to June; if Spring sown the plants bloom rather later; it is of the easiest treatment, requiring only ordinary garden soil, but as the plant branches greatly, it should be thinly sown, and the seedlings be transplanted (when large enough) to a distance of four or five inches. It will be found very useful for small beds or for edgings to larger ones. ... .. h.a. 1s.

**Novelties continued.**

- 415 **Waitzea Aurea** (*Morna nitida*). This handsome everlasting grows about eighteen inches high, it branches at the base, and clothes with oblong-lanceolated leaves somewhat stem clasping, the uppermost ones being linear. The flower is of a brilliant yellow, the disc somewhat deeper. It is of the easiest treatment as a half-hardy annual in any friable soil, blooming in July and August. Though bearing some resemblance to the *Helichrysums*, the flowers have a far more distinguished aspect, and greater delicacy of character . h.h.a. 1s.
- 416 „ **Corymbosa**, an exceedingly pretty species, entirely distinct from the foregoing, and more nearly allied to the *W. acuminata*. It forms a round bushy compact plant, about a foot in height and as much in diameter, every shoot being terminated by clusters of elegant flowerheads, about an inch across, stained externally with deep amaranth-red. It forms an admirable pot plant lasting in bloom for a considerable period, but also succeeds well in the open ground in light soil. The dried plant is remarkable for yielding a strong odour of ripe strawberry h.h.a. 1s.
- 417 **Whitlavia Grandiflora Alba**—Since the introduction of the purple *Whitlavia* some 10 years ago, it has speedily risen into favour, and has now become a leading favourite amongst annuals. This variety possesses all the merits of its predecessors, with the additional value of being pure white, it must necessarily rank in the first class of Californian annuals, and it is said to be one of the best novelties ever introduced. h.a. 1s.

SELECTIONS OF NOVELTIES.

- |     |    |  |              |      |          |
|-----|----|--|--------------|------|----------|
| 418 | 20 | <i>Choice Annuals, novelties for 1865, selection left to S. B.</i> | ...          | 15s. | 0d.      |
| 419 | 12 | <i>Choice Ditto for 1865,</i>                                      | <i>ditto</i> | ...  | 10s. 0d. |
| 420 | 12 | <i>Choice Perennials, novelties for 1865,</i>                      | <i>ditto</i> | ...  | 10s. 0d. |

NOVELTIES OF 1864

Offered in last year's Catalogue.

*A great number of these which have passed their flowering season have proved themselves to be very splendid. They will be found described in the body of the general list of Flower Seeds in the Catalogue; those marked h.a. under the hardy annuals, h.h.a. half-hardy, h.p. hardy perennials g.h.p. greenhouse perennials, g.h.bi. greenhouse biennials.*

Armeria splendens ..	p.p.	6d	Clarkia pulcherrima integripetala, very fine	
Arundo festucoides—see ornamental grasses				h.a. 6d
		6d	Convolvulus aureus superbus	6d
Aster Globe pæony-flowered crimson			Datura atroviolacea plenissima	h.h.a. 6d.
	h.h.a.	6d	Elichrysum naeum atrosanguineum, splendid	
Callirhoe verticillata (involuctata)	h.h.a.	6d		h.h.a. 6d.
Chrysanthemum coronarium dwarf yellow			Gilia lacinata	... h.a. 4d.
	h.a.	4d	Godetia Rosea alba Tom Thumb	h.a. 4d

## Novelties continued.

Godetia rubicunda splendens, splendid	h.a.	6d	Penstemon Lobpii, pure yellow	h.p.	6d
Helipterum Sandfordi, beautiful	h.h.a.	6d	Phlox Drummondi Chamois Rose	h.h.a.	6d
Ipomopsis rosea	...	g h bi.	Rhodanthe atrosanguinea, very fine	h.h.a.	6d
„ cupreata	...	g.h.bi.	„ maculata alba	h.h.a.	6d
„ jaune canarie	...	g.h.bi.	Sedum fibrianum rubrum, very beautiful	h.p.	6d
Kaulfussia atrovioleacea, very brilliant	h.a.	6d	Senecio elegans atrorosea pleno nana, extra	h.a.	6d
Lobelia Paxtoniana, very fine	g.h.p.	6d	„ „ purpurea	„	extra
Lupinus albo coccineus	..	h.a.	„ „	h.a.	6d
„ Dunnettii atrovioleacea	h.a.	4d	Stock blue celeste	...	h.h.a.
„ Venustus tricolor, extra fine	h.a.	4d	„ new citron yellow giant tree, very fine	h.h.a.	6d
Mimulus hybridus tigrinus, very beautiful	h.p.	6d	Swainsonia splendens	...	g.h.p.
„ maculosus (Bull's) do.	h.p.	6d	Tropeolum majus purpureus	h.h.a.	4d
Nemophilla auriculæ flora, superb	h a.	4d	Verbena new Italian striped	g.h.p.	6d
„ discoidalis elegans punctata	h.a.	4d	Waitzia acuminata	...	h.h.a.
					6d

## IMPORTED GERMAN FLOWER SEEDS in Collections, Separate Colors.

*These Collections are of the finest quality. They are received from the first continental growers and the varieties of Asters, Stocks, Balsams, Wall-flowers, &c, are exceedingly double.*

### TEN WEEKS OR ANNUAL STOCKS.

*For sowing the early part of March in pots or pans, under glasses or in April for a later bloom.*

		Separate Colors per Collection.	
		s.	d.
421	20 Vars. superb Dwarf GERMAN STOCK, flowering about 1 foot in height	2	6
422	12 Vars. do. do. do.	1	6
423	6 Vars. beautiful MINIATURE, or very Dwarf Ten Weeks about 9 inches in height	1	6
424	12 Vars. beautiful BRANCHING TEN WEEKS, well adapted for bouquets, about 1½ ft. in height	2	6
425	10 Vars. SUPERB GIANT or TREE TEN WEEKS. <i>A very valuable acquisition by its large flowers, about 1½ to 2 inches in diameter, the plants growing 2 to 2½ feet in height, new and splendid</i>	3	6
426	6 Vars. splendid EARLIEST FLOWERED AUTUMNAL (INTERMEDIATE), about 2 ft. in height <i>The intermediate are later than Ten Weeks, they may also be sown in July or August and make a good display during the early Summer months the following year.</i>	1	6
427	<i>The whole of the above Annual Stocks, forming a collection of 54 superb vars.</i>	10	0

### BIENNIAL STOCKS.

*For flowering the second season, and may be sown in May or June.*

428	12 Vars. SUPERB BROMPTON	about 2 ft. in height	2	6
429	4 Vars. NEW ROSE-FORMED BROMPTON, stem 6 to 8 inches high		2	0
	<i>The large closely-set flowers resemble beautiful half-opened roses, a first-rate acquisition.</i>			

**Biennial Stocks continued.**

430	8 Vars. ditto <b>NEW LARGE FLOWERING EMPEROR</b> , ro, wt, crim, and pk.	2 6
	<i>Some of these are New Colors, and very splendid, they are about one foot in height, branching and flowering 3 or 4 times in the season.</i>	
431	4 Vars. <b>COCARDEAU</b> , or <b>NEW TREE GIANT CAPE</b>	1 6
432	<i>The whole of the above Biennial Stocks, forming a collection of 28 superb vars.</i>	7 6

**GERMAN ASTERS.**

433	18 Vars. choice <b>Quilled German Asters</b> , very fine	2 6
434	12 Vars, do. do.	1 6
435	12 Vars. <b>Superb Dwarf Boquet Pyramidal Aster</b> , extra fine, forming when well grown a complete bush of 150 to 200 double flowers	2 0
436	6 Vars. splendid <b>Ranunculiflowered Aster</b> , very double. <i>Not larger than the Ranunculus and same form, very beautiful and excellent for Bouquets</i>	1 6
437	6 Vars. choice <b>Double Crown Asters</b> . <i>All having white centres very beautiful</i>	1 6
438	6 Vars. fine <b>New Imbrique Pompon do.</b> <i>Charming rich flowering varieties with small compact blooms, very pretty</i>	1 6
439	12 Vars. <b>New Dwarf Crysanthemum flowered do.</b> <i>This new tribe of Dwarf Asters is a very useful acquisition, they commence flower when the others cease, are as large as the Pæony flowered, and the plants covered with a mass of bloom.</i>	2 0
440	12 Vars. <b>New Tall Crysanthemum Flowered Aster</b> , these are fine	2 6
441	12 Vars. extra, <b>French Pæony Flowering</b> (Truffant's). These are very large and fine	2 0
442	2 Vars. superb <b>New Large Globe Pæony Flowered</b> . <i>Snow white, and variegated rose and white, flowers as large as the largest Pæony flowered 14 days earlier, habit same as the quilled and Globe Aster</i>	1 0
443	10 Vars. <b>New Giant Emperor</b> , <i>flowers fine shape and enormous size</i>	2 6
444	<i>The whole of the above 10 sorts of Asters forming a collection of 96 beautiful varieties</i>	15 0

445	8 Vars. <b>French Camelia Flowered German Balsam</b> , extra	2 0
446	8 Vars. choice <b>Convolvulus Major</b> , do.	1 6
447	12 Vars. <b>Dianthus Chinensis</b> ( <b>INDIAN PINK</b> ), including Heddewegii, Lacinatus, Imperial Double, &c.	2 6
448	12 Vars. „ <b>Lacinatus</b>	2 6
449	10 Vars. <b>Hyacinth Flowered Double Larkspur</b>	1 6
450	6 Vars. <b>New Stock Flowered tall Branching Larkspur</b> , very fine, being a vast improvement in richness of color, form, and density of bloom, very double	1 6
451	10 Vars. superb <b>Double African and French Marygold</b> , extra fine	1 6
452	8 Vars. <b>Marvel of Peru</b>	1 6
453	12 Vars. splendid <b>Phlox Drummondii</b>	3 0
454	8 Vars. brilliant new large <b>Pæony Flowered Poppy</b>	1 0
455	12 Vars. beautiful large flowering <b>Salpiglossis</b>	2 0
456	4 Vars. <b>Dwarf Scabious</b> , 6 inches high	1 0
457	10 Vars. superb <b>German Wallflower</b> , extra double and very fine	2 6
458	6 Vars. do. do.	1 6
459	12 Vars. superb <b>Zinnia Elegans</b> , finest colors	2 0
460	12 Vars. superb <b>Double Zinnia</b> , distinct selected colors, extra	3 6

# FLORIST AND POMOLOGIST ADVERTISER.

## No. XXXIX.—MARCH.

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**JOHN MORSE'S** Catalogue of the above, is now ready, and will be forwarded, free by post, to any address, on receipt of One Stamp. It contains all the most Choice and New Varieties of Dahlias, Fuchsias, Verbenas, Chrysanthemums, Pelargoniums, Calceolarias, Petunias, Cinerarias, Phloxes, Pinks, Pansies, Pentstemons, Antirrhinums, Mimulus, Tropæolums, and all kinds of Bedding, Greenhouse, and Stove Plants, Cuttings of which can be sent, free by post, at one-third the price of Plants. **THE NURSERIES, DURSLEY, GLOUCESTERSHIRE.**

### CALCEOLARIA "AMBASSADOR," (SANG'S.)

Strong Plants in single pots of this magnificent bedding-out CALCEOLARIA will be ready in April. Price 12s. per dozen.

Early orders will oblige.

\*\*\* The Trade supplied on the usual terms.  
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## THOMAS MILLINGTON,

### HORTICULTURAL GLASS WAREHOUSE,

87, BISHOPSGATE STREET, WITHOUT, LONDON.

ESTABLISHED 1750.



Fig. F.



Fig. C.

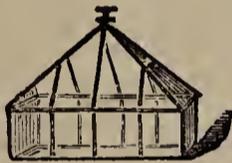


Fig. A.

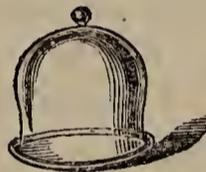


Fig. B.



Fig. G.



Fig. E.

### NEW REDUCED TARIFF.

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers and others.

Size	per 100 ft	Best.	2ds.	3ds.	4th.
20 in. by 12 in.	}	16 oz. 18s. 0d.	16s. 0d.	13s. 6d.	11s. 0d.
20 in. by 13 in.		21 oz. 27s. 6d.	24s. 0d.	18s. 6d.	14s. 6d.
20 in. by 14 in.					
20 in. by 15 in.					

### SMALL SHEET SQUARES.

Size	Best.	2ds.	3ds.	4ths.
6 in. by 4 in.	} 17s. 3d	} 14s. 8d.	} 12s.	} 10s. 6d.
6½ in. by 4½ in.				
7 in. by 5 in.				
7½ in. by 5½ in.				
8 in. by 6 in.				
8½ in. by 6½ in.				
9 in. by 7 in.	} 17s. 3d	} 14s. 8d.	} 12s.	} 10s. 6d.
9½ in. by 7½ in.				
10 in. by 8 in.				
10½ in. by 8½ in.				
11 in. by 9 in.				
11½ in. by 9½ in.				

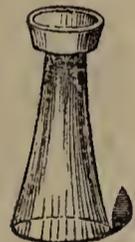


Fig. D.



Fig. D.

Fig. A. Hand Glasses.		Fig. B. Propagating Glasses.		Fig. C. Milk Pans.	
	s. d.		s. d.		s. d.
12 inches	5 6 each	3 inches	0 4 each	6 inches	0 5 each
14 "	6 6 "	4 "	0 5 "	10 "	0 10½ "
16 "	7 6 "	6 "	0 7 "	14 "	1 6 "
18 "	8 6 "	10 "	1 2 "	18 "	2 5 "
20 "	9 6 "	12 "	1 6 "	20 "	2 10 "
24 "	11 6 "	16 "	3 0 "	22 "	3 4 "
		18 "	4 6 "	24 "	4 0 "
		20 "	6 0 "		
If open top, 1s. extra.					
Fig. D. Hyacinth Glasses.		Fig. E. Hyacinth Dishes.		Fig. G. Rolling Pins.	
Common, 2s. 6d. per dozen.		6 inches ..... 1s. 0d. each.		1½d. per running inch.	
Improved, 3s. 3d. "		9 " ..... 1s. 6d. "			
		12 " ..... 2s. 6d. "			
Crocus Glasses.		Fig. F. Cucumber Tubes.		Opal Ditto.	
Common, 1s. 9d. per dozen.		1d. per running inch.		14 inches ..... 3s 6d. each.	
Improved, 2s. 3d. "				16 " ..... 4s. 0d. "	
				18 " ..... 4s. 6d. "	

Intermediate sizes in proportion.

Crystal Glass Shades, Ebony and Gilt Stands, Gas and Lamp Glasses, Chimnies and Globes, &c.  
Anti-Corrosion Paint, of all Colours, 34s. per Cwt., Packed in Casks of various sizes. Prepared Oil for ditto.  
Patronised by the British, French, and Russian Governments, as also the Dock and Railway Companies.

# BUTLER & McCULLOCH,

SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

## NEW VARIETIES OF FLOWER SEEDS, POST-FREE.

Per pkt.—s. d.		Per pkt.—s. d.	
Acacia nematophylla .....	1 0	Six new Mexican Annuals, per collection.....	3 6
Agrostemma cœli-rosa fimbriata .....	1 0	Mimulus cupreus hybridus.....	1 0
Antirrhinum majus Tom Thumb.....	1 0	Nasturtium King of Tom Thumbs .....	1 0
Aster Victoria .....	1 0	Nemophila maculata purpurca.....	1 0
„ five new Sp. from China .....	each 1 0	Nolana lanceolata.....	2 6
„ the Collection.....	4 6	Phalocræa cœlestina Tom Thumb .....	2 6
Campanula attica.....	1 0	Primula sinensis, white, brown eye .....	2 6
Callirhoë involuerata.....	0 6	„ „ striped, brown eye.....	2 6
Chrysanthemum carinatum atrococcineum .....	1 0	„ „ erecta superba .....	2 6
„ „ atropurpureum .....	1 0	„ „ Clarkiæflora.....	2 6
„ „ tricolor Dunnettii fl. pl.....	1 0	„ „ filicifolia alba .....	2 6
Clarkia integripetala fl. pl.....	1 0	„ „ „ rubra .....	2 6
„ pulchella nana alba .....	1 0	Reseda crystallina .....	1 0
Cosmidium Englemannii .....	1 0	Veronica glauca .....	1s. and 2 6
Datura fastuosa Huberiana .....	1 0	Waitzia aurea .....	1 6
Godetia Lindleyana fl. pl.....	1 0	„ corymbosa.....	1s. and 2 6
Helichrysum nanum atrosanguineum .....	1 0	Whitlavia grandiflora alba .....	1 0
Lobelia gracilis erecta rosea .....	1 0		

For General Collection of FLOWER SEEDS, also VEGETABLE SEEDS, see CATALOGUE, which may be had Post-free.

BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, W.C.

## NOW READY, NEW HARDY CLIMBING PLANTS,

Well adapted for Covering

Verandas, Trelliswork, Walls, Porticos, Pillars, Festoons, &c.

CLEMATIS JACKMANNI—First-class Certificate.

CLEMATIS RUBRO-VIOLACEA—First-class Certificate.

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Strong Plants 21s. each.—The usual allowance to the Trade.

Two Coloured Drawings, by Andrews, may be had post free for Twenty-four Stamps.

## THE BRIGHTEST GEM OF THE SEASON.

### THE INVINCIBLE SCARLET SWEET PEA.

**S**TEPHEN BROWN has great pleasure in introducing this splendid and very striking novelty. The colour is a most intense scarlet, with a slight variation in the lower petals, which have a deep crimson tinge. This will be found one of the finest annuals which has been of late years introduced.

S. B. regrets the stock is this year too limited to make any reduction to the Trade. Packets of 6 seeds, 1s. 6d.; of 12 seeds, 2s. 6d.

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FOR ONE YEAR'S SUPPLY (CARRIAGE FREE).**



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No. 1, A complete collection of KITCHEN GARDEN SEEDS for One whole Year's supply (with Instructions on Cultivation).....	£3	3	0
No. 2, Ditto, in quantities proportionately reduced .....	2	2	0
No. 3, Ditto ditto ditto .....	1	11	6
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No. 5, Ditto ditto ditto .....	0	15	0
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Sent Carriage Free by Rail, and 5 per cent. Discount allowed for Cash.

*A List of Contents of the above Collections, and General Seed Catalogue, may be had Gratis on application to*

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**F**or the Season's Supply of VEGETABLE & FLOWER SEEDS, please try POYNTER'S ANGELICAN COLLECTIONS, which for utility, simplicity, and beauty cannot be surpassed, Prices 7s. 6d., 14s., 25s., and 30s. each. Specially suitable for the Season's requirements in Seeds of those who do not keep a professional gardener, the 7s. 6d. and 14s. lots being equal to a Garden a quarter to half-an-acre, and the 25s. and 30s. lots are equal to a garden half to one-and-a-quarter-acre in extent, according to the demands of the family for Vegetables.

Compiled to give the largest quantities possible of the best sorts only.

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**WM. PAUL** (Son and Successor to the late A. Paul), will shortly announce 5 NEW SEEDLING ROSES of First-class merit. A Priced Descriptive Catalogue will be ready early in March.

All the NEW FRENCH ROSES from 36s. to 42s. per dozen; older kinds, from 9s. to 24s. per dozen.  
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Also the justly celebrated Apple LORD CLYDE, new of 1863, which is allowed to have no equal in flavour and keeping qualities, at 2s. each, or 20s. per dozen.

Trained and Standard PEARS, CHERRIES, PEACHES, NECTARINES, &c., in great variety, at equally reasonable prices.

CURRANTS, Red, White, and Black Naples, at 2s. per dozen, or 12s. per hundred extra fine.

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First-Class New Seeds, Carriage Free, at Market Prices.

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GLADIOLUS, best HYBRIDS of GANDAVENSIS, at 6s., 9s., and 12s. per dozen. Descriptive List sent Post Free.—MERRIOTT NURSERIES, OR SEED STORES, YEovil, SOMERSET.

New Strawberry, Sir Joseph Paxton.

**THE** above approved variety obtained three First-class Certificates this season. Strong Plants, now ready, 21s. per 100.

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WALTHAM CROSS, LONDON, N.

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**GISHURST COMPOUND**, whether used against Insects and Mildew on growing Plants, or as winter-dressing on Trees at rest, should be dissolved forty-eight hours before use. This gets rid of smell, and if the solution be decanted, prevents any "Staining of Foliage." A strength of from one to two ounces to the gallon of water is recommended for growing Plants; one from eight to sixteen ounces for Trees at rest.

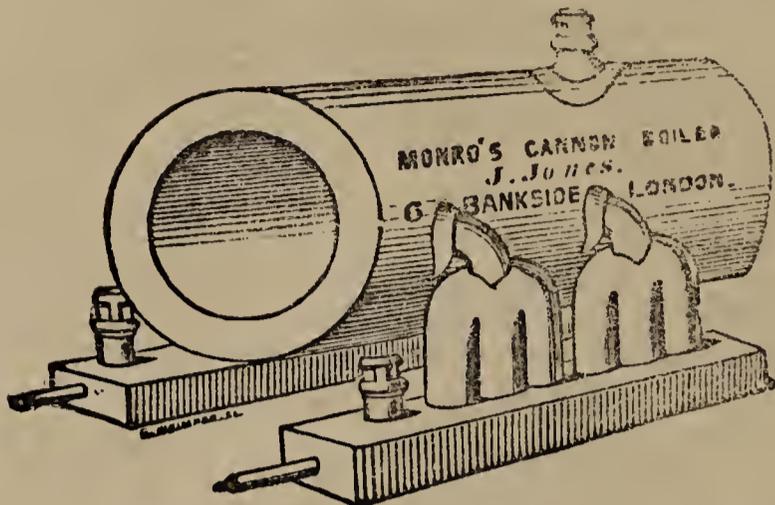
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**H**OT-WATER APPARATUS OF EVERY DESCRIPTION SUPPLIED, OR  
ERECTED COMPLETE.

**J. JONES & SONS, 6, BANKSIDE, SOUTHWARK, LONDON.**

**MONRO'S**



**CANNON  
BOILER.**

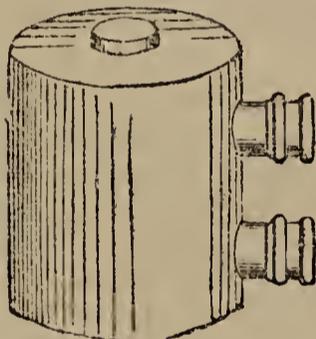
PRICE:—24-inch Wrought Iron, £6 10s; 36-inch ditto, £8 10s.;  
48-inch ditto, £12.

**T**HE last few years have fully proved that these Boilers are superior to any others yet  
invented, from the large number of them now in use in the Gardens of the Nobility,  
Gentry, and principal Nurserymen in all parts of the Kingdom; and they having in all  
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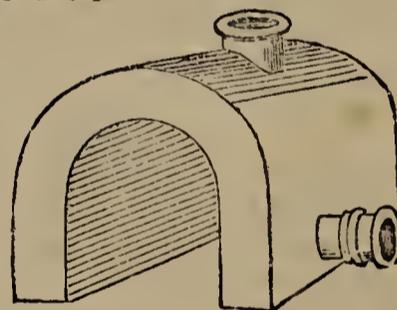
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Waitzia Grandiflora.

F. Waller, Lith. 18, Hutton Garden.

## WAITZIA GRANDIFLORA AND ITS ALLIES.

WITH AN ILLUSTRATION.

THE introduction of a new species of *Waitzia*—*W. GRANDIFLORA*, represented on the accompanying plate—seems to afford a favourable opportunity for some notice of a genus which is probably better known to most cultivators under the name of *Morna*, than by that which, owing to its priority, has been since adopted by botanists. Though seeds of two at least of the species—the *Morna nitida* and *M. nivea* of the “Botanical Register”—were sent from Swan River by the lamented James Drummond and others, more than a quarter of a century since, the plants do not appear to have made their way into general cultivation, and to the present generation of horticulturists, at least, the genus will be entirely new.

With something of the aspect of *Helichrysum*, in regard to their flower-heads, the *Waitzias* are mostly of a dwarfer and more restricted habit of growth, with foliage less obtrusive in its character. They are further distinguished from *Helichrysum* by their beaked achenes or fruit, as well as by a more microscopic feature, the appendages or tails of the anther.

We are glad to be able, in this place, to add some very interesting notes on the different species, communicated by Mr. W. Thompson, of Ipswich, to whom, also, we are indebted for the specimen figured, the plant having been introduced by him, and exhibited in the course of last summer. As an indication of its merit, we may add that the Floral Committee awarded it a first-class certificate.

M.

“The best-known species of *Waitzia* is probably *W. aurea*, the *Morna nitida* of Lindley, a handsome plant, of erect habit, growing about 18 inches high, with a few branches springing immediately from the base of the stem, and reaching about two-thirds of its height. The foliage is oblong-lanceolate, somewhat stem-clasping, the uppermost leaves being narrower, and the whole plant more or less villous. The flower-heads terminate the stem and branches in large clusters, are about an inch across, and have the involucreal scales of a glossy golden yellow, the disk being rather deeper in tint. This species is one of the easiest to cultivate, and adapts itself better to open-air treatment than some of its allies.

“Less known than the preceding, though probably first introduced about the same period, is the *W. corymbosa*, the *Morna nivea* of Lindley. This species differs notably in habit from *W. aurea*, being of a much more branched and compact habit of growth, as well as more floriferous. It does not much exceed a foot in height, is clothed with neat linear-lanceolate foliage, and bears numerous corymbose clusters of elegant flower-heads at the extremity of the shoots. These capitules are most effective in the bud, in which stage of growth the involucreal scales are of a deep amaranth red; the interior of the scales being paler, they are seen to less advantage in the fully-expanded flower-heads. I believe a pure white form of this occurs wild, on which the *Morna nivea* was founded, but at present this has not come under my notice. All my specimens were nearly similar in colour. When dried this species is remarkable for a fruity odour closely resembling that of ripe Strawberries. The stipe or claw of the scales is a pretty object under the lens, being thickly set with stalked glands.

“Closely allied to this is *W. acuminata*—so closely, indeed, that in the early stages of their growth the two species are not easily distinguishable even by the botanist; for although the foliage of *W. corymbosa* is usually rather broader and more villous than that of *W. acuminata*, there is sufficient

variation in these features to render the determination of the species uncertain in the absence of flowers. In *W. acuminata* the involucreal scales are not only as the specific name indicates, more pointed than in the allied species, but they are *invariably reflexed completely* when the capitule attains its full development, which never occurs in the *W. corymbosa*; the florets of the disk are also longer. I have cultivated two varieties of this plant—in one the scales are of a bright lemon yellow; in the other of an amaranth red, which varies considerably in depth in different specimens, some being but faintly tinged. So far as I am aware, *W. corymbosa* does not yield a form with yellow flowers. Both of these species are exceedingly neat in habit, and desirable for pot culture, requiring only a moderately rich friable soil, and a little care in the use of the watering-pot. In the open ground they also succeed in dry warm summers, in soils not too retentive.

“Quite distinct from the two preceding is *W. Steetziana*, a species comparatively diminutive; for though, when strongly grown, it attains a height of 6 or 8 inches, it is more usually somewhat dwarfer. Its pale green linear foliage is chiefly radical, forming a small tuft, from which springs a slender stem, sparingly branched, the branches bearing a few bright yellow capitules above half an inch in diameter. When well grown, a potful of this species is a pretty object.

“The subject of the accompanying illustration, *W. GRANDIFLORA*, completes the list of the species introduced to our gardens. It is very nearly related to the *W. aurea*, but is more robust, and has flowers considerably larger. The foliage, too, is so much less villous, that, when planted together, the species are readily distinguishable from each other by this feature alone. It blooms rather later than *W. aurea*, coming into flower when the latter is almost over. I received this fine species from Dr. F. Mueller, of Melbourne, but have reason to believe that, like the other species I have described, it is a native of Swan River. From its robust, tall habit, it is better suited to the open ground than to pot culture, agreeing, in this respect, with *W. aurea*.

“The treatment requisite for all the species may be concisely summed up as consisting of thin sowing about the middle of March; early preliminary transplantation to pots or boxes; close approximation to the glass, in a moderate temperature only, to prevent weak growth; and final transplantation to the open ground in May, in the case of *W. aurea* and *W. grandiflora*, or to four-inch pots in the case of *W. acuminata* and *W. corymbosa*, with a subsequent shift, if found necessary. Both the latter may, however, be submitted to open-air treatment in light soils. In wet ones, or if exposed to heavy or long-continued rains, they are liable to die off without apparent cause. The treatment recommended is, in fact, simply that requisite for most of the half-hardy annuals; and, although it may appear to involve an attention to details which many amateurs are unwilling to give, it cannot be too strongly urged that any attempt to cultivate on the ‘rough’ system will infallibly result in disappointment.—W. THOMPSON, Ipswich.”

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#### CHRONICLES OF A TOWN GARDEN.—No. XIV.

WHILE the land is covered with a thick coating of snow, beneath which, however, there are silent and unseen forces at work, for under this warm covering—(“He giveth snow like wool”)—many of the spring-flowering bulbs are rapidly thrusting their lance-like foliage up through the yielding soil. I have inside my window, against which, even as I write, large flakes of snow are driven by violent winds, a very pretty display of Hyacinths, not yet quite fully

developed, a few more days must elapse before they are in the "height of perfection." An old single white variety named Themistocles led the way. It was once a link in the chain of the large-belled kinds that has resulted in the magnificence of Madame Van der Hoop and Snowball; and having fulfilled its mission, it has been set aside for other and better flowers. Next was Annie Lisle, single red, deep rose, with darker stripe along each segment of the bells, and in its present stage of growth suffused with claret. I do not remember to have seen this flower before, and I am vastly pleased with it. It has two fine spikes of flowers, the foliage is dwarf, and it is an early and very pretty variety. It is one of a few bulbs sent me by Mr. J. H. Veen, of Haarlem, for trial. Next came Lord Wellington, double red, one I always grow in a glass, and I dismiss it by simply saying that while it is one of the best double Hyacinths in cultivation, it is also one of the easiest to grow in glasses that I know of. Another is Jeanne d'Arc, single white, a large-belled pale blush variety, also from Mr. Veen. It is not sufficiently advanced to judge accurately of its merits. The same can be said of Torquato Tasso, also single white, another flower included in Mr. Veen's kind present. A dozen others are in a successive stage of growth, strong, vigorous, and promising.

Two pots of Roman Hyacinths, potted about the first week in December, and kept in a very cold room till the flower-spikes had put in an appearance, are very gay and enlivening, and have been so for three weeks past. Under more favourable conditions they could be had in flower in a much shorter time. Each bulb has two, and some three spikes of flowers, and they emit a delightful fragrance. They deserve a more general culture than they receive, and I fancy that a large demand is anticipated for them in the coming autumn, as a Liverpool firm is already advertising for a large quantity of them. They appear to me to be a kind of connecting link between the Squill and the Hyacinth.

Out of doors I have a bed of something like thirty supposed different varieties of Crocus for trial; and in two other beds collections of single and double Tulips (early-flowering); the various sections of Narcissi, &c. I see indications of many of these being on the move in places where the noon-day sun has dissolved the snow that had settled on a warm border. The great transition process has commenced; what was just now vegetable life in suspension, is coming forth like Lazarus from the sepulchre:—

"Upward glancing to the sky"—

and from the returning season, the lengthening day, and the increased warmth of the sun's rays, seems to issue once again the summons, "The Master is come, and calleth for thee." Quo.

## THE RENOVATION OF FRUIT TREE BORDERS.

As a means of preserving fruit trees in health and productiveness, this branch of the art of gardening is not without its share of importance, and ought to be generally followed out in a systematic manner. That it is not so I feel convinced, and shall endeavour in a concise manner to show why I consider that the practice is both to be commended and recommended. We need not enter deeply into the theoretical and scientific part of the question to arrive at the knowledge that where there is only a limited supply of food, and many mouths to feed, the supply is likely to become soon exhausted, unless replenished, and our practice ought to teach us that where fruit trees are confined to a limited space, and subjected to a system of artificial treatment entirely opposite to the conditions in which they are found to flourish in a natural state of

growth, that unless furnished with a sufficient supply of suitable nutriment, they must become exhausted and debilitated before the period to which they may reasonably be supposed capable of surviving.

It will not be amiss to take a short review of some of the causes which are likely to have an influence on the well-doing of fruit trees under artificial treatment, on walls and pyramids for instance, which are both subjected to rather a rigorous course of manipulation. In the first place a defective drainage is very injurious and must be corrected; and the appearance of the trees will always indicate when the drainage is bad by a weakly habit of growth, unripened wood, and the stem and branches much covered with moss and lichens. In the next place the character of the subsoil has a very great influence on the welfare or otherwise of all fruit trees. There are some which are so inimical, either from poverty or a deleterious composition, that the roots will not enter into them at all; and on the other hand, there are some which, although differing materially from the surface soil, do yet contain a good supply of pure nutriment, and if the texture is at all open, the roots will penetrate a long way into it in search of fresh food, and that too without any of those bad effects which often follow on a poor or deleterious subsoil, such for example as cankered wood, and the tips of the young branches dying off, and so forth, symptoms quite familiar enough to practical men.

Now, whether the subsoils are good or bad, there are none so good as to be independent of assistance, and none so bad but that their effects may be neutralised, where the operations are not on a very large scale, say for instance the borders of a kitchen garden, by total removal to a certain depth, and the substitution of a good compost to increase the depth of the staple soil; but when the subsoil is of a good quality and tolerably open in texture, it only needs thorough drainage and well breaking up. In either case care should be taken to plant shallow, and to trust more to the principle of renovation of the surface soil, than to any permanent influence which the subsoils whether good or bad are likely to have on the welfare of the trees. At the same time they cannot be put altogether on one side, and operations must be carried on with reference to their peculiar qualities. I would like to press this point particularly on the attention of young practitioners who are likely to be called upon in future years to plant fruit trees on a large scale. It would be useless to go to the expense of making large plantations on bad subsoils; it would never pay, and after a few years the progress of the trees would be most unsatisfactory. This is merely in passing; my remarks are intended to apply more particularly to fruit trees grown on a smaller scale, and where space is very valuable, and the operator is obliged by the force of circumstances to crop his fruit tree borders, and even to run his crops pretty close up to his pyramids, so that the soil is not only subjected to the exhaustion caused by feeding the roots of the trees, but is also liable to become impoverished by kitchen garden crops. Now it is not to be denied that frequent and liberal applications of manure are a very great help to these borders, and enable heavy crops to be taken from them, and that at the same time the more soluble parts of the manure are carried down by the action of water so as to reach and benefit the roots; but even this has its limits, and in time such soils, although good, and even rich to all outward appearance, become incapable of throwing up a superior produce, arising probably from being overcharged with rich inorganic matter, and a deficiency of those elements which are only found in pure maiden soils from open pastures; and this indicates a necessity for what I call renovation, and it is astonishing to any one who is not conversant with its effects to see what a change for the best will be produced by the complete removal of all the surface soil down to the roots, and the substitution of a good compost, composed principally

of maiden loam from an upland pasture. I have seen old and debilitated trees come back as it were to a new life, start into a fresh growth with vigour, and better than all, this new growth is almost invariably fruitful, so that in most cases the second year after renovation an ample return may be expected. But renovation in the sense in which I wish to impress it on the mind will be necessary long before the trees become old and debilitated so as to be almost useless, and should be applied at the very first symptoms of a downward tendency either in the trees or from the crops around them. In such cases the addition of more manurial matter only adds to the evil, and increases the sourness of the soil, and the only remedy is to give it a sufficient pabulum of virgin soil on which the roots will eagerly seize, and a more healthy development of fruitful wood be produced. This applies principally to wall fruit tree borders. Renovation as applied to pyramids in the open quarters is a much more simple matter, because under good management they are subjected to periodical root-prunings; and as this implies the removal of a good portion of the earth around them, it is only necessary to remove it, and supply its place with the virgin soil.

JOHN COX.

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### THE SEASON'S PROSPECTS.

Now, whatever is a poor gardener to do in "these sensation days," with all these so-called new things that are being sent out every year, and more especially this year? He is considered quite behind the age unless he has tried Somebody's Atlantic Cable Cucumber or Whoisit's Pneumatic Peas, or some other such "vast improvement on all existing varieties." I have heard some people say that this is an age of humbug, and I really believe that a poor gardener has to put up with more than his share of it.

I remember, in my young days, there were very few seedsmen at all who sent out a printed catalogue, but now-a-days every seedsman has his "Little Book," "Vade-Mecum," or "Amateur's Guide;" and he is not content to have merely a list of seeds, but he must go into the thing, and make up, with illustrations, testimonials, &c., a book of some seventy, eighty, or perhaps a hundred pages. Let us look at the prospects of the season presented us by two of the largest advertising firms in the seed trade. One of these houses offers no less than *fifty-two* new and *distinct* varieties of vegetable seeds! while the other, certainly more modestly, "directs especial attention" to forty-one new varieties.

Now, let us assume the latter is more like the exact number of novelties offered this season, and see what we gardeners have to try this year in order to keep pace with the times. We have five new Peas, one new Bean, three new Borecoles, five new Broccoli, three new Sprouts, four new Cabbages, three new Cucumbers, one new Lettuce, five new Melons, two new Onions, four new Potatoes, three new Turnips, and a few other sundries, making up the total of forty-one. Now, I suppose we must try all these things because they are a careful selection of "novelties worthy of especial attention."

I verily believe there is more humbug in early Peas than in anything else going. Formerly seedsmen were content to produce Expresses, Racehorses, Number Ones, &c.; but now-a-days these are far too long in coming to perfection, and the *clencher* is put upon us by the production of "First and Best Early," "First Crops," &c., a sure evidence that the horticultural millenium is fast approaching; but it seems to need heralding with a grand flourish of trumpets in the way of testimonials from my brethren, who, I fear, do not always stick to truth in their desire to see themselves in print. I cannot understand, myself, how it is that *all* the early Peas sent out this year have been

proved to be the *best and earliest in cultivation*, unless I could make up my mind to believe that it is the peculiar care each seedsman paid his pet Pea; but, after all, I suppose it is not a very unnatural thing—like mothers, always thinking their own babies the prettiest, these worthy members of society, who have brought their early Peas into the world, think their own the best.

But Peas are by no means, according to seed catalogues, the only thing that has undergone such a vast improvement—other things have either been hybridised or ennobled; and I may go on with a gardener's catalogue of woes to almost any extent.

There is one thing I, with many of my gardening brethren, heartily wish, and it is that seedsmen would have some pity upon us, and stick to brevity in their catalogues, and give us the credit of being endowed with common sense. If one wants an ounce of Parsley, now-a-days, you have to hunt through their big books, and puzzle your few brains which sort you will have, Manchester Matchless, Reading Garnishing, or some other sort, which always, *under my cultivation*, turns out the old-fashioned Curled variety. It may be true that these fat catalogues may be sought after by a few, such as elderly ladies and country parsons, and suchlike readers; but I am sure no gardener would ever think of looking into a seed catalogue to find what soil the Carrot "loves," or the treatment the Cucumber "delights" in. And, again, with regard to the illustrations the catalogues usually contain. Though I admit the plates of knives are useful to enable a man to select his fancy in knives, I believe that the other illustrations are of no other use than to give the children to play with; and I am sure that these large catalogues cannot be printed without a deal of expense, which must be charged upon the seeds either in price or quality. It is no consolation to a gardener to know that a catalogue cost a shilling each, or even more, in printing. What he wants is a catalogue with a selection of really good and distinct things, with, perhaps, a few brief descriptive notes of the seeds offered. Yes, depend upon it, Messrs. Seedsmen, if you wish to please gardeners generally you will have to prune your catalogues considerably, and let us have a handy book to refer to, and not one easily to be lost in.

Q.

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### EUPHORBIA JACQUINIÆFLORA.

EUPHORBIA JACQUINIÆFLORA, I consider one of the most ornamental stove plants for winter decoration. Producing as it does racemes of bright scarlet flowers, at a time of the year when really bright flowers are desirable, it is worthy of the best cultivation it is possible to give it, as indeed is any plant that is worth growing at all. But then the best cultivation is a point on which gardeners are not all agreed, and it is worthy of note that some of the best of them differ materially in this matter, and yet arrive at equally successful results.

By simply asserting that a plant is worth cultivating, I would wish to have it understood that there are plants which in themselves possess a degree of merit quite independent of the kind of treatment it receives. The one above named, for instance, may be allowed to stand on one side in any out-of-the-way place during the summer, merely receiving a little water occasionally; it will be sure to flower in the winter provided it is taken into the stove or is put in a temperature of from 60° to 70°. In fact, I have known plants apparently neglected, and drawn up weak and spindling through being huddled together all the summer in a vinery, and merely brought into the stove in October, come in most valuable for cutting the flowers in winter and spring. The habit of

the plant is naturally tall and straggling; a great many of them, if in small pots, may be grown in a small space in consequence. No fear need be entertained of their failing to flower in their season. They generally do so abundantly, and every one who is acquainted with this flower knows how effective it is for bouquets, or in vases for the sideboard or dinner table.

My object, however, is not to show what amount of ill-treatment this plant is capable of enduring, although, alas! it often has to endure much, and often bears up bravely under it. Nor do I pretend to teach the learned in such matters, but simply to show how I have grown decent-looking plants fit for decorating the conservatory, the drawing-room, or the dinner table.

In order to grow a good specimen, I take a one-year-old plant which has done flowering in about the latter end of April, it will then require about two months' rest in a warm greenhouse, or a vinery or pit, with an average temperature of  $55^{\circ}$ , then gradually inure it to an average temperature of  $70^{\circ}$ . It may be cut into a good form, which the grower should be the best judge of; it will soon break, and may be turned out of the pot, the old fibres and some of the old soil removed, the plant then potted into a clean pot of about the same size, using good drainage, and a soil composed of equal portions of peat and loam, with just enough sand to make it porous. The soil I consider best to be rough and rather turfy. The plant may be kept in the same temperature—that is, about  $70^{\circ}$ , or it may be a few degrees higher. If the plant does well it will fill out that pot with new fibres in three weeks, and may then be potted on into one two sizes larger, using the same kind of soil. As it fills out the pot with roots, it may be potted on or not, according to convenience. I consider a 10-inch pot large enough for a good specimen, but a yet larger and better may be grown in a 12 or 13-inch pot. The size of the pot, however, is a matter of convenience, always bearing in mind that when the pot becomes crowded with roots, the plant cannot, and does not derive sufficient nourishment from the soil therein to keep it in full growth and vigour; that must be supplied in the form of liquid manure, and that again must be applied in a judicious manner, and not at all before the plant has received its last shift, and has filled out the pot with roots. This is of some importance in cultivating this plant, which grows vigorously when it has good soil and plenty of root room, or supposing it is limited in room, the deficiency is supplied by liquid manure; but in order that this may be effective, it should be ascertained that the roots are in vigorous action, and that they have very nearly traversed the whole of the soil in which the plant is growing.

When this is known to be the case, a little stimulus may be given in the form of liquid manure, very weak indeed, but slightly coloured, and of course the strength may be increased after a week or a fortnight, and may be continued until the plant is in full bloom, and then gradually discontinued.

While the plant is growing, it will require stopping rather frequently, or about four, five, or six times, according to what the plant might have been, or what it is desired to make it. A plant well grown in this manner attains a beautiful fountain-like habit, and requires neither stick nor tie, and as unlike the twisted contorted specimens I have sometimes seen as well could be imagined. A plant so grown, however, requires much room to show it off to advantage.

Smaller plants are, however, often desirable, and may be grown either by keeping the plants in smaller pots, or what I think better, to grow them from cuttings of the previous autumn. I have struck the cuttings late in the year, kept them in the cutting-pots all the winter, potted them off in March, and grown very neat plants in eight-inch pots, about 18 inches high, with the same fountain-like habit, which I consider the best adapted to the peculiar growth of

this plant—that is to say, when the form of the plant, as well as the beauty of the flower, is a consideration. There are instances, however, in which the peculiar tall straggling style of growth of this plant may be brought into requisition, in order that it may stand among other plants, and show its flowers high above the surrounding foliage. Old plants are very well qualified for this purpose, simply giving them a shift in the summer and allowing them to grow without stopping. Again, for growing very small plants which are sometimes desirable, cuttings may be put in some time in May, and potted when rooted into three-inch pots, in which they may be allowed to flower, or they may be potted on into four-inch or six-inch pots, seeing that it is done in time and not later than September, in order to allow of the pots being filled with roots before the plants begin to flower, for they flower much better and continue in flower longer when this is the case. I often have them when the blooming is apparently over, break out into flower the whole length of the young stems, and continue so till the latter end of May.

As before said, plain peat and loam, with a moderate quantity of sand, is the soil I give this plant. It is possible that others may have been equally or more successful by using a different compound, but that anything more than I have named is really necessary to good culture I can scarcely believe. I am satisfied that if growers confine themselves to the more simple methods and materials, they are less liable to disappointment. Enriching the soil in order to encourage growth, may have its advantages when judiciously managed, but is scarcely safe in the hands of any but the most experienced growers. I would, therefore, recommend beginners and inexperienced cultivators to be satisfied with putting their plants in plain soil, and if any extra support or stimulus is thought to be requisite, apply it in a liquid state, when the plants are in full vigour, and have plenty of roots to absorb and appropriate it.

Cuttings are easily struck by taking small pieces of the half-ripened wood, inserting them in an equal mixture of peat, loam, and sand, and plunged in a gentle bottom heat, in a hotbed or stove.

When old plants are allowed to get potbound, or starved in too small pots, or stood for any time too close together, they become subject to scale. This is very easily got rid of by sponging with soapy water. F. CHITTY.

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## THE MANETTI STOCK, AND ROSES ON THE MANETTI STOCK.

1ST. PRELIMINARY OBSERVATIONS.—I believe that great prejudices have in time past existed with regard to the Manetti stock. These prejudices are fast dying away. I believe that what I have written in its defence, as founded on experience, has tended to banish these prejudices so far as to insure a fair trial; and I believe, further, that the stock, having been more fairly tried than at its first introduction, has itself now very widely banished prejudice, and gained to itself the favour of the public, and of some of its first opponents. What new invention is not subjected to suspicions, and to a fiery ordeal?

2ND. ITS ORIGIN.—Mr. Rivers introduced it into this country about thirty years ago, under the following circumstances. In a letter to me, he says:—“It is just thirty years this month (30th of January, 1864), that I received one small rooted cutting of Manetti in a bookseller’s parcel, through Messrs. Longman & Co. Its brother, raised in the same batch, came over with it, and was called “*Rosa indica grandiflora*.” Our sort was called “*Rosa indica Manetti*.” Both were raised by a Signor Crivelli, who dedicated the latter to Signor Manetti, the Director of the Botanic Garden at Monza, near Lago de

Como. The first-named was exactly like Manetti in leaves and habit, but not a cutting would grow; so, after some years I destroyed it, which I now regret. So highly is the Manetti stock esteemed in the United States, that I have sent some hundreds of thousands there; and there is at this moment in the house an order for 50,000 for one nursery."

3RD. HOW I CAME BY MANETTI ROSES.—Years ago I was at Mr. Gill's nursery at Blandford. He said, "Sir, I have something to show you—noble stuff, that will please you." He then showed me the first specimens of Manetti Roses that I ever saw. They had just arrived from Mr. Francis, of Hertford. I saw, admired, and bought half a dozen plants.

4TH. WHAT A MESS I MADE OF IT.—Manetti Roses were not then propagated as low as they are now. I had no instruction, at that time, as to how they should be planted or pruned; so I made a nice mess of it! I planted them as briar Roses, and pruned them as such. The stock, being exposed to the sun, soon became indurated, and I never had any flowers from them worth speaking of; and in two years they died. Two of the kinds have long since passed from the catalogue. These four still remain, and, being now properly treated, are successful Roses—viz., *Baronne Prevost*, *Triomphe de Paris*, *Géant des Batailles*, and *Général Jacqueminot*. I have long been a Manetti-ite, and the amount of pleasure and increasing satisfaction that I derive from them annually is very great.

5TH. HOW I GOT OUT OF THE MESS.—I am not quite sure, but I believe it was as follows:—I was dining at my kind and valued friend's, Mr. Sturt, of Critchill. He said, after dinner, holding up a red book—Mr. Rivers's "*Rose-Amateurs' Guide*"—"Here is a book that will charm you." I read it, and there discovered that the Manetti Rose requires to be covered with earth an inch or two over the line of union. This has ever since been done; and I and Manetti Roses have been good friends.

6TH. HOW I HAVE BEEN GIBED.—I have withstood jeers of all kinds. "Well, these are birds of a fine feather, but will they last?"—"Ah! they are well enough the first year, but, if I come again next year, what shall I see?"—such were the gibes. Some of these suspicious satiricals have come again, and seen what has gratified them. There is an old saying, "Let those laugh that win." In 1861, after the destructive winter—after the sad havoc made among the briar Roses of England—I won, chiefly by the Manetti Roses, eight first prizes, beginning at Dorchester as early as the 13th of June. The other places were Shepton Mallet, Langport, Blandford, Reading (two prizes), London (two prizes in summer and in September). The September Roses, twenty-four trebles, were cut and conveyed to London by the distinguished "D.," of Deal, to whom I still confess a great debt of gratitude is due for saving me the toil of travel. I may observe that, when he saw the natural poverty and the dryness of the soil, he expressed himself astonished; nor less so at the manure bestowed upon them.

7TH. HOW, IN THE PROCESS OF TIME PEOPLE CHANGE THEIR OPINIONS.—I believe that we all live to moderate our opinions on most subjects; but I have not moderated my opinions as regards Manetti Roses—not one word will I withdraw. Whilst some, however, have not candour enough to admit their change of opinions, there are others who are of a more generous nature. Two rosarians have candidly owned their failures with the briar Roses, and owned the virtues of the Manetti Roses. The first I name is Adolphus Kent, Esq., of Blechingley, Surrey, to whom the periodicals are much indebted. He has been here twice, and is coming again this year. He had once suspicions that the Manetti Rose would not last; but now he writes, "The briar is a thing of the past; Manetti is the stock for me." Moreover, he adds, "Dr. —, of

Redhill, having in vain tried briar Roses, is determined to try Manetti Roses." I say, as I have said before, that the briar is an excellent stock for strong lands, but for the generality of lands, and for free growers, Manetti is the best stock. The briar is, perhaps, the best for moderate or dwarf growers, but both the briar and the Manetti stock are kept healthy by the freedom of the growth of the Rose. The summer Roses here, chiefly on briars, illustrate the first case; and, though they have been here for years, in lands not suited to the briar, they are healthy, masterpieces in form, and an "exhibition" every season. They passed through the severe ordeal of 1860-61 without a scratch, and are better than when I bought them of Cranston years ago. Another case of conversion is in my own county. Mr. Edward House, yeoman, of the fine old Elizabethan house at Anderson, who has budded his own briars for years, told me, when I was there this summer, "I have given away 400 of my briar Roses. The Manetti Roses have done well; henceforth Manetti is the stock for me!"

A voice comes also from my respected parishioner, Mr. John Ford, whose land is strong, and to whom I gave almost all his Roses on both stocks. He told me that the briar Roses stood no chance with the Manetti Roses; and yet you will be told that Manetti Roses are not good for strong lands. A voice also comes from Ireland. Lady Dunraven says: "Great pains are taken with the briar Roses round my geometrical garden, but they do nothing; I must try the Manetti Roses." Accordingly, I recommended her some that do well here, and which, I doubt not, will do equally well in Ireland. I need not mention any more cases. I could supply voluminous testimony. The greatest testimony, next to that of personal experience, is the difficulty the nurserymen have in supplying the increasing public demand for Manetti Roses. The failures must be shared by the propagator and cultivator. Some propagators bud them so high that it is impossible to plant them sufficiently deep to cover the stock. The cultivator, hitherto, has not covered the stock, even where it might have been done; and he has cut the Rose down as if it were a briar Rose; whereas it should, from first to last, be cut like a Hybrid China. The propagator is also to be blamed for putting bad growers, or delicate sorts, on the stock.

8TH. HOW MANETTI ROSES SHOULD BE MANAGED IN STRONG LAND.—It is supposed by some that the stock, and Rose on the stock, do not like strong land. The converse is the truth. It is oftentimes too good a stock for first-class lands; it is driven, by excess of growth, into blindness. The way to cure it is to root-prune *in loco*, or lift, and root-prune. Moreover, sorts that grow excessively should not be manured till after their flowers are formed; their long shoots should be shortened but little, inferior wood cut out, and, if the tree is overladen with buds, some of them may be cut off with a view to succession. There is another way in which the Manetti Rose may be made available in land especially suited to the briar. Stocks may be planted, and in due time budded. After the first season, in the autumn, they may be sold to the provincial nurserymen at reduced prices, who would be glad to avail themselves of plants reared in first-class land. The management, in light land, will be the same, except that, if they give their flowers well and late, there will be no need of removal or root-pruning.

(To be continued.)

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## BEURRÉ CLAIRGEAU PEAR.

IN walking through Mr. Turner's nursery in the month of October, about four years since, I was much struck with some small Pear trees which were laden with highly-coloured fruit, and apparently a variety with which I was unacquainted. I inquired the name, and was told "Beurré Clairgeau, but that it was not of much

account only for its good cropping qualities and its beauty." On these grounds alone I was inclined to grow it; therefore, ordered two plants, but unfortunately only kept one myself—that I planted against a west wall, and although only a little tree, I have each year had a nice crop of fruit of so pretty a character, that some of my friends the past autumn fancied I had fastened artificial fruit on the tree, the size and colour of the Pears being so different to those they had been accustomed to see growing in the midland counties. But it is not solely of its beauty I wish to speak—it has far higher qualities. The past season appears to have well suited it, for the flavour was excellent, partaking somewhat of a good Bon Chrétien, with a fine musky aroma, juicy and buttery. I have occasionally eaten the fruit in Jersey—where it grows to an immense size—but have never considered it first-rate until last year, when I found fruit, weighing over a pound each, to be highly flavoured, even more so than Duchesse d'Angoulême or Marie Louise, and preferred by some to those varieties, which is saying a great deal in its favour. I brought from Jersey last November some extraordinary specimens of this variety, and found that they were excellent for about a month. Unlike Beurré Bosc, Marie Louise, Van Mons Léon le Clerc, and other fine varieties that ripen in October and November, it will not go rotten at the core until the fruit is entirely decayed, which peculiarity is a great drawback to many of our richest Pears. If any one were to ask me to name three Pears best suited to the midland districts of England, I should not omit Beurré Clairgeau—its handsome fruit, of excellent quality, combined with its perfect hardiness and great cropping propensities, even in its infancy, places it in my opinion at the top of the list.

*The Cedars, Castle Bromwich.*

CHAS. JAS. PERRY.

## THE PEAR AND ITS VARIETIES.

(Continued from page 255, Vol. 1864.)

### BERGAMOTTE DESTRYKER.

SYNONYME.—Bergamotte de Stryker.

FRUIT small, even and regularly-shaped, roundish. Skin smooth, and somewhat shining, of a greenish yellow colour, and marked with russet dots. Eye very large and open, with long, broad, and spreading segments. Stalk about three-quarters of an inch long, quite green, and inserted without depression. Flesh white, half melting, and very juicy. Juice thin and watery, sweet, and pleasantly-flavoured.

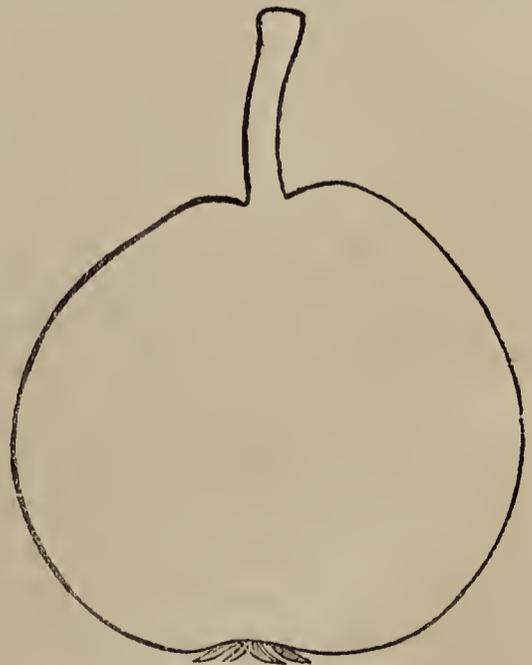
A second-rate little Pear, ripe in the end of October.

This was raised by M. Parmentier, of Enghien.

### BERGAMOTTE DUSSART.—*Bouvier.*

Fruit medium-sized,  $2\frac{3}{4}$  inches high and 3 wide, Bergamot-shaped. Skin clear green, changing to lemon yellow as it ripens, strewed with green and grey points, and mottled with green patches. Eye open, placed in a wide and shallow basin. Stalk stout, woody, a quarter to half an inch in length, inserted in a small wide cavity, which is sometimes bossed and undulated. Flesh white, fine, melting, and juicy. Juice abundant, sugary, vinous, slightly acid, and perfumed.

A pretty good Pear, but not of first-rate quality, ripe from November to January. It was raised by M. Dussart, of Joigne.



Bergamotte Destryker.

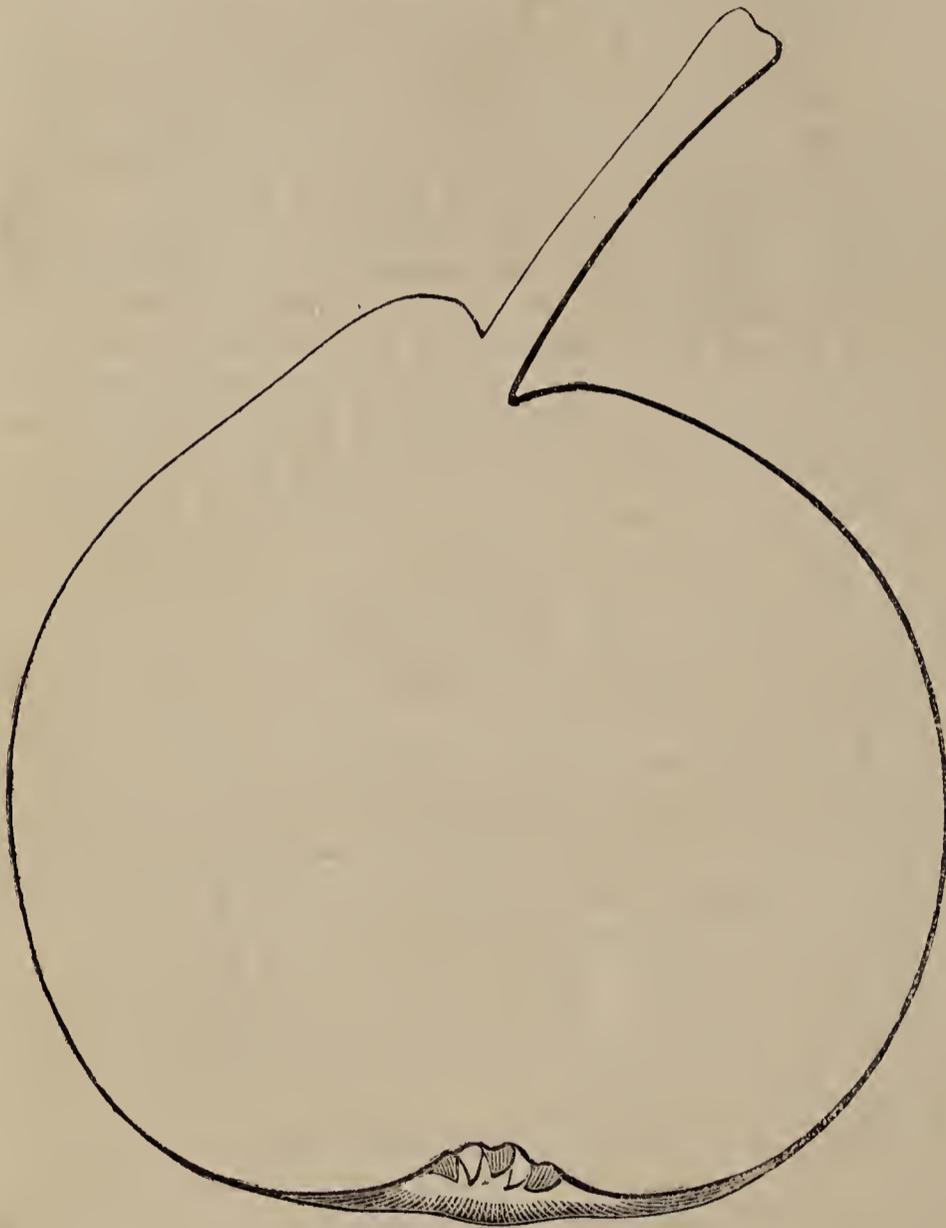
BERGAMOTTE ESPEREN.—*Bivort.*

IDENTIFICATION.—Alb. de Pom. i. 177. Annales de Pom. v. 75.

SYNONYMES.—Esperen, *Decaisne Jard. Fruit. du Mus.* liv. 48; but not of *Alb. de Pom.* ii. 97, or *Handb. der Obst.* ii. 481.

FIGURES.—Alb. de Pom. i. *Decaisne Jard. Fruit. du Mus.* liv. 48.

Fruit medium size, frequently above medium size, varying from  $2\frac{3}{4}$  inches wide and  $2\frac{1}{4}$  high, to  $3\frac{1}{2}$  inches wide and 3 high. It is, in the smaller fruit, distinctly Bergamot-shaped, but in large and well-grown specimens it is rather turbinate, narrowing abruptly to the stalk, even and regular in its out-



Bergamotte Esperen.

line. Skin coarse and rough, at first of a dark green colour, covered with large brown russet dots, but, as it attains maturity, it assumes a dull greenish yellow hue, and the numerous large russet dots become grey; sometimes, on the side that has been exposed to the sun, it assumes a faint orange tinge. Eye small and open, with a dry, rigid, horny calyx, of no regular form, set in a pretty deep, wide, and even basin. Stalk three-quarters of an inch long, stout, and somewhat fleshy at the insertion, and placed in a small narrow cavity. Flesh yellowish, fine-grained, quite melting, very juicy and sugary, with a pleasant aroma.

A most delicious late Pear, coming into season from about the middle of February, and lasting till April. A fit successor to Winter Nelis. It was raised from seed, about the year 1830, by Major Esperen, of Malines.

“Pierre Joseph Esperen was born at Ghent, 29th January, 1780, and died at Malines, 13th August, 1847. He entered the service in 1804 as a volunteer, and, resigning at the restoration, he was free to indulge his tastes in pomology. His temporary return to the service in 1830 gained for him the rank of Major.”  
—(*Decaisne.*)

BERGAMOTTE HEIMBOURG.—*Bivort.*

IDENTIFICATION AND FIGURE.—Alb. de Pom. iii. 79.

Fruit large,  $3\frac{3}{4}$  inches in diameter and  $3\frac{1}{2}$  high, Bergamot-shaped, even and regular in its outline. Skin rough to the feel, from being considerably covered with brown russet; it is at first of a bright green, but changes to yellow as it ripens, and has a light tinge of red on the side next the sun. Eye large and

open, placed almost level with the surface, and with long segments, which sometimes are entirely wanting. Stalk an inch long, slender, and woody, inserted somewhat obliquely in a small cavity. Flesh white, fine-grained, tender, half buttery, and melting, very juicy, sugary, and with the flavour of the old Autumn Bergamot.

An excellent dessert Pear, ripe in the middle of October. This is one of Van Mons' posthumous seedlings, which produced fruit for the first time in 1847, and was named by M. Bivort in honour of M. Heimbouurg, President of the Philharmonic Society of Brussels.

#### BERGAMOTTE DE HOLLANDE.—*Merlet*.

IDENTIFICATION.—*Merlet Abrégé*, 120. *Duh. Arb. Fruit.* ii. 170. *Hort. Soc. Cat.* ed. 3. n. 44. *Down. Fr. Amer.* 430.

SYNONYMES.—*Bergamotte d'Alençon*, *Acc. Duhamel*. *Bergamotte de Fougère*, *Hort. Soc. Cat.* ed. 1. n. 68. *Beurré d'Alençon*, *Acc. Hort. Soc. Cat.* ed. 3. *Amoselle*, *Decaisne Jard. Fruit. du Mus.* liv. 38. *Musquine de Bretagne*, *Acc. Decaisne*. *Holland Bergamot*, *Mill. Dict.* n. 71; *Lindl. Guide*, 389. *Lord Cheney's*, *Acc. Hort. Soc. Cat. Sara*, *Acc. Bavay Cat.* 1852. *Hollandische Bergamotte*, *Christ. Handwörterb.* 155.

FIGURE.—*Duh. Arb. Fruit.* ii. pl. xxv. *Jard. Fruit.* ed. 2. pl. 89. *Decaisne Jard. Fruit. du Mus.* liv. 38.

Fruit large, 3 inches wide and  $2\frac{3}{4}$  high, roundish, and flattened. Skin green at first, but changing as it ripens to clear yellow, and marked with several brown russet spots. Eye small, set in a wide and deep basin. Stalk  $1\frac{1}{2}$  inch long, slender, curved, and inserted in a small and furrowed cavity. Flesh white, rather gritty, and coarse-grained, crisp, juicy, and pleasantly-flavoured.

A dessert Pear of second-rate quality, in use from March till June, but may be used before that period for cooking.

The tree is vigorous either on the pear or quince, but to bring the fruit to perfection it requires a wall, which, however, it does not merit.

#### BERGAMOTTE LESÈLBE.—*Liron d'Air*.

IDENTIFICATION.—*Liron d'Air. Poir prec.* 20.

Fruit below medium size,  $2\frac{1}{2}$  inches broad and the same in height, Bergamot-shaped. Skin dark green at first, but changing as it ripens to golden yellow, speckled with cinnamon-coloured russet, and strewed with darker brown dots, particularly towards the eye, and tinged with a crimson blush on the side next the sun. Eye open, clove-like, with short segments, set in a wide and irregular basin. Stalk half an inch long, stout, inserted on the extremity of the fruit without depression, and with several fleshy folds at its base. Flesh white, coarse-grained, half melting, very juicy, and nicely perfumed.

A second-rate Pear, hardly worth cultivating, ripe in the first or second week in October.

The tree was raised by M. Lesèlbe, in a vineyard on the estate of Lochefuret, near Tours, and first produced fruit in 1843.

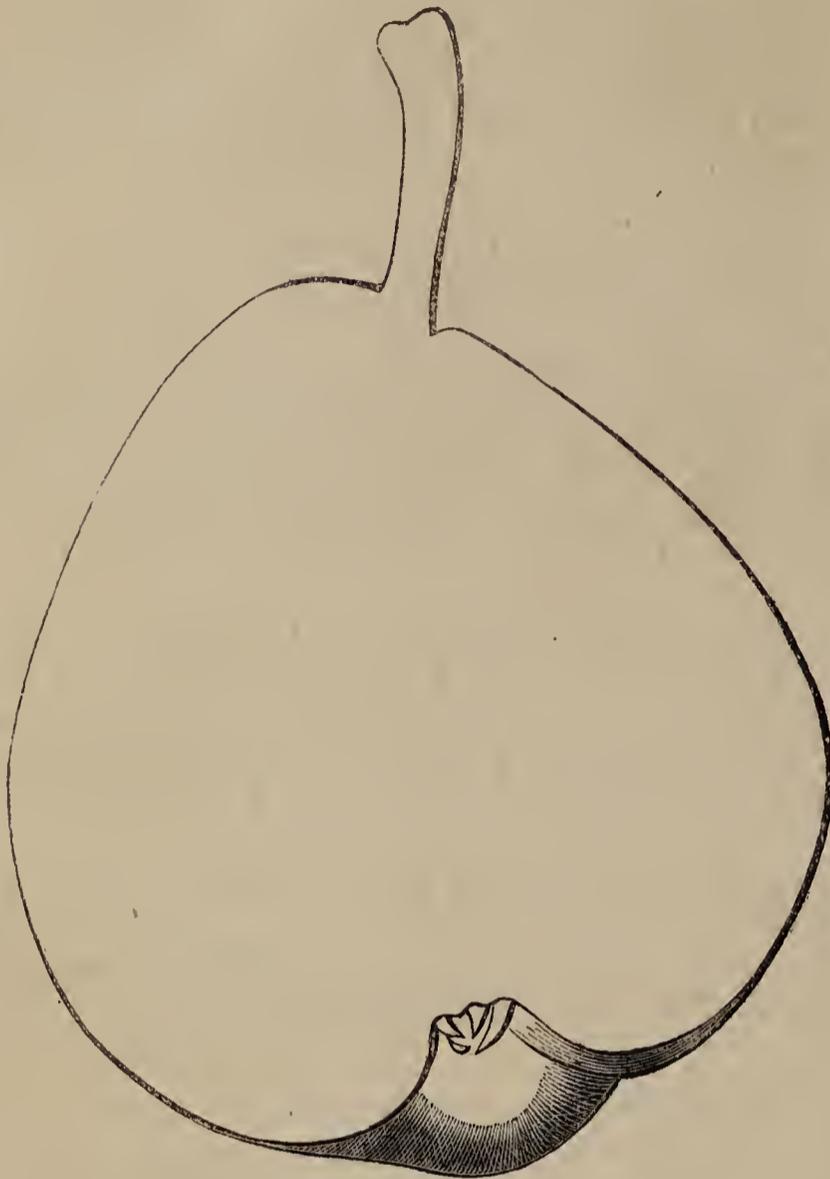
#### BERGAMOTTE MICO.

Fruit about medium size,  $2\frac{3}{4}$  inches broad and the same in height, roundish, and not unlike a small Easter *Beurré*. Skin greenish yellow, covered with freckles and dots of cinnamon-coloured russet. Eye closed, with rather long awl-shaped segments, like those of Easter *Beurré*, and set in a shallow depression. Stalk half an inch long, rather stout, and set in a narrow round cavity. Flesh coarse-grained, gritty, and without much flavour.

An inferior Pear, ripe in the end of November, when it becomes meally.

## BERGAMOTTE DE MILLEPIEDS.

Fruit about medium size,  $2\frac{3}{4}$  inches long and  $2\frac{1}{2}$  broad, obovate, uneven in its outline, and considerably furrowed and knobbed round the eye. Skin,



Bergamotte de Millepieds.

when ripe, of a deep lemon yellow colour, sprinkled all over with large russet dots, and with an aurora glow on the side next the sun. Eye small, closed, and deeply sunk, having narrow pointed segments. Stalk an inch long, stout, and woody, placed rather on one side of the fruit, and with the flesh rising higher on one side than the other. Flesh tender, buttery, and melting, fine-grained, richly flavoured.

A delicious Pear, ripe in the end of October. It was raised by M. Goubault, of Angers, and I am indebted for it to M. André Leroy, of that city, who has been good enough to furnish me with many of the finest fruits recently produced in France.

BERGAMOTTE REINETTE.—*Boisb.*

IDENTIFICATION.—*Boisb.* in *Bulletins d'Hort. Rouen. Liron d'Air. Not. Pom. ii. 26.*

Fruit small,  $2\frac{1}{2}$  inches wide and the same in height, Bergamot-shaped. Skin at first bright green, marked with large russet patches, but changing to yellow as it ripens. Eye small and closed, with narrow segments, placed in a pretty deep uneven basin. Stalk half an inch long, stout, inserted in a rather deep irregular cavity. Flesh half-tender, with an abundant sweet juice, which has a brisk acidity, like a Reinette Apple: hence its name.

A dessert Pear, of second-rate quality, ripe in the second week of September.

The tree was raised by M. Boisbunel fils, of Rouen, and first produced fruit in 1857. It is vigorous, and an abundant bearer, and has a pyramidal habit.

BERGAMOTTE ROUGE.—*Duh.*

IDENTIFICATION.—*Duh. Arb. Fruit. ii. 162. Calvel. Traite. ii. 314. Lindl. Guide, 334.*

SYNONYMES.—*Crasanne d'été, Acc. Duhamel. Bergamotte Crasanne d'été, Bavay Cat. 1852. 19. Rothe Bergamotte, Diel Kernobst. i. 1.*

FIGURE.—*Duh. Arb. Fruit, ii. pl. xix. f. 6.*

Fruit small,  $2\frac{3}{4}$  inches broad and 2 high, oblate, flattened at the apex, and tapering obtusely from the middle towards the stalk. Skin greenish yellow

when ripe, washed with brownish red on the side next the sun, and marked with stripes of the same colour, the whole covered with fine delicate cinnamon-coloured russet, sprinkled with large grey dots. Eye half open, placed in a wide and shallow basin. Stalk short and stout, inserted in a deep cavity, with sometimes a fleshy swelling on one side of it. Flesh white, tender, buttery, and melting, somewhat gritty, but, when grown in a light, warm, and slightly humid soil, it is rich and melting.

A dessert fruit, of good quality, ripe in September.

The tree is a vigorous grower, and an abundant bearer. It succeeds well as a standard or pyramid; and Diel says the fruit is better from an old than a young tree.

(*To be continued.*)

H.

### THE TRUE BLACK ALICANTE GRAPE.

I BEG to thank Mr. Hill, Mr. Wills, and Mr. Wighton, for their kindness in so promptly replying to my query respecting the Alicante Grape. The testimony of any one of these gentlemen is amply sufficient to satisfy me on the matter. I don't recollect ever to have seen the true Black Alicante. I am now pleased I asked the question, as the evidence of these gentlemen as to the excellence of the Alicante will, I doubt not, be as acceptable to others as it is to myself.

M. SAUL.

### THE CULTURE OF THE CAMELLIA.

FOR winter decoration and for furnishing a supply of flowers during the winter and spring months, few if any plants equal the Camellia. With very little care they can be had in flower from the end of October until May. From some cause or other we do not find them so extensively grown in private establishments as they deserve to be; and what makes it the more singular is the fact that the Camellia is of the easiest culture, and one of the hardiest of greenhouse shrubs; indeed the plant does best in a low temperature during the winter months. To amateurs and young gardeners about to commence their cultivation the following remarks may be acceptable.

**SOIL.**—The soil best adapted to the growth of Camellias is a mixture of good loamy turf and peat, in nearly equal proportions, to which should be added a little sand. These should be well mixed and broken small, but not sifted. It should neither be too wet nor too dry when used for potting the plants.

**DRAINAGE AND POTTING.**—Effectual drainage is indispensable to the success of the plants. Put plenty of potsherds at the bottom of the pots, and cover them with a thin layer of moss. The proper season for potting the plants is when the young growth is completed, and the blossom-buds for the next year are forming at the ends of the shoots. In potting, especially large plants requiring liberal shifts, put some of the coarsest of the soil at the bottom on the moss, and press the soil well round the ball, so as to leave no hollow between the pot and the ball; and the latter should be rather moist at the time of potting. After they are fresh potted, the plants should be taken back into the conservatory or greenhouse. The greatest attention should be paid to watering. Water should only be given when the plants absolutely need it. If given too freely after the plants begin to root into the fresh compost, it may cause them to start into fresh growth—a thing to be most carefully guarded against. Air should be given freely both by night and day. The plants intended for autumn flowering should remain in the greenhouse the whole summer, giving them plenty of air at night. Those for winter and spring flowering should be placed out of doors when the blossom-buds are well formed, in a situation where they can have free exposure to the atmosphere, and

be well protected from the wind, and shaded from the hot sun. If the weather be very dry and hot after the plants are placed out of doors, they should be well syringed occasionally in the evening; it will greatly benefit them. I think it necessary to remark that the plants when set out of doors should always be placed on flags, tiles, bricks, or boards; they should never be put in the soil, as worms soon get in and stop the drainage, and then the soil soon becomes wet and sour, and the plants become sickly. It also saves watering and protects the fine roots if the pots can be plunged in rotten leaves or tan. If the weather be fine the plants may remain out of doors until the end of September, but when heavy rains prevail in September, the plants will be better housed.

**PERIOD OF FLOWERING.**—The greatest attention is necessary during the whole of this period. The plants that have been kept in the conservatory or greenhouse all the season will not require much artificial heat to expand the blossoms, but they will need liberal supplies of water, and will be much benefited by an occasional good soaking with liquid manure, especially large plants in tubs. The falling off of the blossom-buds instead of expanding into flower, is the frequent cause of complaints. Too much dryness at the roots is one of the principal causes of the buds falling off. If the blossom-buds are perfect, and the plants are well watered, they will all expand properly; but it sometimes happens that many buds which outwardly appear right are not perfect, and in consequence invariably drop off, no matter how well the plants may have been watered. Anything like a parched dry atmosphere and a high temperature must be carefully guarded against during the period of blooming. The plants do best with plenty of air at all favourable opportunities, and in a temperature a little above freezing, and a rather moist atmosphere, and the blossom-buds expand better and remain longer on the plants, and the succession of flowers is also much longer. When the plants that have stood out of doors are being housed, if those having the fullest, boldest, and most prominent buds are placed at the warmest end of the conservatory or greenhouse, and kept a little close, they will come nicely into flower after those that were indoors all the summer; and if the plants with the smallest and least prominent buds are placed at the coolest end of the house, and have abundance of air given them, they will come into flower after the others, and will thus prolong the period of flowering late into the spring. After the plants have done flowering, they should be kept well syringed, and be regularly watered, when they require it; but the temperature should on no account be increased until all the wood-buds have fairly pushed.

**PERIOD OF GROWTH.**—When growth has fairly commenced, the temperature should be raised to about from  $50^{\circ}$  to  $55^{\circ}$  at night, and to about from  $60^{\circ}$  to  $65^{\circ}$  by day, with an increase of  $10^{\circ}$  or  $15^{\circ}$  by sun heat. The atmosphere should be kept rather close and moist, giving air with moderation and caution in the morning, and closing up early in the afternoon; a light syringing overhead morning and evening will benefit the plants. Water must be freely given when required.

**FORMING OF THE BLOSSOM-BUDS.**—When the young shoots have ceased growing, a higher temperature and a drier atmosphere must be maintained, and more air must be given in order to promote the formation of the blossom-buds. The temperature should now range from  $55^{\circ}$  to  $60^{\circ}$  by night, and  $65^{\circ}$  to  $70^{\circ}$  by day, and be accompanied with a greater circulation of air, and no more water than is absolutely necessary should be given. Under this treatment perfect blossom-buds will be formed, which in due time will expand into beautiful flowers. We now arrive at the point we started from—the season for repotting. All plants that require shifting should at once be put into larger pots, and undergo the same treatment they did the previous season.

I cannot close this hasty sketch without expressing a wish that the Camellia will receive a greater share of attention than it has in general of late years. I yield to none in my admiration of Ferns and fine-foliaged plants, and I would have them grown by all means; but whilst doing so let us not forget the Camellia. I can hardly conceive anything more beautiful than a fine large healthy plant of the old Double White Camellia in the depth of winter, with its hundreds of exquisite flowers expanded.

*Stourton.*

M. SAUL.

## CULTIVATION OF THE LOVE-APPLE IN THE OPEN AIR AT GORDON CASTLE.

THERE has always been a difficulty in this northern climate to get the Love-Apple to ripen perfectly in the open air, except in very warm summers, although we have been able most seasons to get them fit for use by cutting off the bunches of fruit on the approach of frost, and hanging them up in heat for a short period. I have for some time entertained an idea that a good deal more could be done to overcome the shortness of our summers, and the consequent drawbacks connected with the ripening process, by hastening the plants forward while under glass, and forcing a crop of fruit to be set previous to planting out. With these objects in view, seed was sown and placed in a brisk bottom heat, about the middle of March, and the plants, when ready for pricking off, were put singly into small pots, and again put into heat, where they were allowed to become rather drawn and leggy, as well as being much pot-bound. At this stage they were drawn wider apart, in order to give more air round them, and get them somewhat stunted and ripened in growth. This being accomplished, and in the stage of beginning to open their flowers, they were taken out, and shifted into seven-inch pots in rich soil. They were now placed into a pit near the glass, and as soon as they exhibited signs of having taken to the fresh soil, air was admitted freely, and in a short time a fine crop of fruit was set, and swelling upon dwarf stocky plants. About the end of June, they were turned out at the bottom of a Peach wall, of southern aspect, and the first dish of large ripe fruit was gathered on the 19th of August. A quantity of mixed Capsicums, when about half-grown, was planted in the same manner, from which I gathered quantities of perfect ripened fruit towards the end of September. I may also mention that these successes were in a summer with the temperature below the average. So those who are short of room to grow these under glass, may find the above hints of some service.

*Gordon Castle.*

J. WEBSTER.

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## ANNUALS, AND THEIR CULTIVATION.

THERE are few plants which so eminently reward the cultivator for his skill, time, and attention, as those which constitute the classes of tender, half-hardy, and hardy annuals.

We, therefore, purpose to treat of these; and will do so, firstly, of the section of TENDER ANNUALS, selecting as models of culture the Balsam, Cockscomb, Globe Amaranth, Egg-Plant, Browallias, and leaving the numerous kinds of others which exist, to take their share in this system of culture.

The Balsam, then, is a tender annual, from 1 to 2 feet high, with a succulent branchy stem, serrated leaves, and various-coloured flowers. It is a native of the East Indies and Japan, where, according to Thunberg, the natives use the juice, prepared with alum, for dyeing their nails red. Double flowers are principally esteemed, especially such as are marked like flake and bizarre Carnations.

The soil should be rich, but not quite equal to a Melon soil. At any period, between the 1st of March and the 1st of May, sow the seeds in a pot thinly, and place them as near to the glass as possible. When the plants are 5 inches high, transplant into single pots, 4S's, one plant in each pot. As they become rooted, shift them again and again, until they are in pots 8 inches or upwards in diameter, keeping them close to the glass in a hotbed. So treated, they will rise 5 feet in height, and 15 feet in circumference, furnished with branches, having fine double flowers. The culture of the Amaranthus, Celosia or Cockscomb, Gomphrena or Globe Amaranth, Mesembryanthemum crystallinum or Ice-Plant, Solanum melongena or Egg-plant, will obtain similar results if similarly treated. I have myself cultivated the common Cockscomb to an immense size, acting under the advice of the late T. A. Knight, Esq.

Knight, in October 1820, sent to the Horticultural Society a Cockscomb (*Celosia cristata*), the flower of which measured 18 inches in width, and 7 inches in height, from the top of the stalk; it was thick and full, and of a most

intense purplish red. To produce this, the great object was to extend the protrusion of the flower-stalk, so that it might become of great strength. The compost employed was of the most nutritive and stimulating kind, consisting of one part of unfermented horse-dung, fresh from the stable, and void of litter, one part of burnt turf, one part of decayed leaves, and two parts of green turf—the latter being in lumps of about an inch in diameter, in order to keep the mass so hollow that the water might have free liberty to escape, and the air to enter. The seeds were sown rather late in the spring, and the plants put at first into pots of 4 inches in diameter, and then transplanted to others a foot in diameter, the object being to avoid the compression of the roots as having a tendency to make plants flower freely.

The results of this experiment were of this nature, that no plant could be more fully or fitly organised. The vast amount of food stored up in the fresh droppings, and the heat of the bed, varying from 70° to 100°, were such conditions, as combined with prudence, resulted in the production of this leviathan.

**HALF-HARDY ANNUALS.**—There are few plants more interesting and beautiful than those which make up this large and extensive family, consisting as it does of flowers of all hues and shapes, and having the greatest diversity of fragrant perfumes.

We think that the novice who is about to commence this, cannot do better than apply to any one of the great seedsmen, for their list; and having obtained this (which is easily done) he will proceed to make a plan.

Waiting till about the middle of April, he will then think of sowing his seeds, and for this purpose we should advise 24-sized pots, using one packet of seeds to each pot; when sown, they may be placed under glass carefully, and when up removed out. The plants in the pots should not be allowed to become too thick, but must be watched.

Towards the middle of April will be the time for planting out—we should keep the plants thin in their pots, and plant them out in circles of 1 foot or 1 foot 6 inches in diameter. Each circle for planting should be lightly watered with a rose before planting, again after it, and constantly of an evening.

**HARDY ANNUALS.**—We now pass from the half-hardy to the hardy annuals, and find them to be a numerous family, distinguished from their brethren by being cultivated without transplanting. The mode which is usual is generally in rings, or circles, of about an inch deep. Great care should be taken not to distribute the seeds too thickly, as the woolly matter among them is apt to engender damp, and injure the young plants. As soon as the plants can be distinguished, they should be gone over and regularly thinned; this is an operation of the greatest importance to their success, and upon its being well or ill performed, depends the beauty and perfection of the crop.

We think it right to mention that we have grown the half-hardy annuals, *Schizanthus retusus* and *pinnatus*, to very fine plants, dwarf bushes, 1 yard over, and most handsomely covered with flowers. The temperature of a Peach-house is well suited for their cultivation.

There are many annuals which are capable of much improvement by being judiciously grown, shifting them freely in rich light compost. The stopping of them has, too, an important influence on their growth, and should be constantly attended to in their culture. The thinning of hardy annuals, too, is very important in their culture; if left too thick, they only become paralysed, and make poor weak things.

*Amersham.*

HENRY BAILEY, C.M.R.H.S.

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## DWARF FRUIT-TREE ROOT-PRUNING.

THERE is a great mistake current among dwarf fruit-tree growers, arising in most instances from the books published on the subject. I have found a great many this autumn practising what they call root-pruning trees which have been planted two years, in many instances without their having made even a medium

growth. Surely instructions of this sort should be qualified by the state of the tree, according to the young wood and the healthy appearance of the plant itself.

I was a witness the other day to rather extensive operations of this sort, and in several instances during the two years they had been planted they had not increased their roots much, but they showed evident signs of commencing; and not having made roots the soil crumbled away into the trench, and left them as bare as when first planted. This is simply retarding the production of fruit for another year or two. There is a tendency in some sorts to fruit in quite a dwarf state; when this is the case, they will be found to want encouraging more than root-pruning. There is also at present a great demand in favour of foreign trees. My experience is very much against them, as in most of the better sorts particularly, canker begins the second season. Soil may have something to do with this, but in all my experience I have never seen any clear of this after a season or two in our climate. Of course when this begins the fruit is next to useless, as it invariably affects that also. English-raised trees are more apt to grow strong, but this is easier dealt with than canker; and as we know well now how to get flower-buds, heavy cropping will assist in reducing that tendency.

F.

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### ON CRACKED PEARS AND SWEATING APPLES.

THE past season having been so dry, I have seen very few cracked fruits amongst the abundant crops of Pears and Apples. This corroborates my former remarks on the subject in these pages (Vol. 1862, page 55), in which I stated that the disease was the effect of the damp and cold. I may now state that I possess only one Pear badly cracked which grew in a bottle. In the early part of this season I put a young Pear of the Vicar of Winkfield into a small bell-shaped bottle, by way of a curiosity. During the season the bottle leaned on one side, which prevented the exhalation or condensed vapour from the Pear from dropping out, and the side of the Pear which touched the water is cracked nearly to the core. After the bottled Pear was some time in a hothouse, I was somewhat surprised to find so much exhalation from it condensed in the clear bottle. This fact reminded me of the old and common plan of sweating Apples in a heap, then wiping them dry and laying them upon wheat straw in a chamber. But I seldom hear of that plan now-a-days, and I never adopted it myself; therefore, I cannot speak of its utility. This season, however, Apples are so abundant, that some of my neighbours are grinding and pressing them into cider; while others for the want of room have stowed their Apples in heaps knee-deep. Although I do not approve of the last method, I think that those who keep Pears and Apples in closed jars, or boxes, may take a hint from the sweating plan. I mean that of wiping the fruit dry before it is stored up, otherwise the condensed exhalation in the jars may not only injure the flavour of the fruit, but hasten the decay of the store. In short, I have doubts if it is not safer to place the fruit in open jars than closed ones. However, for the sake of those who have not seen my previous paper on cracked Pears, I may mention, that I spoke of a crop of Pears in front of a cottage, where the fruit exposed to the drip was cracked to the core, while that under the eaves or projecting thatch was sound. The tree was a common Crasanne, whose russet-skinned fruit like others of its class, is more apt to crack than smooth green kinds like Napoleon and Sucrée Vert. The last resembles the Green Yair of the Scotch, which is seldom good in the south in hot seasons; while the reverse is the case in some of the French kinds. In cold seasons, though their fruit looks well, it seldom ripens and decays in a hard state without being soft or mellow. The same may be said of some kinds of Apples. The Paradise Pippin or Egg Apple is a favourite in the north, but here in hot seasons it is often mealy, and even bursts like a good Potato well boiled; whereas in such seasons the Calville Blanche of the French is excellent. This angular-shaped Apple is more worthy of notice, especially by those who prefer quality in flavour to beauty. Mr. Rivers speaking of it says, "It is most remarkable for its delicious flavour when grown in the warmer parts of

France, whence it is brought to Paris in large quantities in winter, it is also most excellent when cooked."

This Apple has one fault however—like a deep-eyed Potato, there is much waste in peeling off the angular part, especially round the eye or crown of this singular-looking Apple.

J. WIGHTON.

## HEATING VINE-BORDERS.

WHEN the new range of vineries was erected here, a very large house (106 feet in length by 20 feet in breadth) intended for growing principally Muscats, was heated in the borders by applying two rows of four-inch pipes on the outside. Mr. Meredith, who heated the hothouses here, agreed with me that an excellent chance now occurred of heating the borders of the house by making drains below the borders from the outside pipes to the chamber at the back, which contained the main flow and return, where there was always a great store of heat. The drains communicate with the outside air above the pipes, and can be shut off or turned on with valves at pleasure. When this vinery was planted with Muscats, Grizzly, White, and Purple Frontignans, and Golden Hamburgs, many of the Vines were twelve and fourteen years old, and bore an excellent crop the second year of planting, and a full crop every year since. It is impossible for Muscats to colour better than they do in this house; and the berries are large, and the bunches fair in size, for Vines short-spurred in the pruning. The Frontignans, and Golden Hamburgs likewise, do better in this house than in any of the other vineries where the borders are unheated. It will be seen that the borders of this vinery are simply aerated below with heated air, and the borders being pretty deep, with plenty of brick rubbish for drainage above the drains, too much drying of the soil or overheating is an impossibility. I am convinced heating Vine-borders too much by bottom heat is a mistake, and can only be of use to very early forced Grapes, or in the way used here.

The late Mr. Mearns, when gardener at Welbeck, heated some of his Vine-borders with very indifferent success. He had the borders chambered and made very shallow, and used fresh turf from a magnesian limestone rock without any other mixture. This soil soon got too dry and too hard for Vine roots to work in, owing to the bottom heat and the nature of the soil. I had, therefore, these borders to renew and to do away with the heating. On taking out the soil it came out in lumps as big as horses' heads, and by its cracking the Vine roots had nearly all perished, especially the fibres.

Another gardener in the neighbourhood, not to be behind Mr. Mearns in Vine-border heating, had a brick flue made below his border, just where his young Vines entered the house from the outside. This flue soon settled their pretensions, for it had to be taken up, a new border made, and another lot of young Vines planted.

WILLIAM TILLERY.

## OUR MONTHLY CHRONICLE.

ROYAL HORTICULTURAL SOCIETY.—Between forty and fifty of the principal exhibitors have addressed a memorial to the Council to induce that body to reconsider the objectionable arrangements for the Exhibitions of 1865, and stating that, if not altered, they must decline to exhibit. The reply of the Council was that they felt themselves bound to adhere to the programme which has been made public, but that they will not consider themselves precluded from introducing any modification

or alteration that experience may prove desirable. So much dissatisfaction, however, has been expressed on all sides, at the Shows being held on Saturdays, that it is probable the Council may yet change the day to another more generally convenient. We may here remark that already have the Council been under the necessity of making a change in the days of two of the Spring Shows, in consequence of these falling on the same dates as those fixed on by the Royal Botanic Society.

The Hyacinth and Camellia Show, which was to have been held on the 18th of March, and the Azalea Show, announced for the 8th of April, have been put off to the 25th of March and 15th of April.

The Annual General Meeting was held at South Kensington on the 14th of last month, Lord Henry Gordon Lennox, M.P., in the chair. The report of the Council states that the number of Fellows has increased to 3380, recounts the steps which have been taken towards improving the Kensington Garden, defends the course pursued with regard to the Exhibitions, and congratulates the Fellows on the improved condition and efficiency of Chiswick, which, it is stated, has supplied quite £1400 worth of plants, grafts, and seeds, as well as realising upwards of £730 by the sale of surplus produce. The report further states that "arrangements are being made with the Society of Arts for adding an examination in gardening to the examinations which they now conduct throughout the United Kingdom; and the Council intend to offer prizes to successful candidates, and to allow them, in cases of great proficiency, the means of gaining experience at Chiswick." It is also announced that the services of the Rev. M. J. Berkeley have been secured to act as a botanist to the Society, and to conduct a journal, which is to appear periodically, and be entirely devoted to papers on theoretical and practical horticulture. On the adoption of the report being moved, Mr. A. F. Godson proposed, as an amendment, that a committee be appointed to inquire into the true financial state of the Society, at the same time commenting severely on the manner in which the accounts were presented in the balance sheet, by which, he contended, a large deficiency was shown. He also complained of the sum of more than £4000 having been taken from the life compositions to restore the balance. A warm discussion ensued, in which Mr. Thring, Mr. Clutton, Mr. Cole, and Mr. Bateman defended the course pursued by the Council, and eventually the adoption of the report was carried by a large majority.

**CINCHONA CULTURE IN CEYLON.**—From the report of Mr. Thwaites, the Director of the Botanic Garden, Peradenia, Ceylon, it appears that the introduction of Cinchonas into this island has been attended with complete success. Of *Cinchona succirubra*, one of the most robust and valuable species, there are now, planted out in the forest, 1345 plants, the largest of which is now  $13\frac{3}{4}$  feet high, with a stem  $8\frac{3}{4}$  inches in circumference. There are, besides, 2380 plants for taking cuttings from, 42,450 ready for distribution, and 32,800 in different stages of rooting. Of *Cinchona officinalis* there are 1044 planted out in the forest, the largest being  $6\frac{1}{2}$  feet high; 1934 for taking cuttings from, 58,747 ready for distribution, and 47,400 in different stages of rooting. Of *Cinchona macrantha*

there are 300 planted out, 320 for taking cuttings from, 329 in different stages of rooting; and of *C. calisaya* and *Pehudiana* 106. Planters on the island have already applied for upwards of 28,000 plants, and, if required, as many as 20,000 a-month could be supplied. Some plants of *Cinchona officinalis* were destroyed by a temperature of  $24^{\circ}$ ; it would not, therefore, be safe to plant at a greater elevation than 5000 feet above the sea-level.

#### OBITUARY.

**THE DUKE OF NORTHUMBERLAND.**—This nobleman died at Alnwick on the 12th of last month, in his 73rd year. Descended from a race which had long been liberal patrons of gardening, the late Duke took great interest in horticulture; and under him the fine collections of hardy trees and shrubs, and of tropical fruits, which exist at Syon, were fully maintained. It will be recollected that it was there that the Mangosteen was fruited, and more recently the Cocoa-nut. The Stanwick Nectarine was raised at Stanwick Park, one of his seats, from a stone sent home from *Suedia* by Mr. Barker; and the Duke gave the proceeds—no inconsiderable sum—to the Gardeners' Benevolent Institution.

**DR. HUGH FALCONER**, Vice-President of the Royal Society, and formerly Superintendent of the Calcutta Botanic Garden, died in London on the last day of January, aged 56, twenty of the most active years of his life having been spent in India. "During the few years in which he has been at home," says the *Times*, "he quickly became known as the possessor of one of the most scientific intellects in England. His chief field of study was palæontology, but he was also favourably known as a student of botany, and indeed generally of natural history. His scientific memory was prodigious, and he had such stores of knowledge at command, that men of science in London speak of his loss as if with him had perished a great treasure of information which is not likely to be soon amassed again. From this enormous knowledge of his great things were expected; but he was cautious to a fault—never liked to commit himself to an opinion until he was perfectly sure of it; and he has died in the fulness of his power, before his race was run. He was born at Forres, in the north of Scotland. He studied successfully at the Universities of Aberdeen and Edinburgh, and went out to India in 1830. His two official appointments there, in which he became best known, were those of superintendent of the Botanic Gardens at Suharunpore, in succession to Dr. Royle, and afterwards of those of Calcutta. It was to information supplied by him that we owe the cultivation of tea in the district of Assam. It was through his exertions, also, that the *Cinchona* plant has been introduced into India. The South American supply of quinine, threatened failure through

bad management. He suggested the cultivation of the plant in India, and the result has been completely successful. But beyond this, he made great discoveries of fossils in India, and the result of his researches, arranged by himself, is a splendid gallery of specimens in the British Museum, the like of which is not to be found in any other collection in the world. He has been one of the chief instigators and directors of the inquiries which have recently been raised as to the antiquity of man, many of the facts bearing on the question, such as those connected with flint implements, having been discovered either by him or by friends whom he urged to

this or that course of investigation. About ten years ago, he returned from India with shattered health, and he has died before his time."

MR. CONRAD LODDIGES.—The inheritor of a name distinguished in the horticultural world, died at Hackney on the 20th of Jan., aged 43. After the celebrated Hackney nurseries were given up, and the rich collections which they contained dispersed, he ceased to take any active part in horticulture, and was, consequently, but little known to horticulturists; but in private life, he was, we believe, much esteemed for his many excellent qualities.

## CALENDAR OF OPERATIONS.

### CONSERVATORY AND SHOW-HOUSE.

WE remember nothing like the severity of the season up to the time we write. Plants that usually bloom in March and April are not yet in full beauty. The conservatory will be gay with *Acacias*, *Camellias*, *Azaleas* (Chinese and forced), and all the plants mentioned under the head of forced shrubs in our last notice, to which may be added bulbs, *Mignonette*, *Violets*, stove plants, and *Ferns*. Do not, however, overcrowd the house, or you will materially damage the permanent plants by overdrawing them, and inducing the sides and lower parts of the plants to make weak growth, or perhaps die altogether. Temperature as last month.

### GREENHOUSE.

*Hardwooded Plants*.—These must now have more air and be set tolerably wide apart to prevent drawing. Before the spring growth commences will be a good time to repot any plants requiring it. Mind in potting that the old ball is tolerably moist, and let the compost used be moderately dry, that the plants may be potted firm, arranging the surface of the soil so as to allow the water to pass through the old ball. *Softwooded Plants*.—Any *Calceolarias*, *Cinerarias*, or other softwooded plants not yet in their blooming pots, should at once be shifted into them; also late-struck *Pelargoniums* or *Geraniums* for a late bloom. *Japan Lilies*, *Tritonias*, &c., now commencing to grow should have a little water. Frames are now the best place for this class of plants. Sow *Balsams*, *Cannas*, *Cockseombs*, and the autumn-blooming *Tropæolums*, &c., in a little heat for decorating the greenhouse after July. *Azaleas and Camellias*.—Forced *Azaleas* which have done blooming should have all the decayed flowers picked off; and if thrips or scale infest the plants let them be well cleaned by washing them with diluted tobacco-water, to which, in case of scale, may be added a small quantity of soft soap. The roots should be

next examined, and if the pots are either very full of them or these not in a satisfactory state, let all the old soil be first shaken from the roots, and then wash away the rest by working the ball backwards and forwards in a pail of water. When the remaining soil about the roots has dried a little, pot in smallish-sized pots comparatively, in fresh sweet compost, and place the plants where a slight fire-heat is kept—as a fresh-started vinery or Peach-house—and they will quickly commence growing, and ripen their wood early for forcing another season. The above remarks as to root-treatment apply equally to *Camellias*, or indeed to any kind of shrubby greenhouse plants, when their roots are not in a healthy state, or where it is desirable the size of the pots should not be increased at potting-time. Keep *Azaleas* for late blooming as shaded and cool as possible, or the present unprecedentedly mild season will bring them into bloom before they are wanted. Cultivators will find north houses fully as useful as south ones for the purpose of retarding, which is as often wanted as forwarding into bloom. Let the whole stock of *Azaleas*, old and young, be well cleaned from insects before growth commences. Stocky old plants of bad kinds should be headed back, to make young wood for grafting by-and-by; these make fine specimen plants in quick time, when properly done. *Calceolarias*.—Any plants struck during the winter should be repotted into four-inch pots to succeed the first plants. If not so large they will make compact handsome bushes for decorating the conservatory or greenhouse. For bedding-out it is not too late to strike cuttings of the best shrubby kinds for the purpose, such as *Aurea floribunda*, *Prince of Orange*, *Yellow Prince of Orange*, *Pallida*, *Beauty of Montreal*, *Kayii*, *amplexicaulis*, *viscosissima*, and *coecinea minor*. *Cinerarias*. As the spring is now advancing great care must be taken with large specimen plants, to see that they do not suffer for want of

water, for much will depend on this in keeping good foliage round the pot. Tie out as wide as possible, keeping the shoots as near the surface of the pot as convenient without a risk of breaking them. Keep them as thin and as near the glass as possible, and syringe until in flower every favourable opportunity, as this will tend to assist the foliage and develop the young bud. Give weak liquid manure occasionally. Look to seedlings as they come into bloom, and select the brightest colours for the ensuing season. Sow in a shady situation for early autumn flowering, and as soon as large enough transplant and keep in a cool shady situation through the summer. Prepare compost by throwing up into a heap good turfy loam and partly decomposed stable manure. *Pelargoniums*.—Under the increasing influence of solar light they will require a more liberal supply of water, particularly the plants intended for the early exhibitions, and also those that are well established in their blooming pots. Now they should occasionally have some liquid manure water. As the days lengthen an increase of temperature may be allowed, and air should be given early on fine bright mornings; but the house should be closed early in the afternoon. Attend to the training of the shoots to admit the light and air. The young stock should have every attention to training, the stopping back of any strong shoots, being kept entirely free of insects, and encouraged by every possible means to make a vigorous and healthy growth. Keep the plants clean of dead foliage, and especially the fancy varieties, for if they are allowed to remain long on the shoots they often cause them to damp, and spoil the shape of the plant. The June and late-flowering plants, as they progress in growth, should be kept well tied out, according to instructions previously given.

## FORCING.

Potatoes of well known early kinds, as the Early Oxford, Ashleaf, and Royal Dwarf, may now be planted freely in frames over a gentle heat, as the disease will not affect them at this season to the extent it often does earlier. Let the soil be sandy and free from manure. Thin out Carrots and Radishes sown in frames; and prick out into low pits or frames spring-raised Cauliflowers, Lettuce, and Celery for future transplanting. Keep up a succession of forced Kale, Asparagus, and Rhubarb. It will save a great deal of trouble and risk from the attacks of insects if a pit or two could be devoted to the culture of the French Bean, instead of growing them in vineries, &c. The pits however, must be provided with some means of heating. The best forcing varieties are the Newington Wonder, and Early Mohawk. *Melons and Cucumbers*.—These latter should now have every attention, as they will be growing and bearing freely, if grown in Pine stoves in pots. They will require liquid manure occasionally, and fre-

quent surfacing to encourage the roots. Thin out the vines, and do not allow too many fruit to swell off at the same time. Cucumbers in frames must have the required heat maintained by linings of warm dung. Earth up the hills as the roots advance, and train the vines over the surface, stopping them at a joint beyond the fruit. Ridge out succession crops. The night temperature should not be less than 68°, with a rise of 12° by day, giving air on all opportunities. The bottom heat should be kept steady, at from 80° to 90°. Melons require a heavy loam, or rich marly soil, on which they thrive fast, and escape many evils they are always subject to on lighter soils; therefore this description of soils should be selected if possible. *Peach-house*.—Look at last month's directions. When the shoots are long enough for tying in let it be done at once. Night temperature 58°, day 75° to 80°. *Pinery*.—Fruit ripening should be well exposed to get it a good colour, and a rather drier atmosphere kept; succession plants, if active at the roots, may have a shift towards the end of the month. Use pure loam, or loam and peat, with a little bone dust mixed with it; but be sure that the roots are on the move before you pot, or if not give them a little extra bottom heat to forward them. *Vineries*.—Early Grapes which have been thinned should be kept growing by a uniform temperature of about 60° by night, and ranging to 80° under bright sun by day. Sprinkle the paths, walls, &c., frequently to maintain a certain degree of humidity in the atmosphere, and let the admission of air be attended to early each morning; indeed, if a little is allowed all night it will be to the advantage of the crop. Grapes in pots will require constant watching to supply them with water. Outside borders should be watched, to see the protective materials keep off the wet, and if they give a slight heat at the same time the roots will derive an additional benefit; but if heat has been applied it must not be allowed to decline. Bring on succession-houses, and stop down shoots as they advance. The latest houses where fruit is cut may be pruned and washed, and the Vines shaded from the sun to keep them from breaking till late. Now is a good time to pot a lot of Vines for fruiting next season in pots.

## KITCHEN GARDEN.

Every means must now be taxed to keep pace with the season. All crops of summer vegetables may now be either sown or planted. A succession of Peas and Broad Beans should be put in about every fortnight, sowing two sorts at each time. This will produce an uninterrupted supply, allotting the quantity sown to the demand. It would be useless recommending sorts, seeing seedsmen's catalogues contain such descriptive notices of each that each may select for himself. Sow Onions on well-prepared ground, made tolerably firm

if at all light. Spinach, Radishes, and Lettuce, should be sown every fortnight in small gardens. Horn Carrots do well mixed with the Radishes, as these may be drawn out, and the Carrots follow. Lettuce delights in rich and rather heavy land; the autumn planting should have the soil stirred between them, and get a dressing of soot. Plant out autumn Cauliflowers on a warm rich border; also a good piece of Cabbage for a main crop; and give plenty of air to Cauliflowers under glasses, and water with liquid manure. The main crop of Potatoes should now be planted in select dry soils and open situations, and avoid fresh or rank manure.

## FRUIT GARDEN.

*Hardy Fruit.*—The remarkable mildness of the season has brought the Apricot, and in some places the Peach, into bloom. This is an unfortunate state of things, for in all probability we shall have a winter of more or less intensity, when the coming crop will be placed in the greatest jeopardy. The only plan to adopt is to keep off the covering while the mild weather lasts, but have your protection, in ample quantities, ready for use when wanted. Wash Apple and Pear trees, whose stems have become mossy, with hot lime and water, to which add a little salt.

## FLOWER GARDEN.

A good time this (if not done in autumn), for taking up and dividing the roots of perennial herbaceous plants. Permanent bulbs must on no account be touched now, as they will be commencing to grow. Phloxes, Asters, Delphiniums, and other plants of this class, when the roots have grown too large should be divided and the best portions planted again in fresh soil; due regard should be paid to the height and colour of each at planting, that they mix well as regards colour; and where the beds can be seen from all sides, the tallest should be arranged in the centre, falling gradually to the edge. Mark some of the best Polyanthus and Auriculas for seed; these and Hepaticas when done blooming, may be divided and replanted for increasing the stock, and in the same way Russian Violets and common Violets may be treated. A few hardy annuals may be sown for an early bloom, and those sown in autumn should be well thinned out to allow them to stand singly, when the bloom will be much finer. Finish the pruning of Roses, except the Tea and China sections, and a few of the Gallicas, Provence, and Alba classes, which may be left unpruned till April to run the chance of a very late bloom. Rose beds on poor soil should be well manured. *Cold Frames.*—Push on with all kinds of propagating, so as to have plants established somewhat by the beginning of May, that they may be hardened before finally planting them. Pot off what autumn-struck cuttings yet remain in store-pans, particularly Geraniums and the like. Sow seeds of Stocks, Lobelias, Nierembergias, Maurandyas, and other greenhouse

plants for turning out; also of the many varieties of Canna or Indian Shot, which as foliaged plants make admirable beds, and for mixing with other things. Consult the many catalogues; for among the things advertised as new many are worthy a trial. And who is not ambitious to have a new bed in his garden? Attend particularly to fine-foliaged plants and ornamental Grasses, which make interesting additions to ordinary flower gardens by infusing variety. Propagate Dahlias, Salvias, Bouvardias, tall Lobelias, and other similar plants by the young shoots thrown up from the roots, or by making cuttings of the roots themselves.

## FLORISTS' FLOWERS.

*Auriculas.*—These will now be much more tender, from the amount of young growth they have made. Protect from frost, and water more frequently, as well as more liberally; weak liquid manure once a-week will strengthen the trusses now being thrown up. Give plenty of air, and fumigate occasionally; green fly generally appears with the young growth. *Carnations and Picotees.*—The season has been such that, early as it may appear, the strong-growing varieties should now be potted, as such will be getting pot-bound in small pots, and the sooner they have an opportunity of getting established permanently in the soil they are to bloom in, the finer it may be expected, as well as a larger increase of stock. Pot firmly and secure any long plants with small sticks; if there is any green fly on the plants, give them a good smoking with tobacco or tobacco-paper before taking them from the pit. The latter end of the month will be soon enough for planting out in borders. We advise expedition, as being in favour of large blooms. *Dahlias.*—March is the best month for propagating the Dahlia; cuttings struck now have time to make fine plants, yet are not too early to become stunted; therefore propagate freely, and when sufficient cuttings have been taken, divide the roots, to make a few strong early plants. Sow seed towards the end of the month, in a brisk heat. *Pinks.*—Top-dress without loss of time, if not already done, using half-rotten manure mixed with rich loamy soil. Particularly mild as the weather has been of late, those planted early, as recommended by us last autumn, look very strong and healthy. From the remarkable season we have experienced, a fine bloom is very probable. *Tulips.*—Protect the bed with canvas, frigi domo, or mats whenever there is severe frost, or excessive rain; but, as a rule, keep it covered as little as possible, as doing so obviously excites a weakly growth. Stir the surface of the soil between the bulbs as soon as it is in the best state for the operation—i. e., between wet and dry. All the beds we have seen, and they are not a few, promise a good bloom, the appearance above ground being very regular. An early bloom is all but certain, however.

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No. XL.—APRIL.

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ESTABLISHED 1750.



Fig. F.



Fig. C.

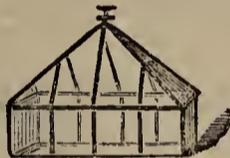


Fig. A.

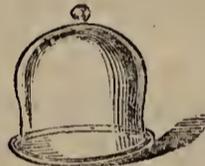


Fig. B.



Fig. G.



Fig. E.

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20 in. by 14 in. }				
20 in. by 15 in. }				

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Size	Best.	2ds.	3ds.	4ths.
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6½ in. by 4½ in. }	9½ in. by 7½ in. }			
7 in. by 5 in. }	10 in. by 8 in. }	17s. 3d	14s. 8d.	12s. 10s. 6d.
7½ in. by 5½ in. }	10½ in. by 8½ in. }			
8 in. by 6 in. }	11 in. by 9 in. }			
8½ in. by 6½ in. }	11½ in. by 9½ in. }			

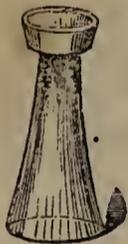


Fig. D.

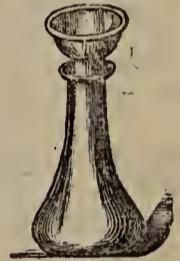


Fig.

Fig. A. Hand Glasses.		s.	d.
12 inches	.....	5	6 each
14 "	.....	6	6 "
16 "	.....	7	6 "
18 "	.....	8	6 "
20 "	.....	9	6 "
24 "	.....	11	6 "

If open top, 1s. extra.

Fig. B. Propagating Glasses.		s.	d.
3 inches	.....	0	4 each
4 "	.....	0	5 "
6 "	.....	0	7 "
10 "	.....	1	2 "
12 "	.....	1	6 "
16 "	.....	3	0 "
18 "	.....	4	6 "
20 "	.....	6	0 "

Fig. C. Milk Pans.		s.	d.
6 inches	.....	0	5 each
10 "	.....	0	10½ "
14 "	.....	1	6 "
18 "	.....	2	5 "
20 "	.....	2	10 "
22 "	.....	3	4 "
24 "	.....	4	0 "

Fig. D.  
**Hyacinth Glasses.**  
 Common, 2s. 6d. per dozen.  
 Improved, 3s. 3d. "

**Crocus Glasses.**  
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Fig. E.  
**Hyacinth Dishes.**  
 6 inches ..... 1s. 0d. each.  
 9 " ..... 1s. 6d. "  
 12 " ..... 2s. 6d. "

Fig. F.  
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Fig. G.  
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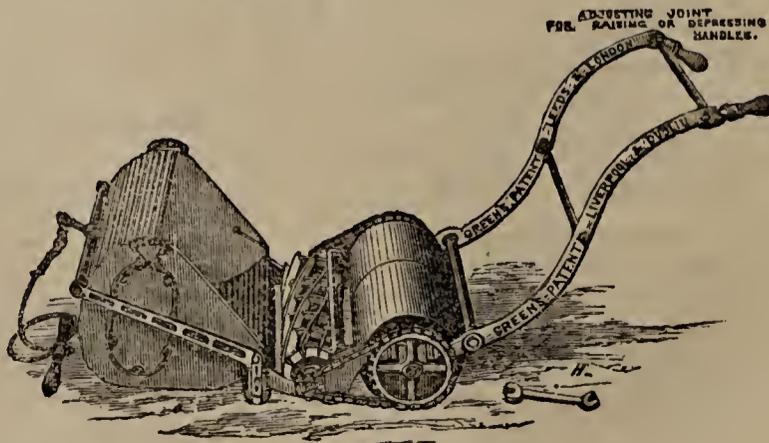
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„ „ nine distinct varieties, extra choice, 2s. 6d. per packet.

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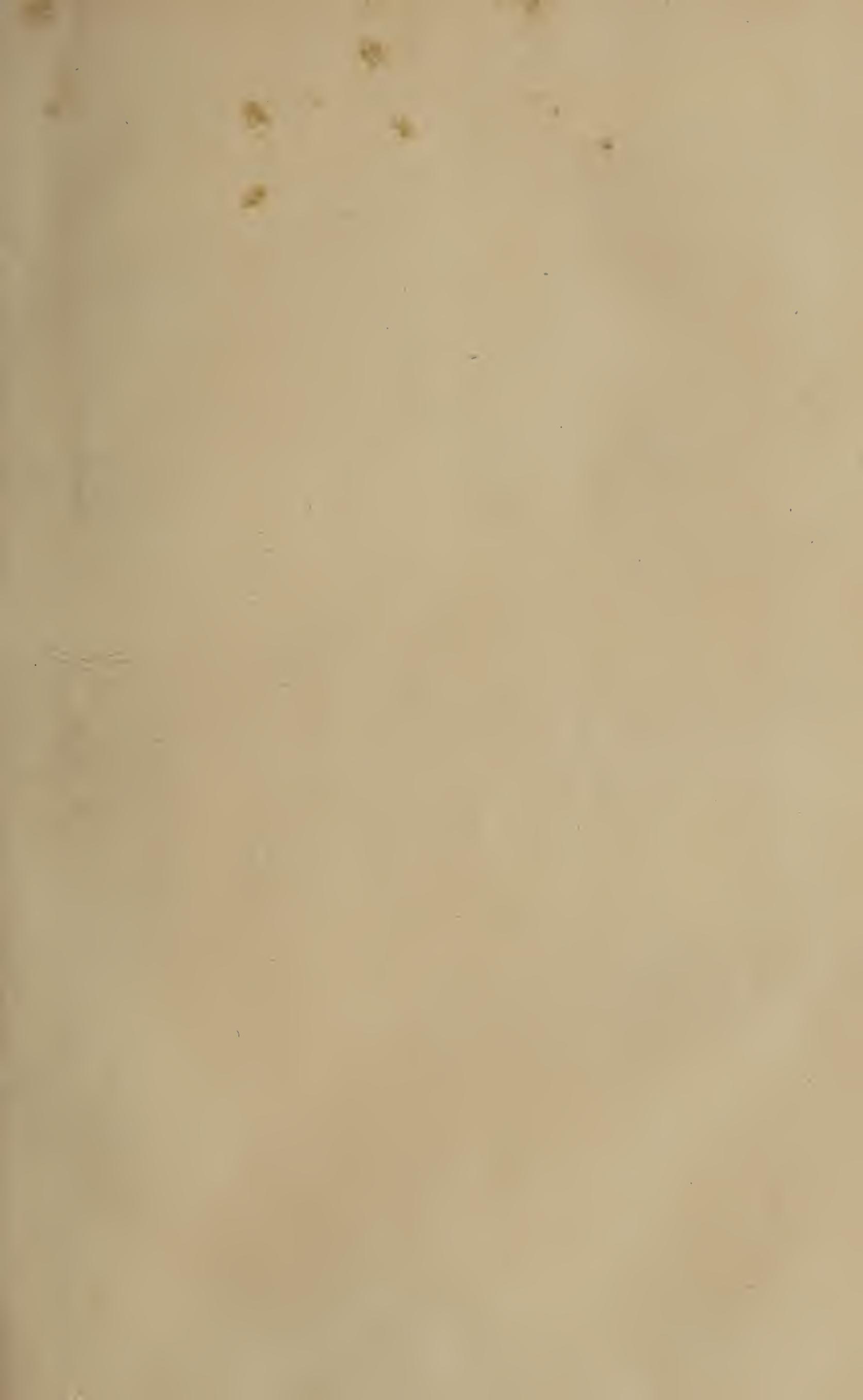
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*Maunus japonicus* Thunb.

*♂ Male Flower*

*Illustration by [unclear]*

## AUCUBA JAPONICA.

WITH AN ILLUSTRATION.

WHO amongst us is not familiar with the common blotched-leaved Aucuba, which, for three-quarters of a century, has been the inmate of every garden—the ornament of every shrubbery? And yet which of us, till within a few months of the present time, have realised the full beauty of that gorgeous shrub? For it is a gorgeous shrub, when laden with its ample trusses of large, oblong, brilliant, coral red berries; and nothing we have in the way of ever-greens can at all compare with it.

The reason we have been so long ignorant of the full merit of the *Aucuba japonica* arises out of the fact that the plant is dioecious—producing its stamen-bearing flowers on one plant, and its pistil-bearing flowers on another. All the Aucubas we possessed in this country, till quite recently, were of the latter kind, all, doubtless, the progeny of one originally-imported individual: and hence, as we had no fertilising pollen, our poor Aucuba blossomed uselessly so far as concerned the production of its ornamental berries. To Mr. Fortune belongs the credit of giving us the first male Aucuba; and the spring of 1863 will be famous in the annals of horticulture as that in which English gardeners first saw, through the agency of these male plants of Mr. Fortune's, the first berry-laden bush produced in Europe.

This plant is that which our plate represents, as grown by Mr. Standish, of the Ascot Nurseries. It also—that is to say, the green-leaved female Aucuba—is a recent introduction from Japan, and is, no doubt, the typical form of the species, of which our common blotched-leaved Aucuba is one of the many varieties having variegated foliage. Handsome as the spotted Aucubas are, the green-leaved form is still handsomer, on account of the better contrast it presents with the coral-coloured fruit. Mr. Fortune himself observes:—"The green-leaved I look upon as the most valuable of them all. It forms excellent dwarf hedges, and its glossy evergreen foliage is very ornamental, particularly during the spring months, when the rich coral-coloured berries may be seen peeping out from amongst its leaves." Our principal figure represents this plant in fruit, but we are unable to give the true brilliancy of colour, which is that of the finest glossy sealingwax. In the upper corner of the plate is a small sprig of the blossoms of the male form, which has wrought such a change in the few plants as yet brought within its influence; and which, when well established and planted out in our gardens and shrubberies, is to work similar changes on the many forms of Aucubas which henceforth—thanks to Messrs. Siebold, Fortune, and Veitch—will adorn them.

That the common variety will be equally ornamental so far as the production of berries is concerned, is now sufficiently evident; for it has already been exhibited in a fruiting state by Mr. Laing, of Twickenham, who produced, at the Royal Botanic Society's Show, on the 18th of March in the present year, two or three small bushes with the bunches of glossy scarlet fruit very well developed, in which state, on account of the larger size of the berries, it is decidedly more ornamental than the Holly, and that is sufficiently high praise.

M.

## BEDDING TULIPS.

THERE has been, of late years, such an increased demand for bedding Tulips that the price of many sorts has been doubled. At one time I considered that these could not be grown in our gardens in sufficient quantities to be remunerative. Of late years, however, our success here has led me to

E

think otherwise; and no doubt in a short time we shall have them down to the old standard, or perhaps lower, as everything with us, that can be grown to meet an increased demand, is now soon multiplied by those who strive to supply the public. A few years ago it was our practice to save all offsets from the bedding Tulip roots at planting time, and prepare a border for them. They were then sown, and covered 6 inches with soil. A few of these invariably flowered in the spring; but the whole were lifted after their leaves died down, to make way for another covering. Being much pressed for labour, one spring we left the bulbs in the ground, and sowed the surface over with sweet Alyssum. To our great surprise the next spring these came up strong, and bloomed well, coming in most useful for house decoration. This was encouraging; and when we came to take up the bulbs they were found to be a good size, and will no doubt all bloom in the flower garden this spring. I gather from this that one season is not sufficient, and that they are better in the ground two at least. But, what is more surprising, the same beds, although we were careful to gather every bulb, are now covered with leaves as thick as weeds. The sorts that were sown consisted of La Candeur, Rex Rubrorum, Imperatrice Rubrum, Tournesol, &c. The ground was trenched and well manured with rotten dung and road-scrappings, but good sand would be better; and a three-years rest in the ground would also be advantageous, as I am persuaded the roots keep fresh, as well as work away all the season for the good of the bulb.

*Cliveden.*

J. FLEMING.

#### CHRONICLES OF A TOWN GARDEN.—No. XV.

JOAN OF ARC, single white, a large-belled Hyacinth in the way of Mammoth, but apparently an improvement on it, has been extremely fine with me in a glass. The bells are large and stout, but they did not reflex so much as I could have wished, and were too pendant on the spike. Like all the large-belled kinds, it is a vigorous grower, and had I placed it in a pot, instead of in a glass, I think it probable it would have rivalled to some extent a splendid Madame Van der Hoop, single white, in a pot close by the ledge on which Joan of Arc peacefully ekes out the remainder of her days. I shall not attempt to grow a large-belled Hyacinth in a glass again, they do better in pots. These robust growers want "feeding;" it is necessary that a strong stimulus should be administered to them, to bring out in rich fullness their stately forms. Torquato Tasso, single white, is a very pretty delicate blush flower, producing a good truss of moderate-sized well-shapen bells; but it betrayed a delicacy of constitution which snapped the frail thread of its existence somewhat prematurely. I however think it will prove a capital variety for cultivation in water. This, together with Lady Wellington, double red, an exquisite pale rosy blush flower, with carmine centre, and moderately sized bells thickly set on the spike; and Carmine, single red, a beautiful shade of bright deep carmine, which unfortunately prematurely bloomed, were sent to me by Mr. J. H. Veen. Of others, in glasses, I had El Dorado, single red, a small, but very bright flower; Charlemagne, single red, deep red, but too small; Homerus, single red, a very old and cheap pink flower; William the First, a good deep-coloured single blue; Emilius, single blue, light blue; Pomona, single red, pink, with darker stripes; and Porcelaine Sceptre, single blue, a good old-fashioned light blue, make up what were the most noticeable. A few others are only just showing colour.

I think Mr. Jas. Cutbush was right when he said the other day at Liverpool, that this was not "a Hyacinth year." This had already been predicted by some of the continental growers, as the frosts of the late spring of 1864

had acted injuriously on many of the varieties of Hyacinths. I noticed at the recent Hyacinth show at Liverpool (which by the way completely distanced in extent any spring exhibition that I ever witnessed in London), a want of that "mass of physique" that was observed in the spikes of last year: yet Mr. Wm. Paul said, he thought his bulbs promised to be as fine as he had ever produced them. I have seen the flowers of one or two northern growers of some considerable local reputation, and they are illustrations of the truth of the opinion advanced by Mr. Cutbush.

Tulips and Narcissi, and their allies, come on towards blooming very slowly. How can they "make haste to appear," while these biting east winds prevail? Within-doors I have some Polyanthus Narcissi that will be in flower in a very few days, and Tulips and Jonquils are pushing on rapidly the work of developing their blossoms; but out of doors the march of vegetation appears to have halted in the face of the piercing eastern winds. The little unassuming Snowdrops are shrivelled up; Crocuses, but yesterday radiant with the beauty of life, are lying prostrate, never again to "arise and shine;" Bulbocodiums keep firmly closed their curious-looking buds; the frail forms of the Dogstooth Violets piteously, but unsuccessfully expostulate with the rushing winds, and their delicate blossoms are wrecked by the torrent as it sweeps wildly by:—all, Aconite, and Daffodil, Polyanthus, Scilla, and Hepatica, wait hopefully the termination of the "reign of terror."

Just where the fury of the storm seems to concentrate its force,—where waves of sand are gathered up as it were by handfuls and scattered around, just there is a clump of Primroses, the blossoms of which screened by strong outworks of foliage seem to defy the worst effects of the unfriendly blast. Verily, quaint preachers occasionally speak to us along the path of life!

"Milder gales and warmer beams  
May the gaudier flow'rets rear;  
But to me this Primrose seems  
The worthiest of the mountain year.

"Bright, brave flow'r! like thee may I  
Dauntless view the tempest rise;  
Danger neither court nor fly,  
Fortune's bleakest blasts despise;  
Oppression's threats regardless hear,  
Nor past regret, nor future fear."

QUO.

## THE ADVANTAGES OF DEEP TRENCHING.

I BELIEVE there are few, if any persons, either gardeners or farmers, who are not fully sensible of the beneficial effects of thorough drainage and deep trenching; they are the groundwork of good cultivation. Draining is becoming pretty general, but I fear many clay lands are anything but thoroughly drained. Deep trenching is not, I regret to say, so universally practised as it ought to be. If deep trenching had been generally adopted, we should not have heard so many complaints about the failure of crops last season as we did. So long as people are satisfied with merely stirring a few inches of the surface soil, leaving a hard "pan" unbroken beneath, they will have cause to complain of deficient or failing crops in dry seasons. The one is the inevitable result of the other. Some people, and very many farmers in particular, have quite a horror of bringing any of the subsoil to the surface; and hence they go on year after year turning over a few inches of the surface soil, and reaping oftentimes not even one-fourth part the crop they would if the land was properly cultivated.

The roots of all crops will, under favourable circumstances, descend to a considerable depth. They do so in quest of food; and the crops are in general

the better the deeper the roots are able to penetrate. This is so true and so generally recognised, that it would be difficult to find any person to gainsay it.

It is now a good many years since I saw a border in a kitchen garden trenched between 3 and 4 feet deep, and as it was for Peach trees, there was a quantity of stones and rubble put at the bottom—the soil was all excellent. Some Endive was that season planted on the border—and such Endive! it was prodigious. The following spring, owing to some alterations, a portion of the soil was removed, and it was then discovered that the roots of the Endive had penetrated down to the rubble at the bottom. I was then a youth, but this fact taught me a lesson I have never forgotten. Some people object to deep trenching on account of the expense. Deep trenching cannot be done without extra labour; but in my opinion it is labour well bestowed, and in the end I question if there is not a considerable gain by it. In all gardens where there is a regular and constant cropping, there always is a great exhaustion of the soil going on. Now in gardens where trenching is not adopted (if there be any such), this exhaustion must be constantly made good by heavy manuring in order to grow crops. With the best of manuring, if trenching be neglected, the crops of vegetables will not be first class, and in dry weather constant waterings are necessary. I do believe that in some places the labour that is employed in watering the vegetables is sufficient to deep trench one-third the garden annually.

By deep trenching we bring up to the surface those constituents which the crops had exhausted the surface soil of: consequently, less manure is required; and by a proper rotation the finest crops of vegetables are obtained with little or no watering even in the driest seasons. All plants require a certain quantity of inorganic matter from the soil to make it grow in the most healthy manner; but they will live, grow, and even ripen seeds with very much less than this quantity. The crops soon exhaust shallow soils of these matters; and to continue to grow good crops successfully, these matters must be restored to the soil either by manure or otherwise. Deep trenching, when the subsoil contains nothing noxious to vegetables, will to a certain extent supply these matters, and it also wonderfully improves the physical condition of the soil. When the roots strike deep into the soil they are less liable to suffer from drought; the fibres are sent into every part of the soil, and the space from which the nourishment is derived is more considerable than when only a few inches of the surface soil are dug.

My own practice is to trench a certain portion of ground every season; by this means the whole is got through in time. When from unfavourable weather or a pressure of other work I am unable any season to get as much done as I want, I make an effort the following season to get through so much more. Trenching should never be attempted when the soil is wet. It should be always done when the soil is dry, the drier the better. All kinds of vegetables grow most luxuriantly in newly trenched land when it is good, they soon get so well established as to be almost indifferent to the seasons. I never wait for rainy weather to plant anything when the ground is ready and the season has arrived. If the soil be very dry at the time of planting, I have the plants well watered until we get some rain; I then have some earth drawn round the plants and rarely give them any water after, no matter how dry the season may be, as they soon strike deep into the soil, and do not require it. Artificial watering out of doors is to very little purpose if it be not done thoroughly, and then it involves a great amount of labour in gardens of any size, and that too at a very busy season of the year. In very droughty seasons it is not unusual to see the greater number of hands half their time employed in watering to keep the plants alive. Now if this be not both expensive and profitless, I don't know

what is—better, far better, and much more economical, to try to get the ground trenched deeply, and to bring it into a good condition for the crops by improving its physical condition. I have often been astonished why a practice so advantageous in every respect, and the beneficial effects of which are almost universally understood, should be only so very partially adopted. It is one of those things we cannot account for. Self-interest is generally a great stimulant, but in this case it seems powerless, or why is it we see deep trenching so little practised? If a thing is worth doing at all, it is worth doing well. If land is worth cultivating at all, it is worth cultivating it well, and the first great means of doing this, is to drain and thoroughly trench deeply.

*Stourton.*

M. SAUL.

## ON THE CULTIVATION OF ASPARAGUS.

THIS being one of the most important vegetables, anything having a tendency to simplify its cultivation and promote rapid growth, will, I have no doubt, be found acceptable to many readers of the *FLORIST AND POMOLOGIST*.

By the following mode of cultivating it, a great saving of time is gained, and beds of Asparagus that under the ordinary system of cultivation, would take three or four years in coming to maturity, can be had equally as good and strong in two years and a half.

This is a very great consideration to many, who, like myself, have to produce a constant supply from November to the end of July.

Soon after the April Number of the *FLORIST AND POMOLOGIST* is distributed to its numerous readers, it will be time to commence the first operation—viz., sowing the seed. I need not waste your valuable space by describing any particular mode of doing this, I will only say that it should be sown in drills 8 inches apart, and sown thinly in the first or second week of April.

After the seed is sown, the next important operation should take place about the second or third week in July, by this time many of the early crops will be cleared, and a good space of ground will thus become vacant. The quarter of ground intended for the Asparagus plantation, after having a thick coating of good manure spread over it, should be well trenched to the depth of 2 feet or more, if there is a good depth of soil, placing the manure in the trench between the second and third spit. After the ground has been trenched it should be marked out into five-foot beds, well thrown up above the general level of the ground; two deep drills should then be drawn on each bed 2 feet 6 inches apart, these are then to be filled up, or nearly so, with small charcoal.\* The soil that has been drawn out of the drills is then raked over on the charcoal; two small ridges are thus formed,  $2\frac{1}{2}$  or 3 inches above the level of the bed. The intermediate spaces between the ridges should have a liberal sprinkling of half-inch bones sown over them, and an inch or so of well-decomposed manure or leaf-soil, spread evenly over the whole surface of the beds. More soil should then be taken out of the trenches between the beds, to fill up the spaces level between the ridges on which the young plants are to be planted, the beds would then be considerably above the level of the ground surrounding them, which is very essential to the well-being of Asparagus—this completes the formation of the beds. The next

\* The Asparagus is very impatient of too much moisture about the crown of the plant, the charcoal is, therefore, placed in the drill below the plant for two reasons:—1st, to prevent water from lying about the crown of the plant; 2ndly, because the young rootlets delight in creeping through the small fissures formed in it by the action of the fire.

operation is, to lift the young green plants carefully, taking care to injure the roots as little as possible, they are then to be planted exactly over the charcoal, about 7 inches apart, the soil to be carefully pressed about their roots, to make them firm in the soil; they should then receive a good soaking of water, and if the weather is hot and dry they should be watered daily for a week or ten days; by this time they will have got root-hold, and will not require but little more attention, unless the weather is very hot and dry, such being the case, they will require watering occasionally.

The next important operation takes place at the end of October, when the beds should be well covered over with manure, to prevent the young plants suffering any injury from frost. The manure should be afterwards sprinkled over with salt, this helps to keep out the frost, and kills many insects and weeds which are brought on the ground in the manure. During the following summer the plants will make rapid growth; there should then be some means taken to prevent the plants from suffering injury by being blown and twisted about by the winds; this is done by placing a stake, at intervals, along each side of the rows; a piece of string is then strained along the stakes. This is a most important thing to be attended to, for when one or more of the shoots are twisted and broken off, the plant is considerably weakened by pushing up other shoots, to take the place of those that have received injury. The plant is thus, to a very large extent, prevented from developing the young pseudo-shoots at the base or crown. It thus often happens that the second set of shoots, which the plant has thrown up to replace the broken ones, are cut down by the early autumn frosts; the plant by that means receives a check which it does not recover till the following year; and without the top or head of the plant, which is the conductor of all the atmospheric agencies during its natural season of growth, the plant cannot be performing its natural functions of storing strength for vigorous growth on the following year. Want of attention to this particular point is the cause of so many blind and dead plants being found, when the roots are dug up for forcing and other purposes.

Having mentioned the time for sowing the seed, and described my mode of preparing and planting the beds, I will now explain the advantages to be gained by adopting this system of cultivating Asparagus, and the disadvantages to be encountered under the old system.

The original *modus operandi*, was to prepare the beds in a similar manner to the one I have already described above, as far as the preparing of the beds was concerned. After the seed had been sown, the plants were allowed to remain in the seed-beds for one, and sometimes two years, at whatever time it was determined to plant them on the permanent beds, whether at one or two years old. The plants were generally planted about the third week in March, or first week in April, according to the state of the weather, after the plant had commenced growing; and I have often seen them planted, when they had shoots on them 3 or 4 inches long; the operation, therefore, could not be performed without injuring the shoots more or less, according to the amount of care taken by the person planting them. After the operation of planting was finished, supposing them to have been planted in the first week of April, it would be the middle or end of July before they had well established themselves in their new quarters, they would then begin throwing up young shoots, and would continue doing so more or less, till, perhaps, the middle or end of October. If it should chance to be a mild autumn, when the tops would all be cut down by frost, there would be, perhaps, one or two young shoots, the last the plants have thrown up just at that time peeping through the soil. These become frost-bitten, which causes their speedy decay, and as they rot down to the

crown of the plant they leave a place very similar to the cells formed by the bee in the honeycomb, in which water lodges and often causes the destruction of the plant. That being the case, I consider the plant to have been making premature growth, and wasting its energies for a useless purpose.

When the beds are formed and planted on the system that I advocate and adopt with great success,—viz., to plant young green plants in a growing state, after the manner described above, the last week in July, the whole energy of the plant is then employed during the months of August, September, and October in establishing itself. It is thus prevented from making any premature growths, and those young pseudo-buds, which would have been destroyed, had the young plant remained in the seed bed until the following spring and then being planted, are thereby saved. They rush up in the following spring, gaining strength by the atmospheric food they receive, and are followed by others stronger and more robust, and the

“Cry is still, They come.”

It is in thus saving or preventing the plant from making premature growth, that nearly a year in strength is gained.

We will now suppose the bed or beds to have been planted twelve months. Nothing in the shape of a stimulant will be required till the autumn, only the protection mentioned above for preventing the plants from receiving injury by high winds and heavy rains. In the autumn, the beds should have another thick coat of manure, with a liberal allowance of salt, and in the summer following be well supplied with liquid manure. In the autumn of the second season after planting, the plants will be found in excellent condition for forcing, and if left in the beds undisturbed till the following spring, in splendid condition for cutting from in the open ground.

*Oulton Park.*

J. WILLS.

## THE MANETTI STOCK, AND ROSES ON THE MANETTI STOCK.

(Continued from page 50.)

9TH. HOW MANETTI POT-PLANTS MAY BE BEST REARED INTO GOOD TREES.—Unless they are very weak, I never put them into Cucumber-frames, as it only fosters fungoid diseases, which is more or less about plants reared under artificial heat. I plant them out at once, or harden them gradually, and then plant them out. I have now twelve Rose banks, in different ages, and nothing can do better than these pot-plants, some of which are now (two years old), 8 feet high. All the pot-plants, bought this last fall, are planted out on the banks, which are covered with straw; they are perfectly healthy and safe. In all I have about 193 in different ages on the banks, which can be seen by any one that will honour me with a call. The Manetti Roses here usually begin about the 6th of June, are plentiful by the 12th, and in their zenith between that and the 20th. These plants, on banks, may be put thick the first year. The next year every other plant may be taken out, and placed with the strong plants planted on the flat. I observe that pot-plants ultimately make the best and most enduring trees. If their wood is hard, never mind the quantity.

10TH. HOW MAL-PROPAGATION ON STRONG STOCKS MAY, IN SOME MEASURE, BE OBIATED.—If plants are budded too high, plant them at a reasonable depth, and earth-up the remainder over the point of union, like Potatoes; the sun can then act on the roots. The sun may be too hot for briar Roses, but it

can scarcely be too hot for Manetti Roses, if supplied with water. I have plenty of pumps, plenty of decayed manure, and a willing and obedient servant—all I ask for is a West Indian sun. For lazy people a hot dripping summer is best, but the blooms are spoiled by rain.

It may be as well here to say that, as good sound briars are getting scarce, it would be wise to rear some Manetti stocks; they are easily raised. Slips 10 inches should be planted in September; by the following September they will, in strong land, become robust trees. The following season they will be fit for budding. In order to bud them low conveniently they should be planted in delves. In severe winter the delves may be filled up with leaves or straw.

11TH. HOW MANY POINTS OF ADVANTAGE ARE THERE IN MANETTI ROSES?—They are an admirable *via media* for obtaining Roses on their own roots, often with multiplication. They require less water and less manure than Roses on their own roots, or on the briar; they can be grown in land where these two would be hopeless; they will stand more violation from the weather, from fungoid diseases, and from the ignorance or neglect of the owner; they are earlier, more abundant, more continuous, and later than any other Roses. Here the blooms are far larger. If diseased in root, they can be recovered by placing them under a north wall, with a light covering of earth and a cloth over them. They will then quickly recover by making fresh roots. I have saved thus, this summer, two Alfred de Rougemonts that were yellow in their wood. Manetti Roses are quickly established; you may plant them at any time, and move them with their balls on at any time, even with their leaves on and buds formed, without detriment, provided you water them, and place a sheet over them for a few days. If you live near the nurseryman, so as to get them home before their leaves are injured, September is the best time to have them, as they make new roots at once, and the removal causes them to confirm their wood. You may cut them in the winter (their rest is short), when they are dormant; or you may let them form all their new wood and buds, and cut out what you do not want in May. Their buds are so many and distant, that the bud-worm can never disappoint you. They fatten and tumble off here, and still leave more buds than one cares to see on the plant. The stock, being under ground, has no frontier to defend; a little straw over the surface will defy zero. I need not give a list of Roses that do well on the stock, because I never had one that grew freely, and was hardy in its constitution, that did not do well. The reader may refer to the Roses that I have previously recommended. My Roses are mainly on the Manetti stock. I may observe that Mr. Rivers, by double budding on the Manetti, and Mr. Harrison, of Darlington, with a new stock, tell me that in due time they mean to astonish the Rose world. Be it so; if a better stock comes out, the Manetti stock can never be a bad one for suitable Roses. “We shall see what we shall see!” In addition to its many virtues, the Manetti stock is essential to the quick and convenient dispersion of novelties through the kingdom.

LASTLY. HOW GLAD THE READER WILL BE TO SEE THE WORD “FINIS.”—Before I conclude I shall do well to make the following observations. Some Roses will do well on their own roots, as Paul Joseph and Louis XIV., that will not succeed on any hitherto-tried stock. Roses that will not do well on their own roots, or any stock, in light soils, will often do well in rich deep loams, as Madame Vidot, Madame Rivers, and others. I have seen Roses do badly, both on the briar and on Manetti, that would have done well had they been properly treated. This article is not intended to deny the virtues of the briar stock in proper soils, and under proper hands. It is intended to show persons how they may grow Roses on the Manetti stock in first-class lands, and also in lands where it would probably be hopeless to expect to see them on the

briar stock, especially when we consider the number of enemies that Roses have, and how few people understand them, and how little they do for them as regards cultivation, preservation from mischief, and restoration after it. It should not be forgotten that, whilst no nation can grow better Roses than we can grow, the Rose, in this variable climate, is here on sufferance. Pains and appliances will, however, do great things. Make use of them, instead of wasting your time and breath in blaming, for *your* failures, Providence, the climate, and the nurseryman.

This subject would have been treated of in the lecture delivered in the Council-chamber of the Royal Horticultural Society last year, but, as I was limited to short time, I thought it better to reserve this as a separate subject. As Mr. Turner observed to me that he wished the lecture had been as long again, probably he will accept this as a reparation. As lectures on fruits and flowers, especially on the national flower, should be practical and intelligible, I have endeavoured to avoid, in both cases, letter-learning—"Philosophy, vainly so called."

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## HINTS TO THE AMATEUR

### ON THE IMPORTANCE OF SECURING A GOOD SUPPLY OF WATER FOR HIS GARDEN.

WE have already, in a former paper, insisted upon the urgent necessity of draining from the soil the superfluous moisture, and of rendering the ground easily permeable to the young roots of plants, thus permitting them to receive supplies of proper food without inducing the appearance of plethora or indigestion.

The earth and the atmosphere are the two great sources from which plants derive their food; in the former they find those organic constituents, and in the latter those gases, which, when absorbed in a fluid form, and again given off by perspiration in the form of oxygen, go so far in the production and support of animal life, and tend to preserve that balance between the animal and vegetable kingdoms, which we daily see so fully illustrated.

It is of the first importance, then, that the water for the use of the garden should be well and thoroughly aërated. There may be situations in which it can be forced from a pond or river already sufficiently aërated; but in most places it must come from a well, and should be pumped up into a large stone tank or wooden cistern, which, if placed at the highest point of the garden, would allow the water to run out at a tap, without the labour of carrying.

The importance of the temperature of the water is most obvious. Suppose it is required, after a few hot days, to water a quarter of vegetables—to give it, in gardener's phrase, "a good soaking." The temperature of the well water is about 55°, while the sun has heated and dried the ground's surface to 84° or 85°. Surely the application to the ground of a great quantity of water at such a temperature must be very unnatural, and tend to the production of paralysis rather than vigour.

In the course of our time we have known many difficulties to arise, and expensive alterations to be required, in consequence of the neglect of these preliminary precautions in a garden. Let us, therefore, most earnestly advise our friends who are starting in this way to do the things which we consider needful, rather than submit to the inconvenience for years, and then, at a great expense, have to re-establish their gardens.

The art of watering a garden well is one only to be acquired by very considerable experience. We dislike small dribblings, and should prefer hearty soakings, moistening at the same time the branches of the plants with the dew of the garden engine. We consider this last practice very judicious, and should

apply it to all recently-transplanted shrubs and trees daily for some time after their removal. We believe that, with the master eye of a well-practised man, and with this judicious application, trees may be removed with safety at any time of the year for special purposes.

In saying that trees may, for special purposes, be removed at any time of the year, we do not wish to alter the generally-received opinion on this subject. As a rule, autumnal planting is the thing; and if the tree is moved while it is yet in leaf so much the better. But I mean to say that, where it is necessary for an especial object to move one at the wrong season, it may be successfully accomplished by the exercise of a little extra care and perseverance.

In proof of the accuracy of my statement, I may be allowed to mention that my good friends, Messrs. J. & C. Lee, of Hammersmith, planted large Lilacs in full bloom last summer, they having an occasion which justified them in making this special trial.

In many gardens it would be quite possible, and, if thought of, could be done at a small outlay, to have the water brought by pipes down the front of the wall borders, and the trees syringed without any carrying of water by hand, either by garden engines or hydropulps. This would altogether constitute a most efficient and advantageous mode of appliance, and, if at first well considered and done, would be found, in the end, to save expense.

Independently of the general supply of water for the purposes of the garden, it would be well for the amateur to economise the water caught upon such houses as he might wish to have, and to catch it all in cisterns in such places. He will find it invaluable for watering and syringing purposes; and as these supplies might sometimes fail in dry weather, it would be well to make use of a tap from the general stock, near to each house, thus insuring a continuous and permanent supply to be used at pleasure, while the under and excessive water would be fully carried away, by the adoption of the preventive means we have detailed. Thus far we have ventured to lay before our amateur readers some suggestions, upon the carrying out of which must depend their success or failure in the art of horticulture.

*Amersham.*

HENRY BAILEY, C.M.R.H.S.

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## THE PRESERVATION OF FRUITS.

*(From the Proceedings of the American Pomological Society.)*

THE production of new and choice varieties of fruit is not the only labour of the pomologist. The great annual loss from decay constrains me to say a word more on the *preservation of fruits*. Probably twenty-five per cent of our summer and early autumn fruits either rot, or, to prevent loss, are forced upon the market at very low prices. In the hot season of the year, and with certain species of fruit, this evil cannot be entirely overcome; but that it may, in a great measure, be controlled by suitable fruit-rooms and other expedients, and that we may thus prolong the season of fruits beyond their usual duration, we entertain no reasonable doubt. What we especially need, is valuable late autumn and winter sorts. These, however, will not supersede the necessity of suitable storehouses, without which the heat of our warm autumnal months is liable to start the ripening process, and compel us to dispose of them.

The proper construction and management of these is, therefore, commanding the attention of pomologists, both in this country and in Europe. Their success is found to depend on a perfect control of the temperature, moisture, and light. After having built and managed four fruit-rooms, upon different plans, I am of opinion that a proper equilibrium of temperature and moisture

cannot ordinarily be obtained without the use of ice. The preservation of the

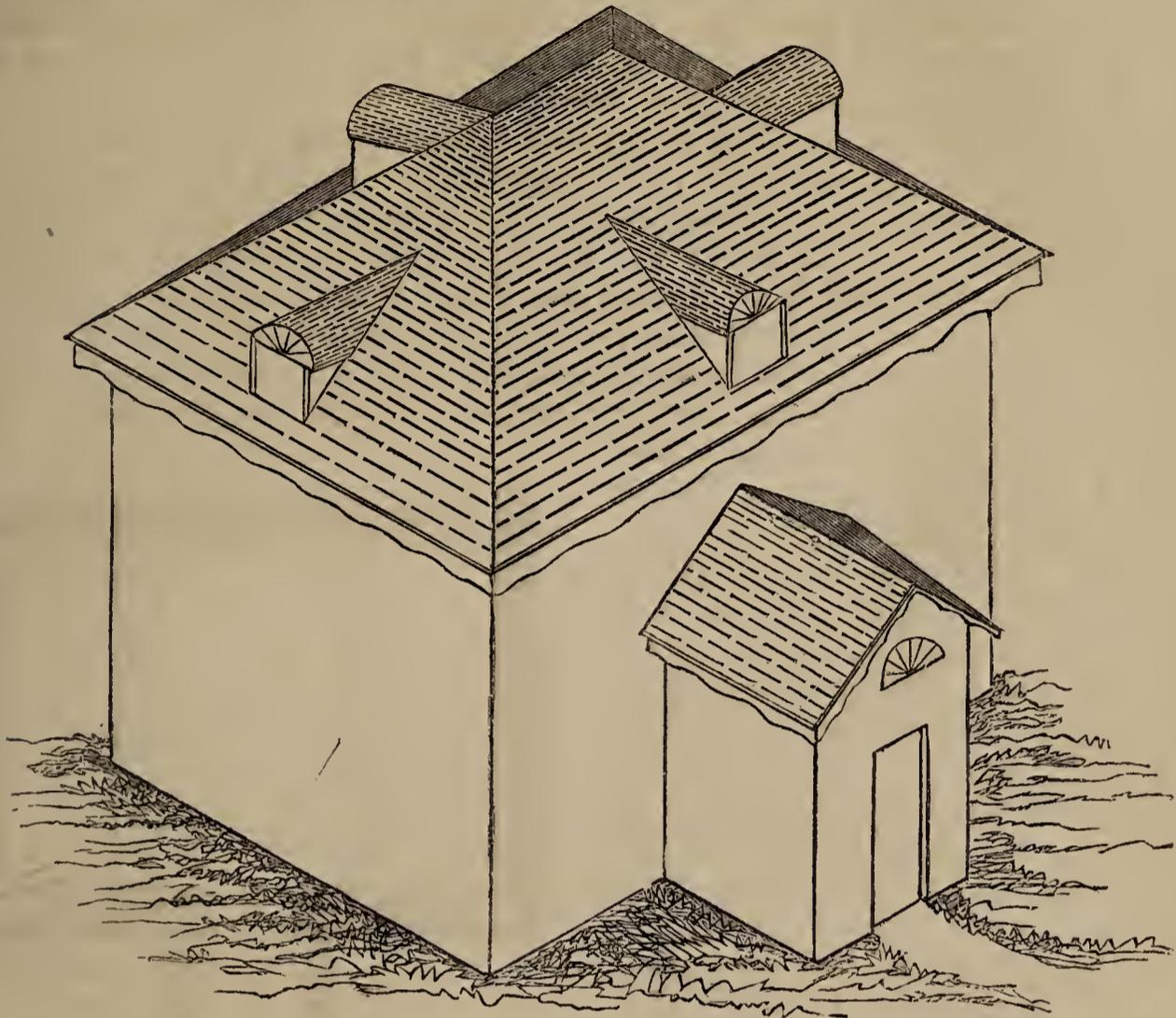


FIG 1.—Scale, 10 feet to 1 inch.

View of an ice and fruit-house under one roof, built entirely above ground, with dormant windows in roof, three of which are counterfeit; the other one is a door to admit ice, with lattice transom, made so as to admit outside atmosphere on to the ice.

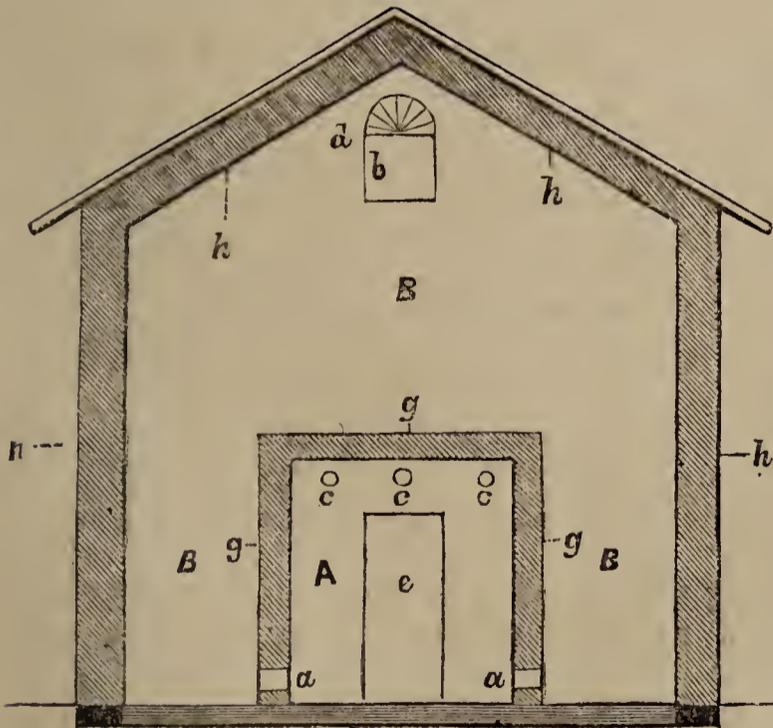


FIG. 2.

A, perpendicular sectional view of same.  
 B, Ice-room—over and at the sides of the fruit-room.  
 A, Fruit-room. *e*, inner door to same. *c, c, c*, small round openings for the egress of the air from fruit-room; *a, a*, flues from ice-house to fruit-room; *g*, partition between ice and fruit-room, 12 inches thick (should be 18 inches, and well insulated); *b*, door in dormant window to admit ice; *d*, lattice-work, to admit air on to ice.

Apple is less difficult than that of most other fruits, and is tolerably well understood by our farmers. Still, how few specimens, even of this fruit, are brought to our spring market in a fresh and perfect condition! The art of keeping the Pear, and fruits of delicate texture, is much more difficult; and it is to these I particularly refer.

Having heard of the great success of Mr. Schooley, of Cincinnati, Ohio, by his celebrated discovery for the preservation of meats, I opened a correspondence with him with respect to the application of the same process to the preservation of fruits. He subsequently visited me at Boston, and advised as to

the construction of a fruit-room upon his principle. This I have found, during the last winter and the present summer, to operate in accordance with his statement, as illustrated by Professor Locke, in his "Monograph upon the Preservation of Organic Substances." By his plan, the temperature and moisture of the fruit-room, and consequently the ripening of the fruit, may be perfectly controlled. One gentleman informs me that he kept Strawberries in a fruit-room constructed on this plan from June 1st to the 20th, in perfect condition for the table; and he entertains no doubt of its complete success in the preservation of Apples and Pears indefinitely. Mr. Schooley writes me that, in the month of June, he received several barrels of Bellflower Apples, which had been kept for eight months, that were sold in that market at two dollars and twenty-five cents per bushel. The remainder out of eight hundred bushels was sold at home at three dollars per bushel. These Apples were purchased at random from the strolling waggons passing through the streets of Dayton, and were more or less bruised by careless picking and transportation. My own experience corresponds with these statements.

The construction of these rooms is simple. All that is required are walls made of non-conducting materials, with an apartment for the ice above the fruit-room, and with Mr. Schooley's descending flues for the cold air, so as to preserve an equable temperature and moisture, and to hold the ripening process in suspense. The air, by passing over the ice, is deprived of its moisture, and, being cold, and specifically heavier than the surrounding atmosphere, falls through his descending flues, and, by a ventilator, escapes on one side of the room, thus creating a temperature not only cool, but dry. This principle, I am informed by a distinguished member of the medical faculty, may be applied to the construction of hospitals with great advantage, so that the air may be kept at a uniform temperature and degree of humidity. For a more particular account of this process I refer you to Professor Locke's "Monograph," and to the inventor's letter, herewith submitted.

In these remarks our object has been to provide against the maturing of fruits until the season when they are wanted for use. Care should, however, be exercised, especially with the Pear, and more delicate fruits, not to reduce the temperature much below 40° of Fahrenheit, lest the vital principle of the fruit be destroyed, and the flavour lost.

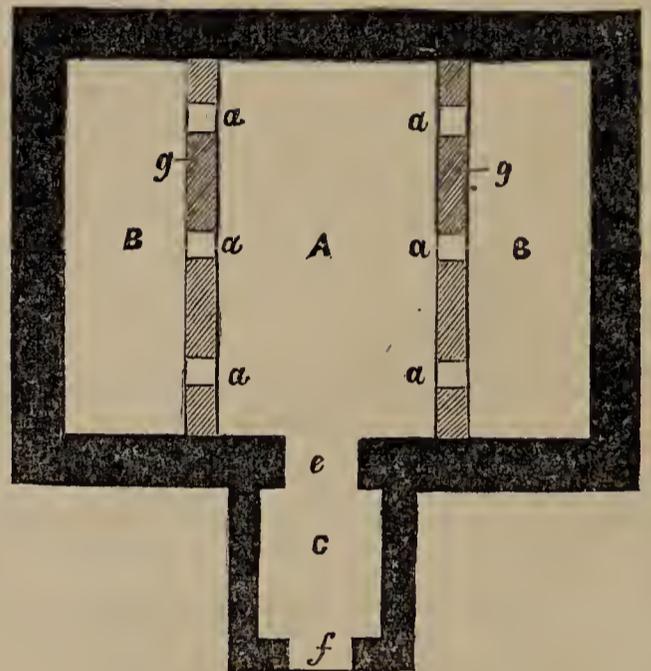


FIG. 3.

Horizontal sectional view of ground-plan of the structure.

A, Fruit-room.

B B, Ice-house.

C, Vestibule or protection-porch, so as to keep the outside atmosphere from penetrating into A. *f*, Outside door of the same, well insulated; *e*, inside door and entrance to fruit-room, well insulated; *a, a*, six openings for the admission of cold dry air from ice—each opening 1 foot square, with slides over the mouth, so as to open and close at will; *g*, partition, well insulated.

This house can be built either with brick or wood—the latter the best. The fruit and ice-houses can be constructed within another building.

N.B.—Particular care should be taken in all cases to have the bottoms of these houses thoroughly drained, and well insulated from the natural heat of the earth. This is absolutely necessary, as heat affects the earth to the depth of 40 feet or more.

## BEURRÉ CLAIRGEAU AND VICAR OF WINKFIELD PEARS.

FROM the description of the Beurré Clairgeau Pear, as regards size and appearance, which I read, I was induced to get a plant of it about ten years ago. The plant I got was a very poor thing, and made little progress for three or four years. I had it planted against a south wall, and, with some care and attention, I got it at length into a growing state. The first crop it bore was in 1860, when it had a few fruit, which were large and fine-looking, and, contrary to my expectations, the flavour was excellent, notwithstanding the unfavourable nature of that season. The flesh was melting, juicy, and sweet. It has borne a light crop every season since, and the fruit has been pronounced first-class by every person who has tasted them. It bore a nice crop last year, and the fruit was large and fine, many of them a pound in weight. The flavour was excellent; indeed I do not know that I ever tasted better, and all who tasted them were of the same opinion. In a good favourable soil, and on a south wall, I feel certain this will prove one of our best Pears in Yorkshire. Here the fruit ripens towards the end of November and beginning of December.

THE VICAR OF WINKFIELD.—This variety ripened here last season, the flesh being quite melting and sweet, with a pleasant aroma. The tree is on a south wall. The fruit also ripened in 1859, but from that year until last season it did not ripen, though it bore good crops every year; but I took care to thin well, so that the fruit had every chance, but remained quite hard to the last, and was only fit for stewing purposes. Except for the purpose just mentioned, I do not consider it worth growing in Yorkshire. M. SAUL.

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## ON THE IMPROVEMENT OF THE GOOSEBERRY.

IF we consider what a vast number of varieties of Gooseberries we have in this country at the present time, it is a matter of surprise that so few are possessed of that intrinsic excellence, both as regards flavour and early or late production, which would render them desirable for cultivation in the gardens of the nobility and gentry, or even in market gardens for wholesale purposes.

It would appear that the whole attention of those who have devoted their time and talents to the improvement of these fruits, has been mainly concentrated upon the attainment of weight and size, leaving flavour and good marketable qualities, which are of far more importance to the community in general, quite out of the question. We must, however, acknowledge that the attainment of an improved size in fruits is a legitimate object to strive for, and in most cases the flavour is not injured thereby, but on the contrary improved, yet there appear to be certain limits which cannot be passed without a sacrifice of flavour, and the Gooseberry appears to me a very good exemplification of the correctness of this view, as it will almost invariably be found that flavour decreases as size increases, and therefore all the praiseworthy efforts made by those gentlemen who have succeeded so admirably in attaining their object are entirely thrown away on the great mass of consumers, and are only really useful to those who make it an especial hobby to grow them for exhibition. Having myself in former years gone through all the excitement of growing them for that purpose, and devoted much time and attention to their culture, I can bear testimony to their extreme unsuitableness in an economical point of view for cultivation in gentlemen's gardens: they occupy much room, and the produce is not at all to be compared to that which may be obtained from an equal extent of space, and the same liberal treatment, accorded to many of the

smaller high-flavoured varieties; and although they have a grand appearance, place a dish of each before a lady or gentleman of fine taste, and it will be invariably found that the preference is accorded to flavour, and when we consider that flavour is after all the first great criterion of the excellence of all fruits, I think it should not, even in this case, be kept so much in the background. Let me not be misunderstood: I do not wish to deprecate the practice of growing for exhibition, I know that it affords a great amount of pleasureable excitement and healthy relaxation to many worthy men, and I can truly sympathise with them in their exertions, and I say, Go on and prosper; but, at the same time, I am of opinion, that if they will take something else besides size and ponderosity into their list of qualifications, and insist on high flavour before weight, they must go back to the high-flavoured small varieties for it, and as they have all the machinery of past experience to guide them in their operations, they will not only throw a new feature, and create more excitement and interest in their shows, but they may reasonably hope to succeed in producing some new varieties which may be of great use to the public at large. Some of our richest-flavoured varieties are too small for real utility, and some are very thick-skinned, yet their flavour when well grown is so rich and superior that they cannot well be discarded except for larger varieties possessed of those intrinsic merits which make them valuable. I should instance the old Red Warrington, when well grown, as a very good model of a desirable size for general use; and if the flavour of the Red Champagne, Yellow Champagne, Green Gascoigne and others, could be transmitted to other varieties of a good medium size, they would be a great boon to the general cultivator. It would be useless to trust to chance for these improvements, as it would only entail a great loss of time and labour, and therefore careful hybridisation must be resorted to, and only the best kinds made use of for the purpose.

There is also another, to my mind, very important consideration to be taken into account, in order to increase their general usefulness, and that is, the habit of growth. Some of the varieties are so much inclined to weep, and spread along the surface of the ground, as to entail a great amount of trouble to preserve the fruit clean, as during heavy rains the soil is often dashed over them so as to render the fruit useless; and although this may be counteracted in various ways, and very economically by covering the ground underneath with straw, or long litter, yet they are so much more manageable, and the fruit more easily gathered when the habit of growth is erect, that in hybridising for an improved size accompanied by flavour this object should not be lost sight of, and therefore only trees of a good erect habit should be made use of for the female parent. I am quite aware that it is much more difficult to influence the habit, [and flavour, than it is the size; but that should only increase the interest to be derived from the pursuit, and the value of such new varieties would certainly compensate for all the extra trouble.

*Redleaf.*

JOHN COX.

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### FORCING STRAWBERRIES.

IF any apology is needed for introducing a topic so frequently discussed as that relating to forcing Strawberries, it must be in the fact that I have found my plan so far successful, that I can confidently recommend it to others. I have had no great experience in testing sorts, or trying various methods. When some years ago, I first tried my hand at producing Strawberries, earlier in the season than their natural time, I adopted the plan which seemed to me most natural—I simply took some of the earliest runners, and laid them in pots filled with plain loam, pressed in rather tight. The runners were

soon rooted, and in six weeks from the date of laying, the pots were generally filled with roots. These were mostly six-inch ones, and the plants were generally fruited in them. My practice is, as nearly as possible, the same now, excepting that I prefer seven-inch pots, filling them to the brim with good sound loam, using little or no manure of any kind.

I have sometimes laid the runners in small pots, afterwards shifting them into larger, in fact, when they have been extra strong, I have had them in nine-inch pots, but I have found that no real advantage has been gained by it, and I have arrived at the conclusion that, for expedition in obtaining good plants in fruiting condition, with the least amount of labour (which I consider no trifling matter, particularly where large quantities are required), no better plan can be adopted than to lay the runners into the fruiting pots of the most convenient size. In doing this it is sometimes recommended to lay a stone or lump of earth on the runner to keep it in its place. I find a more expeditious method is, to cut up partly dried twigs into lengths of about 3 inches, these being partially broken in the centre, are easily thrust into the soil, which should be firm enough to hold them, the runners being thus held in their places.

In about three weeks time, I generally find the runners have taken sufficient root to allow of their being severed from the old plants, and placed together in a shady place for a few weeks, say one month. By that time they are well established, and can be plunged in the ground, or in ashes, or what not, in an open situation. After the runners are laid, the soil in the pots soon becomes apparently dry, when, as a matter of course, it may be deemed proper to water them. Now in this case, trifling as it may appear, a little caution ought to be used. It is desirable to encourage the emission of roots as quickly as possible, and if cold water is given too freely, the soil becomes cold and sodden, by which the process of rooting is retarded considerably. A mere sprinkling or wetting the surface will be found all that is necessary, until it is known that the runners have rooted down into the soil. When established or plunged, they may be treated like any other pot plants.

F. CHITTY.

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## ON GRAFTING AND INARCHING VINES, AND THE SHANKING OF THEIR FRUIT.

NOTWITHSTANDING much experience in the cultivation, and forcing of Vines, I have never succeeded well in grafting or inarching them, except when they were at rest or not growing. I consider the failure arose from the sap oozing out at the incisions, which prevented the proper union with the stocks. But as some profess to graft and inarch Vines, as if they were Camellias or Apple trees, perhaps they can state the best time for those operations. Not that I consider either plan of much utility, except when one wishes to have one of another kind united to a healthy Vine, in order to save time in rearing a young plant. For instance: I have a Black Barbarossa grafted on a White Muscadine, and also a White Syrian on a Black Hamburgh; both of them fruited the following season after they were grafted. I have likewise a Black Muscat inarched on a Black Hamburgh, which, however, is still weak. I consider that new Grape an excellent one, though inferior to the White Muscat in flavour; and as regards the other two, I see no difference either in their growth, or the quality of their fruit, from that of others of the same kind nourished with sap from their own roots. I mention this more particularly, as being contrary to the opinion of those who profess to strengthen

tender Vines by inarching them on hardy ones; and also to give their fruit the particular flavour of that of the stocks. But the first does not accord with the fact, that the tops of Vines, like those of all other trees and plants, have nearly the same influence on the growth of their roots as these have on their tops, consequently, a tender Vine united to a hardy one will still remain tender. This may be observed on budded Roses, especially tender ones, which are seldom so strong as those growing on their own roots, and shoots from the stock either below or above their parasite tops are still briars; which shows that the tops have little or no influence on the original sap. Now according to the theory of the circulation of sap or juice in plants analogous to that of blood in animals this might be expected; or even by that of any of the other theories on the flow of juice in plants. It has just occurred to me, however, that there is no difference in the sap of varieties of plants, from that of their original species, like the difference of blood in distinct species of animals. But my subject may be better exemplified by grafted Apple trees bearing various kinds of fruits; and showing that there is some modification of nourishment in the parts united, differing from that in the stocks. This seems to be caused by the influence of the sun upon the various kinds of wood, in which the sap vessels also vary, but more especially on the leaves, which are the lungs of plants. These vary more or less in texture, and in this also as they advance to maturity, and so does the influence of the sun upon. Therefore, by that mysterious process, each variety has its proper nourishment, and ripens fruit according to its kind, the flavour of which depends much on the health of the leaves which conveyed the supplies. Hence, the saying, "good foliage good fruit." But there seem to be exceptions, for instance, in the disease of Grapes called shanking. In that case, however, the nourishment from the leaves cannot get properly into the unripe berries, the sap vessels being injured or closed by a diseased or dark speck on the collar or stalk close to each shanked berry; and in bad cases, larger ones are seen on the stalks of the unripe bunches. The late Mr. Crawshay, of Ottershaw Park, Surrey, was the first to call my attention to the small specks just noticed; and when I asked the cause of them, the reply was a shake of his head. I may notice, however, that he tried to prevent the disease in Frontignan Vines, which have a bad name for shanking, both by very high and low temperature; but the results were equally bad. Some think that the disease proceeds solely from damp borders, but last season mine were dry indeed, and yet shanking abounded with me and others.

J. WIGHTON.

## REMARKS ON THE CULTURE OF CYCLAMENS.

THE different species and varieties of Cyclamen are very deservedly admired for their pretty foliage, and neat, gay, graceful, and fragrant flowers; and yet they are by no means so generally cultivated as they should be. Flowering, as the varieties of *C. persicum* and *C. coum* do, during the winter and spring months, they are invaluable for decorating the drawing-room and conservatory at that season.

All the varieties of Cyclamen suffer from excess of moisture in winter, but the varieties of *C. persicum* are more impatient of cold and wet than the others.

All the sorts are readily increased by seeds, which should be sown, soon after they are ripe, in pans or boxes, well drained, and filled with a mixture of sandy loam and leaf mould.

Those sown in spring, or any time up to July, should be placed in a cold

pit or frame, which should be kept rather close until the young plants appear, when air should be freely given. Towards the autumn it is advisable to remove them to the shelves of a greenhouse. Those sown in the autumn should at once be placed on a shelf in the greenhouse, and care should be taken not to over-water them during the winter months. If properly managed the plants will be fit for transplanting about the beginning of June. The spring-sown should remain in the pans or boxes in which they were sown until the following spring, by which time they will have formed bulbs as large as good-sized peas, and some of them as large as hazel-nuts. If a pit or frame be at liberty, prepare it as follows for them:—Place some decayed leaves or rotten dung at bottom to the depth of 8 or 10 inches, and cover this with a mixture of good loam, leaf mould, and sand, about 4 inches deep. The surface, when made level, should be about 6 to 8 inches from the glass. Plant about 6 inches every way. Keep them rather close until they begin to grow, when air should be admitted freely during the day; water well when they require it. About midsummer the light should be taken off altogether, as the plants will require no further care than sufficiently watering them, if the season be a dry one, and as often as they may require it. Towards the middle of September the whole should be taken up carefully and potted, one bulb in a small pot. Fit the pot to the size of the plant, and be careful not to place a small bulb in a large pot; 60-sized pots for small ones, and 48 for the larger, will be sufficient. Use the soil previously recommended. In potting be careful not to cover the bulbs entirely with soil. When potted they should be placed on the shelves of the greenhouse, where they can have plenty of air when the state of the weather permits. They should not have much water until they begin to grow, when it should be given carefully. Most of the plants will flower the following season. The hardy kinds, which flower in summer and autumn, will do well in a cold pit or frame, if kept rather dry and safe from frost.

Towards Christmas, if the plants are in good health, *C. coum* will begin to flower, and will continue producing fresh flowers until the end of February, by which time *C. persicum* and its varieties will begin to flower, and will continue producing fresh flowers until May. When done flowering the plants must be properly attended to in watering, &c., until the foliage begins to decay naturally, when water must be sparingly given them, and finally withheld altogether. The bulbs should remain in the pots when in a state of rest; and whilst in this state all the kinds are best kept in cold pits or frames, as the soil in pots does not dry up so soon as when they are kept on shelves in the greenhouse. The light should remain off in dry weather, but should always be put on during heavy rains, as the soil in the pots may get too moist whilst the bulbs are destitute of leaves, which would be very injurious.

Before the bulbs start into fresh growth, the pots should be fresh-surfaced with soil, and any bulbs that require a larger pot should have it at this time.

The same general treatment applies to all the kinds of *Cyclamen*, with the exception that, as the varieties of *C. persicum* are more impatient of cold and wet, as already remarked, than the hardy kinds, they should be kept during the winter on the shelves of a greenhouse, and not placed in a pit or frame with the others. The season for resting the bulbs depends on the sorts. *C. europæum* and *C. neapolitanum*, which flower in the autumn, will be at rest when *C. persicum*, which flowers in spring, will be in full growth. Whilst at rest, the bulbs of all kinds should remain in the pots, and no water should, if possible, be given. If plunged in rotten leaves or tan, in a pit or frame, and the lights are kept on during rains, giving plenty of air at the same time, also for a few hours in the middle of the day, in very hot weather, shading them the while, but taking care to remove the light during the night.

Few plants are more easily cultivated than the different species of Cyclamen. Some will do well in the open border, with the protection of a frame, in very severe weather. For in-door gardening I know very few plants to equal it; and yet how rarely do we find it in the sitting-room window. Few plants will better repay any little labour that may be bestowed on them than the Cyclamens.

*Stourton.*

M. SAUL.

### CULTURE OF THE SEA-KALE.

THIS most useful of all winter vegetables, is in my humble opinion, so often badly grown, that I beg to give a few notes of my own way of growing it, as from the numerous inquiries I have had, I believe it will be of some interest to the amateur readers of the *FLORIST AND POMOLOGIST*.

To grow it successfully, the ground should be well trenched and well manured, particularly the bottom of the trench, as there is no opportunity of doing this after the ground is planted, and Sea-kale requires deep root-hold to keep it growing all through the summer, on which depends success or failure. If it makes a good summer growth, so as to well fill the top buds, then good heads may be expected in the winter.

If a piece of ground be selected that has been trenched and thrown up into ridges last October or November, so much the better. March is the month I prefer for planting with seed or plants, but I prefer seed. After the ground is levelled down, draw a line each way 4 feet apart, so that the plants will be 4 feet from row to row, and 4 feet in the row. Ten or twelve seeds should be put where the plants are intended to be. Great care must be taken as soon as the seed comes up, as the seedlings have several enemies. Slugs are very fond of the seed-leaf, and the Turnip fly will sometimes eat them. A good dusting of lime, early in the morning, when the dew is on the leaf, will protect them from both of these insects, and sometimes from birds, as they are very fond of the young leaf.

I was once asked, when living in Berkshire, about sixteen years ago, by Martin Doyle (the Rev. W. Hickey), if I ever forced Sea-kale the first year. I told him not till the second year; but since I have been living here, I have forced it the first year, and cut very good heads. It may be done in case of emergency, but I would not recommend it; it is better to wait till the second year. As soon as the seedling plants get a good size, and the leaves as large as the palm of one's hand, pull up all but the three largest, leaving them about 4 inches apart, and in a triangle, as near as possible, as they are the most easily covered over with the pots when they are covered for forcing.

Another way of planting I have sometimes adopted, by cutting up the old roots into lengths of about 2 inches, all of which make good plants, but the crowns grow the strongest, and should be planted by themselves, and forced first the following season. In planting these sets, they may be put in with the dibber three in a triangle, and 4 feet apart, the same as the seed.

A row of Lettuce or Onions may be grown between the rows the first year, but the second year the ground will be covered with the Kale.

The ground must be kept clean with the hoe the first year, the end of which, when leaves are killed by the frost, they should be cleared off the ground, and a good dusting of lime given all over it, particularly on the crowns, as the slugs often lay the eggs as though they knew it was a good place for their young family.

At the end of the second summer, about the end of September, cut the leaves off all the Kale that you want to cover, in the middle of November, for cutting at Christmas and through January. We covered ours this last autumn at the above time, and began cutting the first the week before Christmas, and hope to do so every week till the middle or the latter end of April. Before the pots are put on, the crowns are all covered over with dry coal-ashes and a layer put round the outside of the pot. This keeps out the rank steam and smell from the dung, when it is used, but I only use leaves of Oak and Beech;

these I prefer to dung, as a steady heat is all that is required, of about 40° or 45°, for if too much heat is given the heads are then small, instead of being short, thick, white and crisp.

*Elsenham Hall Gardens.*

WILLIAM PLESTER.

## THE CULTURE OF THE PINE APPLE—No. IV.

MODERATE heat—say from 58° to 65°—not too much charged with humidity, should be maintained for the suckers and succession plants during the short days of the winter months, increasing it and humidity as the light and days increase, by the addition to, and turning of, linings, if applied by fermenting materials, and by applications of tepid clear manure water with the engine or syringe. If in a structure heated with a tank, hot-air chamber, or hot-water pipes, they may be treated in the same way, but more liberally and oftener. Should there be paths inside, they should also be frequently saturated with clear water, charged with ammoniacal matters, on sunny afternoons.

Plants grown to their fruiting size, and about to start their fruit, should be always liberally aired with a more moderate heat and humidity till after they have bloomed and started into fruit, after which, and till they have about finished swelling, both should be liberally supplied. While colouring or ripening, air should very liberally be given, and humidity withheld, in order that the fruit may ripen of a fine colour and flavour. If the plants should be grown to their fruiting size without a check, and started into fruit in a healthy growing state, they are sure to be vigorous, blossom strongly, and grow on vigorously; and they are sure to produce handsome, well-grown, heavy fruit, without deficiency or deformity. In order to accomplish this, the uniformity of atmosphere, in the interior of the structure, should range, in the short days of winter, from 65° to 70°, increasing it as the days lengthen to 75°. The sun heat by day will, of course, raise the atmosphere's heat much higher, which may at all times be easily modified by reversing the heat from the top pipes to the bottom heat, where this arrangement is provided, and in all structures by the application of additional air and humidity, and stopping the fire. The addition of 10° or 15° of sun heat will at all times be beneficial, if humidity and air are methodically and duly applied; and this is far preferable to shading, which I never approve of. The idea of hearing so much complaint, in our uncertain climate, about the want of light, and then, as soon as we are favoured with the sight of it, to deprive plants and fruits of the benefit of it by artificial shading, after bewailing and complaining of its obscurity by clouds, seems to me always unreasonable. By adhering to the foregoing practice, vigour and health will at all times be maintained, and disease or vermin will never become troublesome.

Those who are unfortunate enough to be troubled with any kind of scale or coccus may easily eradicate them by putting in full practice, generally, the instructions given in a former paper, instead of making use of any medicated compounds, of which so many are recommended by the old authors on Pine culture. These fully show that the Pine must formerly have been subjected to very imperfect treatment; for under good methodical culture the Pine Apple is not subject to disease or vermin. The best plan I could ever discover, and which I fully recommend to those who have their plants infected, is to set to at once and get their plants into robust health, by placing them—that is, the succession and growing plants of all stages—in structures such as stated in the second article on Pine culture, applying abundance of humidity by fermenting materials, frequently turning and shaking up the linings, adding fresh materials to the summit, maintaining a strong humid heat, well charged with ammonia, always applying the water with the engine or syringe, or rose of a water-pot, overhead, well charged with ammonia, either through chimney-soot water, manure water, made from a solution of sheep, deer, or other animal droppings, with occasionally a fresh hot stone or two of lime dropped into the cask or cistern.

If the plants are methodically potted and placed on a kindly bottom heat, with plenty of ventilation, as previously recommended in treating of the succession-

growing pit, it does not signify how much heat and humidity is commanded by the fermenting materials surrounding them—the more the better, as it is easy to control or regulate it by ventilation. The summer season, when there is abundance of light, of course is the best time to carry the extirpation quickly out.

*Bicton.*

JAMES BARNES.

## VINES AND BORDERS.

I HOPE your correspondents are not finished with Vine-border treatment. No one can doubt its importance, both as to expense and future results. Mr. Tillery's practice, as recorded at page 60, is more the geothermal system than bottom heating, which of itself—without any connection with artificial heat beyond the air drain running a good distance in the ground, where it becomes warm—must be a good addition to every Vine-border. I was induced to notice this bottom heating more particularly from having seen it largely adopted in several places where efforts have been made to establish January Grape-houses on the plan of Dalkeith and Knowsley. Not any of these have been a success, which is easy to understand by considering that the drain upon the Vines, by such early work must weaken them very much, in fact, it appears a process of years to accomplish this, and keep the Vines strong and healthy.

Now, it must be more in accordance with giving strength and arriving sooner at results, if these Vines were retarded, rather than severely forced to gain a season. I suppose if Grapes ripen by January or February, they will be called new Grapes by whatever process they are got. I have done this several seasons with pot Vines, and we found a pit planted on the same plan to come to the time it was planted. These Vines were ripened late, mostly January of the next year. When taken out of the pit from a pressure for room in the early months, the tops of the pots were then turned down against a north wall and slightly covered, the canes trained up the wall. According to the season, before any signs of growth, they were removed into the ice-house where they were put upon a shelf. There is little difficulty in keeping them here till the end of July, and so the season is gained. We have not done this for the last two years because we do not want early Grapes; but if any cause arose to require them again, we should always put it in practice with pot Vines for the reasons mentioned above. At most places the demand for space in the early part of the season prevents many from being able to grow and ripen the canes in time for October starting, consequently they break badly, and in many instances disappoint those who rely upon them. F.

## WINTER BEDDING.

WE have to thank last summer for its approximation to more favoured climes. We must now extend the same to the past autumn, extraordinary for its mildness and genial weather, so much so that our rows and ribbons of Pansies, with Red and White Daisies are quite in fine bloom, having more the appearance of spring than autumn. White Candytuft (*Iberis sempervirens*), Yellow Alyssum (*Alyssum saxatile*), numerous Polyanthus, and different-coloured Primroses, show a few blooms; all of which tend to enliven and add a cheerful appearance to what would otherwise have been naked soil. Since last month we have filled a large circle with centre row, Honesty; on each side triple rows of yellow Wall-flowers, two rows of *Narcissus poeticus*; then two broad belts of blue *Myosotis*, two ditto of white *Arabis*, two ditto of *Silene rubella*; out-edging, *Cerastium tomentosum*. The *Arabis variegata* is far superior to this as an effective-leaved plant for winter, but the *Cerastium* makes a fine white row in spring when in bloom. There is also no question between *Arabis variegata* and *lucida*, the former at least in our soil. The white of the *variegata* is more distinct and shows better at all times; the stripes of *lucida* being yellow are at all times more dull.

In a long row of round beds we have planted all sorts of mixed Tulips, *Narcissus*, with stiff *Crocus* edgings, and the surface of each covered over, almost touching, with mixed *Anemones*. These latter are blooming now, and will con-

tinue, except in very bad weather, up to the first week in June. It is surprising the common single mixed Anemones are not more in favour; they are magnificent flowers, and nearly all colours from rich red and scarlet to blue and white, and no plant can be easier managed.

*Cliveden.*

J. FLEMING.

### OUR MONTHLY CHRONICLE.

ROYAL HORTICULTURAL SOCIETY.—The first spring Show was held on the 25th, and there was a very good display for the season; moreover, the subjects being ranged in the glazed and comfortably-heated eastern conservatory arcade could be inspected without dread of the weather. Not only was there a large and excellent display of Hyacinths, and early Tulips, but Cyclamens, Crocuses, Roses, Camellias, and miscellaneous flowering-plants were there in considerable numbers. As usual the finest Hyacinths were to be found in the Nurserymen's Class, where Mr. Paul took first for eighteen, with Von Schiller, Macaulay, Solfaterre, Koh-i-Noor, Miss Nightingale, King of Blues, Garrick, Van Speyk, Charles Dickens, Grand Lilas, Feruck Khan, Prince Albert, Tubiflora, Gigantea, Seraphine, Grandeur à Merveille, and Alba Maxima; and Messrs. Cutbush who were second, had also an excellent eighteen. Of new kinds not previously exhibited, *La Française*, white; *Cuvier*, pale blue with indigo stripe; *Princess Mary of Cambridge*, pale blue with a fine spike and large bells; *Beauty of Waltham*, rosy pink with white eye; and *Leviathan*, white, with a slight tinge of rose, were the most promising. In addition to their exhibitions in the above and other classes, there were large collections from the same growers. Roses in pots and cut blooms of the same in boxes were remarkably good for so early in the season, and there were some splendid Crocuses and Cyclamens, the former from Mr. Paul, the latter from Messrs. E. G. Henderson. A curious and ornamental Fig was shown, being the fruit of *Ficus Cooperi*, ripened in the garden at Chiswick. It is about the size of a small bantam's egg, and red speckled with yellowish white. If edible it would serve to give variety to the dessert.

The Floral and Fruit Committees have resumed their meetings, and the result has been two very interesting gatherings, one on the 7th, and the other on the 21st of the month, and on each occasion a scientific meeting of the Society was held afterwards, the Chairmen of the Floral and Fruit Committees, and the Rev. M. J. Berkeley making observations on the principal objects of interest exhibited; and at the last meeting Mr. Paul delivered an admirable lecture on Spring Flowers, which was listened to with great attention by a numerous audience. There can be no doubt that by these meetings the Society may do much to strengthen its position and maintain its character as a national institution; and

we look forward to their taking a yet greater development.

ROYAL BOTANIC SOCIETY.—The first of the minor shows was held on the 18th, and although the wind was exceedingly cold and cutting, there was a fair attendance of visitors, including H.R.H. the Princess of Wales and Duchess of Cambridge. Hyacinths, of course, were the principal object of the show, but there was a fair exhibition of other flowers. Mr. Paul carried off the chief honours, being first both for twelve and for a collection, Messrs. Cutbush being second. His twelve consisted of *Solfaterre*, *Von Schiller*, *Macaulay*, *King of the Blues*, *Garrick*, *Grand Lilas*, *Prince Albert*, *Grandeur à Merveille*, *Van Speyk*, *Alba Maxima*, *Tubiflora*, and *Ida*. The spikes had an air of free growth without the slightest approach to looseness, that at once marked them for the first place. The large collections of the same flower consisted of 125 pots from Mr. Paul, and 100 from Mr. Cutbush, and there were many noble spikes in each. Early Tulips, Camellias, Chinese Primulas, and Cinerarias were also well represented, and there were several exhibitions of Aucubas of different varieties, including some in fruit, and one from Messrs. E. G. Henderson in flower. The most remarkable plants in this way, however, were those sent by Mr. Laing, of Twickenham, being two plants of the common mottled-leaved kind, bearing a profusion of berries, and forming handsome objects either for out-door or house decoration. This, we believe, is the first time the common Aucuba has been seen in fruit, and Mr. Laing deserves every credit for having been the first to obtain so desirable a result, and in a few years we shall doubtless have in our gardens and squares fruitful Aucubas in abundance.

NEW VEGETABLES.—Among the novelties which are announced by Vilmorin & Co., are the following:—*Schweinfurth Cabbage*—of German origin, and described as having the largest head of any Cabbage known, being very early as compared with other large kinds, and coming in after the early York and Joannet. If sown in the beginning of March it is fit for use in August, and it is thought it may be sown for succession up to the middle of June, to come into use in October. The stem is very short, and the heart very large, somewhat flattened, and not very compact, but tender and of good quality. *Norwegian Savoy*.—Very hardy,

never being injured by frost in the climate of Paris; keeps well, and may be considered as intermediate between a Savoy and a Cabbage. It has a tall stem and very glaucous leaves, almost blue, and acquiring a reddish brown tinge after frost. The head is of medium size and excellent quality. Under the name of Chou Joulin, a small and very early Savoy is generally cultivated for market in Anjou. *Dwarf Lenormand Cauliflower*, said to be dwarfer than the original, the leaves smaller and less numerous, but the head as large. *Laitue Chicon pomme en terre*.—This is a Cos Lettuce, forming a very close heart, which being one-third under ground does not require tying. Its merits consist in the large quantity of salad which it produces in a small space.

**MARKET GARDENING AT HYÈRES.**—A company has just been formed to take advantage of the fine climate and soil of this place, for growing on an extensive scale fruits, vegetables, flowers, seeds, and plants, for market; and being in direct communication with Paris, many of the productions which in winter and early spring are brought to the London market from Algeria, will, probably, be replaced by those from this new and less distant source of supply.

**BLANCHING ENDIVE.**—When mild weather is followed by a sharp frost, Endive covered up for blanching sometimes remains a month in a green state, in consequence of growth being arrested. To obviate this, the market gardeners in the south of France adopt various expedients, such as half burying the plants. Another and more certain method consists in raising a hotbed a foot thick, in a dark close place, using fresh dung, if rapid blanching is desired, or mixing it more or less with old if they are not pressed for time; and according to the heat of the bed, the time required for blanching, varies from one to three or four days. The Endive is carefully taken up with a little earth attached to the roots, and without bruising either roots or leaves, placed upright and pressed close together on the bed. A thick roll of straw is put round the sides of the bed to prevent the escape of the heat, and the whole is lightly covered over with straw. A moderate watering is then given if the hotbed is moderate; but if strong, it is well watered. This serves to check the heat a little, which, if too strong and sudden, would cause the leaves to assume a pale colour, instead of being tender and of a rich golden yellow, as when a moist heat is afforded.

**NEW WORK ON FRUITS.**—M. Mas, President of the Horticultural Society of Ain (France), has begun to publish, under the title of "Le Verger," a work on fruits, containing descriptions and coloured plates of the varieties, together with cultural remarks. It is to appear in monthly parts, each con-

taining coloured plates of eight varieties, and sixteen pages of descriptive letterpress, the cost of which will be £1 per annum, the whole to be completed in eleven volumes.

**FOREIGN HORTICULTURAL EXHIBITIONS.**—It has been decided to hold a grand horticultural exhibition at Paris, in 1867, in conjunction with the international exhibition to be held the same year. The Amsterdam exhibition, which is to open on the 7th of this month, and close on the 12th, from the number of classes and the prizes offered, amounting to more than £1200, promises to be well attended, and many eminent horticulturists have signified their intention of being present at the horticultural congress, which is to be held concurrently. A congress is likewise to be held at the exhibition at Erfurt, on the 15th of September, and at this it is proposed to investigate the truth of the Darwinian theory. An agricultural and horticultural exhibition is likewise to be held at Cologne, from the 15th to the 31st of May.

**FOREIGN BOTANICAL APPOINTMENTS.**—Dr. Schubeler has been appointed Professor of Botany, and Director of the Christiana Botanic Garden, and Dr. Maximovicz, who has recently returned from Japan with a numerous collection of plants, has become Director of the Imperial Garden at St. Petersburg.

#### OBITUARY.

**MR. F. CHITTY**, gardener to Tom Web-ley Esq., The Uplands, Selly Park, near Birmingham, and an occasional contributor to these pages, died there on the 14th of March, after a three-days illness, at the early age of 33. His master writing in the *Journal of Horticulture*, to which Mr. Chitty was also a contributor, bears the following testimony to his worth. "Although he has been in my service but a little more than two years, yet the confidence I had in him was unbounded. He was in all things a trustworthy and faithful servant, and respected by all who knew him, not only for his ability as a gardener, but for his kind and unassuming manners. He was ever ready to impart and to receive any information connected with his profession, and though he has been here but so short a time, yet will he be much missed by the lovers of horticulture in this neighbourhood. He has left a widow and five young children (the oldest not yet nine years old), to lament his loss, and totally unprovided for." Diffident almost to a fault, he never hazarded an opinion till he felt assured of its correctness, and in his writings he was thoroughly practical, confining himself to facts which he had himself observed.

WE regret to announce the death of Mr. J. F. Wood, formerly of the Coppice, Nottingham, and for many years editor of the "Midland Florist." Some years ago he emigrated to South Australia, and established

a large nursery and vineyards there, but we have just received intelligence of his death at St. Augaston, South Australia, aged 59 years.

## CALENDAR OF OPERATIONS.

### CONSERVATORY AND SHOW-HOUSE.

THE training of conservatory climbers is always a task of some difficulty, as they should, as far as is practicable, be allowed to grow in a natural manner, to avoid the appearance of formality. Tacsonias, Passifloras, Mandevillas, and Jasminums, will now be breaking, and the young wood will require tying in; let this be done agreeably with the suggestion given above. Kennedyas, Hardenbergias, and climbers of this class, when out of bloom, should have a portion of the flowering wood cut away, which will encourage a freer growth. No plants are more pleasing and cheerful for the conservatory than these when well managed. Rough open turfy peat and sand, with plenty of water during the growing season, and kept comparatively dry through the autumn, suits them best. The very beautiful *Lapageria rosea* also bears similar treatment and should be in every greenhouse. Stove and other plants intended to decorate the conservatory from July to September should now be looked after. Allamandas, Clerodendrons, Vincas, and even Ixoras, Dipladenias, and Justicias, will do well in the conservatory, during the above season, if grown on well till May, and then gradually exposed, so as to harden them by degrees. Balsams, Globe Amaranths, and many other annuals may be also grown for this purpose. *Brugmansia suaveolens*, if grown in pots, should now have the old soil shaken from their roots, and re-potted in very rich compost. There are now several kinds of *Daturas* (belonging to the above class), which make capital conservatory plants. Nor should we forget such things as Cannas, *Hedychiums*, &c., all valuable when got forward in good time. Sow also the autumn-blooming *Tropæolums*, as *Triomphe de Gand*, and *Ipomœas*, which are splendid objects as conservatory climbers through the autumn. Look to the present inmates. Remove plants on the wane, and replenish with fresh introductions coming into bloom. Roses should now predominate. Let every care be taken to keep the house and plants in the best order as regards cleanness; and when rearranging, introduce as much variety in the general effect as possible.

### GREENHOUSE.

*Mixed Plants*.—Any things tolerably hardy, which can be removed to some kind of shelter, may now be cleared out to make room for better things. Tie out *Pelargoniums* and other specimen plants. *Epacris*, when out of bloom, should be well pruned in, and kept at the warm end of the house for a time, to encourage them to grow again. Heaths and

similar plants should occupy the most airy and lightest places. Give plenty of air, and towards the end of the month a little may be left on all night, but only when the weather is mild. *Azaleas and Camellias*.—Any of these latter out of bloom, and wanting more pot room, should be shifted at once, using a compost of sandy loam and peat, in about equal proportions, with a little silver sand where the loam is heavy, and very rotten cow-dung for large specimens. Keep them close after potting, and syringe frequently, to induce the plants to break freely. *Cinerarias*.—Little can be said more of these. The instructions given last month may be continued. Many of the plants will now be in full beauty, and will remain so for some time if removed to a north house or other cool situation. The green fly attacks the plants at this season, but a slight fumigating will remove it, without injuring the plant or flowers. Look well to large plants, and see that they are tied out as wide as possible, and kept clear of all decaying leaves; keep them, too, as near the glass as possible, to prevent their drawing. If not already done, prepare soil, by putting equal parts good turfy loam and partly decomposed stable manure together; throw these into a heap, that they may ferment; turn occasionally, to thoroughly amalgamate. *Pelargoniums*.—As the successful blooming of these plants depends on the strength and vigour of the shoots, do not allow anything to check their progress. As the branches increase in size, continue to tie them out, so as to keep them free of each other; and also, do not permit any of the plants to be crowded. Keep the foliage clean, if needful, by thoroughly using the syringe and soft water. The time is nearly at hand for the cultivation of this beautiful flower, and any care and attention will be abundantly repaid. The early flowering plants will especially demand even increased attention, as they will be fast coming into bloom. Never allow them to get dry, as that state injures the bloom, and causes the plants to lose their leaves. Do not forget to well fumigate them, to keep the green fly under, a pest which increases rapidly at this season. In bright weather, a slight shade will, in the heat of the day, be necessary; and, if late-flowering plants are required, some must be removed now into a cold pit, to keep them back.

### FORCING.

Earth-up Potatoes in frames, and the spring-raised Cauliflowers. Lettuce pricked out in frames, may be transferred to the open ground, towards the middle of the month; harden them well before removing, by allowing the

sashes to remain off day and night for a week. Prick out the first crop of Celery on a slight bottom heat. The soil should be rich and very shallow, and the plants kept close to the glass, to have them stocky and well rooted by the first week in May. Where Leeks are required early, it is a good plan to raise them on a little heat under glass, and then transplant. *Melons and Cucumbers.*—Follow our last directions, and see that the heat, both bottom and top, is at all times uniform, that no check may occur—which, with Melons particularly, is most injurious. Watch for green fly and red spider; frames and pits with these plants may be kept pretty free from these pests by occasionally washing the inside with tobacco water, with which mix a handful of sulphur. *Peach-house.*—In selecting the wood for next year's bearing, in some degree be guided by the vigour of the tree. Strong-growing trees will require the wood to be laid in pretty thick, while weakly growing ones must have it left in much thinner; with the former, leave a large crop to check too luxuriant a growth, while weakly trees should be rather under-cropped, till they gain strength. Keep down green fly; and thin the last house, if the fruit has set too thickly. The night temperature of the early house should not exceed 60°, allowing a rise of 15° to 20° under bright sun. Syringe with tepid water once or twice daily, according to the weather. *Pinery.*—If not shifted last month, the succession plants will now require repotting. Shake the soil clear away from plants at all unhealthy, or when the soil is not in a suitable state, and repot the plants in pure loam. The healthy plants should have a small shift, liberating the roots before potting; let the soil be moderately dry.

#### KITCHEN GARDEN.

All the crops above ground will be benefited by having the soil frequently stirred between the plants in dry weather, nothing conducing so much to a vigorous growth as moving the surface. Keep up the required succession of vegetables, according to the demand. Peas and Cauliflowers should have well trenched and richly manured ground, or the produce will be indifferent—in dry weather particularly, if the land is at all poor; in fact, deep working of the soil, and frequent stirrings of the surface, are the main points of success in growing nine-tenths of our vegetable crops. Sow a crop of early French Beans on a warm border, and Scarlet Runners may be sown towards the middle of the month. Thin out Onions, Parsnips, Lettuce, Carrots, Parsley, and Spinach, when large enough. Silver Beet may be sown towards the end of the month, as also Salsafy, and Scorzonera, which run when sown sooner. If you want your Rhubarb to grow as large in the stem as a tidy builder's pole, water the roots two or three times a-week with guano water or other liquid manure.

#### FRUIT GARDEN.

*Hardy Fruit.*—Finish pruning and nailing as quickly as you can. Figs are generally the first to be looked to. Have your protecting materials ready. We do not know what April may require yet, but it will be well to be fore-armed. Raspberries may be shortened back if not done; and if part are cut back to a foot from the ground they will produce a succession, carrying on the supply from the main crop till the double-bearing ones come in.

#### FLOWER GARDEN.

This month is quite as important to the flower gardener as May, as he will now be busy preparing the soil in the various beds for their forthcoming inmates, and he will also have to sow and transplant many things hardy enough to stand the climate. All vacant spaces in the herbaceous beds and shrubbery borders may now be sown with hardy annuals, having first well broken up the soil and made it fine to receive the seed. Finish pruning Tea and China Roses, also any others left at the general pruning. Prune and train wall climbers, &c., and let the whole of the ornamental shrubs, requiring cutting in, be done, that the borders, &c., may be made tidy, after which they will only require hoeing and raking occasionally. Provide stakes for Hollyhocks, &c., and the proper supports for all tall plants. The grass in many places requires mowing; do not let it grow too long, if you wish for a close bottom. *Cold Frames.*—See our last calendar; and finish all the propagating for the flower garden as quickly as possible, to enable them to get properly hardened off by planting time. Some of the hardiest things, as Calceolarias, Lobelias, &c., may be removed to turf pits, to be protected with canvas; this will allow more room for more tender things requiring glass. Softwooded plants may yet be propagated.

#### FLORIST'S FLOWERS.

*Auriculas.*—These, like many other things this spring, are unusually forward, many now being in bloom. Shade during bright sun, if the plants are facing the south, or perhaps it would be best to place them in a cool north situation, to prolong their bloom. Always popular with a class, the Auricula is now becoming generally so, and is now patronised by the great societies at their spring meeting. *Carnations and Picotees.*—No time should be lost in completing the potting of these for bloom, or planting them in beds or borders. *Dahlias.*—Propagate freely. Plants struck during the first three weeks in April, will be in ample time, yet not so forward as to become stunted before planting-out time. Pot-off first-struck cuttings, and keep them growing, if but gently. Start old roots in the bottom of vineries, or any spare place where no increase is desired, but only the old plants, which will be forward and strong. Seed should now be sown.

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No. XLI.—MAY.

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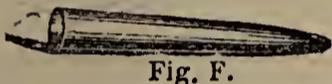


Fig. F.



Fig. C.

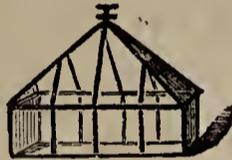


Fig. A.

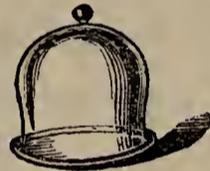


Fig. B.



Fig. G.



Fig. E.

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Fig. D.



Fig. D.

Fig. A. Hand Glasses.		s.	d.
12 inches	.....	5	6 each
14 "	.....	6	6 "
16 "	.....	7	6 "
18 "	.....	8	6 "
20 "	.....	9	6 "
24 "	.....	11	6 "

If open top, 1s. extra.

Fig. B. Propagating Glasses.		s.	d.
3 inches	.....	0	4 each
4 "	.....	0	5 "
6 "	.....	0	7 "
10 "	.....	1	2 "
12 "	.....	1	6 "
16 "	.....	3	0 "
18 "	.....	4	6 "
20 "	.....	6	0 "

Fig. C. Milk Pans.		s.	d.
6 inches	.....	0	5 each
10 "	.....	0	10½ "
14 "	.....	1	6 "
18 "	.....	2	5 "
20 "	.....	2	10 "
22 "	.....	3	4 "
24 "	.....	4	0 "

Fig. D. Hyacinth Glasses.	
Common,	2s. 6d. per dozen.
Improved,	3s. 3d. "

Crocus Glasses.	
Common,	1s. 9d. per dozen.
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Fig. E. Hyacinth Dishes.	
6 inches	..... 1s. 0d. each.
9 "	..... 1s. 6d. "
12 "	..... 2s. 6d. "

Fig. F. Cucumber Tubes.	
1d.	per running inch.

Fig. G. Rolling Pins.	
1½d.	per running inch.

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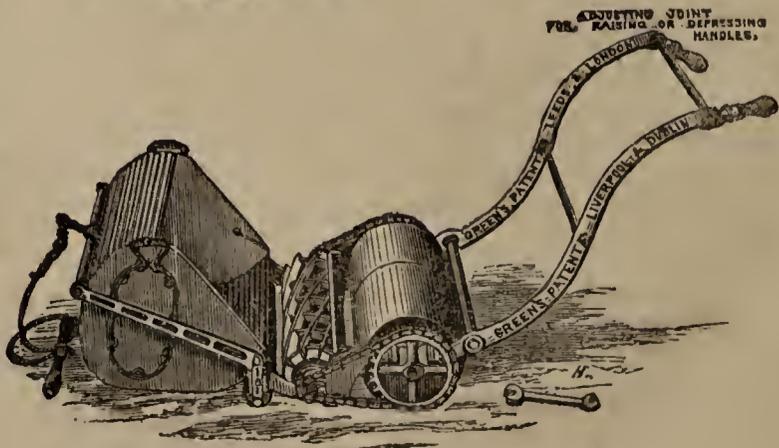
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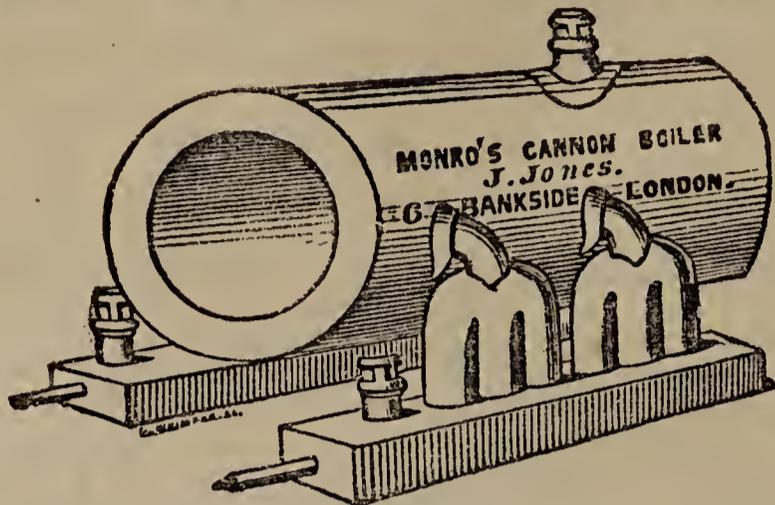
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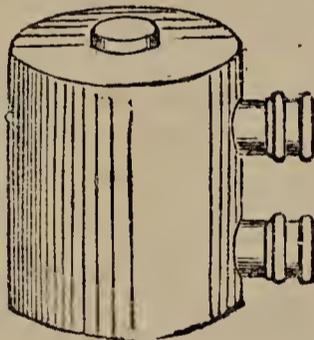
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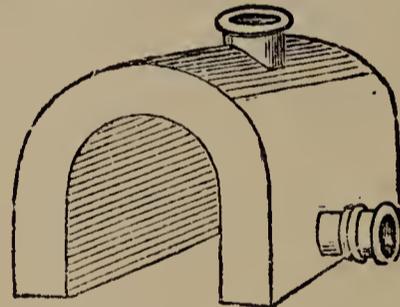
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Achimenes.

1 Rose Queen. 2 Aurora. 3 Stella.

E. Waller lith. 16, Hatton Garden.

## NEW ACHIMENES.

WITH AN ILLUSTRATION.

THE accompanying plate represents—very inadequately, for the colours are beyond the reach of art to copy—those of the most advanced of the improved smaller-flowered race of *Achimenes*, as it may be called, of which Meteor and Dazzle may be taken as the types. They were bred by Mr. A. Parsons, gardener to W. J. Blake, Esq., Danesbury, Welwyn, who has taken up the improvement of this plant with a hearty will and with very marked success; and during the last summer were submitted to the Floral Committee at South Kensington, by whom they were rewarded, ROSE QUEEN (*fig. 1*), and AURORA (*fig. 2*), by first-class certificates, and STELLA (*fig. 3*), by a second-class certificate—not that it is less beautiful than the others, for the colour is particularly rich and effective, but because it was a little further removed from the technical smoothness of margin, which is one of the main points of ideal perfection in flowers brought under the influence of the horticulturist.

We are happy to add in the raiser's own words the history of these improved forms of *Achimenes*. “It is now forty years since I first beheld what seemed to me at that time the most beautiful of plants—*Cyrilla pulchella*, afterwards called *Trevirania coccinea*, and now commonly known as *Achimenes coccinea*. What a lovely thing it seemed to my inexperienced eye! though I little thought at that time I should ever be the originator of a Mauve Queen or a Meteor, &c. This first impression was never effaced, and the plant continued ever after to be one of my especial pets. Some twenty-five years ago we received *A. rosea*, *A. grandiflora*, and a few others; but still we had no improvements as regards colour. A few years later *A. longiflora* made its appearance. This was indeed a move onwards, and I lost no time in obtaining a plant.

“In 1854 I began seeding my old favourite, and had about five hundred plants, nearly all of which came true; but I thought I could discern some improvement in two or three, which were selected, and the others thrown away. The next season I obtained an upright half-shrubby kind with bronze or salmon flowers, the name of which I forget, and began crossing with this and the best of my seedlings. In this way I obtained five or six pretty kinds, mostly rosy purples, and with them one copper or salmon-coloured sort, which was named *Parsonsii*, and was ultimately distributed by Mr. Turner. About that time I procured a plant of Sir Treherne Thomas; and by crossing between this and the best of my own seedlings I obtained *Carminata splendens*, *Gem*, and others. I had now got *Carminata splendens* to assist me, so I made Sir T. Thomas my seed-bearing plant, and the result was the production of Meteor and Dazzle, with a few other nice things. I also had a fine showy seedling of a bluish cast that I did not send out, from which with the assistance of *Longiflora major* I obtained Mauve Queen.

“I now come to the batch of 1864—Scarlet Perfection, *Vivicans*, and others. This crop of seedlings was the result of crossing with Meteor and Dazzle. The varieties named Stella, Aurora, and Rose Queen, the subjects of the annexed plate, are the results of crosses that are not yet in commerce. I am inclined to believe that Stella will prove to be a finer and better thing than the Committee thought; at any rate I think a good deal of it. This is a true and faithful account of my stewardship, so far as the breeding of hybrid *Achimenes* is concerned.

“The culture of these plants is very simple. For soil they like peat and leaf mould in equal parts, with enough silver sand to give a gritty appearance to the mass. They delight in plenty of heat, water, and shade during the

growing season, and after they show flower they may be kept cool; but upon no consideration must external air be admitted too freely. I am not acquainted with any plant that is more impatient of draughts than the *Achimenes*.”

M.

### CHRONICLES OF A TOWN GARDEN.—No. XVI.

THE much-desired “milder gales” and “warmer beams” have come at last, and what a change has resulted therefrom! “With verdure clad,” and that in its newest and brightest form, the earth smiles as it unfolds its wondrous treasures. The most surprising activity everywhere prevails, the long-pent-up forces (for the spring is unusually late) are hastening forth to furnish their quota to the beauty of the landscape. What just now was so much prized within when all outward objects were bound in the gloomy fastness of winter—the window occupants, that were a cherished link between the past of winter and the future of spring, cannot now stand in rivalry with the beautiful forms that have emerged from their earthy prison-house at the bidding of the beneficent angel Spring.

The last of the *Hyacinths* are now in the fulness of their bloom. They are *Mont Blanc*, single white; *La Dame du Lac*, single red, a very beautiful shade of pink; *Comble de Glorie*, single blue, pale azure blue, changing almost to white with age; *Veronica*, a high-coloured single red, very free blooming, one bulb in a glass had five spikes of flower; *Prince Albert*, single blue, and *Grandeur à Merveille*, blush white, a flower that has been very fine this season. In pots I have had *Keizer Alexander*, and *L'Abbé de Verac*, double blues, the former in the way of *Laurens Koster*, but not so good, the last with pale blue, well-formed flower, but a poor spike; *Gen. Havelock*, single blue, very dark, rich, and fine; *L'Etincillante*, single red, deep bright red, very showy; *Alba Maxima*, single white, a very fine flower when grown with liberal treatment; and *La Grandeur*, and *La Pine d'Or*, double yellow, two expensive but worthless representatives of this useless class. Double yellow flowers are not worthy of cultivation, and but a select few of the single flowers. The latter are well represented in *Ida*, a splendid flower that has been produced in fine form this season; *San Francisco*, deeper in colour, but very scarce; *Duc de Malakoff*, nankeen with reddish stripes, but of which there appear to be two forms in cultivation, one of them being almost destitute of the stripes. Of older, but yet good flowers, there are *Heroine*, *Alida Jacoba*, *Anna Carolina*, and *King of Holland*.

*Tulips*, both double and single, in pots, of which I have a good collection are, as yet, very partially in bloom. *Superintendent*, a single flower, white and rosy violet, is still fine and showy, though rough on the edges and deficient in form; the rose, yellow, and gold-striped *Van Thols* are also in bloom; the last being a deep scarlet flower with yellow stripes, but very small. I have also *White Eagle*, a small single white, which I take to be the same as *White Swan*. *Tournesol* double is also showing colour. In another fortnight I shall have a collection of some twenty varieties of double and single *Tulips* in bloom, all of which promise to form a grand display.

Some varieties of *Narcissi* will also bear them company as they come in in gaudy attire to celebrate the May Day festivals. Already I have the magnificent *Bazelman Major*, a large white flower with golden cup, remarkably fine; and *B. minor* (which is but the smaller bulbs sent under that name), is expanding its first flowers in company with *Sulphurine*, bright yellow with deep orange cup, which will also be very fine. *Trumpet Major*

Narcissus, a very fine form of the single Daffodil, is also in bloom both in pots and on borders, and is very showy.

To bulbs, both in glasses and pots, I have been applying the bone-flour manure, which I have received from Mr. J. F. Meston, of Kentish Town. A very small pinch of it put into the glasses containing Hyacinths, just as the buds were forming, seemed to impart vigour and force to the plants, and to heighten the beauty of the colour of the flowers. When employed in this manner it must be used very sparingly indeed, and with great caution, as a large dose will do injury to the tender rootlets. To those of my bulbs grown in pots I administered it in two forms:—1st, mixed with the soil; and 2nd, diluted with water and imparted at blooming time. In the last form I use a small teacupful boiled in six gallons of water. The bulbs appear to feed eagerly on it, and to derive considerable vigour therefrom.

Out of doors I have a very interesting collection of Crocuses in full bloom, a bed of Tournesol Tulips just showing colour; several plants of *Iris persica*, with their quaint silver grey flowers; Campernelli Jonquils, *Bulbocodium vernum*, Winter Aconites, and blue Scillas; and last, but not least, some plants of the new *Collinsia verna*, a kind present from Mr. Thompson, of Ipswich, will soon be in flower. I am awaiting with increasing interest the unfolding of this new form of beauty.

And so, amid change of circumstance and location, and under the influence of the ever-recurring mutations of daily life, I yet have about me my floral subjects—a very autocrat, and yet wielding a mild and gentle rule; and whether there be sunshine or storm, whether calamity or blessing, may I be able to copy their silent, but not less expressive example, and—

“Look up in sunshine with a smile,  
And gently bend in showers.”

Quo.

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## THE CINERARIA.

WHERE a gardener gives the public the benefit of his experience in the culture of any particular race of plants, he does so in the conviction that there are numbers who know less of the matter than himself, and would be glad to profit by what he may have to impart; still he cannot be blind to the fact, that his lucubrations must first pass through a terrible ordeal under the editorial dissecting-knife, and then run the gauntlet of the critical eyes of a great many gardeners and others who know as much, or more, than the writer himself. He can have no doubt that his work will be criticised; but then it is satisfactory to know, that of all critics the one who knows the most is the least to be dreaded, for he either remains silent or points out an error in a manner that cannot possibly offend, but is more likely to give the greatest pleasure.

In offering a few remarks on the culture of the Cineraria, I wish it to be understood that I simply give my experience to the best of my ability. I have known instances where a gentleman, having read the cultural remarks of some one, has shown them to his gardener in the hope that he might profit by them, and the gardener would take it as an attack on his own knowledge of the matter, and labour hard to show that the writer was radically wrong and knew nothing of the subject, at the same time promising wonderful things in order that his own cleverness might be apparent. Now, this is just the sort of critic who, though little to be feared, is much disliked; but he is only mischievous when he is believed, and though very clever in his own estimation, he would show his good sense by calmly and quietly discussing the matter, instead of resorting to abuse or simply contradicting what he reads.

I have for years been in the habit of growing the *Cineraria* merely as a decorative plant, seldom attempting to produce fine specimens, and this for the simple reason, that when in bloom the flowers were cut so freely as very soon to spoil the shape of the best specimens, and also to destroy the interest which one might take in producing fine individual plants. It may appear a very simple matter for ladies and gentlemen to go into the conservatory and cut flowers when and where they like, and, undoubtedly, they may have a perfect right to do so, but they ought to remember, that it has a very discouraging effect upon the gardener, who cannot take that pride and interest in his work that he otherwise would do, were he allowed to cut the flowers himself. I have, however, occasionally grown very good specimens, which when in full bloom presented a uniform surface of bloom,  $2\frac{1}{2}$  feet in diameter. When thus grown the *Cineraria* is a splendid object, and one that amply repays the little extra attention that may be requisite. This, however, is a question of choice or convenience, for I do not believe that it takes more time or attention to grow good plants than it does to grow bad ones, the only difference being, that in the former case the necessary attention is perseveringly given; in the latter there are intervals of neglect.

It is a question, I believe, undecided among growers, whether it is better to adhere strictly to named sorts of known merit, and propagate from side-shoots or offsets, or to trust to seed obtained from good sorts. I should adopt the latter method for growing plants expressly for decoration, but for exhibition purposes good named sorts are preferable. The only difficulty with them is that, after the high culture they have received, they are very apt to die-off after blooming. This, however, may be avoided to a certain extent by keeping duplicates of each sort, allowing one to grow and flower without any stimulus.

In growing *Cinerarias* from named sorts, let the old plants continue flowering as long as they will, but do not allow the seed to ripen; simply pick off the dead flowers, but do not cut the stems down. After flowering the plants should be put into a cold frame, shaded from the midday sun, and gradually hardened, so that they may be placed out of doors in a rather shady spot by midsummer. They may remain in that position, simply receiving water occasionally, until August, when the offsets may be taken off and potted singly in small pots, using a soil composed of about two parts good mellow loam, one part leaf mould, and one part sand. When potted they should be placed in a frame, the lights kept on during the day, and shaded if necessary, but uncovered entirely at night, unless it should rain heavily, when they had better be sheltered with the lights. This treatment may continue until the nights become chilly; the lights may then be kept on at night, but so long as there is no danger of frost they should be tilted 2 or 3 inches. When the young plants have made a fair start they will grow rapidly; the aim should then be to keep them growing by potting them on as they require it. The main point in cultivating the *Cineraria* is to keep the plants growing freely while young. If this is carefully attended to no green fly will appear until the plants begin to flower; but should they receive any check at this time the leaves begin to curl, and green fly appears very quickly. By about the end of November they will be in their flowering-pots, which may be eight-inch, nine-inch, or ten-inch, as may be deemed advisable; but I have found that nine-inch pots are quite large enough for any purpose, and quite as good plants may be grown in them as in those of larger size. About New-year's day the roots will have traversed nearly the whole of the soil in the pots, and then, and not till then, a little liquid manure may be given, but it should be very weak to begin with. It may be made by filling a tub with rain water, and only slightly colouring it with guano; then tie up a bag of soot and put it into the liquid, letting the

soot remain for any length of time it may be required, as it will do for several tubs of water. About the end of February a little more guano may be used in the water; but still it should be used very weak, for the *Cineraria* is a plant that will not stand over-feeding with impunity; better give it very weak each time the plants are watered, than give it too strong at once. About this time, also, the flower-buds will appear, and some of the flowering-shoots should be drawn down to the pot, and tied to a piece of matting passed round it. This will help to bring the plants into suitable form; and all the time they should stand close under the glass, so as almost to touch it. This will keep them dwarf. They will require little further attention except watering until they begin to flower, when they will require a little tying. At this time, as formerly, they will require plenty of room, in order that the foliage may receive full light and air, and that each plant may keep its proper form, which, when the plants are in full bloom, should be that of a very dwarf bush, presenting a regular and slightly convex surface of flower. If well-grown and well-flowered in this manner they will do credit to the grower, and form most beautiful objects for the conservatory.

When the young plants are raised from seed instead of offsets, the seed should be sown about the end of July or beginning of August. In sowing I have at different times adopted various modes, and young plants never failed to come up in abundance. Sometimes I have merely raked a place smooth on a shady border, sown the seed, pressed it in, and covered with a hand-glass, and, there being plenty of room to sow thinly, the plants have come up strong. I find this the best way of raising the young plants. At other times I have sown in pans, and placed them in shady parts of the greenhouse or pit; at others, again, in pots, out of doors, putting pieces of glass over them. In either case I have found the seed germinate fast enough without the least difficulty. As soon as the young plants are large enough to handle, prick them out round pots, but not thickly, taking care that they have plenty of room. When they have grown large enough, pot them singly in small pots, and continue to pot them on as they require it. This will keep them growing freely, which is the most essential part of the programme. They will be ready to put into their flowering-pots towards the end of November, or about the same time as those grown from offsets, so that from the first potting the culture of both will be similar; and, as I have described the one, nothing more need be said on that point.

As regards the time of flowering, seedlings may be had in bloom earlier than offsets, since the time of flowering will depend on the time they have been sown, although this is not invariably the case. If seed is sown in May it will not be difficult to have plants in bloom by Christmas, if a great many are grown, and they are kept in rather small pots, placed in a greenhouse after September, and kept rather close, with no more fire heat than is necessary to exclude frost. If sown about midsummer they can be had in bloom in February and March; but those sown at the beginning of August will flower in May, if kept in a free-growing state all the autumn, and cool during the winter. This also applies to plants grown from offsets, which are not easily got into early blooming except by keeping them in small pots. Any attempt to hurry them into flower is apt to bring thrips, green fly, and red spider, and the last is sure to appear if much fire heat is used. Green fly will generally attack the *Cineraria* when it is about coming into bloom, supposing the plants to have been kept growing freely while young; but it may be destroyed at any time by fumigating. When thrips or red spider attacks the *Cineraria* there is something wrong about the plants, and they will never do well, although the former may be destroyed by smoking, and the latter by sulphur. Fire heat I

consider the greatest enemy of this plant; it likes a tolerably cool and moist atmosphere, such as would be supposed to exist in a cold pit with a floor of ashes. I have kept them growing all the winter in such a place near London; but here, in North Worcestershire, I find it necessary to winter them in a greenhouse, although I consider that it is more owing to the dry bleakness than to the coldness of the air that they will not do in a cold pit. It is sometimes recommended to syringe the plants often, but as far as I have observed I can see no advantage in it; and I consider it better to maintain a little moisture in the air by keeping the floor damp. The syringe, however, may be beneficially employed now and then to wash off dust.

As regards soil, I am aware that growers differ as to the best kind for the *Cineraria*. Some recommend old mortar to be mixed with the other ingredients; others bone dust, or powdered oyster shells, &c. All I can say is that these may be used safely, and perhaps advantageously, in small proportions. I have seldom, however, used any soil except a compost of two-thirds loam, and one of leaf mould, with sand enough to keep it open and porous. I consider this is all that is really needed in potting, but a little extra stimulus may be afforded as the pots are filled with roots, and then any kind of weak liquid manure may be given; but let it be rather weaker than for most other plants, and only given as a watering when the plants require it. Although the *Cineraria* requires a moist atmosphere, and a tolerably moist soil, still the plants are soon injured by being soddened; for this reason they should not be watered too often, nor allowed to become dry; the drainage should also be perfect, and the pots kept clean.

As to sorts, the best soon go out of fashion. I have grown what have been considered good sorts, but I have had equally good from seed. If the latter is depended on it will be necessary to save it from good sorts, and they will not fail to produce good kinds. Those, however, who prefer having named sorts may depend on the following, although there are very few new ones amongst them:—Amazon, white, with dark crimson edge; Brilliant, crimson self; Captain Schreiber, azure, blue self; Celestial, blue self; Eclipse, carmine self; Estelle, white, with purple belt; James Andrews, purple self; Meteor, crimson, with white ring; Minnie, rosy lilac edge, white, with purple disk; Optima, white, with broad blue edging; Pauline, white, edge deep blue; Queen Victoria, rosy crimson, large white ring, dark centre.

F. CHITTY.

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### CULINARY APPLES.

I HAVE thought that it might be useful to some readers of the *FLORIST AND POMOLOGIST* were I to offer a list of those kinds of culinary Apples which we still retain. All are not equally good, but it is somewhat singular that several of the varieties should keep to so late a period, possibly the heat of last summer may have exercised considerable influence over them. They were stored away much in the usual way, confined to trellised shelves, with a little wheaten straw laid underneath, kept dark, and subjected to a moderate amount of air, with a temperature averaging from 40° to 48°.

*Cellini* is still in a good state of preservation. *Hambledon Deux Ans*. This beautiful Apple remains crisp in the flesh and juicy. *Mère de Ménage*, although it has lost some of its briskness, still remains in good condition. *Striped Beefing* one of our best late Apples, is now as firm and crisp in the flesh as when first gathered. *Reinette du Canada* still remains sound; flesh spongy; skin very much shrivelled. This Apple is highly spoken of, but there are very many varieties far superior in quality. The tree is liable to canker. *Tower of*

*Glammiss* is still in excellent condition. One of our largest and best culinary Apples. Occasionally subject to canker. *Bedfordshire Foundling* is another first-class Apple, equal in merit to the Tower of Glammiss, and like it subject to canker. *Brabant Bellefleur* is now in excellent condition, flesh firm and juicy. *Alfriston* is not surpassed by any, and is now in excellent condition, subject to canker in heavy retentive soil. *Yorkshire Greening* in excellent preservation. *Emperor Alexander* is much shrivelled; useless. *Beauty of Kent*. This is another valuable kind, now quite firm and juicy. *Waltham Abbey Seedling* is quite plump and sound; flesh woolly. Only secondary at this season. *Hanwell Souring* still remains sound, but so much shrivelled as to be of little use. *Northern Greening* is firm in the flesh and juicy; retains its sub-acidity. *Norfolk Beefing*, sound and good. *Blenheim Orange*, quite shrivelled, woolly in the flesh. *Warner's King*. A few of this variety still remain sound, although November is its proper season. *Gloria Mundi*. What has been said of Warner's King is applicable to this kind. *Red German* remains in excellent condition. This is a large handsome Apple, and in colour and size resembles Brabant Bellefleur and Mère de Ménage. *Wadhurst Pippin*, although a somewhat early variety, continues in good preservation. *South Carolina Pippin* is now full of juice, and in good preservation. *Kentish Pippin*, excellent, but not quite equal to some at this season. *Greaves's Pippin* is a valuable late kind, quite fresh and juicy. *Bess Pool*, shrivelled and spongy. *Gooseberry* is somewhat shrivelled, but useable. *Dumelow's Seedling*. This is among the best, if not the very best, late Apples, high-coloured, flesh firm, crisp, and juicy, and will retain its qualities till the middle or end of May. *Rymer* is quite equal to Dumelow's Seedling in every respect. *Wormsley Pippin* is somewhat shrivelled, useable, but inferior to a great many kinds during April.

*Tortworth Court.*

A. CRAMB.

[From what we have seen of the superior treatment, and the correctness of the nomenclature of the collection of fruits at Tortworth Court, such notes as these are highly valuable. We should be glad of a few more such, and also of a few words on the soil and situation.—  
ED. F. AND P.]

## CELOSIAS.

NOTHING introduced of late years is more useful and ornamental than the feathered varieties of these plants. As decorative plants, either for rooms or conservatories, they are unequalled; their colours being clear, and their habit graceful, and the culture required to bring them to perfection being easy, it is surprising that they are not more generally grown. For late exhibitions I know of no plants that would be so showy and effective from October to February as these. Perhaps the reason they are so little in favour may be attributable to the many spurious half-breeds that are frequently sent out among seeds, and which produce a comb of whity-brown or dull red, nearer to a Cockscomb than the true Celosia, but utterly useless in a decorative point of view. Another reason may be very early sowing, which invariably causes a diminutive premature spike of bloom, sufficiently puny to justify the plants being thrown away as weeds; but even those sown early may be made fine plants, with good large clusters of feathers, if the top and side blooms are pinched off, and the plants pushed on in a little bottom heat. It is impossible in its way to surpass the golden-yellow variety; but there are several, such as the Magenta, Scarlet Globe, and a variety we raised by crossing the Prince of Wales, which are unique in their way. We had last autumn the two latter varieties 4 feet 6 inches high, and nearly as much through, forming pyramids of scarlet and red feathering bunches, the most appropriate subjects for a

drawing-room I have ever seen. The Magenta is a more dense dwarf-growing sort, but its colour is conspicuous among the conservatory plants at that season.

For the principal lot in autumn, at which time they can be had finest, we sow the seed in the end of April or beginning of May, in good-sized seed-pans, putting on a bell-glass to secure them from green fly and woodlice. It will be found, if this is not done, that, except under very favourable circumstances, not a plant will be seen, for woodlice, &c., will then destroy them as fast as they come up, and the nurseryman will be blamed for sending bad seed, whereas these pests have nibbled them off before they could make their first leaf. I may mention, in passing, that the seeds are seldom bad, for if once black and ripened they keep a long time. A little bottom heat, or such a place as the old Cockscombs or Balsams need, is generally recommended, and will bring up the seed in a short time; but if no bottom heat can be afforded, a warm shelf will answer equally well, only the seeds will be a little longer in germinating. When of sufficient size to handle, the most forward seedlings are put in thumb-pots, and the others pricked off in pots or boxes for succession. Some of them will show flower early, particularly if pushed on with heat, but, as before stated, the flowers must be pinched out as they appear; others, at a later stage, will show a partial comb—this must also be pinched. Where they do not show bloom, pinching will also be necessary to make dense uniform plants, bearing in mind the time at which they will be required to flower. I have never seen good effective plants from early sowing, nor the yellow variety, when so treated, assume that fine, feathery, golden tint that it does at the commencement of autumn and retains up to February.

*Cliveden.*

J. FLEMING.

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### CULTURE OF CELERY.

A FEW remarks on some of the principal points connected with the cultivation and management of this much-esteemed vegetable may not be out of place at this season, when the plants are under a course of preparation for future purposes. It is important, in this course of preparation, to keep in view that the principal care is to keep the plants constantly in a free-growing state, in order to guard against the tendency to run to seed, which is more often induced by some serious check during growth than by any other cause. It should be remembered that the plant is really a biennial, and would not, under ordinary natural conditions, flower until the second year; but, under a course of artificial treatment, it is started into growth much earlier than would be the case in a state of nature, and, when this is the case, like many other biennials, there is a great tendency to flower in the autumn, only to be counteracted by a very liberal treatment, both as regards plenty of space for development, and copious supplies of liquid food. That this last is an absolute necessity, we are taught by the fact that the native habitat of the plant is slimy ditches on the seashore, into which the tide constantly ebbs and flows.

**SOWING THE SEED.**—For very early purposes a large seed-pan should be sowed very early in February, placed in a brisk heat until the seeds have germinated, and the seedlings gradually hardened for pricking-out; but for the general crop the first week in March is preferable, and the sowing should be made on a gentle hotbed, and kept covered until germination takes place, after which every opportunity of fine weather must be taken to give full exposure. Keep the surface of the bed moist by frequent sprinklings of water, and on no account allow the seedlings to remain long enough in the seed-bed to become drawn up weakly. This is a very common but great mistake; it gives a check which entails a very considerable loss of time, besides inducing the tendency to flower.

**PRICKING-OUT THE SEEDLINGS.**—The great object of this operation is to get the plants strong and sturdy, with plenty of good fibrous roots, for which purpose, where only a superior article is tolerated, they must have ample space for development when pricked-out previous to transplanting.

A good plan is to select a warm border, and remove the soil to the depth of 4 or 5 inches, tread the bottom down firm and level, and cover it with a couple of inches of fine sand, and fill up level with light rich soil, taking care to give it a good soaking of water some time previous to pricking-out the plants. The distance at which they should stand apart in these beds should never be less than 4 inches for general purposes; but, if required extra fine and large, 6 inches every way is not too much. They should never be allowed to want for water; drought is a great enemy, bringing rust, stagnation, curled-up leaves, and a train of ills highly detrimental to their perfect development.

**PREPARATION FOR FINAL TRANSPLANTING.**—Having at no little trouble secured fine strong plants, it would be a pity to spoil the whole for want of a little further attention, and therefore an equal amount of care and labour must be bestowed upon the soil. In the first place it is advisable to select, if possible, a soil which is strong and naturally rather moist, or rather, I should say, so strong as to be retentive of moisture, because if the moisture proceeds from stagnant water owing to bad drainage, it is useless for the purpose. Strong soil usually requires considerably less watering than light sandy soils; it moreover produces better flavoured and crisper Celery, and is, therefore, to be preferred where choice is possible. In the next place the convenience for watering should be taken into consideration, the principal object being to arrange matters so that this most important operation can be carried on with the least possible expenditure of labour. If it were only a casual operation, it would not so much matter; but, as it requires to be constantly followed up in dry weather, it becomes a serious question at a busy time. For the same reason it is desirable that the system of cropping should be such as to allow of the whole crop being together in one piece. The space set apart for the purpose should be thoroughly well trenched-over during the winter. This will insure an equal drainage throughout, and will also reduce the soil to the proper working condition for all future operations, as well as disturb the eggs and larvæ of insects likely to be injurious; and, still further to secure this desirable object, after the ground is thus roughly thrown up, I would strongly recommend that the whole of the surface should be drenched with ammoniacal liquor from the gas works, and that, the first dry day afterwards, the surface should be roughly forked over, and then left to become consolidated. About a month previous to planting, dig out the trenches either for single, double, or treble rows, according as the consumption is large or small. In treble rows more plants can be grown on a given space, but single rows produce the largest-sized sticks. Previous to wheeling in the manure, let the bottoms of the trenches be again saturated with ammoniacal liquor, and the trenches filled up nearly level with manure, and left in that state for a few days.

It is important to observe that the manure should be thoroughly decomposed. No half-decayed matter will ever produce superior Celery; there is too much bulk for fattening matter, and it soon becomes exhausted; but the rich mud which sometimes settles at the bottom of horseponds, as they are often called—that is, little pools which are impregnated with the drainage of farmyards—will bring it to very great perfection, probably on account of the saline matter contained therein; but, whatever is used, it must be in a condition to be taken up by the plants at once, and should be thoroughly incorporated with the soil, which is best performed by first turning it in roughly with a spade, and then back again with a digging-fork, by which it will be sufficiently mixed, and the

trenches will be ready for planting. The depth of the trenches must be regulated by the quantity of manure; when finished for planting, 3 inches below the surface level is quite enough. It is a mistake to have them so very deep, as is often practised.

The operator, having thus prepared his trenches in good time, will be able to seize the first opportunity when his plants are ready to get them planted out, which should be done as soon as the foliage meets, and before the plants can be drawn up by crowding. In planting take up the plants with a large ball, which the sandy bottom of the bed will much facilitate, and plant them in the trenches with a trowel, 9 inches apart for ordinary purposes, but for extra fine a foot is not too much. Let them be well supplied with water, and now and then a dose of liquid manure, and sometimes a handful of salt put in the water.

When earthing-up is commenced, which should not be until the plants have attained a good size, the practice of pushing the soil against the plants in the form of a little ridge cannot be too much deprecated, because it is calculated to throw off all the water from the roots, and at that period of growth they still require a good supply. A better practice is for the operator to take his soil a foot away from the plants in the row, and lay it against the plants in such a way that, when finished, the top will be level instead of sloping. At the final earthing, however, this ridge-like form will be necessary for the purpose of throwing off the rains during the winter season.

JOHN COX.

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### THE CULTURE OF THE HYDRANGEA HORTENSIS.

THIS beautiful plant is not sufficiently hardy to stand our winters. In Ireland and along the south coast of England it flourishes well without any protection, and attains the size of a large bush, forming a noble object when covered with fine heads of its grand flowers.

Its merits as a conservatory and in-door decorative plant are such as will always secure for it a place under glass in most gardens. It bears forcing well and can be had in very fine flower in April. The flowers last a very considerable time, so that any person with a few plants and a little management may have a succession of these truly beautiful flowers from April till October. A few remarks on its culture may not be altogether unacceptable.

It is very readily increased by cuttings of the young wood, which root very freely in a little bottom heat. Small plants, when properly managed, produce very large heads of flowers. Old bushy plants that have a number of shoots never produce such large heads of flowers as small plants that produce only one head of flowers each. If it be desirable to grow small plants for their large heads of flowers, they must be struck from cuttings every year. The present is a good time to put in cuttings. I generally get as strong cuttings as I can, and when prepared I put them into small pots, one in a pot, and then place them in a nice close heat. In a short time they will all be rooted and fit for a shift into a larger-sized pot. The strongest I shift into small 48-sized pots, and the weakest into large 60's, using nothing but strong loam. The plants are then placed in a cold pit, which is kept rather close until they begin to root into the fresh soil, when air should be given very freely, and the plants watered when necessary. In about three or four weeks' time the plants will require another shift. The largest I put into 24-sized pots, and the smallest into 32-sized pots. They are again returned to the cold pit, and are regularly attended to with water, giving them all the light and air possible. About the

beginning of August I place them at the foot of a south wall, where they are fully exposed to the sun; the pots should be plunged in decayed tan, leaves, or ashes, to protect the roots from injury. The plants should have little or no water after this time, only just sufficient to keep the roots from suffering. The plants should remain in this situation until the middle of October, by which time the buds will be properly matured. They should then be placed in a cold pit, as near the light as possible, and they should be carefully protected from frost. They will scarcely need any water whilst here, as they should be kept dry and free from damp. About three batches of plants will furnish a succession of flowers from April until October. The first lot should be introduced into the forcing-house, or into a vinery just started, about Christmas, and should be syringed daily until they begin to break; when they get into full leaf they will require liberal supplies of water. With proper management these plants will be in flower in April. The second batch of plants should be introduced into the forcing-house about the middle of March; with care and attention these will be in flower in June. The third batch of plants should be allowed to break naturally; these will be in flower in August.

For in-door decoration the *Hydrangea* is invaluable, as the flowers last a long time; and as young plants are easily grown every year from cuttings, it matters little whether or not the plants suffer whilst in-doors, for if it be not desirable to grow large plants, the whole may be thrown on the rubbish-heap as soon as they have done flowering. A few should, however, be saved if it be desirable to have some large plants. If a few of the first batch that have been forced be cut down to within a joint or two of the root after they have done flowering, and put into a little heat, they will soon break afresh. The buds should be well thinned, only three or at most four shoots should be allowed to grow, and these should be of as nearly equal strength as possible. When a few leaves have got fully expanded the plants should be fresh potted; as much of the old soil as possible should be removed from the ball without injuring the roots. In general, 16-sized pots will be quite large enough. Use nothing but good, fresh, strong loam for potting. When potted they should be placed in a cold frame, and properly attended to in watering, giving air, &c. Towards the middle or end of August, when their growth is completed, they should be set out of doors at the foot of a south wall, and treated as in the former season. These plants will flower well the following season.

If some of the plants that have flowered late are kept until the following January or February, and then cut down to within a joint or two of the root and placed in a vinery or Peach-house where there is a little heat, they will soon break, and with very little trouble will make good plants; but will not, of course, flower until the following season.

Some of these plants if kept a few years and properly attended to may be grown to large-sized bushes, and though the heads of flowers are individually much smaller than those from young plants, they are, nevertheless, grand objects when in full flower, and make a fine display towards the autumn in the flower garden, whether set about in vases or planted in the border.

*Stourton.*

M. SAUL.

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## CAMELLIAS.

WRITERS may well speak in praise of this most beautiful evergreen plant, while maintained in luxuriant health, with its thick dark shining foliage, it is an ornament in any place, and at any season, whether in bloom or not. I well recollect the pleasure I felt nearly half a century ago on visiting the houses of Messrs. Lee & Kennedy at Hammersmith, Loddiges at Hackney, and Colvill's

in the King's Road, Chelsea, and observing these beautiful evergreen plants, with flowers of various colours, blooming throughout the cold, snowy, and frosty weather of late winter and early spring. Since then there have been great improvements made in the varieties and in culture. Poor Robert Sweet was then in his glory amongst them and the noble collection for those days of other plants at Colvill's. Another thing, too, used to delight my sight and hearing at that time, on visiting Sweet's private house, which I frequently did, was the success with which he managed to keep several nightingales and redstarts in health and song throughout the short cold days of winter. Sweet and Edward Body, a coach builder and near neighbour of Sweet, were the only two persons whom I knew to succeed so well in keeping those beautiful songsters in health and singing all winter.

But I was going to make some practical remarks on the Camellia. An orange-house was built here twenty-five years ago. It was about 120 feet long by 22 wide, span-roofed, and about 18 feet high, and had a wall on the north side, and upright sashes in front, made in two, so as either to lift up or slide down, for air-giving. Between the sashes were ornamental pillars, presenting a flat surface inside of about 16 or 18 inches. In the centre of the house was a border, and another went all round. The former was occupied by Orange trees in tubs, intermixed with a batch of Camellias in pots, &c., amounting in all to sixty varieties or more. I set to work and retubbed and repotted the whole, Oranges as well as Camellias, and they grew with such luxuriance, and became so crowded that many of the larger Camellias had to be turned out of doors, where all of them have done well, growing and flowering; many of them are 12 feet or more high. Although this has been a long trying winter, thousands of blooms expand between the frosty nights, and there is always a succession of bloom-buds ready to replace the flowers which are cut off by frost or fall naturally. It is no common sight to see fine clumps of Camellias, healthy and in full bloom, in the open air—hardier than the common Laurel.

In about seven years the house again became so crowded that I mentioned to my noble employer that something must be done—either the Orange trees or the Camellias must be done away with, in order that justice might be done to the other. Her Ladyship at once saw the necessity, and said that an Orange-house should at once be erected. This was done, and I obtained a noble house 90 feet long, and about 60 wide—a little winter garden. Preparation was of course made at once for turning out the Orange trees—but how this was done I need not relate—and the Camellias, after making their wood and setting their buds, being in large tubs, pots, &c., were all turned out of doors, the house thoroughly washed, cleaned, and painted. A wire trellis was placed against the back wall, also on the spaces between the sashes inside. Meanwhile no time was lost in collecting together from the soil-stacks, &c., the materials of which I intended to make the new border, in which the Camellias were to be turned out on their return to the house. Painting and cleaning being finished, a quantity of charcoal was brought in, rubble collected for drainage, and a compost prepared, consisting of heath soil, light turfy loam—healthy turfy loam, such as the healthy turfy loam we make use of for Pine-culture—in quantities of about one-third of each, a large quantity of sharp clean-washed drift or river sand, and a goodly portion of charcoal, all well mixed together. A little mountain of this compost having been made ready, and the old borders taken out to about the depth of 3 feet (this was necessary on account of the large tubs and pots the Camellias were in, the balls being consequently large and deep) rubble was first put in, consisting of broken bricks and large pieces of charcoal, to the depth of from 9 to 12 inches; then tough rooty

grass turves from the above soils, intermixed, were turned grass-side downwards over the rubble. Before planting the arrangement of the plants in the borders was settled on out of doors, in order to insure the colours, &c., being intermixed. Turning out was commenced at one end, by placing under each plant the requisite quantity of soil to bring the whole of their collars 8 or 9 inches above the stone curb of the walk, which runs all round, in order to allow for the settling down of the soil. As the plants were turned out and arranged, men were employed wheeling in and filling up with the compost, treading and ramming it in between and about the plants till the whole was regularly filled up, and the border finished off. The plants of course were tied and trained to their trellises all round, and Oak stumps were cut out and driven in all round the outside of the centre border, a strong line being stretched all round them, in order to tie right and left all the plants in the centre border, bring them into shape, and fill the vacancies. All being so far completed, and the pavement, &c., washed clean, the engine was set to work morning and evening, and the plants kept well washed down for three or four weeks. Abundance of air was given, and the buds thinned; they soon became plump, and produced a fine show of bloom throughout the winter and spring. In the middle of April all the remaining blooms and bloom-buds were pulled off, and gentle heat given at night, there being the means for affording it in a very suitable way in the shape of three pipes running all round from a boiler that heats other houses. These hot-water pipes are under the footpath, with two rows of very neat iron gratings all round between the outside curb-stone and centre slab. Portland stone is the kind used, and it looks very nice when clean. The growth of the Camellias was something marvellous—such shoots and foliage. With a little heat, and thorough washing down with tepid water morning and evening for five or six weeks, they grew like Willows.

When the intended growth is completed, and the buds formed, rest is allowed by shutting off the heat, and throwing open the sashes and doors night and day. When the buds become plump and too thick, we commence thinning in July, and from that time till September much thinning has now to be done, bushels of buds being taken off. The Camellias in the centre and the outside border soon got to the top of the house, plants running up and under the rafters, forming an arch overhead, and being a fine sight from September to the middle of April, when they are covered with thousands and tens of thousands of flowers. It is now years since they have so completely filled the house, and much pruning has to be done. We adopt the following method with great success. In the middle of April all bloom and buds are pulled off, and all the trellis plants are unfastened; the whole of the plants are then pruned, thinned, all superfluous wood being removed, and well cut in where required. Fresh compost is added and forked in; good soakings of clear manure water are given; the whole of the plants are thoroughly washed down with a powerful engine; heat is turned on; and the washing with the engine is continued morning and evening for about six weeks. The house is shut up early, and when full of vapour; and aired like hothouse plants, their growth is marvellously rapid. When they are fairly started into growth, clear chimney-soot water is made use of pretty freely in washing down, and manure water given at the roots. In about five or six weeks the plants are like trees in a wood, meeting together over the walks, and having fine strong young wood, and large dark foliage. When forming their bloom-buds at the end of every shoot, washing down, heat, and waterings at the root are restricted to some extent, abundance of air being given night and day. They are washed well of a morning pretty often throughout summer, and water is given at the root occasionally when required. Bud-thinning is carried on till September or

weeks longer if required, the object being to have only one bud to each shoot if possible. In September all the plants are again tied to the trellises, &c., and brought inside the curbs; everything is cleaned up, made neat and healthy, and, if any weak or superfluous wood is then found, it is taken out. A few more washings with clean water are given, in order to assist the foliage and shoots to recover themselves after being turned about in tying-in. Some of the earliest flower-buds are now opening, and thousands are ready to open naturally, or in the short days, with the assistance of a little heat, if required. No washing down is done after this till growing time comes again; water, of course, is applied in any quantity required to the roots, taking care not to let any be spilled about the house at this season, as it is more or less injurious to plants in bloom in the winter months.

The Camellias growing out of doors have similar soil, but no shelter except in very severe weather, and when they are coming in bloom sticking a few boughs on the sunny side, to keep off the glare of the sun. The severe winter of 1860-61, that killed all the Magnolias, Bays, and many other plants, and browned a good deal the common Laurel, never injured one of the Camellias here in the least, and they are planted in every aspect.

JAMES BARNES.

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### SPRING-FLOWERING PLANTS.

I AM in my garden surveying a group of the above that are about me. Just there is a clump of the common Primrose, singularly gay just now in its simplicity of attire—one of the lowest forms of floral life; and yonder there are the more stately forms of Tulips and Polyanthus Narcissi—the very aristocracy of the community who are gathered here. Some forms are already passing away, scarcely a flower relieves the stout grassy foliage of an edging of Snowdrops, but just now teeming with “snow-white blossoms.” The quaint-looking little *Bulbocodium vernum*, one of the most unpretending of spring flowers, has Crocus-like blossoms of a pale violet, with white tips, too modest to make much display, and yet too interesting to be quite overlooked. These, with an edging of Crocuses, are “passing away” also.

Of the latter, I flowered this season a large and varied collection. Of yellows, I have used only the Golden Yellow, that blooms a little later than the Cloth of Gold, but not so late as the common Yellow: it comes into bloom with the other colours. Round an oval-shaped bed on a grass plat (in which I have a centre of *Tulipa Gesneriana*, surrounded with *Tournesol* double Tulip), I flowered the following varieties of Crocus:—Golden Yellow. Of blue: Gen. Pelissier, Charles Dickens, Vulcan, Sir John Franklin, Jupiter, Von Schiller, Sir R. Peel, Othello, Loveliness, David Rizzio, La Simplicité, and Ne Plus Ultra. Of striped flowers: Princess Alexandra, sent to me from Holland as new, a very large and beautiful variety; Baron Chasse, Napoleon, Sir Walter Scott, Leviathan, Philader, Duchess of Sutherland, a small but very novel flower, heavily striped with violet; Maria, La Sylphide, Albion, Miss Priestly, and Géant des Batailles. Of whites, Grand Vainqueur, Porpus, Isabella, Queen Victoria, Marie Antionette, Florence Nightingale, Goldfinder, very fine, with rich dark orange stamens; and Mammoth. Though among these divisions of colour there were many points of resemblance, yet I seemed to detect more or less in each some small distinctiveness of character, either in size, or height, or shape, or in the form of the stamens or their colour, in the time of flowering, or in the purity and depth of the colour of the flowers. I noticed also perceptible differences in the size, and height, and colour of the foliage in flowers of the same colour; which, however, might have been

occasioned by conditions of soil, or weather, or situation. Altogether they made up a charming picture during the period of their brief existence.

I have also a kind of ribbon-border on a small scale, that is particularly gay just now. Winter Aconites form a front row; next is a line of the pretty blue *Scilla sibirica*, that in a shady position flowers remarkably freely, being profusely charged with spikes of flowers; there is behind these a row of Primroses and Cowslips, all the common yellow varieties; and as a background a line of mixed Crocuses.

Then about me are the singular-looking forms of the Persian Iris, with curious silver grey flowers having dark tips; Daffodils; Van Sion double Narcissi, but a deeper-coloured and rather larger Daffodil; the large and showy Trumpet Major single Narcissus, with bright golden flowers; Campernelli Jonquils; the gay Tournesol double Tulip; clumps of the white-flowering *Iberis Tenoriana*; tufts of Pansies (poor Ophelia's melancholy souvenir, "There's Pansies, that's for thoughts"); *Alyssum saxatile*, and some double Daisies. By clumping any of these in beds, or on borders, or by arranging them in lines, can there be obtained in the early spring months a charming display, lasting nearly till the bedding-out season commences. R. D.

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## ON THE FLOW OF SAP IN TREES.

A WRITER in the last century observed that the "Theory of vegetation should be studied by every one who purposes to make any proficiency in gardening and agriculture," but though there has been much improvement in both since his day, still there is not, perhaps, one gardener in ten, or one farmer in a hundred, who follows his advice. However, for the sake of those who have not studied the subject, I may offer a few remarks upon it. The common belief is that the sap ascends in spring, and descends into the roots of trees before winter. The latter is a vulgar error, which I shall notice afterwards, and writers differ in opinion respecting the former. It is certain, however, that sap does ascend in spring, and the modern belief is that it rises into the sap vessels by the mixing of the denser fluids absorbed by the roots from the soil, in a similar way to that in which currents of fluids of different densities are transmitted by the process called endosmose. M. Dutrochet was the first to notice this, and the theory is spoken highly of by others; but without the aid of the capillary attraction of the sap vessels, and, perhaps, evaporation from every twig and leaf, his theory may be less satisfactory than that of De Saussure, who observes that "the sap's ascent is to be found in a peculiar species of irritability inherent in the sap vessels themselves . . . and thus the fluid is propelled from cylinder to cylinder till it reaches the summit of the plants." Either way, however, accords with the fact of roots sending up sap after the tops have been cut off close to the ground, or even below it, rendering the downward pressure of air from their tops, spoken of by others, useless; and as regards the sap being stored in the roots during winter, evergreens grow in wild winters, and deciduous trees are full of torpid sap. This may be seen by putting the end of a fresh-cut stick into the fire, when the juice will ooze out of the other end. If woodmen were to notice this fact they might see that summer is the best season to fell valuable trees, in order to let them lie awhile with their branches, that the leaves may draw off the sap. If this plan were generally adopted, perhaps there would be fewer complaints of "sap wood" and dry rot in timber, and the better quality of the Oak wood might make up for the loss of the bark, which can only be peeled off in spring. What used

to be considered a second or mid-summer's flow of sap is only the effect of refreshing rain after long drought.

Connected with the sap's descent into the roots, I may mention that if an incision is made in the stem of a tree in spring, in autumn the upper lip or cut may be swollen, but not the under one, something like the swollen ends of grafts of the current year which happen to be badly united to the stocks. Both have been held as proof of the sap's descent into the roots, whereas they are only the effects of the proper juice checked when conveying nourishment to the roots, as well as to every part of the tree, after being elaborated in the leaves by the influence of the sun. During that process the leaves exhale the refuse sap, forming the noxious vapour complained of when plants are kept in close rooms. It is also injurious to plants themselves, especially when various sorts are kept in one house—for instance, Cape Heaths seldom thrive along with Geraniums. Hence the great utility of ventilating or giving air to plants under glass to enable the leaves to elaborate the sap when passing through their upper sides on its way to the under ones, where, perhaps, the refining process just noticed takes place. I may further observe that the health of plants depends more upon the quality of the sap in the descending vessels than on the quantity of crude juice absorbed by the roots in the ascending ones. It may be seen by this that it is wrong to give plants liquid manures during dull weather, and more so to weak ones at any time, as their leaves are too sickly to elaborate the strong juice which descends by the veins in the under sides of their stalks to those between the inner bark and the wood. Its descent may be caused by pressure of air; but be that as it may, it is certain that the descending sap conveys the whole nourishment which forms the annual rings of wood, and also those of the inner bark. The sap vessels are merely open tubes, through which the juice flows, but more slowly when reversed: hence the plan of bending down strong shoots to make them fruitful, but in all cases of weeping branches the crude sap descends, that which is elaborated ascends. It is certain that sap flows in the heart wood of young trees, but not so in those of old ones; and I am of opinion that the pith or heart of a tree is the vent for the sap before the vessels are formed, and also that the descending ones of the present year are the ascending ones of the following one, and thus the life of a tree may last long after the heart wood is gone and the tree hollow.

J. WIGHTON.

## THE CULTURE OF THE PINE APPLE.—No. V.

VARIETIES.—There are many varieties of the Pine Apple, and the many and various methods of culture, or rather treatment, the queen of fruits has been subjected to, make it appear that there are a great many more varieties than there really are.

The *Queen*, there can be no doubt, for all seasons and purposes is one of the best. It will grow and make a mature fruiting plant earlier, is easily started into fruit when required, and will swell off, mature, and ripen its fruit in less time than any other variety I am acquainted with. It will keep for some time in good condition after being cut—indeed will improve in flavour and mellowness through nine months out of twelve. Just in the dark, short and cold days of winter, if cut and hung, it is liable sometimes to turn of a dark colour inside and lose its flavour, and more particularly if hung up or placed in a cold situation. I have grown the *Queen* to the weight of more than 8 lbs.

*Anson's Queen*, *Lemon Queen*, and *Antigua Queen*, I have discarded years since, also the *Otaheite*. Although I have grown some very large well-swelled fruit of them, particularly the latter, they are uncertain in flavour, except in the hot summer months, and the *Otaheite* to be good requires eating within two days of its being cut or ripe.

The *Black Antigua*, and the *Brown* or *Mottled*, I only cultivate a plant or two of for the same reason. I have grown the fruit of the *Brown Antigua* above 9 lbs. in weight.

The *Montserrat* has pips as flat and large as a copper penny; I only grow a plant or two of it. Though a rich fine-flavoured Pine when well grown and ripened, it does not maintain its flavour long after being cut, and its colour does not recommend it.

The *Russian Globe* and *Trinidad* I have grown to an immense size. They are coarse, and will not keep their flavour if not made use of soon after being ripe. Being soft and tender they are not good to pack or send to a distance.

*Black Jamaica* is a charming winter-swelling Pine, handsome in shape, maintaining a splendid flavour for some time after being cut or ripe. If well cultivated it takes considerably more time to swell and ripen than the *Queen*.

*Green Olive* or *St. Vincent* is another very good winter variety, although a very slow-growing plant, and also a slow-swelling fruit. If the plant is in a vigorous healthy state the fruit, though slow in swelling, is sure to finish well; it is plump and handsome, weighty according to its size, and of good flavour at all seasons, though short and generally from 3 to 4 lbs. I was astonished with a fruit I once grew of it, six pips deep, swelling out so plump that it weighed  $6\frac{1}{2}$  lbs.

The *Eville*, a selected good variety, is a very useful Pine, and swells well at all seasons, and if well managed, though a long sugar-loaf kind of fruit, will colour well from base to summit, and will keep good a moderate time after being ripe. Though generally the weight is from 4 to 7 lbs, I have grown it nearly 10 lbs. in weight. What I mean by a well selected good variety is never to save suckers from those that produce cockscombs, crowns, or any other deformity or deficiency. This is a standing rule with all varieties with me.

The *Smooth Cayenne* is certainly not second to any variety. It is a good-swelling fruit at all seasons of the year, comes a good colour and flavour at all times, is solid, crisp, and juicy—that is, if well done—is easy to start into fruit at all times, and ought to have a place in every collection of Pine Apples. The *Smooth Cayenne* is not very free in producing suckers; but when well grown, by a little management of the old stools, after the fruit are cut, a good stock may always be maintained. It is a weighty solid fruit when well managed, at all seasons weighing well in proportion to its size. I have grown it above 9 lbs. in weight, but, to take the year, and allowing for winter small plants, the general run of fruit is in weight from 4 to 8 lbs. There is a spurious variety I have seen palmed off on some people which is nothing but the old, worthless, *Smooth* or *Green Havannah* of olden times, long discarded by the generality of Pine-cultivators. I once called on a friend who drew my attention to a rare batch of young *Smooth Cayennes*. He said he had met with a bargain. I told him, on seeing them, that it was my opinion that they were nothing but the worthless smooth *Green Havannah*, and thus they proved in time, and were all cast to the rubbish-heap. I mention this, as I have seen and been informed by others since, that they have fallen into the same error and disappointment. Although easily detected by the generality of practical men, such useless rubbish is sometimes palmed off on the unwary.

The *Prickly Cayenne*, although a handsome Pine, and I have grown it very large and heavy, is a coarse fruit. It is apt to ooze out its juices at the base almost before it is ripe—is tender, soft, and will keep but a short time after being ripe without losing its colour and flavour. It is not worth growing in a small collection. I grow only a few plants of it now, but have had some exceedingly heavy fruit of it.

The old *Globe* is an erect-growing variety, not taking much room when well done; produces a noble globular-shaped fruit, but requires eating as soon as cut, for in a few days it gets soft and discoloured. I have grown it from 8 to 9 lbs. in weight and truly handsome.

The *Black Prince* is another very handsome Pine in colour and shape when well grown, but coarse and a bad keeper after being ripe. I have also seen another defect in this fruit in some places; it commences decaying at the base previous to being coloured at the summit. I never grew but a plant or two of it. The

finest fruit, and the most regular-coloured I ever grew or saw, I cut on the 17th of October last; it was  $23\frac{1}{2}$  inches in circumference,  $15\frac{1}{2}$  inches high, and weighed  $11\frac{1}{2}$  lbs.—a very noble and good-looking fruit.

*Charlotte Rothschild* is also allowed to be a pretty good Pine. I have grown some handsome, weighty fruit of it, up to 8 lbs., but rather fear it is a tender, soft, not very good-keeping fruit. When well-grown and finished it will, like the Prickly Cayenne, and some other varieties of that strain, early discolour after being well ripened.

*Providence* I grow only a few plants of—the White variety, of course. When well grown from a good-selected stock, for years past, it is not only a noble plant, but produces very noble fruit, having grown many from 10 to 12 lbs.; and the largest and handsomest I ever grew was three years since—it weighed  $13\frac{3}{4}$  lbs., was a truly handsome, well-coloured and well-finished fruit.

*Sugar-loaf* varieties, of which I grew handsome fruit for some years, I have almost discarded of late years. After all the varieties I have cultivated within these last forty-five years or more, there are but really few varieties, taking all into consideration, that are really capable of being profitably cultivated. I have seen and cultivated many more varieties than I have enumerated, and, after proving them, discarded them as not worthy of culture. I have three or four useful seedlings, one in particular for winter use, being a handsome good sweller, but never above three or four pips high, consequently it does not run very heavy, but its flavour is always well spoken of; still, as none of them are superior to our best varieties, little need be said of them.

*Bicton.*

JAMES BARNES.

## OUR CONTEMPORARIES.

L'ILLUSTRATION HORTICOLE.—This is edited by M. Lemaire, Professor of Botany, published by M. Ambroise Verschaffelt, of Ghent, and profusely illustrated with good coloured plates. The January part contains the following:—

*Amorphophallus nivosus*.—A singular Aroid, discovered in 1863 by M. Barquin, in the province of Para in Brazil. From a tuber as large as a man's head springs a tall stem, or rather columnar leaf-stalk, surmounted by three compound leaflets, forming a spreading head like that of a Palm. The leaf-stalk is brownish, elegantly blotched with white and red, like the skin of a serpent, and, like it, giving the idea of something poisonous. This plant appears to be the colossus of the genus; for whilst *Amorphophallus campanulatus*, which is considered the typical plant, has leaf-stalks not exceeding 2 feet in height, the plant of *nivosus*, exhibited at the Brussels Exhibition, was 8 feet high. Accompanying the description is a lithographic plate of the stem-section, together with the flower of *campanulatus*, and the dissections of its parts.

*Dipladenia nobilis*.—Introduced in 1847, this plant had disappeared from cultivation till a short time ago, when M. A. Verschaffelt received it from the province of St. Catherine, in Brazil, where it was first discovered. The tuber is of irregular shape, and found in alluvial soil, which, in the rainy season, is submerged; but when the waters have subsided it sends up its slender twining stems  $2\frac{1}{2}$  feet long, terminating in a long raceme of large rose-coloured flowers, but which are sometimes tinged with purple or orange, or all three colours combined. This is not the same plant as that represented in the "Flore des Serres" of February, 1849, and the editor gives an explanation of how the mistake arose.

*Camellia planipetala*.—A finely-imbricated pure white flower, with a slight tinge of sulphur towards the centre; the plant is free-flowering, and has handsome foliage.

In addition to the above subjects, the Number contains a large plate giving a perspective view of M. Verschaffelt's establishment. In the February part we find—

*Robinia pseud-Acacia* var. *Decaisneana*.—A charming variety, with rose-coloured flowers, found among a bed of seedlings by M. Villeveille, nurseryman, of Manosque (Basse-Alpes), and which was noticed in our last volume. It promises to be a very ornamental variety for parks and pleasure-grounds, in which it will contrast well with the common white-flowered kind.

*Azalea Grand Duchess of Baden*.—A new Indian Azalea, sent out this year by M. Verschaffelt. Flowers large, about 4 inches across, nearly double, bright fiery red, with crimson spots.

*Cypripedium Veitchianum*.—The species of *Cypripedium* now known are tolerably numerous, and that which is here figured is certainly one of the finest in the genus. It was discovered in 1858 by Mr. W. Lobb, on, it is said, Mount Ophir, in Sumatra; but as there is another Mount Ophir in Malacca, where *C. barbatum* is found, along with a quantity of which this species was sent home, there is some little doubt on this point. The flower-stem is upwards of a foot high, apparently two-flowered; the segments are white, veined with delicate green, the superior one veined with reddish purple towards the base, the lateral ones being, in addition, densely dotted with dark red.

In the March Number are—

*Verschaffeltia splendida*.—A beautiful plate is given of this Palm, which was shown at the Brussels Exhibition as *Regelia majestica*, but the name has been changed by M. Wendland to the above. It was introduced by M. Verschaffelt from the Seychelles in 1861. The largest plant which has yet been seen, though probably five or six years old, is no more than 20 inches high from the soil to the leaves. These are of majestic proportions, being now between  $2\frac{1}{2}$  and 3 feet long, by about  $2\frac{1}{2}$  feet across, and at their summit deeply divided into two equal lobes, of which the margin is entire for about one-third, then it is coarsely toothed, with finer serratures in the intervals, to the extremities of the lobes. In colour the upper side of the leaves is a rather dark shining green, with a regular series of oblong blotches of a very dark green, closely arranged along the principal nervures, and contrasting with the brighter ground colour; these are also visible on the under side, and when the leaf is between the observer and the light they have a pretty effect. The young foliage is tinged with reddish orange, which gradually disappears as they become older. This beautiful Palm requires the temperature of a warm stove.

*Bryonopsis laciniosa erythrocarpa*.—A Bryony raised by M. Naudin from seeds received in 1862 from Saharunpore. It is an annual, producing a great profusion of round berries as large as a small Cherry, green, marbled with white when young, but when ripe they are of a bright carmine, and similarly marbled. The plant grows about 18 inches high, and is said to have a charming effect if grown in a pot, and trained on a trellis. Two plants in a pot yielded hundreds of fruit. Two or three berries were shown at one of the Royal Horticultural Society's Exhibitions last year.

*Abutilon vexillarium*, of which a description has already appeared in these pages, forms the subject of the remaining plate.

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L'HORTICULTEUR FRANÇAIS.—The last three parts are now before us. That for February is adorned with coloured plates of *Lithospermum fruticosum*, and Pear *Prince Impérial de France*. The former is a very old plant, indigenous to the south of France. It is an undershrub, 6 or 8 inches high, with pretty blue flowers in the axils of the leaves, and in terminal clusters of two or three. It is figured as being a pretty miniature shrub for pot culture in rooms. The *Prince Impérial Pear* was raised by M. Grégoire-Nelis, and is rather above the middle size, obovate, amber-coloured, with greyish specks. The flesh is melting, juicy, and very good. Ripe in December and January. In the same Number

is an account of a curled variety of Chicory, which is stated to be of as good quality as the Small Green Curled Endive, and much hardier, the latter being killed by 12° of frost, whilst the new kind will resist 25° (7° Fahr.).

*Pelargonium Endlicherianum*, one of the few species not found at the Cape of Good Hope, forms the subject of an illustration in the March Number. It is a native of Taurus, produces ornamental heads of rose-coloured flowers, and is suitable for borders and rockwork, succeeding well in dry and chalky soils.

*Knowltonia rigida*, also known as *Adonis capensis*, a Cape plant, which has been known for eighty or ninety years, is also figured. It is merely a botanical curiosity, with greenish flowers, produced in a singular manner.

The illustrations in the April Number are *Iresine Herbstii* or *Achyranthes Verschaffelti*, and *Libonia floribunda*. The former has been exhibited at several of our exhibitions as a new bedding plant; the latter has been already described in one of our previous Numbers. Growing on elevated table lands, in the southern part of Brazil, there is some chance of its succeeding out of doors in summer, like the Cupheas, to which its flowers bear considerable resemblance.

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THE FLORAL MAGAZINE. No. 59.—The first plate is devoted to two varieties of Achimenes, raised by Mr. Parsons, of Welwyn, and sent out by Mr. Williams, of Holloway. *Pink Perfection* “is a fine well-formed flower, of nearly 3 inches diameter, of a deep rosy-pink colour, throat yellow, spotted with orange; while *Grandis* is a somewhat smaller but still very fairly-sized flower, of a purplish lilac, or deep mauve colour, with orange-spotted throat. Both varieties are very free-flowering.”

The next illustration is *Verbena Popular*, having, in addition to brilliant scarlet flowers, golden-variegated leaves, which, it is believed, will render it an effective bedding plant.

The third plate contains representations of two of Mr. Salter's new *Chrysanthemums*, both of which we have seen, and can affirm to be fine varieties. “*Golden Ball* is a bright orange, with golden back and tips, beautifully incurved, and a perfect model of form, of extra large size, and great brilliancy of colour. *Venus* is large, delicate lilac peach, finely incurved; a beautiful show flower, and decidedly the best in its colour.”

The fourth plate is *Begonia Digswelliana*, which is in the possession of Mr. Williams, of Holloway. The flowers are light pink, the edges of the petals and the buds being of a deeper tinge. Besides making a pretty pot plant it is very useful for cutting for bouquets.

In No. 60 the first illustration is the new Tea-scented *Rose Maréchal Niel*. The beautiful blooms of this exhibited by Mr. W. Paul at the Royal Botanic Show of the 8th of April, were sufficient to establish its merit as one of the finest of the yellow Roses, but the Editor has some doubts about it. “It is said by M. Verdier to have been raised in the south of France, and consequently there must be some doubt as to the certainty of its opening well in England; for *Boule d'Or*, which we have seen in perfection in the neighbourhood of Paris, will not, without a great deal of coaxing, display its beauties with us; and then it is, unquestionably, both in foliage and form of flower, very like *Isabella Grey*, and therefore, we fear, is likely to partake of the defects of that flower.”

The second illustration is a representation of *Hovea pungens major*, from the Swan River, a valuable winter-flowering plant, and very attractive in colour. Mr. Fraser, of the Lea Bridge Road, by whom it has been successfully exhibited, adds some good cultural directions.

The next plate is devoted to another of Mr. Bull's novelties, a variegated

*Chrysanthemum* called *Sensation*, with Ranunculus-shaped white flowers, and the leaves regularly and broadly edged with white.

The fourth plate contains representations of three *Verbenas*, raised by Mr. C. J. Perry, of Castle Bromwich, and now in the hands of Mr. Turner, of Slough. *George Tye* is described as a deep lavender-coloured flower, with lemon eye, and well-rounded pips. *Charles Turner* "is a French white, with bright carmine centre;" and *Queen of Pinks*, bright pink, shaded with a deeper tint, and having a small yellow eye. All three are exhibition varieties, and as such it is believed that they will take a good position.

Though the pile of "our contemporaries" is now somewhat reduced, we have yet many on our table, to which we shall return in a future Number.

### OUR MONTHLY CHRONICLE.

ROYAL HORTICULTURAL SOCIETY.—The second spring show was held on the 15th of last month, and coming between Good Friday and Easter Sunday it was not so extensive as would doubtless have been the case had another day been selected. Only one collection of Azaleas was exhibited, but to make up for this deficiency the Roses were very numerous and very good. Mr. W. Paul had a splendid specimen of President, with some two dozen blooms, each measuring about 5 inches across, and numerous buds; also a fine collection of nine, for which he had the first prize. Among the new Roses, of which numerous collections were shown by the same exhibitor, and Messrs. Paul and Son, Pierre Notting, and Madame Victor Verdier, were first-rate. Madame Emile Boyau, a showy rosy blush, and Princess of Lichtenstein, white, are good additions to the light-coloured Hybrid Perpetuals. Among new plants Mr. Veitch, of Chelsea, had three pretty Japanese Primulas, with saucer-shaped flowers—namely, *P. cortusoides grandiflora*, rosy lilac outside, paler within; *amoena*, dark rose; and *alba*, approaching white. To each of the above a first-class certificate was awarded. Miscellaneous collections of flowering and fine-foliaged plants were exhibited by Messrs. Lee and Bull, besides which Mr. Hooper, of Bath, sent seedling Pansies, and there were a few Auriculas and Polyanthus, but these were very poor.

The fortnightly meetings continue to increase in interest, and from the number of new, rare, and interesting plants that are brought to them have almost attained the dimensions of small shows. At the meeting of the 4th of April Messrs. Backhouse had a charming new bright blue *Hepatica angulosa*, and a *Phycella* with intense orange scarlet flowers. Mr. Bull's *Bertolonia margaritacea*, the leaves of which are, as it were, studded all over with pearls, was an object of general admiration; and so, too, was a variegated Lily of the Valley from Mr. Salter, in which the leaves are beautifully and distinctly lined with white. First-class certificates were

awarded to Messrs. Cutbush for their new Hyacinths—*La Française*, single white, slightly striped with pink; and *Cuvier*, a very good deep shaded blue. Hogarth, a promising rose with a white centre, was also shown. Several new and scarce Orchids, and indeed many other interesting plants, were also in the room; and after the Committee meetings were over Mr. Bateman made some interesting observations on the cool culture of Orchids, and on the principal objects before the meeting.

Another meeting was held on the 18th, at which Mr. Rivers exhibited a collection of upwards of sixty different kinds of Apples, many of them highly coloured and all in excellent condition. They had been kept in a dry cellar where the temperature during the winter was never below 44°. Mr. Turner, of Slough, exhibited a fine group of Azaleas, and a *Bougainvillæa* with red flowers, believed to be a cross between *B. speciosa* and *B. glabra*. An Anemone called *fulgens*, but probably a variety of *stellata*, was exhibited by Messrs. Backhouse, of York, and received a first-class certificate. The flowers were large and of a brilliant deep crimson. Two very curious Hose-in-hose Mimuli were exhibited by Mr. Bull, and the calyx being coloured like the corolla, when the latter falls there is still, to all appearance, a perfect flower. A magnificent head of *Rhododendron Nuttallii* was shown by Mr. Williams, who had besides a beautiful example of *Sophronis grandiflora*, the orange scarlet flowers of which were much larger than those usually seen; a pretty, crested, golden *Gymnogramma*, raised by Mr. Parsons, of Welwyn; and an extensive collection of other plants. Mr. Veitch's new Primulas above alluded to, were again shown and received first-class certificates, and from the same firm came also the hybrid *Cattleya Dominiana* and other Orchids. Nor must we omit to mention a pretty *Bletia*, from Messrs. Osborn, which is nearly hardy; and a new pink-flowered Cape Heath, called *fragrans*, from Messrs. Low. Many other objects were exhibited, and among others *Salvadora per-*

sica, from Mr. Bull, considered by Dr. Royle to have been the Mustard tree of Scripture, but Mr. Berkeley said he had his doubts as to this being the plant referred to in the parable, for it was a rare plant in Palestine, and the officinal Mustard (*Sinapis nigra*), also attained the dimensions of a small tree, and was to be found all over the country. Some remarks having been made by Mr. Wilson Saunders on the treatment of the Aloe family, Major Trevor Clarke, in whose stoves at Daventry there is nearly every known kind of Cotton, gave a short lecture on its cultivation in this country, remarking in conclusion that several of them made pretty stove plants.

ROYAL BOTANIC SOCIETY.—The second sipping Show was held on the 8th of last month, and as usual at the Regent's Park, there was a gay display, of which Azaleas, Roses, and spring bulbs were the chief components. In Azaleas, Mr. Turner maintained his pre-eminence with plants in splendid bloom, which distanced all competitors. In Roses, fine collections of plants in pots were shown by Mr. W. Paul and Messrs. Paul and Son, for which equal prizes were awarded. By the former, the new yellow Tea Rose *Maréchal Niel*, was shown, and from the size, colour, and fragrance of the flower it will, doubtless, become a general favourite: the Judges marked their appreciation of its merits by granting it a first-class certificate. Another new Rose, a Hybrid Perpetual, called *Princess Mary of Cambridge*, pale rose with a flush of pink in the centre, came from Messrs. Paul & Son, but not in a condition for its merits being positively decided on, as much better examples were shown a few days later.

THE AMSTERDAM HORTICULTURAL EXHIBITION opened on the 7th of April, and was attended by nearly three hundred botanists and horticulturists from all parts of Europe. On the opening day there were about 8000 visitors, and upwards of 11,000 on the second day. We had intended to have given some account of the objects exhibited, but from want of space must defer doing so till next month.

A FRENCH SOLDIERS' GARDEN.—One day last summer, on going through Fontenay-le-Comte, I passed by the new barraeks, where a detachment of the 44th regiment of the line have been quartered for the last ten months. All at once I heard cheers, and songs, and the rattling of glasses, and I asked the reason of this rejoicing. The soldiers, I was told, are eating to-day the first salad produced in their garden—it is a peaceful triumph, but one for which they have worked hard. When they first came they found a large piece of waste ground; and the Captain having examined it, and finding it could be turned into a garden, said, "Let us trench and dig it, and we will plant it with Potatoes and salads for our own use." This was done, and in a

month it was laid out in quarters and planted. The summer was dry, and watering was necessary, but they did not lose courage, two old wells which had been discovered were cleared out, and men were told off night and morning for watering.

My informant being unable to answer my other questions I succeeded in introducing myself to the paymaster, who gave me every information. We went together to the garden, and I can affirm that the ground was well prepared, that all the quarters were planted or sown, and that the crops were varied and fine. I observed flowers along the borders, Tomatoes, Melons, Cucumbers, Eggplants, &c. But my object was to know the results of the garden in a moral and physical point of view. The officer informed me that he had kept an account of the expenditure since the garden had been made, and of the value of the produce, and that though the strength of the detachment was only from thirty-five to forty men, the mess expenses were easily provided for, that the rations of meat had been increased to 11 ozs. a-day, leaving  $6\frac{1}{2}d.$  clear to each soldier. Now, military men know that the weaker the force of men the more difficult is it to meet the mess expenses, and in the case of a small detachment, such as his, without the garden, it would have been almost impossible to have had such a surplus as the above. In addition to what they got at the mess the men had Radishes, Salads, Melons, and Tomatoes frequently served out to them, and doubtless, in course of time, added my informant, we shall be able to improve both the quantity and quality of the produce. But this was not all—the soldiers were more happy, more obedient, and the service did not seem so hard. They considered it a favour to be told off to work in the garden, and they took a pride in its productions.—(F. BONCENNE, in *Revue Horticole*.)

Soldiers' gardens are yet in their infancy in this country, but the Royal Horticultural Society have taken the subject up and have stated their intention of awarding prizes to soldiers in the course of the summer.

#### OBITUARY.

SIR ROBERT SCHOMBURGK, celebrated for his scientific explorations in South America, and by whom the seeds of that magnificent Nymphal, the *Victoria regia*, were first sent to this country, died at Berlin, on the 11th of March.

MR. H. W. SCHOTT, director of the Imperial Gardens, at the Schönbrunn, near Vienna, and author of various publications on Aroidæ is also recently deceased; and in our own country

Mr. J. JOHNSTONE, gardener to the Duke of Wellington, at Strathfieldsaye, where he had been for many years; and

MR. OGLE, gardener to the Earl of Abergavenny, at Eridge Castle, Tunbridge Wells.

He attended the Fruit Committee at Kensington on the 4th of last month, and the same night he was no more. He had been nearly twenty-one years at Eridge Castle, was of quiet unassuming manners, and much respected in the horticultural world.

## CALENDAR OF OPERATIONS.

### CONSERVATORY.

It will be very desirable at this season to lessen the number of extra plants in this house, introduced for furnishing a supply of bloom, that the permanent plants may not be overcrowded now they are commencing their growth. Such plants as are growing in the open border must be well attended to with water, and the plants should be frequently syringed overhead; doing this early in the morning, for the house to get dry before visitors enter. The display of bloom should be kept up by Pelargoniums, Azaleas (greenhouse and forced), Rhododendrons, Roses, &c.; and do not forget to introduce sweet-scented plants, as Orange trees, Heliotropes, and the good old *Franciscea uniflora*. Although shading must necessarily be practised, it should not be carried to excess, or to cause the young shoots of the permanent plants to draw. Let the show-house be kept as gay as your stock permits, and look to the successional plants to follow those now in bloom.

### GREENHOUSE.

*Azaleas and Camellias*.—Look at our former directions respecting the treatment of these plants. Camellias will now be out of bloom, and should be encouraged to make wood by keeping the house rather closer and more humid, shading by day, and syringing the plants well overhead; this will induce them to grow freely. Where the plants are grown with others, they will be benefited by being placed in a Peach-house or vinery, with a moderate heat. When the blooms of Azaleas are fully expanded they should be removed to a cool shady situation, to prolong their beauty. If exposed to the sun, many kinds soon fade. *Cinerarias*.—Little can now be done with these, other than keeping the plants that are in bloom in a cool shady situation. Select from the best named and seedling flowers for seed for the ensuing season, which sow as soon as ready if early plants are required. Place such as have gone out of flower in a north or cool situation for early cuttings. Prick-off seedlings as soon as large enough to handle, and place and keep them in a moist cool situation, until large enough to place in single pots. Prepare soil by putting equal parts turfy loam and well-decomposed manure in a heap, which turn occasionally, until required. *Pelargoniums* will now be fast coming into bloom. Continue tying and watering, according to instructions given last month. The blooms as they expand should be well shaded from the mid-day sun. Bees must likewise be excluded, as they cause the flowers to drop. The blooms on

plants intended for exhibition should be tied a few days prior to being wanted, to give them a concise and neat appearance. The late-flowering plants will now require much attention. A cool atmosphere, with thorough ventilation, is indispensable. Cleanliness likewise must be looked to, and continue tying as required.

### FORCING.

*Peach-house*.—After the crops are fairly stoned, if the fruit is wanted in quickly, a slight increase of temperature may be permitted, accompanied with more water to the roots. The trees also should be well washed once or twice daily, according to the weather. Tie in the shoots of the succession-houses, and attend to former directions. *Strawberries*.—If there is the convenience of a spare pit or frame, very fine Strawberries may be obtained by taking the plants, after having set their fruit, and plunging them in pits, in old Melon soil; if over a slight bed of leaves, so much the better. The fruit will swell off to a large size, with little trouble, by this plan, and it will keep the houses clear of spider, which is sure to get introduced with the late Strawberries, when the weather is hot. *Vinery*.—As the crop in the early house ripens, keep the air dry and cool, to improve the colour and flavour. The protecting materials on the outside border should now be removed, and the border slightly forked, finishing by laying a thin coat of very rotten manure over the surface. The latest Vines will now be swelling their buds, and may therefore be tied up to the trellis. Syringe them several times daily, to induce a free break, but fire heat, excepting with Muscats, had better not be applied until the bloom is about opening; mind, that at no season will Muscats set well without fire heat and a dry temperature of 70° or 75°, and St. Peter's and other late Grapes will set very much better if assisted with fire heat, to get the night temperature up to 70° during the time of blooming. After the berries are set, fire heat, except for Muscats, need only be applied in cold wet weather.

### KITCHEN GARDEN.

The principal work here will be a routine of thinning-out, hoeing, &c., between the advancing crops. Sow on well-prepared beds the main crops of Borecole, Cottager's Kale, Broccoli, Savoys, &c., for the main autumn and spring crops. Cauliflowers and Walcheren Broccoli may also be sown twice during the month. Prick-out Cauliflowers and early Broccoli from the seed-beds, as also Celery. The main crops of Dwarf Kidney Beans and

Scarlet Runners should be sown. Peas and Broad Beans sow every fortnight for succession. Stick advancing crops of Peas. Water should be given to newly-planted crops, and mulch if required. Plant-out Artichokes in well-manured trenches; they like a deep and rich soil. Lettuce, Cos and Cabbage, sow a pinch every ten days, and on the best ground you have. Ridge Cucumbers may be sown towards the middle of the month under hand-glasses.

#### FRUIT GARDEN.

Disbudding must be proceeded with as growth advances, and insects kept down; tobacco water, well diluted, is by far the safest remedy for the fly. Strawberry-beds should be cleaned, and the space between the rows filled with stable litter; the rain will wash the surface clean by the time the fruit begins to swell, while the litter will act as mulching, and assist the fruit in swelling.

#### FLOWER GARDEN.

May is the busy month with the flower gardener, as the final arrangement and planting of the beds for the season's display will have to be carried out. Very much of the harmony and effect of a modern flower garden will depend on the tasteful distribution of colour, provided by suitable plants over its area, for it should be borne in mind that so much of every garden, comprised within the area of vision from the principal point of inspection—whether the garden be large or small, or in one or more compartments—should have the primary colours so placed that they may balance each other, and that the subordinate and complementary colours should be added agreeably with their position on the chromatic scale; to carry this out correctly requires a plan with the beds arranged and coloured, and then selecting the plants of a desirable colour to fill them; in this, the habit of the plants will have to be studied as to height, time of flowering, &c.; begin with planting the hardiest kinds first, and as they may yet suffer from cold cutting winds, small branches of evergreens, stuck between them, will form a good shelter, as they are easily removed when the warm weather arrives; above all, let the soil be well pulverised, by frequent turnings-over before planting. As a rule, Scarlet Geraniums and their allies grow dwarfer and bloom more profusely in poor shallow soils; the variegated class like peat or rotten leaf soil, mixed with the compost. Calceolarias do well in sandy loam, without mixtures, as do Petunias; Verbenas are not particular, but like light rich soil. *Cold Frames.*—Calceolarias, Scarlet Geraniums, Lobelias, Pentstemons, &c., may now be shifted to situations where they can have temporary protection if needed; this will make room for tenderer plants, requiring a gradual exposure to harden them for final planting, towards the middle of the month;

indeed the great success of an early start with bedding-out plants will mainly depend on their being well hardened off previously to planting. Continue to prick into small pots the recently struck cuttings of Verbenas, Salvias, Heliotropes, and Petunias, to follow the early plants. Spring-raised annuals, as Stocks, Asters, Zinnias, &c., may now be fully exposed, and finally planted when the weather will permit. Where the frames are cleared of flower-garden plants, towards the end of the month, their place may be occupied by Balsams, Japan Lilies, Cape bulbs, Gladioluses, &c., for decorating the greenhouse in August and September.

#### FLORISTS' FLOWERS.

*Auriculas.*—These, before being placed out of doors to rest, as it were, after their bloom, should be well fumigated, and care taken to eradicate all dead foliage and aphides. Moderate rain will be beneficial to them, but by all means avoid wet in excess. Pit lights might be placed over the plants during heavy rains. *Carnations and Picotees.*—The time will have arrived for staking these; it is best to do this early, as the roots will not be so liable to be injured during the operation, besides the advantage of securing the flowering shoots as they grow, leaving no chance of their being destroyed by wind. To prevent their acquiring a yellow tinge, care must be taken to water them as often as they are dry, even if twice a-day. The old foliage will be dying off, which should be cut away with a light hand. Top-dress towards the end of the month. *Dahlias.*—Prepare the quarters or borders for these, or any ground that it is proposed to grow them in. The time is fast approaching for planting them out, yet, if the weather is cold or unfavourable, it will be best to delay this operation, particularly if the plants have pot room, and can be kept growing. To accomplish this, repot the plants as soon as they are received from the nursery, or, if home-propagated, from the small pots to others a size or two larger, keeping growing but gently; by no means draw the plants—on the contrary, give all the air possible on favourable occasions. The fourth week in May is ample time for planting, particularly if the soil and plants have been prepared as they should be. Seedlings may be put out a little sooner if they stand thick, to prevent their drawing up weakly, but a quiet dull day should be chosen for this. *Pinks.*—If large flowers are required, thin out the blooming shoots; also remove the small side buds. If dry weather continue, liquid manure may be used advantageously.—*Tulips.*—Give the beds a good watering, before they show much colour, if the weather continue dry. When in bloom, much water is liable to flush the white, thereby destroying their beauty. Protect as before described.

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Fig. F.



Fig. C.



Fig. A.



Fig. B.



Fig. G.



Fig. E.

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Fig. D.

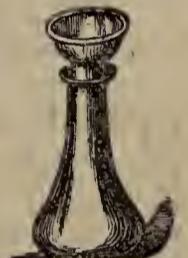


Fig. D.

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16 "	7 6 "	6 "	0 7 "	14 "	1 6 "
18 "	8 6 "	10 "	1 2 "	18 "	2 5 "
20 "	9 6 "	12 "	1 6 "	20 "	2 10 "
24 "	11 6 "	16 "	3 0 "	22 "	3 4 "
		18 "	4 6 "	24 "	4 0 "
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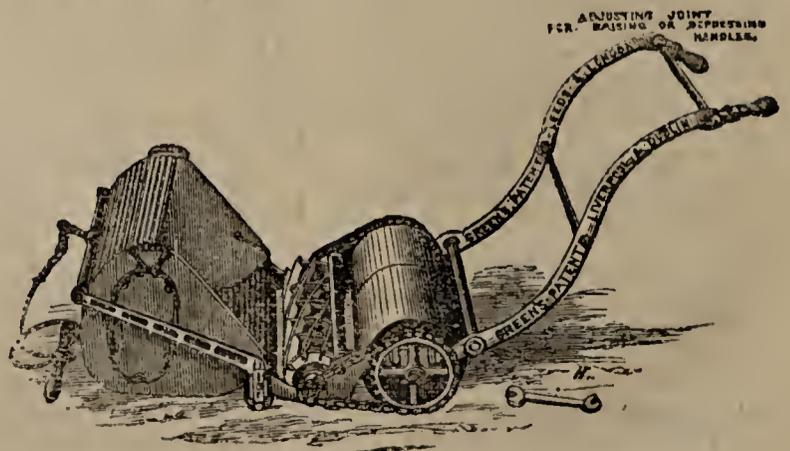
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## CHRONICLES OF A TOWN GARDEN.—No. XVII.

THE new *Collinsia verna* (Nuttall's var.), sent out by Mr. W. Thompson, of Ipswich, is, indeed, a "new form of beauty," and its character is quite up to the high estimate formed of it when seen at the Horticultural Society's Spring Exhibition in March, 1864. My plants were from 6 to 8 inches in height, and were covered with beautiful and showy bright azure blue and white flowers. It comes into blossom very early, and I venture to predict that it will become a deservedly popular spring-flowering annual. The seed of it must be sown in the autumn, or it will not vegetate. If sown in the open ground, a little light litter should be gently spread over the plants during the prevalence of severe weather. For those who have the convenience for so doing, it would be best to sow in a cold frame, and transplant to the open ground early in March where the situation is very cold and exposed.

I have now in bloom in a bed on a grass plat some fifty plants of *Tulipa Gesneriana*, and a grand display they make. When I planted the bulbs they had administered to them a liberal supply of well-rotted manure, and so luxuriantly have they grown, that they have reached a height of from 2 to 2½ feet. The flowers are astonishingly large and suffused with a brilliant vermilion hue. When expanded by the influence of the sun's rays, they dazzle the eyes of the beholder, and they would form fitting drinking-cups for a banquet-table of the immortal gods, from which they could quaff—

"Nepenthe, sovereign drink of grace."

I surrounded them with a narrow belt of the common *Tournesol* double Tulip; but I wish now that I had substituted for them an outer ring of the Dutch mixed late border Tulips. I should then have had them all in bloom together, and the brilliant hue of the centre bed would have been relieved by the more sober colouring of their colleagues. The suggestion is worthy of being treasured up for another season.

Lovers of the early-flowering Tulips (and I would fain hope many are to be found among the readers of the *FLORIST AND POMOLOGIST*), would have been, in common with myself, highly delighted with a collection I have flowered this season. All the most gorgeous hues of the floral kingdom concentrated here, and make a display worthy to be a constituent part in the poetic fancies

of eastern climes. It has been objected that their blooming season is too short in duration, and, therefore, does not sufficiently repay any extra outlay of trouble and patience about their cultivation. To this I reply, that the "blooming period" is by no means an evanescent one, when the bulbs are planted in good holding soil. When they occupy poor impoverished ground, or when they have been allowed to remain in the border without being lifted and replanted, they often induce disappointment; but when they become elevated into the position of "favourites," and they receive treatment corresponding to the esteem in which they are held, they doubly repay the investment. Mine (and I had a beautiful and varied collection), were all planted in the best soil, and at the blooming time carefully supported by sticks; and while many a heart was moved to envy, each one filled with admiration.

Of single flowers, I had White Pottebakker and White Eagle, the former the largest and best; and two almost white—namely, Queen Victoria and Rosa Mundi, both white flowers, delicately feathered and pencilled with red. The first of the twain is the largest flower, and has a streak of rosy crimson up the centre of each petal that deepens with age. I grew the white variety of the Van Thol section also, but it is so small and insignificant that it is not worthy cultivation. Of yellow flowers I had the yellow and striped Pottebakkers, neither of which are pure yellow, as both are feathered and marked with red, the striped variety much more deeply. Some of the yellow variety came self-yellow, but the majority had more or less of red about them. The striped variety I take to be a deeply-marked selection from the former, but they by no means keep true. I also had Duc d'Orange, orange yellow, with bronzy crimson edging and base, very showy; and Marquis de Wessenrode, rich golden yellow, slightly pencilled with red, large and very fine.

I had one self-rose flower, Rose Gris de lin, pale pink, changing to rose with age; and one self-violet, Terburg, a fine and well-formed flower; very novel. Globe de Rigaud, white, heavily flaked with rosy purple; very often comes almost a rosy purple self. I had it very fine in pots, but grew it in very strong soil. It is quite a novel flower.

Of striped flowers I had Royal Standard, white, flaked with red; Bride of Haarlem in the same way, but much more heavily flaked; Standard Gold, yellow, striped with red; Wapen Van Leyden, pure white, with narrow flame of deep rose up the centre of each petal, very pretty indeed; Lac Van Rhyn, rosy violet, with deep edging of pure white; Clarimond, almost a self flower, deep rose, with faint streak of white; and Couleur Ponceau, rosy crimson, with white flame up the centre of each petal, sometimes almost a self flower. I have had but one edged flower proper this season—viz., Lac Van Rhyn, and that I have classed with the striped varieties. I think some of the most beautiful of the early Tulips are the edged varieties, but they do not seem to have come in my way this season.

Of self flowers, I had Fireball, very bright scarlet; Couleur Cardinal, bronzy crimson, with fiery edging; Belle Alliance, bright crimson; and Vermilion Brilliant, rich vermilion, fine, and very showy.

A few words on the double Tulips I have flowered, and this paper must be brought to a close. The old favourite Tournesol, so well known as to need no description; and the yellow variety, very fine and showy, have been the best. Marriage de Ma Fille, is a large crimson and white-striped variety, very handsome but very late in flowering: so also is Couronne Imperial, very similar to the foregoing, but not quite so heavily striped. Pæony Red, is a rosy crimson variety, but very thin. A really good and remarkably showy double Tulip is Gloria Solis, crimson tipped with gold; it very much resembles Tournesol in appearance, but grows taller, and the edging is deeper in colour. Pæony Gold,

Rose Eclatante, and Prince de Galitzin, are dull yellow ground flowers striped with rosy crimson; with a great resemblance between them. I cannot recommend either of them for pot or for border cultivation.

The majority of the foregoing have ceased to exist. I miss their gaudy, yet pleasing forms, but we shall meet again some day to renew, and I also trust to extend, my acquaintance with them.

“A kindling eye and beating heart shall yet  
Catch thy quick glance, and note thy welcome smile.”

Quo.

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## CULTURE OF AZALEA INDICA.

PLANT-GROWERS generally recognise a great distinction between what are known as hardwooded and softwooded plants. The latter section is represented by Geraniums, Fuchsias, Cinerarias, &c.; the former by Ericas, most New Holland plants, Camellias, Azaleas, &c., each section requiring cultural treatment equally distinct. But then, again, there must be a certain dissimilarity of treatment of the various genera, particularly among the hardwooded section: for instance, Cape Heaths and New Holland plants require greenhouse treatment only, and a temperature consistent with our climate, no artificial heat being required except for the purpose of protection from frost; but Camellias, Azaleas, and a few other plants of this section, differ from the above so far that the periods of excitement and rest are more distinct, in consequence of which the treatment, as regards temperature, &c., must vary at different times of the year. With these few introductory remarks I will proceed, to the best of my ability, to give such directions for the culture of the greenhouse Azalea as may possibly be acceptable to some of the many admirers of this beautiful race.

It is probable that in this, as in other distinct classes of plants, the highest point of excellence in the cultural art is usually achieved by those who grow for exhibition; at least it is by such means only that the public generally obtain an insight into the display of skill and science which the art of plant-growing admits. I cannot say that I have been a grower of the Azalea for exhibition purposes to any great extent; but I have grown it for years as a conservatory plant, and while in bloom I have found it one of the most effective class of plants for decoration, and equally so in cutting for bouquets and vases. I have also found it so far accommodating that the season of blooming may be prolonged for at least one-half the year, as no plant bears forcing or retarding better than the Azalea. I will, however, proceed to describe the manner in which I have grown tolerable specimens, beginning with small plants.

The Azalea is not difficult of propagation, as it will strike in a greenhouse temperature; but for all that I would not recommend beginners to obtain plants by striking them themselves. It would be cheaper in the end, and far more satisfactory, to obtain about a dozen plants or so of good sorts from some well-known raiser or grower in the nursery business. A little care ought to be exercised in this, because plants are sometimes crowded together in the nursery, and become infested with thrips or mealy bug, which pests, in the hands of beginners, often prove very troublesome. Good growers and raisers are generally too much alive to their own interests to send out plants so infested, or even to keep them, so that they are more to be depended upon. In purchasing plants of this kind there are three points which it would be well for beginners to observe and act upon. The doing so will be an advantage which he will be unable to see or appreciate for years probably, but may save much vexation at the time, and more as he proceeds. The first point is—be satisfied

with a few to begin with; if they should be lost by any mishap they are more easily replaced than a large number. The second point is—begin with small plants in preference to large, remembering that if you cannot grow a good plant you certainly cannot keep one. The third point is to obtain the plants while in bloom, unless you can depend implicitly on the good name of the dealer. If you have them in bloom you have the evidence of your own eyes, and know that your sorts are good and true to name. So much for getting the plants. If the plants are obtained when in bloom, keep them in a cool greenhouse, and slightly shaded from the sun. This will prolong the period of flowering as long as possible. When the blooming is entirely over, keep the plants rather dry for a week or fortnight, being careful not to over-dry them. This will prevent them starting into that vigorous growth which is sometimes seen, but is certainly not desirable. At the end of that time cut off the seeds, and place the plants in an increased temperature, as a vinery just started, or a pit kept rather close, with a little auxiliary heat, beginning with a temperature of 50°, increasing it gradually until you obtain an average day heat of 65° or 70°, making use of sun heat in preference to fire heat, by shutting up early, and letting the place get warm before opening in the morning. A little shade in the middle of the day will be necessary. The plants must also be syringed morning and afternoon, keeping the atmosphere moist, and the roots of the plants liberally supplied with water. This applies to sunny weather. In dull days syringing or watering will be less needed; but these are matters that will suggest themselves to the grower. What is necessary or desirable is to consider what would be the case supposing the plants were growing in their native country and climate, and to imitate it as near as possible. In tropical countries there are periods of rainy weather, when the air is close and warm, very favourable to the growth of this plant, followed by periods of dry hot weather, equally favourable to the hardening of the wood and setting of the flower-buds. This, again, followed by dull rainy weather, during which time the plant is at rest; and again by bright warm weather, during which the plant is in flower. Although we may not be able, or even desire, to imitate accurately the climate of tropical countries, we can do so to an extent that is sufficient for our purpose, and that is all we need desire. That we can do so sufficiently to enable us to grow the Azalea and other plants is evident; not because we can induce them to submit to our artificial treatment, but because we can give them artificial treatment closely resembling what they would otherwise receive naturally. I mention these facts because attention to them will do more than anything I can say in the way of pointing out directions for cultivating the Azalea or any other plant; at the same time reminding young beginners that the most successful growers have been the most observant of such facts, seeing in them both causes and effects, and acting on them quietly but successfully.

But to proceed. The plants will require about three months' treatment of this kind—that is, to be kept close and warm—during which time they will be making their growth; so that if the plants were put in about the middle of May they will have completed their growth by the middle of August, and by that time the syringing should be discontinued—say limiting it to once a-day by the beginning of the latter month; in a week's time once in two days, leaving it off entirely by the middle of the month; but continue to give them a little extra heat, and discontinue the shading, in order that the wood may be hardened and consolidated. The flower-buds will then begin to form, and the extra heat may be discontinued, the plants receive a little more air and plenty of sun; but no haste should be used in cooling them down; nor need there be any fear of the buds expanding, as they should be

fully developed before the plants are reduced to a greenhouse temperature, or turned out of doors. When the buds show, something after the manner of those of the *Rhododendron*, the plants may be placed in a greenhouse or cold pit, or any convenient structure. This applies more particularly to places sufficiently far north of London to render it dangerous to trust them entirely out of doors after the middle of September, as I have found it is in this midland district (Birmingham), although I have considered them safe in the open air until the latter end of October in the neighbourhood of London. However, let them be safely sheltered, and receive greenhouse treatment before there is any danger of frost. All the care they will require will be to give them sufficient water, and that will not be much.

But to go back a little way. When the plants have finished growing, and the buds are formed, will be the best time to pot them into larger pots. Why this should be the best time I will endeavour to explain. When potted before the growth commences the latter becomes unusually long, the flower-buds do not set so well, nor are they so good as when the plants are allowed to make their growth in the pots in which they have flowered; but if they are allowed to make their growth and set their buds, the potting can affect neither for that season. The plants will then be making fresh fibres into the new soil, and will acquire an extra amount of strength for the process of flowering, which will be prolonged in consequence, as well as the flowers being finer.

In potting, let the pots be two sizes larger than those in which the plants have grown; let them be clean, and use plenty of drainage. The soil should be good peat, a little rough, but not too much so. I generally mix some small crocks with it, besides sufficient sand to make the water pass through it readily. Press the soil firm round the old ball, but do not make it hard. The process of potting, I will suppose, is so far understood as to need no farther description; at least the operator should use such care and judgment as will show that his own credit has been considered in performing his work. I will simply add that the drainage should be perfect, using peat fibre, or moss, between the crocks and the soil, the latter being sufficiently moist to allow of water passing through it, but not wet enough to allow it to clod together. This, I think, is all that need be said as regards potting, but afterwards, when the plants require water, which they will do a day or two after potting, enough should be given to go through both the old soil and new, and this is only accomplished by filling up two or three times; care should also be taken that the water is not too cold. Plants are often killed by watering too freely with cold water after potting, the roots receiving such a chill that they become paralysed, and gradually die without any apparent cause. By about the latter end of October, or beginning of November, the plants should be in a state of rest, and remain so until the following April, merely receiving cool greenhouse treatment; but during that time a little attention should be given to the form the plants are ultimately to assume. The pyramid is considered the most preferable, because in that form they show the largest surface of bloom, and occupy the least space. If this is to be the form in which they are to grow, a little pruning, as well as training, will be necessary. A neat stick should be placed in the centre, to which the strongest central shoot should be tied, the other shoots either cut or tied into their proper position; but the cutting may be deferred until after flowering. Some, however, prefer having their plants in a dwarf bushy form, and many sorts seem to take to it without any training. Such sorts as *Admiration*, *Criterion*, *Variegata*, and others are very dwarf and spreading in their habit, and would require much skilful training to bring them to the pyramid shape. *Azaleas* also look very well when grown as standards; but the plants for this purpose should be selected for this purpose almost from

the cutting-pots. A strong leader should be trained upright to the desired height, when it should be stopped. A bunch of shoots will appear at the top; these, when long enough, may be drawn down with fine matting. The formation of the head will then be a matter of time, and will simply require training into a rounded form. Whatever form it is desired to produce, it will be necessary to begin in time, while the plants are young, remembering that as the twig is bent so the tree is inclined. Using a little foresight is the main thing, and no difficulty will be experienced afterwards.

Should the plants be showing flower sooner than is desired, they may be kept back by placing them in a pit facing the north, uncovering them entirely in fine mild weather, but protecting them from frost. When they are in bloom the more light they receive the brighter will be the flowers; but strong sunlight will fade them rapidly, and shading will keep them in flower longer than if left exposed to sunshine. After flowering the plants may be treated in a manner precisely similar to that previously described, going through the same course of treatment year after year. With the most ordinary care they will improve and become more valuable as they grow, and in three or four years they will become good specimens fit for exhibition.

The Azalea is a plant that, once got into good form, may be kept so without sticks or ties; yet it will be as well every winter to look over them, and where a twig happens to project beyond its proper bounds it would be as well to cut it in, or draw it down. It will also be necessary each autumn to see that the wood is properly matured, and the bloom-buds are set before reducing the temperature, otherwise the plants are apt to start into growth before the buds open. The shedding of the leaves in autumn or winter is a natural process, and generally indicates that the ripening is complete.

Azaleas are subject to the attacks of thrips when kept anyways dry while they are making their growth, or if placed near other plants infested with them. The best treatment will not save them; but these insects may be destroyed by fumigation, or by syringing with Gishurst compound, mixed up in the proportion of  $1\frac{1}{2}$  oz. to the gallon of hot water, and allowed to cool and settle before using. This, however, will have to be applied with force enough to get well under the leaves. They are also subject to mealy bug, or at least the bug attacks them when placed near any other plant infested with it. To eradicate this pest is not so easy. A sponge and good strong Gishurst I have found the best method of destroying it, syringing the plant in every direction after sponging. The only instance in which I have had to deal with bug and Azaleas was one in which the plants were purchased when in bloom, and afterwards, when put in an increased temperature, the insects began to show themselves. They had evidently been crowded together amongst other plants in the nursery; otherwise I am confident that, with the most ordinary care, it is easy to keep this pest at a distance; and certainly very desirable, for nothing can be more troublesome to get rid of.

As regards sorts, I am bound to confess that I have had few opportunities of noting the best sorts in general cultivation; nor can I conscientiously assert that I have made the most of what opportunities I have had, not having entertained the idea of giving a selection for public use. Regrets, however, are useless; and the next best thing I can do is to give a selection from sorts that I have grown. Some of those named were exhibited by me at the Corn Exchange, Birmingham, twelve months ago, at the first Show of the season held by the Handsworth Horticultural Society; and others, again, later, at the Botanic Gardens, Birmingham. These sorts, however, may not be the best in general cultivation; but they are such as I can recommend, and certainly good enough to begin with.

*Admiration*.—White, with carmine stripes. The flower of good form; the habit of plant dwarf and close.

*Ardens*.—Beautiful orange scarlet; habit close; makes a good pyramid.

*Beauty of Europe*.—Pink, striped with carmine; good habit, but not so robust in constitution as could be wished.

*Broughtoni*.—Rosy pink. Flower of good form; in habit one of the best.

*Criterion*.—Beautiful light salmon pink, with white edge; well-formed flower; habit of plant dwarf and bushy.

*Duke of Devonshire*.—Fine scarlet; first-rate sort.

*Eulalie*.—Blush pink, spotted; inclined to be semi-double; makes a good pyramid.

*Gem*.—Rich red, or deep salmon. Flower well formed; habit of plant rather dense. One of the best for late flowering.

*Glory of Sunning Hill*.—Beautiful pink. Flowers semi-double; fine vigorous habit.

*Holfordiana*.—Splendid rosy purple; rather vigorous in habit, and fine for exhibition.

*Magnificens*.—Fine large white, sometimes striped with carmine; close in habit. One of the best.

*Murrayana*.—Rose. Flowers of good shape; habit also good.

*Mrs. Fry*.—Deep carmine. Very bright and large flowers.

*Optima*.—Scarlet. Large and fine well-shaped flowers; good habit.

*Petuniæflora*.—Purplish rose. Flowers apparently fringed; very good.

*Stanleyana*.—Rosy scarlet. Flowers well formed; habit of plant good.

*Variiegata*.—Much the same colour of Criterion, and much the same in habit.

*Triumphans*, *Rawsoni*, and *Indica alba* are good, free-growing, and free-blooming sorts, good for forcing, for cutting the flowers, or for conservatory decoration.

I forgot to mention, in their places, *Aurora* as a good white, and *Delecta*, a beautiful rosy purple, with flowers very large, and a beautiful half-weeping habit; one of the best.

F. CHITTY.

## SPRING GARDENING AT BELVOIR CASTLE.

THIS place affords another proof that flower gardens may be made gay in every month except those in the depth of winter, when they are really not wanted. Belvoir is in one of the midland counties, and, therefore, cannot be classed among the highly-favoured sites near London, that some would have us believe were really exceptions, and where only spring flowers will succeed. At the same time it is only fair to say, that although the climate may be more severe than nearer London, it stands on high ground and the flower gardens are well sheltered by the surrounding woods. It is quite cheering to drop suddenly upon a flower garden in full bloom the second week in April, composed of plants that every one can have and grow. Here is a beautiful circular bed one mass of bloom, with a centre of white *Arabis*, and a broad belt round of *Aubrietia*, named by Mr. Ingram *purpurea grandiflora*, and which rises nearly as high as the *Arabis*, and the flower as large. Another with a fine yellow centre of *Doronicum cordifolium*, with edging of *Anemone apennina*; fine large beds of blue Russian Violet, edged with a white variety, making the air quite fragrant. There were also large quantities of double Wood Anemones, *Arabis verna*, *Adonis vernalis*, *Sanguinaria canadensis*, Dog's-tooth Violet, Daffodil, *Lamium variegatum*, *Omphalodes verna*, *Pulmonarias*, Primroses, and *Polyanthus* (single and double), *Scilla bifolia* and *sibirica* (white and blue), *Orobus vernus*, and Wallflowers; with plenty of *Crocus*, *Hellebore*, and *Snowdrops* gone by;

and the Winter Aconite runs riot over many parts. Added to the above are quantities of Kale in all shades of variegation, with early-flowering Heaths and shrubs, in borders and belts, surrounding the different flower gardens.

There is great credit due to Mr. Ingram for gathering together and getting up sufficient stock of these plants for the March and April display, and it is another proof of the great variety of flowering plants that can be got at that season. Many of them are soon over, but if they are wanted for this particular season, each adds its share when most wanted.

I have no wish to put myself forward as an authority, but with all deference to the taste of others I fear Kale will never look well in a flower garden. Mr. Ingram had it planted in various ways, as in rustic stone baskets, flower-beds, and mixed alternately among beds of dwarf shrubs. The latter is its best aspect, but even then, at a distance, it has a coarse displeasing effect; its best form of variegation never dispels the idea that we are looking upon Scotch Kale, the leaves of which some one has been amusing himself by sprinkling with new milk. The various Saxifrages, as *cordifolia*, &c., have leaves sufficiently large to satisfy the most rabid of sub-tropical fanciers. The Castle I shall long remember, with its grand view over a vale rich in agriculture, and its pure old style and ancient means of defence carefully preserved from the time when neighbours of a similar class were more to be feared than they are now. Its terrace walls are now put to more peaceful purposes, and covered with creepers, among which Mr. Ingram pointed out a splendid plant of the *Lonicera odoratissima*, a plant which should be in every garden, as it blooms all the winter when weather will permit. It is deliciously sweet and a great favourite with ladies, but I fancy from previous experience that it does not bloom until it becomes a large plant. The kitchen garden is a magnificent affair, and the whole place reflects great credit upon its manager, Mr. Ingram.

J. F.

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## REMARKS ON THE OUT-DOOR CULTURE OF THE FIG.

THIS celebrated fruit tree is a native of Asia and Africa, and is completely naturalised in the south of Europe, where its cultivation is one of the most important occupations of the fruit grower. In English gardens the Fig is chiefly cultivated under glass; but along the south coast it arrives at maturity on trees grown as standards and low bushes. In the northern parts of the country it requires a wall to ripen it properly; but when grown on a wall there is no kind of fruit tree which bears every year with more certainty than the Fig.

The flavour of the Fig is exceedingly sweet and luscious, so much so as not to be agreeable to many persons, when tasted for the first time; but, like most fruit of this kind, it becomes a great favourite with all after a short trial, and is really one of the most agreeable, wholesome, and nutritious kind of food.

There are two large Fig trees against the wall in the garden here, one the White Genoa, and the other the Brunswick, which every year bear crops of fine fruit. A few details of the treatment they receive may not be unacceptable to our young readers.

Fig trees generally thrive in all kinds of soils and in every situation, but they produce a greater quantity of fruit upon a strong loamy soil than on dry ground, for if the season proves dry during the months of May and June, those trees which grow upon very warm dry ground are very subject to cast their fruit. The soil in which the trees here are growing, is a sandy loam resting on a gravelly subsoil, naturally thoroughly drained. One of the principal causes of Fig trees being unfruitful when growing against walls in the open air, is strong and highly-enriched borders, which produce over-luxuriant growth of

the branches. One of the trees here I have root-pruned with the most beneficial results. Short-jointed wood and only moderate vigour of growth are well-known accompaniments of fruitfulness in this tree, and proper care and precaution must be taken to secure them.

The young Figs on the last year's wood are now swelling nicely on the trees here. They will begin to ripen about the beginning of August, and will continue in bearing until October. The summer management of the young wood requires some attention. Disbudding and thinning of the shoots must be done freely. Anything like crowding of the young shoots must be guarded against, as the air should pass freely among the leaves. The young shoots must on no account be nailed to the wall during the summer. This is a matter of very great importance, as the young Figs would, if the shoots were nailed to the wall, get too large before the autumn to stand over the winter, consequently they would all drop off, and the crop the following season would be a failure. By allowing the shoots to hang loosely from the wall, and the farther the better, the young Figs will not get too large to stand over the winter. If the young shoots are thinned sufficiently no further attention is required until the autumn, except protecting the fruit from the attacks of wasps and birds. About the beginning of November, when the leaves are all off, I prune the trees; but in general little pruning is required, as all young shoots not required for next year's crop are removed in the summer management, but there will be sometimes a naked shoot here and there that requires removing. I then take the terminal bud out of all the shoots. This I also consider a very important point in the culture of the Fig, as the removal of the terminal buds causes a greater number of the embryo Figs to swell than would be the case if they were allowed to grow. The young shoots are then all nailed neatly to the wall, and the trees are well thatched with straw to protect them during the severity of the winter. If trees were in a conspicuous place this mode of covering would be objectionable on account of its unsightly appearance. Instead of being thatched against the wall the trees may all be loosened from the wall, the branches tied into bundles and laid at the bottom of the wall, where they could be protected by something less objectionable than straw. I make it a point to uncover the trees as early in March as the state of the weather will allow, as the covering if left on much later would blanch the young Figs, which will then be beginning to swell, and many of them would in consequence drop off. Whilst the trees are covered they should be occasionally examined, as rats and mice are apt to eat the bark off the branches, especially in bad weather. One large branch on the Brunswick Fig tree here had the bark eaten off by rats completely around it the winter before the last, in consequence of which it made very little growth last season, but the Figs it bore were as fine as any I ever saw—indeed they were admired by the gardeners who saw them.

From the foregoing outline of my management of the Fig it will be seen that the following are the essential points:—1st, the production of short-jointed wood of moderate vigour; 2nd, the timely disbudding and proper thinning of the shoots; 3rd, the letting the shoots hang from the wall during the summer and not nailing them, which would cause the young Figs to swell too large to stand over the winter, and which would inevitably drop off. Thus the tree would lose a portion of its organised matter, and the crop the following season would be light, if not a complete failure; 4th, the removal of all the terminal buds from the young wood in the autumn previous to nailing-in and covering; 5th, the protection of the young wood from frost during winter. This should be perfect, as if the wood was the least injured the fruit also would suffer; and 6th, the removal of the covering as early in spring as it can be safely done.

Such has been my practice for many years, and the results have been most satisfactory. There is no other crop out-doors that I can so safely calculate on as a crop of Figs. When I have heard of Fig trees not bearing, and when I have seen the trees I never had any difficulty in ascertaining the cause—sometimes it was through a total neglect of summer pruning, the trees being one mass of gross unripened wood, and other times the young wood nailed carefully in and the young fruit swelled to nearly full size when cut off by the frost. I cannot too often repeat that well thinning the shoots in summer and allowing them to hang out from the wall are the most essential points in the culture of the Fig out-doors in obtaining regular crops. I am aware there is nothing new in my management, but I do know that if it were more generally carried out than it is there would be no difficulty in obtaining heavy crops of Figs in the open air in any part of the country, regardless of the character of the seasons.

The Fig is largely grown under glass, but its out-door culture does not extend very rapidly. What is the cause? It certainly is not owing to any difficulty in its management. Perhaps it is because public attention has not been sufficiently drawn to the matter. In nine gardens out of ten that one goes into he will not find a Fig tree out of doors. This is a state of things that should not be. Cultivate it as extensively as you please under glass, but surely if it be worth while to devote glass to its growth it ought to be worth a place against a wall. An east or west aspect will do equally as well as a south one, more especially when we consider that very little management is required to ensure good crops every year, no matter what the season may be.

*Stourton.*

M. SAUL.

### ROOKS EATING CROCUS BULBS.

IN the beginning of April the rooks attacked the Crocus-beds here, and devoured the bulbs greedily. At that time, owing to the backwardness of the season, and the dry weather that afterwards ensued, there was a great scarcity of their natural food. When the Crocuses came into flower they left off taking them for a time; but lately they have attacked them again, and I have been obliged to take up the plants to tie in bundles, to put them in a protected border to ripen. Since the Crocuses have been taken up the early Tulip-beds have also been inspected; but Mr. Rook evidently does not like their flavour, for the bulbs, after being pulled up, are left on the ground untouched. The small bulbs of *Scilla sibirica* are likewise scattered about, but not eaten. Immense rookeries are quite near, and the demand for food for the young ones at this time of the year makes the rooks do no end of injury to Potatoes just coming above ground, and to the spring-sown corn.

Another daring depredator has been the sparrow this spring; and it is impossible to calculate the damage done to early Peas and the Gooseberry buds, unless where netted over or otherwise protected. Here they commenced by nipping the young hearts and leaves of the early Peas as soon as they appeared above ground, and I expect they will have the first dish as soon as the pods are filled. Our brethren at the antipodes are stated to have been at great expense and trouble in introducing the sparrow into that quarter; but I am afraid they will yet be sorry for trying the experiment. Should that country ever get thickly populated, Mr. Sparrow will be sure to colonise faster than the inhabitants, and, like the brown rat, they will try all ingenuity of man to keep them within bounds. The sparrows, from building their nests in holes and gutters in houses and old buildings, set the "youngsters" more at defiance than other small birds from taking their eggs and nests. They are, therefore, more prolific; and wherever a new house or farm arises the sparrow

will be sure to follow and multiply. Mr. "Punch" lately tried to be very severe on the Shipley Sparrow Club for destroying 10,000 sparrows in the course of last year, even threatening to employ Bishop Colenso to calculate how many grubs and caterpillars these 10,000 sparrows would have devoured during that time. The great satirist of Fleet Street, however, appears to have no great knowledge of natural history, or of the habits of the sparrow in particular; for who ever yet saw a sparrow eat a grub or caterpillar if it could get anything else in the shape of grain, seeds, bread, or potatoes?

Amongst the really respectable small birds—I mean those that do not prey upon seeds, buds, and fruits—the starlings must hold the first place. They frequent fields, either in pairs or flocks, in search of insect food, and never do any damage to the farmer or gardener. They are, therefore, well worthy of protection, as are all little birds of the same disposition. There are many small birds that prey on grubs and caterpillars, but it unfortunately happens that these birds are incubating when those pests are doing the most injury to our crops. No gardener can possibly grudge that some of his Cherries, Currants, and Strawberries are taken by the "sweet songsters" of our groves; but birds like the sparrow, that have not one redeeming quality, ought to be kept within narrow bounds.

*Welbeck.*

WILLIAM TILLERY.

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### ON THE USE OF SALT IN GARDENS.

THE use of common salt in kitchen gardens, as a very useful auxiliary to cultivation, is so seldom brought prominently forward that we are apt to forget that it is one of the very best applications to various crops that we have at command. This reticence on the subject probably arises from the fact that it is in some instances very destructive to vegetation, and that the fear of consequences may cause many to forego its use altogether. I think so highly of it myself that I am induced to point out a few cases in which I have found the application attended with success.

I must again declaim the intention of entering on a scientific exposition of the action of salt upon soils. I may, however, observe that it is a direct food of many plants; in other cases by admixture with other substances in the soil it produces soda—another fertiliser; it converts injurious organic matter in the soil to a nutritious food for plants, it stimulates growth, it greatly increases the flavour of all vegetables to which it is suitable, it destroys worms and other injurious vermin in the soil, and thus converts them into additional fertilising matter—in short, its benefits are so many and so various that I am surprised it has not been more generally appreciated. The value of this material for manure was well known to the Romans, and the knowledge was probably distributed by them wherever their dominion extended. It was generally used in agriculture in this country up to the time of William III., who, by the imposition of a war tax which raised the price from 6*d.* to 20*s.* per bushel, thus virtually precluded its use, and the practice became lost to agriculture; but it is probable that the use of it in small quantities in gardens was continued notwithstanding the prohibitory price, for Hitt, in his treatise on fruit trees, which was written more than a century ago, enlarged very much on the great benefit which fruit trees derive from an admixture of salt with the soils of the borders. Many of his observations I have verified in practice, and his celebrated experiment on the application of salt to grass land has been tried here with the same results. As it may not be familiar to many I will shortly detail it. "On four square spaces of grass land, of equal size, were poured, nine nights in succession—on No. 1 pure water, No. 2 water in which 1 oz. of salt

to the gallon was dissolved, No. 3, 2 ozs. of salt to the gallon, No. 4, 3 ozs. of salt to the gallon. The results were—No. 1 not different from the rest of the field, No. 2 the grass became of a much darker green and grew both larger and faster, No. 3 turned brown in patches, and No. 4 turned brown altogether, but recovered itself the following year, when it was the most luxuriant of all; from which it was inferred that 1 oz. to the gallon of water was the right proportion to produce immediate benefit.” It is very probable that the impression of its destructive nature may have been derived from a careless or improper method of application, which may be done either by using too great a proportion to the space operated upon, or by applying it at the wrong time, by which success is defeated and the practice condemned.

The great object to be kept in view is the proper proportion to apply and the best time to apply it. Now it may be applied, and even liberally, to some growing crops with impunity; but to do so to others would be disastrous, although they are very partial to it when it can be absorbed into the system of the plant through the roots, and No. 4 in the above experiment bears upon this subject, which, considering that it turned out so well afterwards, and that it was presumed to be the result of the action of the rains of winter carrying it down, and thus diluting it and enabling the roots to take it up in a right proportion, points to the fact that by dressing the ground with salt as it becomes vacant, and is left to lie fallow for some time, it will become dissolved by atmospheric influences, and will pass into and become a very necessary constituent of the soil, and will be presented to the roots in such a state and proportion as that they may take it up without danger.

The following are some of the particular instances, and the mode of application in which I have found the use of salt beneficial. I will take first our old favourite—Asparagus, which as a sea-side plant would, I have no doubt, take almost any amount of dressing with salt, or at any season; but for practical utility I have found 1 lb. to the square yard act with good effect, which, however, is not immediately evident, but is shown the following season by the increased size of the growth. I have generally applied it as soon as the cutting season is over and in showery weather. The same proportion will agree very well with Sea-kale, which is another sea-side plant; and it may be applied on the surface of the beds when they are pricked-up and dressed in the spring, after the cutting season is past. It is also highly beneficial to all the Brassica tribe, such as Cauliflowers, Broccoli, Winter Greens, and Cabbages; and it may be applied as a surface-dressing after the ground is turned up, or even afterwards when the crops are growing, or it may be used diluted in water. Salt is a great absorbent of atmospheric moisture, and I observed a striking instance of the benefit to be derived from its use in the dry season of last year, which was one of the driest in this neighbourhood of any on record; and it is well known how difficult it was to get Winter Greens along without an immensity of trouble and watering. In a garden near the railway-station I furnished a man with plants of the various Winter Greens for a good bed, and some time after he said, “I have got a quantity of dirty salt which I have had swept out of the railway trucks; would it do any good in my garden?” “By all means,” I said; “put it on that bed of Greens which look very indifferent.” It was, therefore, strewed over the surface among the plants, and a little water poured over, and through all the succeeding dry weather they grew and flourished as if it had been a genial moist season, and there were few such beds of winter stuff even in the best-managed gardens; and this leads me to believe that it may have arisen from the capacity possessed by salt of absorbing and retaining a larger quantity of the night moisture than would be the case with ordinary dry soil.

The presence of salt in the soil is also very beneficial to Red Beet, Carrots, and Parsnips, but in these several cases it should be applied on the surface after the ground is trenched in the winter, and either forked in then or else left for a time to dissolve, but must be well incorporated with the soil some time before sowing the seed. A good-sized handful to the square yard is enough for these for one dressing. Always recollect that where the use is doubtful it is best to use small quantities. I had almost forgotten Celery, which, as another sea-side plant, will bear a liberal application of salt without injury. I generally apply it, diluted in the water which is used for it, to the amount of a small handful in a pot of water, which is quite enough at a time if the dose is often repeated. Salt applied to Potatoes is very beneficial; it should be strewed over the surface of the ground after the sets are planted, and the ground levelled, and a proportion of ten bushels to the acre is sufficient when it is done annually.

The above are most of the culinary crops to which it will be found applicable, but there is another important use for it in the economy of the kitchen garden, and that is for all the stone fruits. Peaches, Plums, Cherries, and Apricots, are all benefited by the presence of salt in the soil, and in the rotation of cropping fruit tree borders whenever a crop is put on which will, as I should term it, take salt, it should never be omitted, as the rains will wash down the superabundance to the roots of the trees, and thus act in a similar manner as the application of maiden soil, the great utility of which I have often thought may be due to the presence of saline matter in the soils in some form or other. In addition to the above, whenever a border is vacant and turned up to lie fallow for some time, a dressing of salt may be given with the best effects. Some years ago I had a small Brugnion Nectarine, evidently dying fast, and, in fact, so far condemned that I thought I would try a kill-or-cure experiment upon it, and having a quantity of strong brine in which meat had been pickled, I poured it over the branches and soil a short time before the bloom expanded. There was enough, as I thought, to kill any tree, but to my surprise the tree recovered and grew better than it had ever done before. I mention this to show that salt, even in excess, is not hurtful to stone fruits; but let me observe that I do not recommend such an extreme mode of procedure, but rather that the inexperienced practitioner should feel his way in small doses, which always do good, and never harm.

JOHN COX]

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### MANAGEMENT OF THE ROOTS OF WALL TREES.

It is invariably the practice with gardeners to crop over the roots of wall trees with vegetables, irrespective of the trees that are growing upon it, expressly with the object of getting their crops as early to maturity as possible. Although the practice is deprecated by all who have a thorough knowledge of its effects, early vegetables are, for the period, as great a consideration as the produce of fruit from the walls; and these warm borders are of such great value in our uncertain and trying climate, that under the best considerations the roots of trees must be left to take their chance.

All the wall borders are cropped here with the exception of a Peach-border, which has a drainage of 18 inches of stones, and only a depth of 20 inches of soil. The health and vigour of two trees with the crops they bear, give full evidence of the great advantage they derive from having it to themselves. Those borders which I have constantly cropped pains are taken to obviate the injurious effects upon the roots under them by the operation of

root-lifting and repeated applications of well-rotted manure to the roots as the trees appear to require it.

With a very few exceptions the whole of the trees on these cropped borders have been root-lifted, and some of them two and even three times; but the process was got over by taking two or three of a sort in a season, and preparing about the same number for the next by cutting their roots, this being necessary from the size of the trees. This steady process does not risk a short supply, and I have most seasons, after lifting, found an advantage from it by getting a few dozens of fruit earlier ripened on trees thus carefully managed.

The roots are relayed at about 1 foot from the surface in a layer of fresh soil, and after this a slight covering of soil; a coat of well-rotted manure is then placed over them before filling up. This encourages the new roots to work upwards, and in order to keep them near the surface I have applied to Apricots and other sorts of fruit requiring it from heavy crops once in every three years.

Our method of applying it is to open a trench across the border 4 feet wide, a spade is used at first, and afterwards a steel fork to bare the roots as much as can be done with safety; 3 to 4 inches of manure is applied all over the roots, and a good soaking of manure water from tanks and cesspools is applied before taking out the next trench to cover over. This operation allows the liquid to take part of the strength of the manure directly down to the roots which are under, while the latter as it decays encourages the roots upwards. I endeavour always to perform these periodical root-dressings as early after the fruit is gathered as possible, so as to get the benefit of winter rains in washing down the strength of manure to the roots. Borders thus managed fruit, and the duration of trees is not much affected by having light rooting crops of vegetables upon them.

*Gordon Castle.*

J. WEBSTER.

[This is *fruit-culture*, not *fruit-growing*; anybody can grow fruit.—ED. F. AND P.]

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## BOUGAINVILLÆA AND BOTTOM HEAT.

I AM not altogether satisfied with the returns upon the subject of bottom heat. What Mr. Wills states is easily obviated by introducing short pipes that reach to the surface, immediately over or placed upon the bottom-heat pipes, and stopped at the surface with wooden plugs. Whether the border is dry or not, a good watering occasionally through the pipes is beneficial at certain stages of the growth of the Vine; but this does not replace in the soil what the heat has taken out. In the absence of iron we have used common drain-tiles, placed the bottoms against each other and forming an oval, one above another; but allow me to bring forward another example. A few years ago, when the Bougainvillæa first came out, it was stated that a necessary element of success was to literally scorch the roots. Now, I believe, we have had this quite as fine here as it has been in any place in England, and it never had a particle of bottom heat, and very little more than an intermediate atmosphere, seldom above 40° in the winter nights; the only difference being, that it blooms later by six weeks, or, perhaps, two months. In fact, it turns out to be our grandest and most gorgeous warm conservatory plant. No one need fear planting it in such places, only give it plenty of brick rubbish to root into, and keep it perfectly dry in winter. A little flagging will do it no injury. It will grow where either *Hexaentris mysorensis*, or *Thunbergia laurifolia* will not, although the former grows and blooms magnificently without bottom heat; but the atmosphere must be kept to 50° in the winter nights or it soon shows the effect of the cold.

*Cliveden.*

F.

## ON PEACH AND NECTARINE CULTURE UNDER GLASS.

ALTHOUGH there is nothing new to be said on this subject but what most practical men of a few years standing are well acquainted with, still I find inquiries are made on the subject by young men and amateurs; and myself having from thirty to forty years' practice at in-door culture, a few practical remarks may be of service to the readers of the *FLORIST AND POMOLOGIST*.

Although it takes some years of close attention to make handsome, healthy, and fruitful trees, what can be more delightful, when these have been obtained, than to behold an early Peach-house, or, indeed, any Peach-house, full of trees that are clean and free from disease and vermin?—the very odour is refreshing from the time they are in bloom till the fruit is ripe; and even in the short days of winter, to watch the progress of the trees, and attending to their progressive requirements, to those who are fond of such a pursuit it is very interesting indeed.

I believe that every kind of Peach, Nectarine, and Apricot may be greatly improved under glass, as to health, choice well-bearing wood, certainty of crop, and long durability of the trees. In the first place it is well known that these fruit trees are fond of a border made of good-holding loam, well drained, and not sunk much below the natural surface. We use at the bottom of a new border a good portion of brick rubble or burnt clay, and, of course, a good portion of charcoal or charred refuse, and no dung. To save time, which should be aimed at, under glass we select from the out-door walls handsome large trees that have previously been well prepared by root-pruning, training, &c., taking them up and replanting them, of course, with the greatest care, and, if possible, early in autumn. These trees, under glass, will soon throw out into the fresh soil, under glass, abundance of white fibres, and grow all winter. We then thin the wood well, and carefully dress them all over with a composition made of soot, a little hot lime, fresh cowdung, and clay, made to the consistency of paint, and applied with a brush make with short ends of bast or matting. This will clean the trees if previously infested with insects, or act as a preventive, should any intruders be getting about. Tie and train carefully, and thin the buds, and in due time a moderate crop may be taken the first year. It is not every kind of Peach or Nectarine that can be depended on for early forcing, neither is it worth while to attempt early forcing with young or recently-planted trees; those that are well established can only be forced early with any certainty of a good crop in return.

To commence forcing these fruits in the short days of winter, in order to get a crop of fruit for table in May and June, requires care, caution, attention, and strict perseverance to enable the grower to contend against our variable atmosphere. The structure should be particularly clean, the trees dressed as above, nicely trained, and, if old long-bearing trees, they may require some nice fresh turfy loam, and a little well-rotted dung forked in about them every year; but we prefer the addition of the loam, with the dung and liquid manure, applied after the fruit is stoned. All being made completely clean, and in order, care must be taken not to apply much fire or artificial heat, otherwise there will soon be a mistake and a failure. Take the advantage of every sunshiny morning to syringe the trees all over with chilled or tepid water; apply a little heat, warming moderately the pipes or flues; give air freely, and shut off the heat again an hour or more, if the sun shines previous to taking off the air, in order to command a dry healthy atmosphere. Little artificial heat, in this stage, can be applied at night with any safety, as the night atmosphere should never be above 50°, unless the natural or external atmosphere is warmer. However, care must be taken, after syringing the trees, to apply

heat and air enough to dry off again all damp ; when the nights are mild and fine a portion of air may remain on. As the blossom-buds swell, persevere in thinning them to a single bud, and, of course, let that be the strongest. This bud-thinning must not be done all at once, but moderately and daily, by degrees, as the buds progress. As soon as the blossom commences expanding, syringing, and all damp, must be withheld, and a dry atmosphere maintained.

No mistake must be made in the stage I am now about to speak of—respecting Peaches in bloom from December to February. It is natural for the blossom of Peaches and Nectarines to expand previous to the wood-bud commencing its growth. If too much heat and moisture are applied, and the wood-bud commences its growth much before the fruit is well set, though the blossom may appear very gay and strong, it is almost sure all to fall off without the fruit setting ; or, when to all appearance it is set, if the wood-bud should take the lead : thus the necessity of maintaining a cool dry atmosphere, taking advantage of sunny days to apply extra heat, with abundance of air, during as many hours as it is safe to do so ; and this must be regulated by the sunlight and external atmosphere. As the trees are commencing to expand their blossoms a small bunch of nice soft feathers should be tied on the end of a little stick, long enough to reach any and every blossom expanded in any part of the house. This is to impregnate them ; and it should be done with care, taking the advantage, as much as possible, of sunny days, or when the house has had its extra daily heat and air applied ; and when the atmosphere is dry, and almost daily, in suitable weather, the feathers should be quickly passed over the whole of the expanded blossoms. Then I take the butt end of the little stick and tap the trellises, and the large branches and stems of the trees, in order to cause a jar to disturb the farina, which, when nice and dry, and there is light from the sun, may be seen like dust in the atmosphere, setting on and over everything. By attending strictly to this, every blossom in the structure may be set.

As soon as the fruit is set, the syringe, with a fine rose to it, should be set to work with tepid water. This soon clears the trees of all loose bloom, the fruit shows itself, the wood-bud begins to grow, and not unlikely but the green fly may make its appearance. Whether it does so or not it is no harm to give the structure a fumigating with tobacco as a preventive. This, of course, should also be done with great care at this season of short dark days, when the foliage and young shoots are thin and soft. To prevent any chance of mischief, the atmosphere should be quite dry, and the tobacco smoke not too much heated. In order to prevent this, if there is any fear of it being so, it may be subdued by throwing over the fumigating-pot a little straight heath, birch, or straw, for the smoke to pass through ; this regulates and spreads the smoke, without any fear of injury to young tender foliage or fruit. We rarely ever have to smoke or fumigate a Peach-house but once ; the reason why will presently be explained. The wood-buds being now progressing, commence early disbudding, taking off first, by degrees, a part of the under and upper, or straight erect buds. Continue this almost daily till finished ; then commence thinning the shoots, which will now have become an inch or two long on the sides, by rubbing off some, and pinching others, leaving a few leaves at the base, taking care always to leave at the base, or on other parts where required, a young shoot for next year's supply, and, of course, always a leader on the upper end of all fruit-bearing wood. At the same time, in performing this at first, all double-formed fruit should be picked off ; for if left it is very general that at stoning time the one side fails, and the other takes the lead, but it is not then much better than a deformity. I have sometimes, with a sharp knife, taken off one side where I considered a fruit was required ; but it

is never worth doing where healthy fruit are set in abundance, which is sure to be by following the foregoing instructions. All bunches of fruit must also be thinned to singles at once; then, by degrees, thin the side fruit, and under-shaded fruit, leaving those as much as possible on the upper sides of the wood most exposed to sunlight and air. As they are now gaining strength, in our large structures the engine is set pretty freely to work every fine morning. Clear soot water is mixed with the tepid water; and clear well-purified manure water is used, occasionally charging the structure well with ammonia. This maintains vigour, health, colour, and cleanliness. Neither red spider nor aphid ever make their appearance with this kind of treatment faithfully and methodically performed. As the days advance with more sun and light, the trees are well washed down early of an afternoon, and shut up, and the night atmosphere allowed to advance. Care is taken, of course, in the afternoon's washing, to shut off artificial heat early, if any has been applied, in order to husband the sun heat, and to get the trees thoroughly dry before sunset; or by repeating the shutting up damp, and then not thoroughly getting the trees dry. Mildew, canker, aphid, red spider, &c., may easily be produced by cold and damp.

In regularly thinning the fruit, of course enough should be left at last to allow for stoning; after which they may be thinned to what the tree's strength is able to carry and finish off well. During this time, and as days and light increase, the atmosphere by day and night is allowed to increase gradually; but the night atmosphere must never be above  $55^{\circ}$  till the fruit is stoned. If any of the young shoots at the base are growing too vigorously, stop them by pinching the points, and tying them down; and this, to properly balance and furnish a tree all over with nice-sized short-jointed wood, must be strictly and regularly attended to, both as regards the progress of the present crop of fruit, and likewise the crop of young wood for fruit-bearing the succeeding year. It is the attention during summer to bud-thinning, fruit-thinning, pinching, tying, and training which are the operations which maintain those fruit-bearing trees in health, vigour, and fruit-bearing for many succeeding years; and not the leaving of such abundance of crowded summer wood, and then to prune, thin, and slash away with the knife in winter. No; but all must be gone through and performed carefully and methodically, without allowing either fruit or young wood to advance too thickly previous to commencing thinning, and then commence the thinning by wholesale. No, no; such practice will certainly cause failure or disappointment.

Now that the fruit is stoned finish thinning, if more is required; apply tepid manure water freely to their roots, advance the heat, wash down freely morning and evening, shutting up early; gradually tie a portion of the strongest young wood down, till all is tied neatly. The fruit that did not, to an inexperienced person, appear to be much of a crop, is now swelling and growing, and appearing above the foliage to that extent that the wonder is where they all sprung from. The foliage or young shoots that shade in any way the fruit should be turned down or pinched off, according to circumstances; but pinch no more foliage than is absolutely necessary on any account. The fruit now being full grown, some commence colouring; withhold, then, wholly the washing down, and do not water the roots any more than is absolutely necessary. Give air freely night and day; keep all fruit well exposed to light and air, and the success that will attend the foregoing practice will be a beautiful, well-coloured, and altogether finished crop, and the requisite proportion of nice-sized short-jointed wood for another year.

The crop of fruit all gathered, no time is to be lost in cutting the whole of the ties, letting the trees entirely loose. All the present year's fruit-bearing wood not required, cut off to the base of this year's young wood, or next year's

bearing wood, and every superfluous or over-luxuriant piece of wood is at once pruned out. The trees now at liberty, and open to the full enjoyment of light and air, are well watered at their roots, well washed down morning and evening with tepid soot-and-manure water, and shut up early. Their foliage, that has some way at times become thin by the crop, and withholding of water, now soon becomes thick, shining, and of a dark green colour; the buds become plump; the wood turns brown, hardens, and gets thoroughly ripe for the ensuing year. This is the principal and most essential part of all—in first laying a methodical foundation; all the rest will be sure to follow in natural succession.

Here, in the early forcing-house, Peaches and Nectarines had stoned on the 20th of March last; in the second house they were about the size of sparrows' eggs; in the third, or orchard-house, about 97 feet long and 18 or 20 feet wide, was then most splendidly in bloom—quite a picture with the various tints of colour of the Peach and Nectarine. The Apricots, of course, were first, and about set when the Peaches and Nectarines were about in full bloom. The Cherries were in full bloom about the time the Peaches and Nectarines were well set. Then follow the Strawberries; then the Grapes—for there are Vines also running up the trellis supports, which are allowed only to fill up any corners, vacant space at ends and back wall, in order to have every available space occupied with fruit. A beautiful and interesting sight it is from February till September; and, as I have before stated, the system of painting the trees with some composition, bud-thinning, the setting and thinning of the fruit, pinching and rubbing out the wood-buds and shoots, stopping of long shoots, summer pruning, &c., are done all on the same methodical principle. The lights, of course, are never taken off, only to get painted, and that not till after all is ripened, and are again put on as soon as repaired. I know it was the custom of old gardeners, years gone by, to pull off all the lights and sashes from Peach-houses, vineries, &c., as soon as the crop had been cleared, “in order to ripen the wood,” as it was then said. A very unnatural practice, I used to think, when a boy; but I suppose such an absurd system has, years ago, been abandoned.

*Bicton.*

JAMES BARNES.

## REMARKS ON THE CULTURE OF LACHENALIAS.

THIS tribe includes a class of highly-interesting greenhouse bulbous plants, of neat dwarf habit and compact growth, with prettily spotted lance-shaped leaves, and curiously pendant blossoms. Their culture is very simple; they bear forcing remarkably well, and may be made to flower at almost any season. The soil best adapted for their growth is a mixture of turfy loam, peat, and sand. The bulbs should be potted in September, three, four, or six in a pot, according to its size. Select the largest and soundest bulbs for flowering, and pot the smaller offsets by themselves. The pots should be well drained, and, after the bulbs are planted, put them in a frame where they will have plenty of light, and not be exposed to the cold autumn rains. They should remain in this situation until November, or till frosty weather may be expected, giving them just sufficient water to keep the earth moist. About that time they may be removed to the stove, greenhouse, or sitting-room window, giving them a light situation, and watering them cautiously until they begin to grow. In February or March, according to the heat the plants have been kept in, the flower-stems will appear, when more water should be given, but with care. The flower-stems will now shoot up, and, in the course of a few weeks, will be

beautifully in bloom, remaining so for three or four weeks, or much longer, if they are kept partially shaded.

In May, when the foliage begins to turn yellow, the pots may be removed to the open air for a few weeks, when the bulbs may be taken out of the pots and laid away in a dry cool place until wanted for planting again in the autumn; or the bulbs may remain in the pots, and they will flower several years without fresh potting, but they should be kept in a dry cool place during the summer months when they are at rest. I generally leave my bulbs in the pots, and only fresh plant when the offsets get very numerous.

After the foliage has died down, and the bulbs are quite at rest, I have them placed on a shelf out of sight, where they are both cool and dry, and no more attention is paid them until the autumn, when the pots are set for a short time in water, that the soil may get thoroughly moistened. They are then placed on a shelf in a cool vinery, near the glass, and they soon begin to grow, and in due time produce their pretty flowers.

*Stourton.*

M. SAUL.

### NOTES ON FRUIT-ROOMS.

A FRUIT-ROOM is a necessary appendage to a garden, but often too little thought of when the garden is first formed. There are some places to be met with where the fruit-rooms are so badly constructed that they are in no way calculated for the preservation of fruit. In my opinion no garden of any pretension should be without its fruit-room and other similar conveniences, of which I am about to speak. The internal fittings are got up so cheaply now that no one need be without them. Some are advocates for making the fruit-shelves of glass, some recommend open sparred shelves, and others close boarded ones. I have had shelves constructed of stone pavement, and have kept the fruit in a sound state for a considerable time. Those I have at present, which have been under my care for the last fourteen years, are made of black birch, which communicates no unpleasant taste to the fruit, as zinc often does. They are cut into spars 4 inches broad, with about an inch of an opening between, and the house is properly ventilated. That they have given every satisfaction in the preservation of the fruit is proved by our having kept Apples in a sound state till the 7th of June, with only a thin layer of dry hay upon them.

Such a house may be conveniently placed behind the forcing-houses, and should be properly ventilated, and 2 or 3 feet clear of the ground, so as to prevent it from becoming damp. The fruit-room should have a table down the centre, and shelves round the sides 3 feet broad, and 14 inches apart, made of black birch cut into four-inch spars, with a small opening between. These shelves are divided into compartments of 3 feet 9 inches, with a ledge in front about 2 inches high. A root-room may adjoin this, with drawers round the sides, so as to be useful for storing bulbous roots, such as Gladiolus, Tulips, Hyacinths, Ranunculus, &c. Underneath the drawers, on the ground floor Dahlia roots may be placed and covered with dry sand so as to preserve them during winter. There may also be a small room with a table down the centre for the forwarding of late Pears, &c. In this department there may be placed a small stove or fire which can be lighted during winter when the weather has been long damp, or to expel frost. In such weather the door leading from this to the fruit-room should be left open, so that the heat may penetrate to it, the better to preserve the fruit. From the period of storing the fruit until March, the temperature may range from 38° to 42°; after that period the temperature of the room may be kept as near to 40° as possible.

This can be best regulated by ventilators in the roof, and by having the windows constructed to push up or down as may be found necessary. The coarser Apples should be placed on the lower shelves in larger quantities, but the more valuable kinds should not lie one upon the other. In winter a little soft hay should be placed over them to keep off the dust, as well as to assist in excluding the frost. Each sort should be kept separate and properly labelled. They will require to be examined now and again, so that any showing symptoms of decay may be removed, thus preventing the others from being contaminated. There should be rollers and blinds in front of the shelves, which may be drawn up and down at pleasure, so as to exclude light or dust. A seed-room would also be a very useful appendage, and might have a series of drawers round the sides so as to secure the seeds from vermin; and in the centre of the room, a table, with drawers in it, might be placed for containing annuals, &c. On this table a small desk might be placed for the use of the gardener, and in the room a small press should be placed to hold books for the use of the gardeners.—(P. G., in the *West of Scotland Horticultural Magazine*.)

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### OUR CONTEMPORARIES.

REVUE DES JARDINS.—The March Number contains a plate of Olivier de Serres Pear, a seedling from Fortunée d'Angers, which first fruited in 1861. The fruit is from 3 to 3½ inches in length, by about the same across, the sectional outline being nearly square. The skin is yellowish green, with numerous brownish red patches, and sometimes bright red next the sun; the flesh is smooth, melting, juicy, and very sweet, with a slight acidity. Ripe in February and March.

LA BELGIQUE HORTICOLE for March is illustrated with a coloured plate of *Billbergia pallescens*, a pretty Bromeliad, producing a scape bearing bright red bracts and green flowers, the sepals and petals tinged with blue at their extremity. It was discovered by Libon in Brazil, and sent by him to M. de Jonghe, of Brussels, who called it Wiotiana, by which name it is known in some gardens, but in Germany that name is applied to another species.

The letter-press chiefly relates to the arrangements for the Amsterdam Exhibition. There is an article by Dr. Regel, the Director of the Botanic Gardens at St. Petersburg, containing some interesting observations on the effects of climate on vegetation, observed in his journey to Brussels; and a memoir of the naturalist Junghuhn, who died in Java on the 20th April, 1864.

FLORE DES SERRES, No. 11., Vol. XV.—This Number has just appeared, and fully maintains the character of the work for fidelity of representation and beauty of execution. It contains plates of

*Aplotaxis Gossypina*.—"One cannot help regretting," says M. Planchon, "that this charming Alpine plant has not borne the name of *Nidularis* (nest plant), with which a happy inspiration of Dr. Wallich had formerly saluted it. It is indeed a nest, and one of the most delicate softness—this cup of eider-down where the flowers seem to conceal their loves." This lovely composite plant is a native of the Himalayas, and was discovered in 1818 by Mr. Gardner, one of the correspondents of Dr. Wallich in Gossan-Than. Subsequently Wallich himself found it in Nepal during his journey in 1820 and 1821, and it has been observed by other travellers, among whom are Drs. Hooker and Thomson, who met with it in Sikkim.

*Dischidia Rafflesiana*.—This curious climbing Asclepiad is not remarkable for the beauty of its flowers, but for the singular organs which take the place

of leaves, and render it of equal interest with the Pitcher-plants and Sarracenias. These are suspended, at the ends of the branches, like a great bunch of Dates, each furnished with a short footstalk. These organs are small vegetable cups, about the size and shape of a Date, furnished with a narrow orifice, the edges of which are recurved, and the cavity contains a more or less thick liquid. This is a native of regions about Malacca, and has recently been introduced to Europe by M. Van Houtte, of Ghent.

*Maximowiczia chinensis*.—This is a fine hardy climber. Its habit is that of a Menispermum, and it rambles for a distance of 30 feet on the trees of the forests where it is indigenous. Its flowers are of a lilac rose colour, agreeably fragrant, and are succeeded (on the female plants), by a spike of beautiful, bright red, pear-shaped berries, like bunches of Red Currants, which are eaten by the natives. This is a native of the Amoor Valley, and is also found about Peking. It has stood out of doors at St. Petersburg for the last four years, and may, therefore, be considered perfectly hardy.

*Stevensonia sechellarum*.—Mr. Van Houtte says: "We have the good fortune to present here the most valuable Palm, in a decorative point of view, that has ever been introduced to cultivation. Altogether a treasure and a novelty in its aspect, the *Stevensonia* or *Phœnicophorium sechellarum* is, indeed, the king of the family."

*Verschaffeltia splendida*.—Here is another magnificent Seychelles Palm, a worthy rival of *Stevensonia sechellarum*, as well by the majesty of its habit as the richness of its foliage.

L'ILLUSTRATION HORTICOLE.—In the April Number we have *Stevensonia sechellarum*, figured under the name of *Phœnicophorium sechellarum*. There is a plate of the variegated *Verbena Popular*, copied from the "Floral Magazine," and one of *Camellia Archduc Etienne*, a seedling of Mr. Ambroise Verschaffelt's.

## OUR MONTHLY CHRONICLE.

ROYAL HORTICULTURAL SOCIETY.—The fortnightly meetings continue to be held in conjunction with those of the Floral and Fruit Committees. At that of the 2nd of May, Mr. Bateman delivered an interesting lecture on Vaccinaceæ and Orchids, strongly advocating the claims of some of the former to cultivation as decorative plants for architectural brackets. Not only were these plants beautiful in their flowers and foliage, but the young shoots, as in certain species of *Thibaudia*, were most brilliant in colour. He recommended tropical Vaccinaceæ to be cultivated in a warm greenhouse temperature in niches or on brackets in the shade, so that the branches might hang down. His remarks were illustrated by a branch of *Thibaudia macrophylla* most brilliant in colour, and a very ornamental plant of *Macleania speciosissima*. The entries of plants shown at this meeting amounted to more than a hundred, and the room was densely packed with visitors. Among the novelties that which engaged most attention was *Phalænopsis Lüdemanniana*, of which specimens were shown by Messrs. Low, Mr. Charles, gardener to R. Barnett, Esq., Mr. Stone, gardener to J. Day, Esq., Mr. Pilcher, gardener to S. Rucker, Esq., and Dr. Pattison, of St. John's Wood. The flowers are amethyst barred with brown, and attain the same size as those of *P. Schilleriana*. It was introduced by Messrs. Low, who, considering it to be the same as *Phalænopsis rosea*, sold part of the stock, and it has thus appeared simultaneously in several collections. A very beautiful Palm, *Phœnicophorium sechellarum* from Mr. Williams, and two fine Alpine Auriculas—*Meridian* and *John Leeche*—from Mr. Turner, had first-class certificates. Messrs. Backhouse exhibited four beautiful Alpines—*Narcissus juncifolius*, with yellow flowers, found in stony pastures near Avignon; *Primula ciliata*, with brilliant rosy crimson flowers; *Andromeda hypnoides*, with small pendulous white flowers, and very pretty; and *Primula farinosa acaulis*, from the Teesdale mountains, with pale lilac blooms. Numerous fine specimens of Orchids were also shown; among others, *Dendrobium densiflorum* from Mr. Stone, gardener to J. Day, Esq., Tottenham, a magnificent specimen, with seventy spikes of bloom. The Orchid show took place on the 13th, but was very far from answering the expectations which

had been formed of it. The principal exhibitors were Messrs. Maule of Bristol. Fine pans of *Cypripedium barbatum purpuratum* and *multiflorum* were shown by Messrs. Maule, consisting of young plants in rows at regular distances apart, and each sustaining one flower. The only other objects calling for special notice were a magnificent specimen of the true *Vanda suavis* shown by Mr. Hill, gardener to R. Hanbury, Esq., The Poles, Ware; *Cœlogyne pandurata*, from the garden of J. Bateman, Esq., bearing three fine spikes of its singular green and black flowers; a fine plant of *Trichopilia crispa* from Mr. Pilcher, gardener to S. Rucker, Esq., and several plants of the new *Phalænopsis Lüddemanna*. Of other Orchids some good, and several inferior specimens were shown.

At the meeting of the 16th, the Duke of Buccleuch took the chair, and there was again a fine collection of plants constituting one of the most interesting exhibitions that could well be conceived. Mr. Veitch exhibited some remarkable hybrids of Mr. Dominy's raising, obtained between *Goodyera discolor* and *Anætochilus*, and stated to be much more hardy than the latter; *Bertolonia pubescens*, another plant with ornamental foliage, bright green, with a broad dark band down the centre; the white-flowered sweet-scented *Rhododendron Veitchii*, and a collection of Orchids. Messrs. Backhouse again exhibited some pretty Alpines, the most remarkable of which was a beautiful Forget-me-not, *Myosotis rupicola*, found on the Teesdale mountains. Mr. Bull sent *Calonyction sanguineum*, a stove climber of vigorous growth, with bronzy red cordate leaves; and *Ficus Porteana*, a handsome species, with coriaceous leaves, which enable it to withstand more exposure than many stove plants. For both of the above first-class certificates were awarded. Of Tulips no less than 160 blooms of sixty varieties were sent by Mr. Turner, of Slough. At the close of the meeting the Duke of Buccleuch congratulated those present on its success, and the improved prospects of the Society.

**CRYSTAL PALACE SHOW.**—This took place on Saturday the 20th of May, and was attended by upwards of 16,000 visitors. If any fault could be found with the weather, it was that it was too fine, for in spite of the shading provided many of the Azaleas and Roses exhibited showed unmistakeable signs of suffering from the bright sun. It was, however, a most successful exhibition, and all the classes of plants, for which liberal prizes were offered in the schedule, were in great perfection. Stove and greenhouse plants, which always form an important feature at this show, occupied the whole of one side of the nave, and a portion of the other; the rest of the space being taken up by Orchids, of which there was a good bank, and Heaths,

which, though not very numerous, were good. Having thus summarily disposed of one half of the show we come to the other. Passing the Azaleas, of which by far the finest were those of Mr. Turner, we come to the Roses, where Mr. W. Paul stood first for large plants in 13-inch pots, with magnificent specimens of *Souvenir d'un Ami*, *Louise Odier*, and others, whilst Mr. Turner took a similar position for those in eight-inch pots. Good collections came also from Messrs. Paul and Lane. Pelargoniums were not equal to those at the Regent's Park Show. Mr. Fraser and Mr. Turner were first and second, both for show kinds and Fancies. Of new plants Mr. Bull sent a very extensive collection; Messrs. Ivery, four new forms of hardy Ferns; Mr. Hoyle, Reading, a beautiful new Pelargonium called *Charles Turner*, a bright scarlet, with a white eye and a dark top; and Mr. Turner, Marion, rose, with a conspicuous white eye and very dark top. For each of the above first-class certificates were awarded. Fruit was neither remarkable for quantity nor quality. The best Black Grapes came from Mr. D. Clements. Muscats were all unripe, more than usually so. Strawberries, however, were excellent, especially those from Mr. Smith, of Twickenham, and Mr. Standish, who each sent several dishes. A cluster of *Musa Cavendishii* partially ripe, and weighing 79 lbs., was exhibited by Mr. Carr, gardener to P. Hinds, Esq., Byfleet Lodge.

**ROYAL BOTANIC SOCIETY.**—The May show followed close on that at the Crystal Palace, taking place on the Queen's birthday, and it was one of the finest exhibitions that have ever been held, and the weather being favourable the company was very numerous for the first show, which never, either in the old days at Chiswick nor at the Regent's Park, has been so well attended as those later in the season. Stove and greenhouse plants as a whole were equal to those shown in previous years, but they sadly want an infusion of fresh blood, for the same species and the very same plants are brought year after year. The most recent addition, probably, to this class of plants is *Clerodendron Thomsonæ*, which offers a charming contrast by its snow-white calyx and scarlet corolla; and of this, two beautiful specimens were exhibited by Mr. Fraser and Mr. A. Ingram. A remarkably fine specimen of *Prostanthera lasianthos* from the former was a mass of bloom. There was a very beautiful *Allamanda grandiflora* from Mr. Peed, which, though shown at the Palace on the previous Saturday, appeared none the worse of the ordeal it had gone through. In the different collections numerous *Allamandas*, *Aphelaxes*, *Eriostemons*, *Epacrises*, *Erica Cavendishii* and *depressa*, *Azaleas*, *Rhynchospermum*, *Ixoras*, and *Stephanotis floribunda* were shown in good style. *Azaleas* from Mr. Veitch and Mr. Turner were truly magnificent, and it is evident that the

remarks made on them last year have had a good effect, for the plants had less of that gigantic crinoline character that was so objectionable. Pelargoniums as exhibited by Mr. Bailey, of Shardeloes, were wonderful, from 4 to 5 feet across, covered regularly with fine blooms. A special medal was awarded them for superior cultivation. Magnificent pot Roses were shown by Mr. Paul and Messrs. Lane, the latter gaining the first prize, and of Orchids numerous fine collections, but save in the case of *Phalænopsis Lüddemanniana*, without offering any novelty or very remarkable specimen. Among new plants Mr. Veitch sent some of great beauty, such as the ivory-stemmed *Dieffenbachia Baraquiniana*, *D. grandis*, with the leafstalks prettily mottled, *Leptopteris superba*, a beautiful greenhouse Fern which no one who has seen it would be without; *Bertolonia pubescens* already noticed; *Anthurium Scherzerianum*, most curious in configuration and brilliant in colour; and *Maranta Veitchii* with very ornamental green and black foliage. From Mr. Bull came a large collection, consisting of various new *Aucubas*, his singular double *Mimuli*, and a variety of other plants shown from time to time at the meetings of the Royal Horticultural Society, so numerous

that our space will not admit of their being mentioned individually; from Messrs. Ivery, new forms of hardy Ferns; from Mr. Hoyle, Pelargonium William Hoyle, maroon, edged with crimson, light eye, dark top; Charles Turner; and Lady of Quality, clouded crimson, white eye, and dark top, all of which received first-class certificates. Mr. Turner had a pretty Fancy called Clytie, delicate pink and rose; and Mr. Nye, Elegans, crimson, with a large white eye, and dark top. Lastly, from Mr. Fleming came a wreath of *Bougainvillæa speciosa*, bearing a profusion of its beautiful rosy bracts, grown without bottom heat, although the contrary is generally considered to be the only means of ensuring success.

**BIRMINGHAM ROSE SHOW.**—This great Midland Exhibition is to be held on Thursday and Friday, the 6th and 7th of next month.

**LIVERPOOL CHRYSANTHEMUM SHOW.**—This, we learn, is fixed for the 22nd of November. All plants exhibited are to be one in a pot, the stem to be distinctly seen above the soil in order to show that this is the case, and the exhibitor to deliver a list of the plants which he intends to stage, from which no deviation will afterwards be allowed.

## CALENDAR OF OPERATIONS.

### CONSERVATORY AND SHOW-HOUSE.

As the beauty and gaiety of the out-door gardens increase, less may be expected here, and it will afford a good opportunity of attending to the permanent occupants. Stove and greenhouse Ferns, Palms, and other fine-foliaged plants from the stoves, may be introduced now for two or three months with good effect; these should be mixed with Pelargoniums and other plants producing colour, and a pleasing variety will be imparted.

### GREENHOUSE.

*Azaleas and Camellias.*—Keep the latter close and with humid atmosphere until their growth is completed, when more air and less moisture should be given, to cause them to form flower-buds. Clean the decayed petals from *Azaleas* as they go out of bloom, and well wash the foliage. The plants, after blooming, should be induced to grow by a nice moist atmosphere. Any plants getting naked at bottom may be laid on their sides, to encourage the bare stems to break. Those intended for early forcing will have made their growth, and may now have more light and air to get them to set well for next season's bloom. *Cinerarias.*—Little can now be done with these other than advised last month. Cut down such as are out of flower to within 2 or 3 inches of the surface. Stir the surface slightly, and top-dress with light

soil. A north aspect is the best at this season. Take cuttings as soon as ready for early flowering plants. Sow seeds in a cool frame or north border, which prick off as soon as large enough to handle. Soil may now be prepared by putting together equal parts good turfy loam, leaf mould, and stable manure. Thoroughly amalgamate, and turn occasionally until required. *Pelargoniums.*—The plants in flower will require to be carefully shaded according to instructions given last month. Water freely every morning, and give as much air as possible to keep away any moisture that may arise at night and during dull weather. Stake and neatly tie the later-flowering plants as they advance in growth, keeping them clear from insects. As soon as the early plants have done blooming, they may be removed to a sheltered situation out of doors. Be sparing with water, to enable the wood to become nicely matured before cutting down. Seedlings should now be selected, discarding any which are not decided advances on known kinds.

### FORCING.

*Melons.*—The last crop of Melons may now be sown. Succession crops earthed up. Reduce the quantity of water as the crop changes colour, and increase the amount of air, to improve the quality of the fruit. *Peach-house.*—The ripening crop should have as much air as possible, to give colour and flavour to the

fruit. Fruit swelling may, now there is plenty of light, have more warm and humid atmosphere, which Peaches delight in. When swelling off, be careful, however, to keep the night temperature down. *Pinery*.—Fruit swelling off cannot well have too humid an atmosphere, if attended with light. Tie up fruit, to keep them upright. Water may be given now liberally if the soil in the pots is in good condition. Successions should be potted on and kept close to the glass as they get full of roots. *Vinery*.—Ripe Grapes require plenty of air. The houses for ripening Grapes for winter should have fire heat when the weather is cool. Keep down spider and mildew by free ventilation and applying sulphur, mixed with lime, to the walls and heating apparatus.

#### KITCHEN GARDEN.

Preparations for keeping up successional crops of vegetables will go hand in hand with cultural operations to growing crops, bearing in mind that by frequently stirring the earth between and around growing crops, you assist vegetable growth immensely, and add two-fold to the productive powers of the soil. In dry soils, mulching is the sheet anchor of the gardener for getting quick-growing crisp vegetables, and we cannot too strongly recommend the practice, having previously well loosened the surface. Half-decayed dung, leaves, or in fact any litter which will cover the surface soil without blowing about will do good. Peas, Beans, French Beans, Cauliflowers, Lettuces, Spinach, &c., should be sown at intervals during the month. We find a good early Pea, as Goliath or Sangster's, makes a good late one, but the Mammoth is our favourite. Plant out Celery and Cardoons in well-manured trenches, and on this plan the best crops of late Peas are to be obtained. Tomatoes should be planted against south walls, or on a warm border, to cover the soil.

#### FRUIT GARDEN.

*Hardy Fruit*.—Let the wall trees have every attention. Peaches which have been crippled with the cold weather will require much care to get into good wood for another season. Continue to watch for and keep down insects. Let disbudding and nailing-in proceed whenever the year's wood is sufficiently advanced. Newly planted trees may be required to be mulched should the weather become hot or dry. We say nothing about thinning; those who have a superabundance may do so; we have not.

#### FLOWER GARDEN.

Everything in the planting-out way should be brought to a close as quickly as possible. Plants of straggling habit should be at once secured by pegging or tying, as the wind may break them. We are no advocates for much watering, but when the ground becomes dry, give a good soaking, and allow the soil to

again get dry before repeating. On many soils daily slight waterings do more mischief than good. As the plants progress let them be properly trained, to cover the surface of the bed. Plants in ribbon borders must have their lines well defined, to be effective. Stake Hollyhocks and all tall-growing plants. Herbaceous plants, as Asters, Phloxes, Delphiniums, when too thick, may have their shoots thinned out. The new herbaceous Phloxes are fine things for autumn decoration, and equally useful for cutting, and should be well encouraged. Sow Brompton Stocks for next season's flowering. Hardy annuals may be sown for late blooming, and tender annuals transferred to borders. Attend to keeping close Grass verges and lawns. When the planting-out is done, will be a good time to fresh gravel the walks, as they will then keep a fresh appearance through the season. Tie out plants in vases or baskets, so as to present a natural appearance; and look well to tying in Roses and climbing plants generally on walls, trellises, &c. *Cold Frames*.—As these are now clear, fill with Balsams, Lilies, Cape Bulbs, or, indeed, anything in the way of greenhouse plants, to forward for bloom in the autumn.

#### FLORISTS' FLOWERS.

*Auriculas*.—Place these in a cool shady situation, taking the precaution not to allow the drips from trees or buildings to fall upon them. Green-fly will be troublesome, but must be kept under; if infected, remove the plants to a pit, that they may be effectually fumigated. *Carnations and Picotees*.—The main shoots should now be carefully tied to nice green stakes. Remove any dead foliage, and likewise any surface soil that may have become green and sour—replacing with fresh. These also are frequently attacked with green-fly at this season, which should be brushed from the points of the shoots as they appear, and occasionally wash them with tobacco water. *Dahlias*.—Complete planting as soon as possible. The soil having been well prepared during winter, a little rotten manure to each plant is all that will be required, unless the soil is very stiff, when a little leaf-mould may be advantageously applied to give the plant a fair start. Keep them regularly and well watered, and secure them to stakes at the time of planting. *Hollyhocks*.—Mulch these, after which give them a thorough good watering, and continue to give them a good soaking once or twice a-week, according to the weather. Secure the plants to strong stakes firmly placed in the ground. *Pansies*.—These must be propagated as often as fresh cuttings can be obtained. They strike best on a shady border under small hand-glasses. *Tulips*.—Beds that have been covered should now be uncovered, and allowed all the weather, unless we get very heavy rains. Too much moisture would be injurious.

# FLORIST AND POMOLOGIST ADVERTISER.

No. XLIII.—JULY.

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Fig. F.



Fig. C.

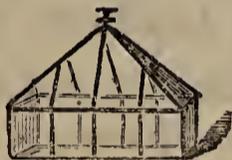


Fig. A.

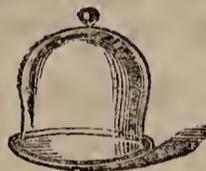


Fig. B.



Fig. G.



Fig. E.

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20 in. by 13 in.	21 oz. 27s. 6d.	24s. 0d.	18s. 6d.	14s. 6d.
20 in. by 14 in.				
20 in. by 15 in.				

per 100 ft.

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6 in. by 4 in.	17s. 3d.	14s. 8d.	12s.	10s. 6d.
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7 in. by 5 in.				
7½ in. by 5½ in.				
8 in. by 6 in.				
8½ in. by 6½ in.				
9 in. by 7 in.				
9½ in. by 7½ in.				
10 in. by 8 in.				
10½ in. by 8½ in.				
11 in. by 9 in.				
11½ in. by 9½ in.				



Fig. D.



Fig. D.

Fig. A. Hand Glasses.		Fig. B. Propagating Glasses.		Fig. C. Milk Pans.	
	s. d.		s. d.		s. d.
12 inches	5 6 each	3 inches	0 4 each	6 inches	0 5 each
14 "	6 6 "	4 "	0 5 "	10 "	0 10½ "
16 "	7 6 "	6 "	0 7 "	14 "	1 6 "
18 "	8 6 "	10 "	1 2 "	18 "	2 5 "
20 "	9 6 "	12 "	1 6 "	20 "	2 10 "
24 "	11 6 "	16 "	3 0 "	22 "	3 4 "
		18 "	4 6 "	24 "	4 0 "
		20 "	6 0 "		
If open top, 1s. extra.					
Fig. D. Hyacinth Glasses.		Fig. E. Hyacinth Dishes.		Fig. G. Rolling Pins.	
Common, 2s. 6d. per dozen.		6 inches ..... 1s. 0d. each.		1½d. per running inch.	
Improved, 3s. 3d. "		9 " ..... 1s. 6d. "			
		12 " ..... 2s. 6d. "			
Crocus Glasses.		Fig. F. Cucumber Tubes.		Opal Ditto.	
Common, 1s. 9d. per dozen.		1d. per running inch.		14 inches ..... 3s. 6d. each.	
Improved, 2s. 3d. "				16 " ..... 4s. 0d. "	
				18 " ..... 4s. 6d. "	

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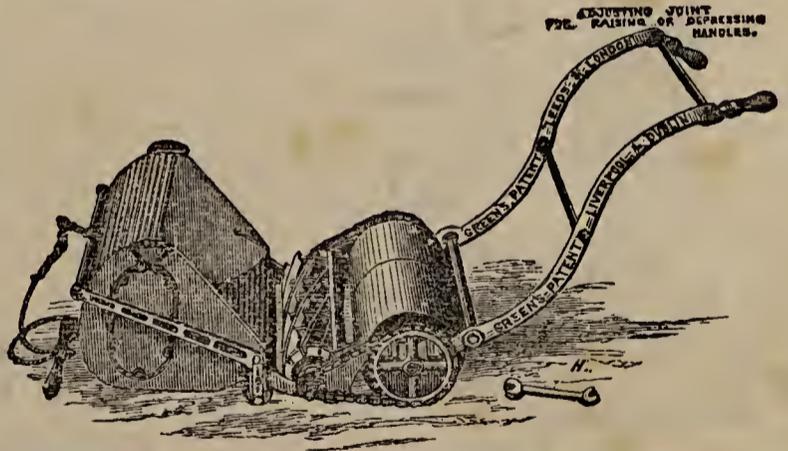
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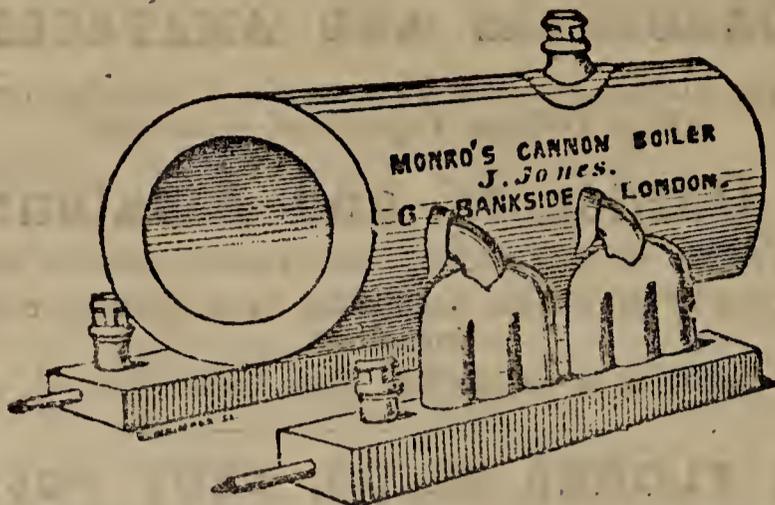
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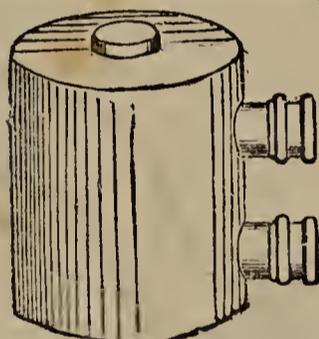
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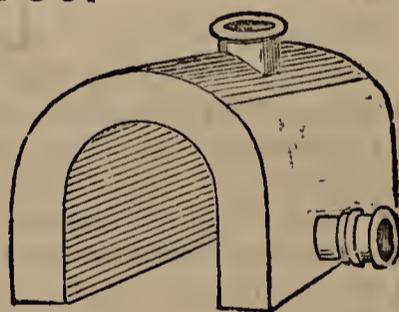
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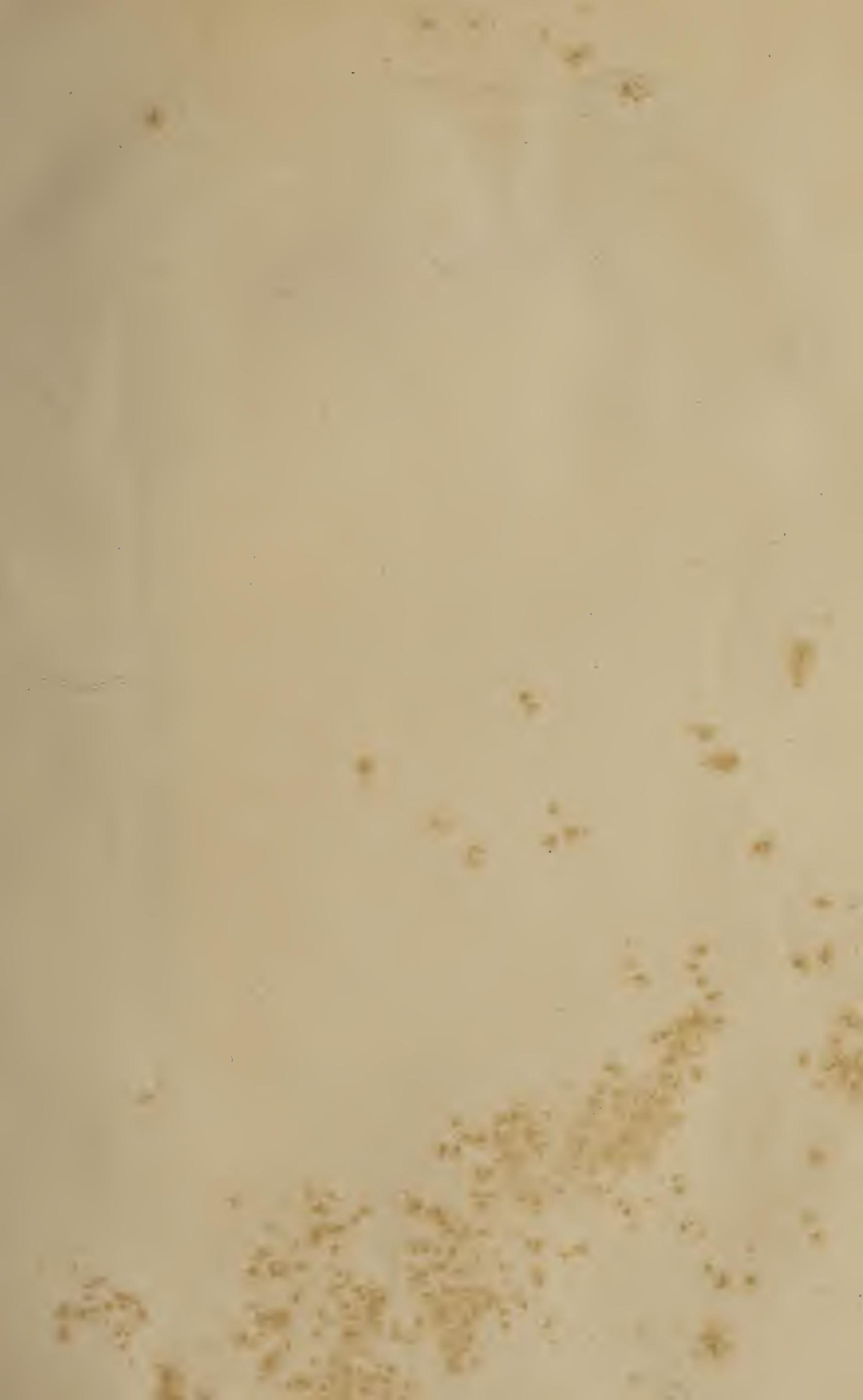
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John Hoyle Pelargonium.

W.D. 71

## JOHN HOYLE PELARGONIUM.

WITH AN ILLUSTRATION.

WE mentioned this flower at page 122 of our last volume as being, at the time we wrote, *the* flower of the season so far as show Pelargoniums were concerned; and such it proved to be. None of the many fine sorts which made their appearance during the blooming season came up to it either in quality or in beauty. We may now add that, for distinctness and richness of colouring, and for all the properties desirable in a flower, none of the varieties of the present season will be found to surpass it.

Our figure, from the pencil of Mrs. Dix, gives a very good representation of the peculiar characters which John Hoyle presents, though, as in the case of other of our high-bred flowers, to obtain an exact picture is an impossibility—the rich effect of the natural colouring is not to be reproduced by art.

We very strongly recommend this variety to the notice of Pelargonium fanciers, who have not obtained plants at its first distribution, as being, in our opinion, the best which has yet been obtained, and one which must be regarded as a standard flower for years to come. M.

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 CHRONICLES OF A TOWN GARDEN—No. XVIII.

THE era of spring gardening came to a close early in June, and now the summer occupants of the garden are in the ground, bronzed and burnt up by the blazing sun. Really “bedding stuff” is passing through a severe ordeal, and the “parched ground” seems to supplicate the sky for a refreshing shower. It will come in the Great Giver’s own good time; and my neighbour Farmer Smith prayerfully trusts that this fine weather may prevail until his plentiful hay harvest is gathered, unusually heavy this season. And so even conflicting interests appeal even at Heaven’s footstool, as they do daily to the children of men.

But how this hot sun brings out the gay and beautiful blooms of my Pelargoniums! Spotted Gem is very fine and free-blooming, so is its grand French cousin Guillaume Severyns. The more sober-looking Wonderful, a “welcome guest” with me, but cast out by this time from many a collection that is much more valuable and select than mine, is still very fine. Some of the deep-coloured French spotted varieties, also look quite charming in company with two or three plants of old Calceolaria Sultan, that has a profusion of bright crimson blossoms, almost unrivalled in brilliancy of colour, though destitute of fine form. Intermingled with these are two or three plants of Coleus nigricans, the same number of Helichrysums, a plant of Centaurea ragusina, that has shown a few bright yellow blossoms, and some dark and light Fuchsias. These last are grown on stems about 3 feet in height, and the heads (they are old, but very free-flowering kinds), are masses of flower. Plenty of water is required now, plenty of air, and shading from the sun. They occupy a stage on each side of a small and unpretending conservatory, through which the front door of the house is reached. This is a great advance on the window of the sitting-room; and I am thankful, deeply so, for the more favourable circumstances.

And yet the old and homely appliances are not forgotten. The window-boxes are filled with bedding stuff, and being kept well watered, are far advanced ahead of those that occupy the beds on the grass plat. An edging to one of them is formed of the little bright yellow Sedum acre, now in full flower, hanging down over the front of the box, and as soon as this is out of

flower, *Lobelia speciosa* and *Paxtoniana* (the last from cuttings, as much of it raised from seed is comparatively worthless), *Nierembergia gracilis*, and *Cuphea platycentra* will take its place. The bright green foliage of this pretty and homely *Sedum* presents a striking contrast to the browned foliage of some Nosegay Geraniums in a bed just beneath it, right in the full glare of the sun. Poor things! they seem to groan in their misery as they roast on

“the wretched land,  
That yields them no supplies.”

Some Gladioli, planted on a shrubby border, are making rapid growth, but are plentifully supplied with nourishment. Should this weather continue for a while longer they will be in bloom early, the spikes seem to be swelling out very fast. I gave all mine a liberal quantity of rotted manure to grow in, and they seemed to appreciate it. Though planted very late they have come on wonderfully quick, and though the bulk were very small in some cases, there will be two strong spikes to several of them. I intend in a few days to open the ground about them to the depth of some 2 to 3 inches, and place some more manure about them, and shall mulch them well with water while dry weather prevails. In another border but more shaded, I have a row of very strong plants of *G. brenchleyensis*, and by the side of this is a narrow slip in which I planted a dozen bulbs of *G. ramosus*, *Ne Plus Ultra*, said to a very fine and showy scarlet flower. What with these, the bedding stuff, dwarf Roses, dwarf Nasturtiums, Stocks, Asters, &c., the summer months are well provided for, and I hope to have a continuance of bloom until

“the summer is past  
And the winds have a whisper that prophesies death.”

And, last of all, though the last should have been first in the order of precedence, I have some dwarf Roses, pretty bushes covered with flowers. *Général Jacqueminot* in a brilliant crimson uniform, looks every inch a warrior, fresh and trim in the morning, but just in the flush of the hot weather it gets prematurely old by evening; *Géant des Batailles*, bright and glowing, but somewhat puny owing to the weather; *Charles Lawson*, large and full; *Coupe d'Hébé*, large globular flowers of great beauty; *Gloire de Dijon*, very fine, and some few others, that flower so profusely that I can pluck some to grace the mantlepiece of my sitting-room.

How pleasant to come up away out of the fierce tide and flow of the city's strife on to the “consecrated heights” where dwell such beauteous forms! It is a reproduction of the Delectable Mountains of the old Christian pilgrim, with the celestial ministrants, though in a much grosser form—faint reflection of the first home of man on earth; type of the “green fields” that “beyond the swelling flood” in the region of the Great Evermore “stand dress'd in living green.”

Quo.

## ON SUMMER PRUNING.

I QUESTION if there be anything which conveys more pleasurable feelings to the mind of the gardener than to see his fruit trees laden with fine ripe fruit. It is a sight which more than repays him for all his care and labour. Nothing tends so much to the production of certain and abundant crops of fruit as the timely and proper summer pruning of the trees. A few remarks on this subject will, therefore, be not altogether unseasonable nor unprofitable.

It may, perhaps, in the first place, be advisable briefly to mention the principles on which pruning is founded—they are these:—The nutriment of plants is absorbed from the soil by the roots and formed into leaves, branches, flowers, and fruit, by their buds; by operating on the roots and buds, we can

regulate what is produced by them. If, for instance, the stem and branches of a plant contain one or two hundred buds, by removing half of these the shoots or fruits produced by the remainder will be supplied with double the former amount of nourishment; and if all the buds be removed but one, the whole of the sap sent up by the roots will be modified by that single bud, provided care be taken to remove other buds as they appear. On the other hand, when the whole of the buds of a tree are so abundantly supplied with sap from the roots as to produce chiefly leaves or shoots without blossoms, then by cutting off a portion of the roots the supply of sap is lessened, a moderate degree of vigour is produced, and instead of barren shoots blossom-buds appear. By these means the growth of plants is controlled by pruning. Pruning has the power of increasing the vigour of plants in two ways. If we assume, as already stated, that a certain amount of nourishment is supplied by the roots to all the branches and buds of a tree, by removing one-half the shoots we direct the whole supply of nourishment to the remaining portion, which will, consequently, grow with nearly double their former luxuriance. Again, when a tree becomes stunted in its growth, the thinness of its inner bark, with its consequent small sap-vessels, renders the upward and downward circulation slow, and the growth is small. By heading-back or pruning judiciously, all the force of the nourishing fluid is thrown into a smaller number of buds, which make new and luxuriant shoots, with larger sap-vessels, and which afford a ready passage to the fluids, and the tree with these renewed energies will continue in vigour for a long time.

This treatment is especially valuable in the case of small trees of feeble or stunted growth, which are frequently cut back to a single bud; and a new shoot or shoots, full of vigour, give a healthy habit to the tree. In the nurseries this practice of heading-down is constantly pursued to increase the vigour of the young plants. And the forester, too, cuts back his Oak plants in the forest, after being a few years planted, and trains a single shoot from the bottom, knowing well that the vigour of this one shoot will be lasting, that the impetus given to the tree will continue, and that in a few years the cut-over trees will be many times larger than those allowed to stand over uncut.

If we look throughout the length and breadth of the land we will find in general, that as regards pruning on correct principles our orchards are as badly managed as our woods and plantations. This is a state of things not at all creditable to us in our present advanced stage of knowledge. In general orchard trees receive little or no pruning save the removal, in winter, of some injured and crowded branches by a saw or handbill; and as a consequence we find that when there is a crop of fruit, it is so closely and numerously packed on every part of the tree that it rarely gets to half its proper size, and its quality is much inferior. It is then of little or no value, and scarcely repays the labour of gathering; such was the case last season. Now, if a proper system of pruning were followed, we could insure regular crops every year of superior fruit and of fine quality, which would amply repay the labour of cultivating. The application of pruning to fruit trees differs much according to the species of trees. Trees that produce fruit on wood of two or more years' growth require to be pruned in a different manner from the Peach, which produces its fruit on wood of the preceding year. All pruning of the shoots should be done during the early part of summer; nothing should be left on till winter.

Disbudding should commence as soon as possible: this is the best mode of pruning, as it leaves no wounds to heal over, and, by being timely removed, they do not rob the trees of their nourishment. All buds not having fruit at their base, and not required to make wood, should in general be rubbed clean off;

but those having fruit on their base should be pinched back to two or three leaves. In our climate it is absolutely necessary that the sun should reach every leaf of the tree that the wood and buds may be properly matured. On spur-bearing trees too many blossom-buds must be carefully guarded against. In general too many are left on the trees, and when they get crowded the blossoms are often imperfect, and drop off without setting, and the weather is then often blamed when it has had nothing to do with the matter. I would strongly urge attention to this point, as I consider it of more importance than is generally thought. I am perfectly aware that summer pruning must be done at a season when people, and gardeners in particular, have plenty of other work on their hands, but as it is the proper time for pruning it should not be neglected. In order to keep trees in a healthy bearing state in our climate, it is necessary, especially on strong soils, to prune the roots in the autumn; but the inexperienced should proceed cautiously in this operation. It is best only to operate on trees that produce a superabundance of gross wood without much fruit. As long as trees are healthy and bear fine abundant crops it is best not to attempt it.

The state of fruit-tree cultivation out of doors is a disgrace to us. Even in market gardens, where one would naturally look for something better, fruit-tree cultivation is anything but satisfactory.

Proper summer pruning, and careful, judicious root-pruning when necessary, are the groundwork of good cultivation. By constant careful attention to these we shall keep our fruit trees in a healthy vigorous state, and they will annually yield us fine crops of superior fruit, no matter what the seasons may be.

*Stourton.*

M. SAUL.

### WINTERING BEDDING CALCEOLARIAS.

How to winter a large stock of bedding stuff in the smallest available space, and with the least possible expense, is to the gardener at all times a matter of considerable importance, and on which much of the success of his summer display materially depends. In the few following observations I propose to detail the method I practise of wintering the bedding *Calceolaria Aurea floribunda*, not only because it is eminently successful, but is at the same time so simple in its arrangement, and so cheap as to realise to some extent the school boy's simile, "As easy as nothing, and as cheap as dirt."

But first let it be understood, that as far as I have yet practised it my mode applies only to *Calceolaria Aurea floribunda*. That it may prove as successful in the case of other hardy bedding kinds I have no doubt, but I have no desire to recommend more than what I have myself put into practice.

And now for the details. About the first week in October I make up in a sheltered situation, but fully exposed to the sun, a framework of wood composed of planks 12 inches wide and 1 inch in diameter. In arranging the size of my frame I allow a space of 5 feet by 2½ for twelve dozen cuttings. I put at the bottom 3 inches of moderately good soil, over this 3 inches of finely sifted mould well mixed with sand, the whole being firmly pressed down before putting in the cuttings, which I do immediately after. Round the outside of the frame I bank up the soil, which materially aids in keeping out frost. After having sprinkled and shaded the cuttings for a week, or ten days if necessary, I leave them exposed till the frost sets in, and then I afford them the shelter of an old door or shutter during the night, giving them all possible exposure to sun and air when safe to do so; but when severe frost sets in I keep them covered up quite close till a thaw comes, and even though the soil within the frame may have been frozen hard, yet if the cuttings are not exposed to the light till the frost is quite gone they will be found not to be in any degree injured thereby.

By the middle of April, it will be found necessary to thin out the plants by transplanting every other one carefully to another frame, which leaves ample space for the remainder to grow into capital plants for bedding purposes.

I must do my plan the justice of saying that my present stock of *Aurea floribunda*, under the treatment I have described, is for robustness and symmetry second to none that I have seen in this locality.

A. D. MAYBUSH.

### CASTLE KENNEDY FIG.

THE Castle Kennedy Fig, of which the annexed figure is a faithful representation, has existed at Castle Kennedy, in Scotland, for upwards of a century, but how it came there, or what was its origin, are matters on which we have no reliable information. It is supposed that at some early period a former proprietor received it from the continent, but whether this was so, or whether it is a chance seedling, is not known, but there can be no doubt that it is quite distinct from any other variety in cultivation in this country. The great distinguishing feature of this Fig is its remarkable earliness. It ripens more than a fortnight before the White Marseilles, which is the only early variety worth cultivating, and as a forcing Fig it also surpasses every other for the rapidity with which it can be brought forward. The fruit from which our present engraving was taken, and which was forwarded to us by Mr. Fowler the skilful gardener to the Earl of Stair, at Castle Kennedy, was taken from a tree which was begun to be forced on the 20th of February last, and the fruit was ready for use in May.

The fruit is of the largest size, turbinate or somewhat obovate. The skin is of a pale dingy brown on the half nearest the eye, and of a greenish yellow on the half towards the stalk, and the brown part is mottled with ashy grey specks. The flesh when fully ripe is of a dull opaline colour with the slightest tinge of red towards the eye, very melting, and of good flavour.



Mr. Fowler says:—"The Castle Kennedy Fig, when grown alongside the White Marseilles, planted out and treated in every respect in the same manner, is about a fortnight earlier than the latter, fully three weeks earlier than the Brown Turkey, and more than a month earlier than the Brunswick.

"The importance of this will be apparent to those interested in the cultivation of Figs, not only for early forcing, but also for out-door cultivation, as it may be expected to ripen in cold and unfavourable localities where Figs have not heretofore been grown. In our wet and cloudy climate (Wigtonshire), it has ripened out of doors on a standard, and always ripens on a wall having a south-east aspect, early in August.

"When within a few days of being ripe, a clear honey-looking substance, of exquisite flavour, commences to drop from the eye of each fruit. When quite ripe this substance becomes somewhat viscid, hanging like an elongated dew-drop, from half an inch to three-quarters in length, clear as crystal, giving a very remarkable appearance to the fruit.

"The fruit of the Castle Kennedy Fig which was before the meeting of the Fruit Committee of the Royal Horticultural Society on the 30th of May, was commenced to be forced on the 20th of February. The first ripe Fig was gathered on the 27th April; the first dish on the 23rd May: thus proving that when forced early it can be ripened in about three months. The Figs here are planted out in a border in the inside of the house, and all treated in every respect in the same manner."

Taking it altogether—its size, earliness, and fine handsome appearance—this is one of our most valuable acquisitions to pomology.

---

## AUTUMN PROPAGATION OF BEDDING PLANTS.

THIS is a topic which has so often been elaborately treated of, and one about which it may be considered most difficult to say anything to better purpose than has already been advanced by men of long and large experience. It may, however, be safely admitted that the saying that "in the multitude of counsellors there is wisdom," is peculiarly applicable to every department of gardening. Depend upon it, men of spheres the most circumscribed may be as well able to teach and suggest on some particular topic as are those who have the direction of operations on the most gigantic scale; and we have each so much to learn in all that is comprehended in that wide and ever-widening word—Gardening, that it ill becomes any to hold forth with tones of imperious dogmatism on whatever subject he may think proper to treat. The diversity of ways and means with which different individuals accomplish results in many respects alike are almost as different, in some parts of their details at least, as are the individuals themselves: hence the never-failing interest that is kept up on the subject of gardening, and the certainty that may be assumed that, however different the doctrines that may be advanced and the method described, they cannot fail to prove of service to a few, at least, of the many who peruse these pages, even if, from circumstances over which they may have no control, they may not be able to follow out the ideas and practice which are from time to time brought forward. I therefore hope that, as the season of propagation is at hand, some tyro may benefit by what shall be briefly advanced.

If we could but fully understand the means by which the most important results are accomplished in the great laboratory of Nature, it would invariably be found that the means are in themselves simple, although, like all else, in the abstract, marvellous. And so I think it is found to be in gardening: the simpler the means, in most cases the greater and more satisfactory the results.

For a good many years I have made it a point for attainment to produce a given quantity of flower-garden plants by the simplest possible means consistent with the production of a first-rate article. I do not mean by this the many resorts and makeshifts which might be called into operation, and which, after a good deal of experience in that sort of thing, I have come to regard as most unsatisfactory, and the most expensive by far in the end. Here, as in everything else, depend upon it, what is worth doing at all is worth doing well; and in flower-gardening, as attempted in numerous instances at the present time, it would be a wise and satisfactory procedure if the area of flower gardens were much reduced, and the remainder better executed. This would be a great step towards rendering flower-gardening what it might be—one of the most delightful departments of a gardener's duties, instead of that which heaps upon him an untold amount of drudgery. It would, moreover, cover the present style of flower-gardening from the many objections which some raise against it. That the season of full beauty could be nearly doubled in duration by means of differently managing the plants now in use is a fact which has been fully proved; and this, too, without more labour—by simply reducing the area to be planted, and which is perfectly consistent with an enhanced degree of pleasure and enjoyment; for it is a fact beyond all dispute that a few beds may be made far more exquisite and effective than ten times their number as we sometimes meet with them.

And this is only one of the many advantages that would be gained by a different mode of procedure. It would relieve hothouses which have been erected expressly for other purposes from being turned into Pandora's boxes. After having had a long spell at turning out thousands of plants from forcing-houses and hardening them off by almost every means that could be devised; and, on the other hand, after the experience of a better-ordered state of affairs, the fact has forced itself upon me most convincingly, that the makeshift system is by far the most expensive, fifty per cent. more laborious, and equally more unsatisfactory in results, than when erections are afforded for the purpose. In this, as in everything else, there is a vast amount of unfruitful mental and bodily wear and tear, mishaps, and disappointments, and, to a great extent, abortive results, when that which is aimed at is altogether out of proportion to the means at command. And in flower-gardening, as now practised, gardeners themselves have plunged headlong, without adequate means, into an amount of labour from which, in many cases, they would be glad to retreat; and, after all, the splendour of the parterre is only of two or three months' duration, while it might be extended to nearly double that period, if the means and extent were more in character and proportion. If ever flower-gardening is to be raised many steps above its present level some course of this sort must be insisted on, as well as some alteration of the general principles now observed both in the character and arrangement of the plants.

In the autumn propagation of all flower-garden plants, excepting Geraniums and Calceolarias, the object is simply to prepare enough of stock from which to propagate, in early spring, sufficient numbers to meet the requirements of the place. Spring-struck plants, as is well known, are much to be preferred to those struck in autumn and winter; and the labour connected with such numbers is confined in the one case to weeks, while in the other it is spread over months.

Looking at cuttings, let us say of Verbenas, Heliotropes, Alyssum, &c., before they are taken from the parent plants, there we find them in all the health and vigour attainable in a rich soil and under the influence of full sun and air. The end to be attained is not simply how to get these rooted and established as independent plants; this could be effected in many ways. But

the question is how to effect it in the easiest, soonest, and most convenient way, and with the least possible amount of debility entailed on the plants in the process; and after they are thus rooted, how best to treat and dispose of them so that they can be wintered in the greatest health and robustness possible.

After having tried a good many methods of preparing a stock that is at the same time healthy and numerous enough to enable short work to be made of the spring propagation, I have found something like the following order of things to be the most satisfactory of any course that I have yet tried, although others may arrive at precisely the same end by different routes.

Early in August about a foot of last autumn's tree leaves are put into the bottom of a cold frame, and beaten firmly down. Over the leaves is put about 3 inches of soil, consisting of equal parts of loam, leaf mould, and sand well mixed together. This is beaten firmly down with the back of a spade, or any similar appliance, and in this state the frame is in readiness for the cuttings; the required number of the different kinds is selected from the margin of the beds, or from wherever they can be most readily had. There is not much ceremony about the selection and preparation of *Verbena* cuttings, only that they are short, stubby, fresh cuttings that have not yielded blooms, and that the leaves are removed from the bottom joint to prevent damping. They are made, dibbed into the frame, and watered with as little delay as possible, so that they are not allowed to droop and get injured by being dried up. When the necessary number is in they receive water through a very fine rose sufficient to moisten the 3 inches of soil. The frame is closely shut down, and rather thickly shaded during sunshine. In fact, everything is done to keep them as cool as possible. If the evenings are calm the lights may be entirely drawn off for a few hours, and when put on for the night air is left on. In the morning, if the day is likely to be hot, they are dewed over through a very fine rose or syringe. Under such treatment they root with little trouble and without making much growth at the top—at least, as compared with similar cuttings struck later in the season in warmer quarters. The object is to get roots formed with as little heat and stagnant atmosphere about the cuttings as possible, and so prevent their being drawn and weakly.

When they have made roots about an inch long they are pricked-off into round earthenware pans, 14 inches in diameter and 7 inches deep. The pans are prepared by placing a thin layer of rather finely-broken crocks over the bottom, then a layer of old mushroom-bed dung, which consists chiefly of horse-droppings, and they are filled up with a good substantial compost consisting of equal parts of a rather sandy loam and the same sort of dung already named, with a very slight addition of sand. About thirty plants of such as *Verbenas* and *Alyssum* are put into each pan, and as soon as possible after being pricked-off they are fully exposed to all weathers except heavy rains. By housing-time you might shear armfuls of fine healthy cuttings from them. They are, of course, repeatedly stopped, and kept free from bloom-buds as they grow, and carefully attended to with water. We make up about eighty or a hundred pans of *Verbenas* in this way; and they are wintered in any cool, airy, dry place, and kept moderately moist at the root; and even with such varieties as *Purple King*, which is largely grown, mildew rarely makes its appearance.

In spring almost any amount of cuttings can be had from such a stock. Last spring we struck about twenty thousand *Verbenas* alone in a very short time, and three times the quantity could have been struck if needed. As compared with plans that I have formerly adopted, and which used to be in vogue, this is found to be attended with far less labour and much better results.

In the case of Geraniums the middle of August is considered a good time to make a commencement (except in the case of Golden Chain, which is always surest if in a fortnight earlier); and if all can be put in by the middle of September it is a great deal better than later attempts. After trying a good many ways in striking all the different varieties of variegated Geraniums I prefer striking them and wintering them in eight-inch pots. They are not very heavily but carefully crocked. Over the crocks is placed a layer of mushroom-dung; and the pot is filled to within 3 inches of the brim with one part loam and one part leaf mould, and is then filled up with the same soil after mixing another part of coarse pit sand with it. The number of cuttings put into each pot varies from eighteen to twenty-four according to the size of the sorts. Large cuttings are preferred as those which root soonest, are least likely to damp-off, and make the finest plants in spring. These are dibbed into the pots immediately they are made, watered, and placed in a position where the pots will stand on a dry bottom, and be fully exposed to the sun all day long, with no covering at any time, unless it be to throw off heavy and continued rains. Most of the larger leaves are removed in making the cuttings, but in no case are they dried before being put into the cutting-pots, never being able to discover what was gained by such drying except mischief. In hot days, when water may not be needed in the soil, the cuttings are slightly dewed over in the evening when the sun has left them.

I have found that cuttings struck and wintered in pots of the size recommended keep much better, and are more conveniently managed, than when put into either smaller or larger sizes or into boxes. The advantage over boxes I conceive to be derived from the better drainage secured, and the more free play of air and light among the plants when in smaller and round detachments. The earthenware has also a little to do in the matter. The whole winter they are kept very dry, and in spring when shaken out of the soil there is a great amount of irritability about the whole plant, and their bunches of white roots are almost ready to take up the very sand itself.

The common scarlet varieties are struck and managed in the same way, except that the great bulk of them have been put into boxes to economise space. But from the conviction that they do so much better in pots, fewer of them will be put into boxes in future, but will be managed the same as detailed in the case of the variegated sorts. There are usually struck more than 15,000 plants, and a little calculation will show that, at the rate of eighteen to twenty in an eight-inch pot, it will not require such a vast space to winter them in.

I will not at present enter into the many methods which might be adopted under various circumstances, but have simply given what—after having tried various ways—I have found to be the most sure and satisfactory mode where such means as are necessary are at command.

D. THOMSON.

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## THE IMPORTANCE OF DEEP CULTIVATION.

IN any systematical management and routinal cropping of a kitchen garden, the practice of moving the soil to a great depth enters so largely into the economy of the matter, and is attended with so many advantages, that I have thought it worth while in a few words to keep the attention of all who may be concerned in such things directed to its importance.

It may be well to inquire in the first place into the reasons why this deep moving of the soil, or in common parlance trenching, is likely to act beneficially. We know that the practice is followed out by experienced men because they well know the benefits that will follow, but younger practitioners may not be so

well aware of its importance, and it is to such that my remarks may be said to be more particularly directed.

The operation of trenching may be said to act beneficially in a variety of ways. It renovates the soil by bringing up to the surface that which has become exhausted by the roots; and by turning down the top soil which has been exposed, it supplies a congenial medium for future crops to feed upon; and the exhausted soil being in its turn exposed to atmospherical action and influences, becomes again charged with fertilising matter, and in a fit state to be turned down again at a subsequent trenching. It equalises the action of drainage, thereby giving greater facility for the roots to penetrate through the soil, and it serves a most important purpose in opening up the earth to a great increase in the circulation of air and moisture through the soil, which, acting chemically upon the mineral and gaseous constituents thereof, prepare these for absorption by the roots.

Trenching must not be performed in an indiscriminate manner on all soils and subsoils alike, but must be varied in the manner of operation according to the character of each. In old garden soils, which are generally deep and homogeneous, a simple interchange of the top and bottom spits is usually considered sufficient for most practical purposes; but in commencing to break up new ground, it is very possible to make a great mistake in the first instance by trenching too deep, and bringing up too much of the subsoil to the surface. This requires caution, because there should not be a greater quantity brought up than will be well exposed to the influence of the atmosphere during the subsequent processes of surface-cultivation and tillage; but at the same time it is advisable to increase the depth of the soil which is moved, by turning over the subsoil at the bottom of each trench to the depth of a spit, and breaking it up, so that the roots and moisture may penetrate it. In performing the operation care should be taken to have the trenches sufficiently wide to enable the operator to be quite certain that the bottom is equally moved all over, because, if there is a ridge of hard unmoved earth left at the junction of the trenches, the bottom will form a series of ditches, which in any but porous subsoils will only serve for the retention of water. By successive trenchings at regular intervals, and bringing up a little more of the subsoil each time, the depth of what may be called the staple soil will soon be sufficiently increased.

There are no subsoils so bad as to be incapable of improvement by a judicious performance of this operation, whether clay, chalk, or gravel. The great object is to move the soil deep enough, and only to bring a couple of inches or so of the bad subsoil to the top at each trenching, which by exposure and admixture with dung soon becomes equal to the best surface soil. Even gravelly subsoils may be brought to the top gradually; and although the surface will become stony it will not interfere with productiveness, but it may be as well to pick off some of the largest stones from time to time.

The importance of moving the soil to a good depth in old garden soil can hardly be overrated, not only because air, moisture, and consequently the roots are thereby enabled to permeate the mass freely, but also because the residuum of former crops together with the manurial matters washed down from the frequent surface-applications of rich substances necessary to bring most kitchen-garden crops to perfection, require to be from time to time brought up to the surface, and purified, by exposure to the air, from many deleterious qualities which they contract under such circumstances. In such soils as these the operation is equivalent, and sometimes superior to, a good dressing of manure.

There is another great advantage attending the operation which should not be lost sight of in gardens where labour and water are scarce, which is, that plants in soils so thoroughly moved seldom suffer from drought when once they

have taken root. I have noticed Cauliflowers, planted in shallow-dug ground all button off in dry weather, whilst the same plants in trenched ground came to great perfection; and what is true of Cauliflowers, is more or less true of every crop which comes under the gardener's supervision.

JOHN COX.

### FAILURE OF THE STRAWBERRY CROP.

THE remarkable failure of the Strawberry crop, which has occurred in the present season to an unusual extent, is not easily accounted for; even experienced cultivators appear to have only vague conjectures respecting it. We have visited places long celebrated for the production of Strawberries, near Isleworth and Brentford; as well as the extensive tracts of land which once belonged to the Monastery of Syon—land which had been well chosen for gardening purposes, for it is deep, rich, warm, with a good aspect, and is in short in every respect highly favourable for fruit trees and vegetables. Here are heavy crops of Pears on young trees, on middle-aged, and also on some above a hundred years old, which are yet healthy and vigorous, so congenial is the soil to their growth. But as regards Strawberries, the crop even here is considered light, and in the case of certain kinds the failure is complete; so much so, that upwards of an hundred acres in the above-mentioned locality have been dug up and the ground filled with other crops. There are two sorts of Strawberries, the names of which will become memorable; one is Sir Harry (Underwood's), the other is called Sir Charles Napier. Both were considered to be good, but latterly Sir Charles has become the greater favourite, and is planted most extensively. This spring the plants appeared healthy and vigorous; but on an hundred acres there is no fruit. The blossoms were not killed by frost, for there were none to kill—no flower-scapes were produced; nor could the failure be ascribed to bad soil, for there is none in that locality; it cannot even be attributed to bad cultivation, for that is out of the question with such noted market gardeners as cultivate the land in this district. With their usual promptness and energy they dug down the Strawberry plants as soon as the absence of fructification was observed, and put in other crops. So much for the favourite Strawberry Sir Charles Napier. No variety, perhaps Keens' Seedling not excepted, ever rose so rapidly in the estimation of extensive cultivators, and we believe none has so rapidly fallen. Whether it will again be grown to the same extent as it has been is a question which time must determine; a similar catastrophe may not occur again.

In the meantime, however, attention is likely to be directed to Sir Harry. This sort we saw very fine in Mr. Myers' ground; the fruit measured upwards of 4 inches in circumference, and the crop was abundant. It is a good forcer, and continues in gathering for three weeks, the quality is likewise very good; on the whole this variety is highly deserving of cultivation.

Another sort, the Empress Eugénie, is large and bearing tolerably well; but it is too coarse in appearance, and not well-flavoured.

Of other fruits Apples are a thin crop. Pears are very plentiful. Plum trees are surrounded with stakes, propping up the branches, which would otherwise be broken by the enormous quantity of fruit they are bearing. In short, with the exception of Apples and Strawberries, all kinds of fruits in these grounds are abundant; and the same remark applies to other districts in the vicinity of London, and also to Kent.

We observed that the cultivation of Black Currants is greatly on the increase. One London house alone takes more than 50 tons. The variety preferred is the Black Naples.

In Essex we are informed that Pears are attacked by mildew. In Surrey they are a scanty crop, and owing to the hot dry weather the crop, such as it is, will soon be over. Strawberries generally did not produce blossoms here any more than they have done in Middlesex; and in instances where they did, the plants are dying off. In consequence of the very hot dry weather Gooseberries have been attacked in some places by a sort of red spider, so as to render it expedient to dig up the bushes. Cherries do not swell nearly so well as they ought in a great many cases. But, more unfortunately, the Potatoes begin to exhibit some symptoms of disease.—(*Gardeners' Chronicle.*)

## THE PEAR AND ITS VARIETIES.

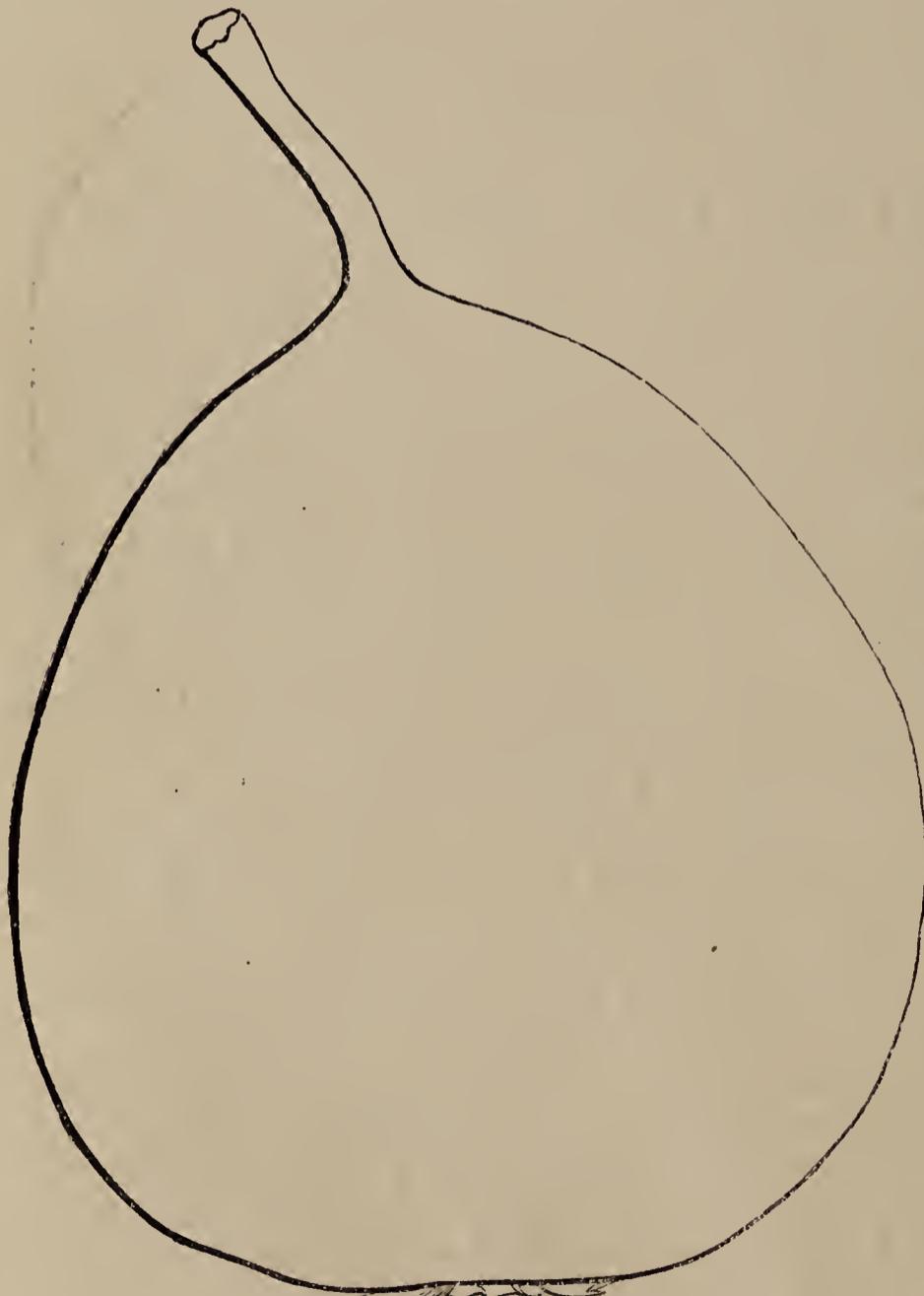
(Continued from page 55.)

### BERGAMOTTE SAGERET.

SYNONYME.—Sageret, *Decaisne Jard. Fruit. du Mus.* liv. 49.

FIGURE.—*Decaisne Jard. Fruit. du Mus.* liv. 49.

FRUIT medium-sized, 3 inches wide and  $3\frac{1}{4}$  high, roundish obovate, or some-



Bergamotte Sageret.

what turbinate. Skin thick, yellowish green, thickly spotted with large brown russet specks, which are more dense on the side next the sun, and where they form large patches of russet, and occasionally with a tinge of red on the side next the sun. Eye large, wide, not open, not depressed. Stalk stout, three-quarters of an inch long, inserted in a cavity. Flesh tender, melting, juicy, and sugary, with a pleasantly perfumed flavour, but rather gritty towards the core.

A good second-rate dessert Pear, ripe in the end of November, and continuing in use during December and January. In France it is regarded as superior to the Easter Beurré, but it has not proved to be so with us. It was raised by M. Sageret, of Paris, about the year 1830.

The tree is very vigorous and hardy, and forms a handsome pyramid, succeeding well as a

standard, either on the pear or the quince, but much more productive on the latter.

### BERGAMOTTE DE SOULERS.—*Duh.*

IDENTIFICATION.—*Duh. Arb. Fruit. ii. 168. Hort. Soc. Cat. ed. 3. p. 125. Lindl. Guide, 387.*

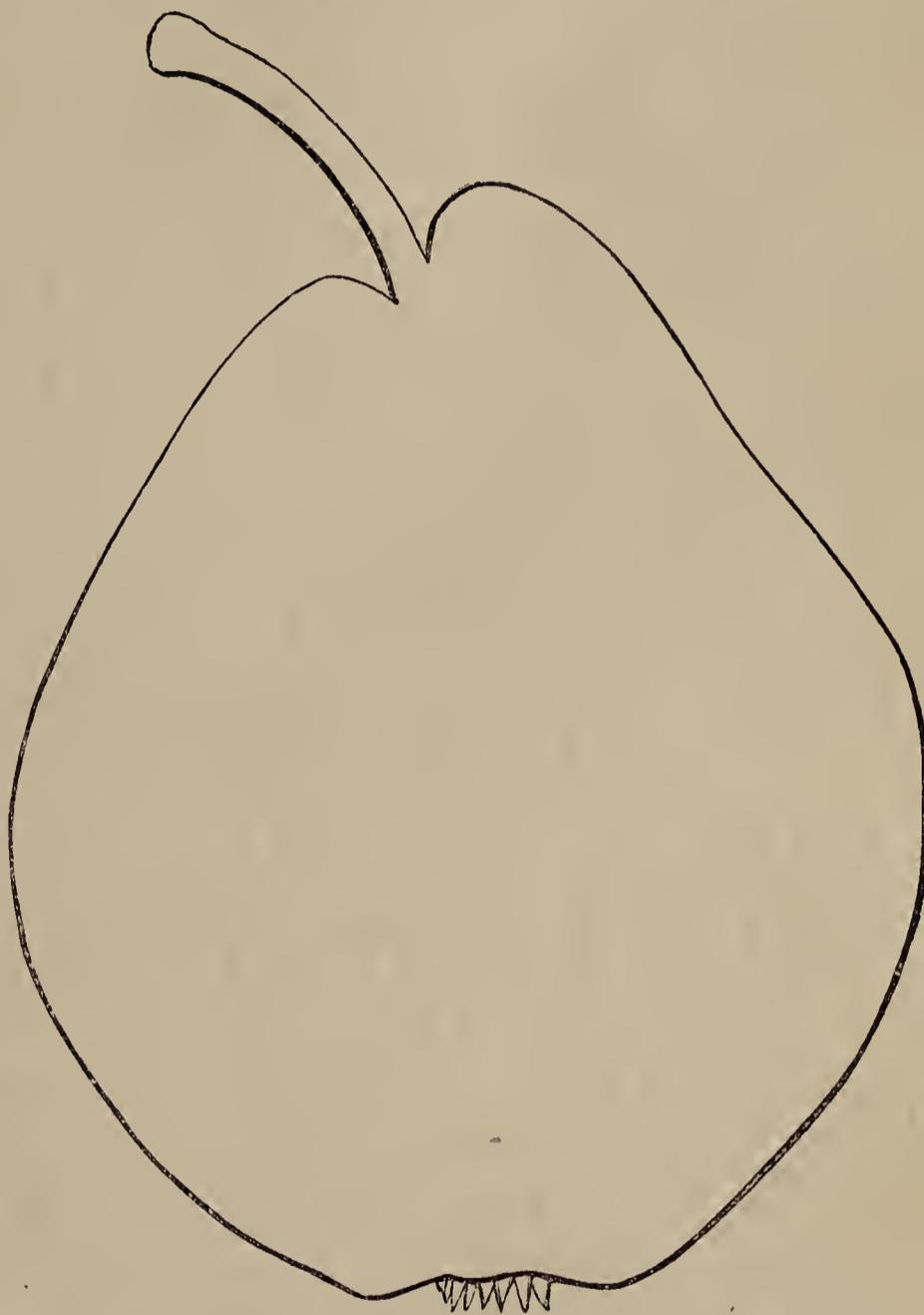
SYNONYMES.—*Bonne de Soulers, Merlet Abrégé, 110: Decaisne Jard. Fruit. du Mus. liv. 11.*

FIGURE.—*Duh. Arb. Fruit. ii. pl. xlv. f. 1. Decaisne Jard. Fruit. du Mus. liv. 11.*

Fruit rather large,  $3\frac{1}{4}$  inches long by  $2\frac{3}{4}$  wide, obovate, or oval. Skin smooth and shining, pale yellow, with a tinge of brownish red on the side next the sun, and covered with green and brown dots, some of which are rather large, and with a patch of russet round the stalk. Eye open, with short hard segments, and set in a shallow basin. Stalk an inch long, stout, and inserted in a close and narrow cavity between two fleshy swellings. Flesh white, tender, and melting, with an agreeable, sugary, and somewhat musky flavour.

An old French dessert Pear, too tender for this climate, and considered only of second-rate quality. It is ripe during January and February.

The tree is tender, and subject to canker, but is a good bearer, and requires to be grown against a wall, and in a light warm soil, which it does not merit. It succeeds well either on the pear or quince.



Bergamotte de Soulers.

### BERGAMOTTE SUISSE.—*Merlet.*

IDENTIFICATION.—*Merlet Abrégé, 79. Quint. Inst. 395. Duh. Arb. Fruit. ii. 163. Hort. Soc. Cat. ed. 3. n. 48. Down. Fr. Amer. 367.*

SYNONYMES.—*Bergamotte Suisse rond, Knoop. Pom. 86. Bergamotte Panachée, Ibid, 134; Decaisne Jard. Fruit. du Mus. liv. 64. Bergamotte marbré, Knoop. Bonte Bergamotte, Ibid. Bergamotte rayée; Schweizerbergamotte, Diel. Kernobst. i. 45. Swiss Bergamot, Mill. Dict. n. 33; Switz. Fr. Gard. 118. Lindl. Guide, 362.*

FIGURE.—*Duh. Arb. Fruit. ii. pl. xx. Knoop. Pom. t. ii. Kratt. Pom. Aust. t. 174. Decaisne Jard. Fruit. du Mus. liv. 64.*

Fruit medium-sized,  $2\frac{1}{2}$  inches wide and the same in height, roundish and flattened, somewhat inclining to turbinate. Skin smooth, and beautifully

striped with green and yellow, and faintly tinged with red where it is exposed to the sun. Eye open, placed in a round and shallow basin. Stalk three-quarters of an inch long, inserted in a small cavity. Flesh white, melting, and buttery, with a sugary and perfumed flavour.

An old French dessert Pear, of second-rate quality, remarkable for its beautifully striped skin. It is ripe in October.

The tree, in rich soil, is a vigorous grower, and an excellent bearer, but, unless grown in a favourable situation, it is liable to canker. It succeeds well either on the pear or quince, and requires a wall to bring the fruit to perfection. Poiteau considers this a variegated variety of Bergamotte d'Automne, which in all probability it is.

#### BERGAMOTTE THOUIN.—*Van Mons.*

IDENTIFICATION.—Diel Kernobst. xxiii. 176. Hort. Soc. Cat. ed. 3. n. 49.

Fruit rather below medium size,  $2\frac{1}{4}$  inches wide and the same in height, Bergamot-shaped, or roundish turbinate. Skin smooth, pale green at first, but changing as it ripens to pale lemon yellow, with a slight trace of pale brown russet about the eye, and covered over with numerous pale brown dots. Eye open, with erect and horny segments, and placed in a shallow basin. Stalk an inch long, slender, inserted in a narrow cavity. Flesh white, tender, and melting, with an agreeable, sugary, and vinous flavour.

A good dessert Pear, but only of second-rate quality, ripe in November. It was raised by Dr. Van Mons, and named in honour of M. J. Thouin, director of the Jardin des Plantes at Paris.

The tree is a vigorous grower, and an abundant bearer, succeeding well as a standard.

#### BESI D'ESPEREN.—*Bivort.*

IDENTIFICATION.—Alb. de Pom. ii. 144.

FIGURE.—Alb. de Pom. ii.

Fruit above medium size,  $3\frac{3}{4}$  inches long and  $2\frac{3}{4}$  broad, long pyriform. Skin clear green, mottled with pale brown russet, and, as it acquires maturity, assuming a yellowish tinge. Eye rather small and open, set in a shallow depression. Stalk slender and woody, 1 inch to  $1\frac{1}{2}$  long, inserted in a narrow cavity, with a swollen lip on one side of it. Flesh white, buttery and melting, juicy, sugary, and vinous.

A second-rate Pear, ripe in November. It was raised by Major Esperen, of Malines, and the tree produced fruit in 1838, at which period it was about twelve years old.

#### BESI GARNIER.—*Liron d'Air.*

IDENTIFICATION.—Liron d'Air. Not. Pom. i. 31.

Fruit large,  $4\frac{1}{2}$  inches long and 3 wide, pyriform. Skin rough to the feel, dark green, strongly mottled with brown russet, and finely dotted with the same colour; when it attains maturity it assumes a yellowish tinge, and has a slight tinge of crimson on the side next the sun. Eye set in a shallow basin. Stalk three-quarters of an inch long, swollen at its insertion, and placed on a level with the surface. Flesh white, crisp, and breaking, juicy, and sugary.

A coarse and second-rate fruit, in use in April. It was raised by M. Garnier, of Bouvardière, near Nantes.

#### BESI GOUBAULT.—*C. Hort. d'Ang.*

IDENTIFICATION.—Com. Hort. d'Ang.

Fruit medium-sized,  $2\frac{1}{2}$  inches long and over  $2\frac{1}{4}$  wide, turbinate. Skin lemon-coloured, thickly strewed with russet dots, and on the side next the sun almost entirely covered with pale brown russet. Eye rather large and open,

with broad clove-like segments, and set in a shallow depression. Stalk from half an inch to three-quarters long, slender and woody, inserted in a very narrow cavity, with a fleshy lip on one side of it, and surrounded with a considerable patch of russet. Flesh half melting, rather crisp, gritty at the core, and with a pleasant rose-water flavour.

A coarse and only second-rate Pear, ripe in the end of October and during November. It was raised by M. Goubault, of Angers.

### BESI D'HÉRY.—*Merlet.*

IDENTIFICATION.—*Merlet Abrégé*, 80.

SYNONYMES.—*Bezi d'Hery, Duh. Arb. Fruit.* ii. 139. *Besy d'Hery, Knoop. Pom.* 117. *Besi de Heric, Decaisne Jard. Fruit. du Mus.* liv. 6. *Bezi d'Heri, Hort. Soc. Cat.* ed. 3. p. 129. *Besidery, Mill. Dict.* n. 45. *Bezi royal, Acc. Hort. Soc. Cat. De Bourdeaux, Ibid.* Wilding von Hery, *Diel. Kernobst.* xv. 97. *Kümmelbirne, Christ. Handb.* No. 72. *Französische Kummelbirn, Christ. Wörterb.* 190.

FIGURES.—*Knoop. Pom.* tab. vii. *Decaisne Jard. Fruit. du Mus.* liv. 6.

Fruit about medium size,  $2\frac{3}{4}$  inches wide and the same in height, roundish.

Skin thin, very smooth, bright green at first, but changing when it ripens to pale yellow, with a slight tinge of red on the side next the sun, strewed with very minute points, and with a patch of delicate russet round the eye and the stalk. Eye large and open, with spreading segments, set in a shallow depression. Stalk slender,  $1\frac{1}{4}$  inch long, inserted in a small round cavity. Flesh white, fine-grained, crisp, and juicy, with somewhat of a muscat flavour, or of the Elder-flower perfume.

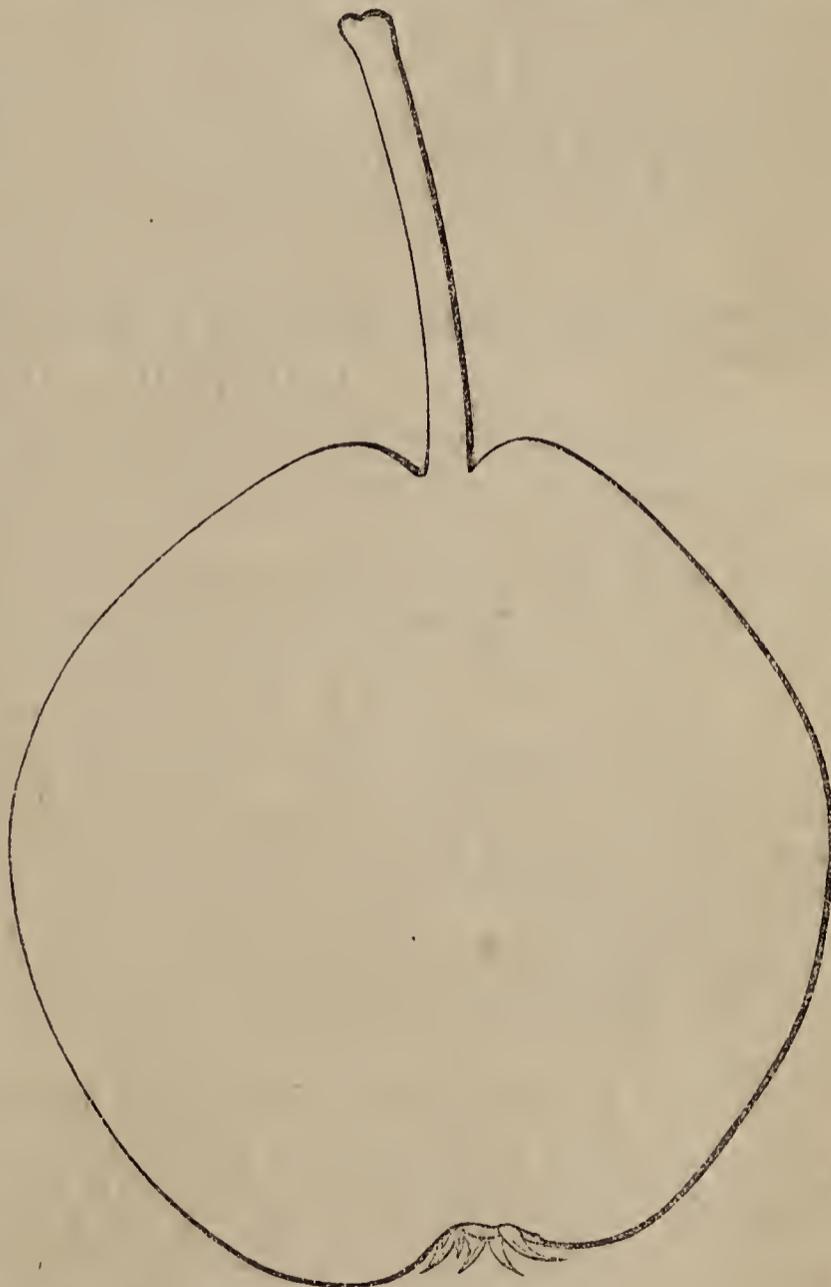
A first-rate cooking Pear, in use from October to November.

The tree is vigorous, and a good bearer in rich soil, and succeeds well as a standard. It was discovered early in the seventeenth century in the forest of Hery, in Brittany, between Rennes and Nantes. Mollet, writing in 1652, says, "This variety came recently from Brittany. The Bretons give it the name of Beside-Héry, signifying the Pear of Henry; for when the King

Henry the Great, of happy memory, travelled into Brittany to reduce the inhabitants to subjection, when he was at Nantes he sent me to see a garden which is near Nantes, called Chassée. Immediately after I had arrived at Nantes the gentlemen of Rennes sent a basket of fruit to His Majesty."

(To be continued.)

H.



Besi d'Héry.

## SPRING BEDDING.

THE late hot and dry weather has been most trying for the preparations of stock for arrangements upon this system, many of the plants, as Pansies, Aubrietias, Alyssum, &c., were quite dried up before lifting from the beds and ribbons, where they have been gay the two months previous to June. A very little care in laying them in, and a good watering will soon revive them, and the sooner cuttings are put in now the better will the stock be for next autumn's planting. A great point is to consider the colours wanted for certain ribbons and borders, and propagate accordingly. Pansies, perhaps, repay the little labour necessary better than many of the others, from the long period of their effective blooming, and if the stock is small the cuttings put in now will give one or two toppings that strike root sooner than the present hard joints. Cheiranthus, the variegated Sage, Lamium, &c., also make better beds and edgings for winter if put in now. Again, many seeds must be sown, as Wallflowers, red and yellow, Anemone, if not already, and plenty of Stocks. I was surprised to learn the other day from J. Howard, Esq., of Lake End, the finest Brompton Stock grower perhaps in England at one time, that the seeds should never be old, for really good fine blooms as large as a half-crown, and 2 feet of bloom. He has always found that the old seed brings variegated flowers. Perhaps this may have been noticed by others, who will give us their experience, as we have found so many plants improve by age in the seed.

J. F.

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 REPORT ON THE BEDDING PELARGONIUMS GROWN AT CHISWICK, 1864.

BY THOMAS MOORE, F.L.S., SECRETARY TO THE FLORAL COMMITTEE.

THE most approved sorts are indicated throughout by an asterisk (\*), and the next grade by an obelisk (†). The varieties which are not distinguished by any mark are to be regarded either as unnecessary, from their similarity or inferiority to other kinds, or from their absolute worthlessness.

## SERIES I.—PLAIN-LEAVED VARIETIES.

## 1. FLOWERS SCARLET.

*Achilles* † (Presented by Mr. Bull).—Vigorous habit; flowers large and of fine shape, in fair-sized trusses, scarlet, lighter and brighter than Punch. This was formerly called Vivid, but the name has been since altered to avoid confusion, there being already a fine scarlet variety bearing this latter name.

*Brilliancy* (Bull).—Vigorous habit; flowers in immense trusses, large, and of bright scarlet, but not distinct enough from Punch.

*Doris* (Bull).—Vigorous habit; flowers large light scarlet. Too thin as a pot plant.

*Eleanor* \* (Bull).—Dwarf, free habit; flowers large, scarlet, of good quality, As a pot plant, under glass it proved also dwarfish and free, with bright scarlet flowers in large trusses, for which it was adjudged the mark.

*Envoy* (Bull).—Vigorous habit; large scarlet flowers in large trusses but not considered superior to Punch.

*Faust* \* (Bull).—Vigorous habit; flowers very bright scarlet, large, and of first-rate shape, borne in large trusses. It proved also a very showy plant when grown under glass, producing immense heads of flowers.

*Garibaldi* (Downie & Co.).—Vigorous habit; flowers scarlet, of good quality; much in the style of Punch, and too much like it to be also required.

*Harkaway* (Taylor).—Dwarf habit; leaves smooth; flowers orange scarlet, of loose shape.

*Lady Cowper* (Francis).—Dwarf and compact; flowers light scarlet, white in the eye. Too near to Waltham Pet.

*Lady Rokeby* \* (Bull).—Moderately vigorous habit; flowers light scarlet, in fair trusses. This proved good as a pot plant, but not so good as a bedder.

*Le Zouave* (Van Houtte).—Vigorous habit; flowers large, very bright scarlet, but not sufficiently numerous in the truss.

*Little David* (Low & Co.).—Very similar to Little Major, and, like it, suitable for small beds, or for edgings.

*Little Major* \* (Turner).—Dwarf habit; flowers light scarlet. This variety maintained its previous character as a good dwarf bedder.

*Major Domo* (Bull).—Moderately vigorous; flowers light scarlet. A fine bold plant for pot culture.

*Mars* (Turner).—Dwarf, moderately vigorous habit; leaves distinctly lobed; flowers of good form, very bright orange scarlet.

*Palastro* (Salter).—Dwarfish habit; leaves lobed; flowers dull orange scarlet.

*Punch* \* (Fraser, Turner).—Vigorous habit; flowers large in bold ample trusses, bright scarlet, and very showy. The best of the large-growing plain-leaved scarlets in the whole collection.

*Red Dragon* (W. Paul).—Vigorous habit; leaves faintly green-zoned; flowers very rich deep scarlet, in compact trusses, and of good form. The deepest coloured scarlet in the whole collection.

*Rigby's Queen* (Fraser).—Vigorous habit; leaves hairy; flowers large, loose, light scarlet. Not adapted for beds.

*Royal Dwarf* (Turner).—Moderately dwarf habit; flowers scarlet, free, but not equal to Trentham Scarlet.

*Royalty* (Bull).—Vigorous habit; bright scarlet flowers.

*Royalty* (Williams).—Moderately vigorous; flowers bright scarlet.

*Stella* (Dixon).—Dwarf habit; flowers of a deep rich scarlet, as in Red Dragon, but not effective.

*Trentham Scarlet* \* (Fraser).—Moderately dwarf; flowers bright scarlet, in good trusses, free. One of the best of the dwarf-growing scarlets for bedding purposes.

*Waltham Pet* \* (W. Paul).—Very dwarf compact habit; flowers light scarlet, of good shape, with a small white eye. A good dwarf bedder.

## 2. FLOWERS CERISE OR ROSY SCARLET.

*Beauté de Meldoise* (Fraser).—Very similar to Lady Middleton, and too near to be required.

*Lady Middleton* \* (Taylor).—Moderately vigorous; flowers in large trusses, of good size and form, bright cerise. Also called Trentham Rose and Shrubland Rose.

*Lord John Russell* (Rollisson).—Dwarf habit; flowers deep rosy scarlet; distinct in colour.

*Viceroy* (Bull).—Vigorous habit; flowers large, rosy scarlet.

*Visitor* † (Bull).—Moderately vigorous; flowers rosy scarlet, of fine shape and of large size. It was of indifferent quality as grown in pots.

## 3. FLOWERS ROSE PINK.

*Christine* \* (Kinghorn).—Moderately vigorous habit; flowers rose pink, freely produced, and of good form. Both this and Rose Queen hold their place in the first rank of bedding varieties.

*Primer* (Bull).—Moderately vigorous habit; flowers bright rosy pink with white base.

*Roseum Compactum* (Salter).—Moderately vigorous habit; flowers in compact trusses, small, rose throughout.

*Rose Queen* \* (Kinghorn).—Moderately vigorous habit; flowers rose pink, with the base of the upper petals paler, freely produced, and of good form.

(*To be continued.*)

## REVIEW.

*Hardy Ferns; How I Collected and Cultivated Them.* By NONA BELLAIRS.  
London: Smith, Elder, & Co.

THIS is one of the most charming books on plant-collecting we have ever read. Reader! are you a plant-collector, or a lover of nature? If so, procure this little volume and take a lesson from it. Here is an example of what you will find:—

“There’s not a nook within this solemn pass,  
But were an apt confessional for one  
Taught by his summer spent, his autumn gone,  
That life is but a tale of morning grass,  
Withered at eve. From scenes of art which chase  
That thought away; turn, and with watchful eyes  
Feed it mid Nature’s old felicities—  
Rocks, rivers, and smooth lakes more clear than glass  
Untouched, unbreathed upon.”—WORDSWORTH.

“Through the Trossachs—not walking or driving leisurely, stopping here and there to admire, now dragging this wheel, now getting down for a lounge up that hill; but dashing, scrambling, tearing along on the outside of a rickety old coach, driven unicorn fashion, with a wild-looking ‘leader,’ having a mad gleam in her eye, called ‘Black Bess’ by the coachman, who instead of minding his horses, kept quoting Sir Walter Scott, to the intense horror of one of our party, a superb four-in-hand ‘whip.’

“Oh! the perils of that drive—the ludicrous mixture of the sublime and the ridiculous. Black Bess scorned a whip, and the coachman employed his to illustrate his quotations. ‘There, madam, is the rock where Fitz James withstood Roderick Dhu.

“His back against a rock he bore,  
And firmly placed his foot before.’

Hold in, Bess, will you; what’s up now?’ ‘My good friend,’ broke in the whip, ‘do let me have the reins. Do pray be careful.’ ‘Bless you, sir, don’t be frightened, Bess is as gentle as a lamb when you let her have her own way. Hold hard, old girl. Now for it!’ and like a mad thing, Bess was tearing down a grip, and pulling might and main up a steep ascent.

“A few more alarming quotations and we came to Loch Katrine, lying graceful and beaming, with its little sunny isles beneath the shadow of its mountains and its trees.

“A small steamer plies up and down this lovely lake, and you find yourself looking out for land-marks given you by Scott. The ‘beach of pebble bright as snow,’ the ‘silver strand,’ are there, it only needs ‘fair Ellen’s’ voice to take the place of the rough music of the paddles.

“Loch Katrine is a graceful preparation for the grander beauty of Loch Lomond. I can hardly fancy a lovelier picture than that which bursts upon you as you near the inn of Inversnaid, Ben after Ben rising in the distance, some brown, some blue, and some with bright patches of green here and there.

“I did not forget the Ferns. I spent hours hunting the hill-side at Inversnaid. *Oreopteris* grew in abundance, with beautiful *Filix-fœmina* and other common Ferns. I had made friends on the lake with a gentleman, armed as I was with trowel and bag. He joined us in the walk.

“What success?’ I asked, half hoping he had found some rarity, half fearing lest his booty should exceed my own. He shook his head. I opened my store triumphantly. ‘Look here,’ I said, ‘is not this a wonderful find?’ and I displayed a graceful little Fern. ‘This is the *Woodsia ilvensis*!’

“I saw a twinkle in the ‘Fern-man’s’ eye; but he told me gravely my

specimen was only a baby 'Filix-fœmina;' and then he added how troublesome baby Ferns always were, and that one could not easily decide on a Fern unless there was fructification. I might hunt for varieties of Filix-mas and fœmina, but he thought I should find nothing else. Then he discoursed of Ferns in general and of Fern-hunters, how he found ladies looking for Septentrionale in a wood, for Ceterach in a ditch, and for Asplenium viride on a wall. 'I do,' said I.'

" 'It is a pity to waste time,' he answered. 'Find out the whereabouts before you search. Know what you are likely to find, and then take anything strange you meet with.' And so it came to pass, I only brought away from Inversnaid a few young plants of Oreopteris and a Lycopodium or two; but I took to more diligent readings of Moore, and wished there had been a few simple directions as to the 'how' of finding Ferns.

"Of course we made the tour of Loch Lomond in the steamer, which was filled with a strange mass of human beings bent on pleasure—the geologist with his hammer, the young girl with her sketch-book, the botanist with a round tin at his back, the pedestrian with his knapsack. For five minutes we scanned each other, and then turned our attention to the scenery. It was a glorious day—a day of strongest lights and shadows—a day of sun and cloud; and I could scarcely fancy any luxury greater than lying down on a sofa of plaids, and sailing through this beautiful world of waters—cut off, as it seemed to be, from any outer world by high frowning mountains, by steep shaggy rocks—every minute the scene changing, bold rugged Bens melting away into bright green islands, and these into a far-off distance of more gentle outline. Looking from side to side as you approach Inverarnon, you came to a hill covered with Firs, some standing, many fallen, and already 'barked.' A picturesque group of women in red petticoats and white jackets are seated by a picnic fire cooking; these are the 'barkers,' who live in rough huts built about the wood during their season of work, and vividly remind one of the Olive gatherers in the Olive woods of Sardinia.

"From the head of Loch Lomond a coach conveys you over the Black Mountain and through the awful pass of Glencoe to the hotel of Banavie at the foot of Ben Nevis, where I was assured I should undoubtedly find Polystichum lonchitis; and up the mountain sides I tramped many a weary mile in the search; now scrambling up a rocky path, now floundering in a bog—but no lonchitis. Indeed, I may here own that I have never found one plant of this most interesting Fern. 'Lonchitidioides' I have found in plenty, and some bearing such close resemblance to lonchitis as for a time to create a doubt even in the mind of Mr. Bree; but the doubt cannot last very long, for I have proved the fact that lonchitidioides in time becomes lobatum, and after a while lobatum becomes P. aculeatum. I have watched the plants changing from year to year, and have had many an argument about it; but each Fern-grower can prove it for himself in three or four years.

"I have one large plant of true lonchitis, which I bought at a small nursery without being able to trace its history, and from which I have this autumn divided three young plants. There is one feature in lonchitis which entirely divides it from lonchitidioides—the pinnules, even in the tiniest frond, lap over each other like the scales on a fish's back; each pinnule is furnished with sharp teeth, with a projection like an ear close to the rachis, which is covered with brown scales; the fronds grow stiff and erect, and its whole formation gives one the idea of protection from wet. The fronds spring from the centre, several sets of them during the summer, the whole preserving a compact vase-like form. During the extreme heat of summer, after watering the Ferns, I made a practice of pouring a little water into the cup of the plant, thinking to encourage the new fronds. After some time I observed a little frond quite perfect, yet very small, spread itself like a guard over the nest of young fronds. I gave up my system of encouragement, and, instead, threw a little cocoa-nut refuse into the centre of the cup as a protection; and this has answered beautifully, and the plant has thirty fronds on it of this year's growth, but the long-continued drought has caused these to be less fine than usual.

"In the wooded dells at the foot of Ben Nevis I found the Pyrola, whose pretty bell-like blossoms of white with a rosy flush were as fragrant as Lilies of the Valley. I brought several plants away, but failed to make them grow.

“My next hunting-ground was Obán and its neighbourhood; and here I had great success with *Cystopteris fragilis*, which abounds in many beautiful varieties. On the road to the Kerrara Ferry I found *angustata*, with its acutely drawn-out length of frond and pinnæ; *dentata*, broad and stumpy-looking, bearing a near resemblance to *Dickieana*, save that the fronds are more robust and the pinnæ not quite so closely approaching each other. I have never found *C. alpina*, *C. montana*, or *Dickieana*; but I possess many healthy plants of each variety excepting *montana*, which I have lately procured from Mr. Veitch's nursery. It promises to grow rapidly as the others do, but I daresay it will need a little extra care.

“The walk from Oban to the Ferry will repay the tourist, even if he be not a lover of Ferns. Amongst the heather he will find the golden *Asphodel* with its feathery blossoms of exquisite form; and in July there are beds of rich ripe Strawberries scenting the air, which blows pure and fresh around him. He should go at eventide, and watch the sun setting over one of Nature's loveliest scenes. The sea, broken into numerous still, calm lakes by rocky islands, reflects every golden cloud, while the distant mountains form a frame of the softest blue; and above and beneath, it is the same fair scene.

“Oban is a real Scotch town—you feel you are in the Highlands. The people talk a *patois* of English-Gaelic, and understand you with difficulty; the shopkeepers have an English of their own. It is a strange, isolated community, grafting English fashions slowly on northern stocks.

“You go to a ‘store’ to buy calico or some little matter. ‘Have you any good calico?’ you ask. ‘Yes—no—I think—my calico is worth hardly anything just. Yes, it's very bad calico.’ Perhaps you are obliged to have it, and to your surprise find it very dear. You remonstrate. ‘Yes, I think it's very dear calico, and no good in it,’ the answer.

“Then their good nature is wonderful. They *will* know your business, and *will* insist upon trying to help you.

“In a country walk you pass by what looks like a huge washhouse. ‘Is that a washhouse?’ you ask a poor woman in the road. ‘A washhouse, is it? Yes I think. Is it a washerwoman you want? Allow me to recommend you one; it's Mistress McFarlane, of Tweedle Street; she's just the most perteklar woman in fine linen and dressing.’

“Staffa and Iona are ‘done’ from Oban, but it was just afraid of the water I was; so I watched the departing and returning steamer in peace, picturing to myself the damp beauty of Fingal's Cave; the ruined cathedral standing out against the clear blue sky; and wondering what Columba would have said to the Free Kirk in Scotland, and whether any Ferns grew upon the weather-beaten island.

“I spent a day on Kerrara, hunting in vain; but it is not time wasted, for the shores of the island are very beautiful, and the slopes green and sunny, and many a lesson of life may be learned while listening to the quiet music of the waves breaking against the shore.”

## OUR MONTHLY CHRONICLE.

ROYAL HORTICULTURAL SOCIETY.—At the meeting at the Floral Committee on the 30th of May, a very interesting collection of plants was exhibited, including fine specimens of Orchids and various novelties of merit. Among the latter were some new Ferns from Messrs. Backhouse, of York, and *Phalænopsis sumatrana*, a very beautiful species from Mr. Stone, gardener to J. Day, Esq., of Tottenham. This was originally discovered in Sumatra, by Korthals, about a quarter of a century ago, and was flowered in the Leyden botanic garden. The flower, as exhibited, was yellowish barred with reddish brown, but there are, it is believed, two varieties, the one with lilac and the other

with violet bars. New *Pelargoniums* constituted an important feature at this meeting. W. Hoyle, C. Turner, and Progress from G. Hoyle, Esq., of Reading, received first-class certificates, also *Zonate Rising Sun*, from Mr. Turner, a dwarf variety with golden leaves, having reddish brown zones; and *Wilt-hire Lass*, from Mr. Keynes, with large trusses of rosy pink flowers. *Verbena Maonetti Princess Victoria*, a deep rose bedding variety of dwarf compact habit, was sent by Mr. Wills, Oulton Park, and received a first-class certificate.

The following *Rhododendrons* in Messrs. Waterer and Godfrey's show also received first-class certificates, viz.: — *Caractacus*,

Mrs. H. H. Hunnewell, Stella, Mrs. John Clutton, Charles Dickens, Lady Clermont, and H. W. Sergeant.

The most remarkable object before the Fruit Committee was the Castle Kennedy Fig, of which an account is given in another page. From Mr. Ingram, came Frogmore Early Crown Cherry, a seedling producing small red fruit of rich flavour and ripening ten days earlier than the May Duke, but, as Dr. Hogg remarked, not so early as Belle d'Orleans. At the subsequent scientific meeting, Mr. W. Wilson Saunders stated that he had found when the spathe of *Sauromatum guttatum* first opens, that it rises in temperature  $4^{\circ}$  or  $5^{\circ}$ , and he had observed this not once but repeatedly. Mr. Bateman then delivered an interesting commentary on the Orchids, in which he took occasion to allude to tailed Orchids, and among others to an *Angræcum* of which dried specimens had been sent home by Captains Speke and Grant, and which had caudal appendages of extraordinary length. To this he gave the name of *Angræcum Grantii* in compliment to Captain Grant, who, being in the room, stated that it had been found by himself and his lamented fellow traveller three degrees from the equator. Mr. Bateman also gave the history of the *Cuitlauzina pendula*, of Lexarza, which was identified by the younger Reichenbach as being the same as *Odontoglossum citrosum*, and Mr. Bateman suggested that the latter name should be changed to *O. pendulum*, the original specific name of Lexarza, more especially as the plant is the only one of the genus in which the flower-stems are strictly pendulous.

The Pelargonium show was held on the 3rd of June, and there was a bank of these flowers about 140 feet long. Mr. Fraser, of Lea Bridge Road, was the only nurseryman who exhibited, but his plants both of show and fancy kinds were large and in excellent bloom, especially single specimens of *Desdemona* and *Delicatum*. Among amateurs, the best specimens were those from Mr. Ward, gardener to H. Wilkins, Esq., and Mr. Donald, gardener to J. Barclay, Esq., Knotts Green. A very beautiful seedling called Charmer, was shown by Mr. Bull, scarlet with a white eye, having a violet tinge at the junction with the scarlet, the upper petal with a dark blotch and broad painted crimson edge. Groups of Palms, Ferns, and other plants were shown by Mr. Bull, stove and greenhouse plants by Messrs. Lee, and several fine boxes of cut Roses by Mr. W. Paul and Messrs. Lee.

The first principal show took place on the 10th, but was not well supported by exhibitors; and the objects brought partook of a miscellaneous character, and in several cases were far from remarkable for their excellence. Among other stove and greenhouse plants a wonderfully fine *Phænocoma prolifera* was shown by Mr. Fraser, who

also contributed very good Pelargoniums, but as much cannot be said of some of the others. New plants were in great force, and upwards of sixty certificates were awarded to them, but for the most part they had made their appearance before at the meetings of the Floral Committee. Messrs. E. G. Henderson had a new Ivy-leaved Geranium called *peltatum elegans*, which may be regarded as an acquisition; the leaves are bright green, and the rosy lilac flowers are produced in good compact trusses instead of in loose ones. *Primula Parryi*, with deep rosy purple flowers, and *Pentstemon grandiflorum*, with very large pale lilac flowers, both from Mr. Thompson, of Ipswich, received first-class certificates. Mr. Veitch and Mr. Bull, each exhibited numerous collections, that from the latter including several fine varieties of *Aucuba*. There was a small display of fruit, mostly of good quality, but nothing very remarkable. Altogether, the experiment of holding a principal show on a Saturday was not very encouraging, and it had been, indeed, previously decided at a meeting of the Council and Fruit and Floral Committees, that in 1866 special and great shows are to be held on some other day. The subjects submitted to the committees are likewise to remain on the meeting-days till 5 o'clock, which will give the public a better opportunity of seeing them, for at present, as soon as the scientific meeting is over the plants, &c., are removed. On the 13th of June, Mr. Bateman again delivered an interesting lecture, the subject being the beautiful genus *Dendrobium*.

ROYAL BOTANIC SOCIETY.—The second great show took place on the 14th, and there was again a fine exhibition and very numerous attended, both by exhibitors and visitors. The specimen plants were in fine condition and of the usual character; the Orchids good, though some of the collections were somewhat marred by the introduction of small specimens to make up the number. Azaleas were past their best; the only ones really good were those from Mr. Veitch. Mr. Bailey, of Shardeloes, again received a mark of distinction in the shape of a large silver gilt medal for Pelargoniums; this time for Fancies. Of Roses the stands of cut blooms were very numerous; the most striking for excellence were those from Mr. Turner and Mr. May, gardener to C. M. Worthington, Esq., Caversham Park, Reading. Boule d'Or from the latter was magnificent. Of seedling Pelargoniums, Charmer and Sparkle from Mr. Bull; Nero, Atalanta, Alabama, and Gladiateur, from Mr. Nye, gardener to E. Foster, Esq., had first-class certificates; and of the Zonate division, Pillar of Beauty, Amy Hogg, and others of Beaton's seedlings received a similar award, as well as Exhibitor, Sir R. Peel, Pink of Perfection, Great Eastern, and Gladiateur (there were

two Gladiateurs in the field) from Mr. Windsor. There was a good show of fruit. Pines were few, but included one or two good Providences and Queens; Grapes very good, especially Black Prince from Mr. Hill, Keele Hall, and Mr. Meads, gardener to Raikes Currie, Esq., Minley Manor, who had equal first prizes. The weight of Mr. Meads' three bunches was 8 lbs. 14 oz. Mr. Fowler, Castle Kennedy, and Mr. M. Henderson, Cole Orton Hall were equal first, for Black Hamburg, Mr. Meredith second; and when Mr. Meredith is second the bunches which are first must be fine indeed, but it was a close competition. Muscats, as usual at this season, though several excellent bunches were shown, were unripe. Strawberries were inferior, being comparatively small and having a dull appearance. Great complaints are made of the Strawberry crops round London; they are a failure this year. Sir Charles Napier, which has been largely planted for the supply of the London markets, appears to have suffered more than other kinds, not even producing flower-scapes. Many acres of it have been dug in, and the ground cropped with other things.

#### OBITUARY.

SIR JOSEPH PAXTON, M.P.—It is a painful duty to have to record the loss of one who held so great a reputation both in the horticultural and commercial worlds as Sir Joseph Paxton—of one who from small beginnings rose to high position, who assisted in carrying out many great enterprises, and who never in the full tide of his prosperity forgot the friendships of his early years, and that love of gardening which was strong in him to the last. He was born at Milton Bryant in Bedfordshire, where his father was a farmer, in 1801; and his attention having been attracted to gardening, he at the age of 15 entered the gardens of Sir G. P. O. Turner, Bart., of Battlesden Park. He remained there two years, and then went to Woodhall Park, Watton, where he continued three years, at the end of which time he returned to Battlesden, and was gardener there for two years. In 1823 he came to London, and was for a short time in the garden of the Duke of Somerset at Wimbledon. In November of the same year he was admitted, on the recommendation of Joseph Sabine, Esq., the then Secretary of the Horticultural Society, into the garden at Chiswick, at that time in course of formation, the ground having been previously occupied as market gardens. In 1824 he became foreman of the arboretum; and while in that position he was connected with a practical joke, of an innocent character, however, which excited the ire of some of the authorities, and led to his suspension from employment. About this time Paxton attracted the attention of the late Duke of Devonshire, who took great interest in the trees and shrubs planted in the arboretum, and conversed with him about

them; and in 1826 he was engaged to take charge of the gardens at Chatsworth. Here it was that Paxton first began to exercise his talents as a landscape gardener and garden architect, and to show that grandeur of conception which characterised his works. The waterworks and Emperor fountain, which throws its waters nearly 270 feet high, were his creation; and so, too, was the great conservatory completed in 1840, the forerunner of his greatest effort—the Crystal Palace of the Exhibition of 1851, so much admired for its simplicity and adaptation to the end in view, and which has become the prototype of a new style of architecture. Beyond stating that Paxton's plan was that selected out of 233, it is not our intention to dilate upon this, Paxton's greatest triumph, for it is still fresh in remembrance as the greatest feature of that great Exhibition, the first of its kind that England had seen, and the most permanent in its effects. So much was the beauty of the building appreciated, that the attempt was made to preserve it permanently in Hyde Park; but the attempt failed, and happily so, for removed to Sydenham, reconstructed, enlarged, strengthened, and improved, it there remains seated on one of the Surrey hills, and overlooking terraces, and lawns, and flowers, a monument to the genius of the man whose creation it was. But it is not with enterprises such as these that the name of Paxton is alone associated; for he conducted the "Horticultural Register," and "Paxton's Magazine of Botany," which at a later date became "Paxton's Flower Garden," a beautiful but unsuccessful work, the literary department of which was entrusted to Dr. Lindley. In 1838 he published a "Practical Treatise on the Cultivation of the Dahlia," which was translated into the French, German, and Swedish languages; and the preface of the French translation was written by Adrien de Jussieu, and that of the German by Humboldt; also in 1842 the "Cottager's Calendar," and in conjunction with Dr. Lindley, "Paxton's Botanical Dictionary," a most useful work of reference. In 1851 he received the honour of knighthood; in 1854 was elected without opposition member for Coventry in the Liberal interest, and continued to hold the seat up to the time of his death, though his declining health led him to inform his constituents that he did not again intend to solicit their suffrages. In the same year (1854), he organised the "Army Works Corps," which did good service during the Crimean war. Sir Joseph was connected with several public companies, and a large shareholder in the Crystal Palace, by which we believe he lost heavily in consequence of Robson's delinquency. After the decease of his friend and patron the Duke of Devonshire, who, with that princely munificence for which he was distinguished, insured his life in favour of Sir Joseph for £20,000, he principally resided at his villa, Rockhills,

Sydenham, where, after a prolonged illness which terminated suddenly at last, he died on the morning of the 8th of June.

In the words of the writer of his life in the *Times*, "It was as a gardener that Paxton first made a name for himself; but it was in the large sense of the word, as one who by a kind of instinct had the beautiful in nature at command to embellish the landscape, and, without the ordinary processes of scientific study, had practically all the laws of plant life at his call. In these delightful pursuits a vigorous, kindly, and sensitive disposition expanded congenially. He had many friends, but they belonged to no sect, or party, or clique; nor was there anything narrow or sectarian about the man in his relations with other men. Friendship was a plant which he loved to cultivate wherever it would grow—among the nobly born if they sought him; among literary men, and artists, with whom he had close and cherished relations; among the great captains of industry, who appreciated and were proud of him; but most of all among younger men than himself whom he could help or cheer on their path through life. His real title to the regrets of his contemporaries, and the regard of those who come after, is the work which he did as a gardener and garden architect; the impulse which

he has given to the love of the beautiful in nature, especially among our great town populations; above all, the English breadth and genuineness of his character, which made him the object of affectionate regard to so many friends."

Sir Joseph was created a Knight of the Order of St. Vladimir in Russia by the Emperor Nicholas, in 1844, was a Fellow of the Linnean and Royal Horticultural Societies, and this year was elected to the office of a Vice-President of the latter Society, to whom he has left his horticultural and botanical library. He sleeps at Edensor, the final resting-place of that distinguished family whom he served so well, and by whom he was so much beloved, and so assisted on his path to greatness.

MR. ALEXANDER SMITH, son of Mr. John Smith, the late curator of the Royal Gardens at Kew, was carried off in his thirty-third year, on the 15th of May, to the grief of his father, and those friends who were privileged with the acquaintance of this studious and talented young man. He was curator of the herbarium at Kew, and to him, also, the museum owes much of its arrangement and usefulness. He was a diligent worker in economic botany, and has left thirty manuscript volumes on that subject, and two ready for publication on commercial botany.

## CALENDAR OF OPERATIONS.

### CONSERVATORY AND SHOW-HOUSE.

THE roof, unless well covered with climbing plants, will require shading each sunny day; this, however, should be removed early in the afternoon, and as much air given as is possible, to induce a sturdy growth in the permanent plants. Well wash the trees overhead frequently, and also attend well to the inside borders. Air will be given all night, except during high winds, or any stormy weather.

### GREENHOUSE.

*Azaleas and Camellias*.—All the early-started plants in this class will have made their growth, and have formed their bloom-buds for next year. More light and air will be necessary, and less water to free-growing plants, to insure a good set. A portion of the earliest plants may be placed out of doors, choosing a rather shady situation, and one protected from the wind. Young plants growing on for specimens may now be shifted again, and kept close in frames, to make them start afresh. *Cinerarias*.—Let us suppose *Cinerarias* to be now cut down and placed in a cool shady situation, where they will shortly break up, and give suckers, which may be taken off as soon as they attain the length of an inch. Prepare the cuttings, and place round the edges of pots or pans, in a nice sandy compost; keeping them close for a few

days will insure their rooting. Give air gradually, and pot off as ready into a nice loose compost, composed of turfy loam and leaf mould. Sow seeds in a cool frame or shady situation. Prick off as soon as large enough to handle into pans or small pots, according to convenience. Prepare soils as advised last month, and turn occasionally, to sweeten, which is indispensable for the health of the plants. *Pelargoniums*.—After flowering, let the plants be exposed to the sun and air, to cause the wood to well ripen before being cut down. Fumigate freely to destroy aphid, which adheres strongly to them. Cuttings put in now will strike freely out of doors in a sheltered situation, in a mixture of light sandy soil. The fancy varieties should be struck in pots, and kept in a cool house for a time, giving a little fire heat. Compost should now be prepared for autumn use.

### FORCING.

*Cucumbers, &c.*—During very hot weather, Cucumbers should be kept shaded from the midday sun, to prevent the fruit becoming bitter, which is apt to be the case during the hot season, particularly should the border get dry. Tomatoes should be trained to walls, and stopped when they have shown fruit enough. Water freely Ridge Cucumbers and Vegetable Marrows during dry weather. *Melons*.—The more light and air Melons can

be supplied with during the period of ripening, the higher will be their flavour. Shading such plants as the Melon is decidedly bad practice, but constant attention to a uniform root-action, by keeping a moderate bottom heat, is indispensable. The soil in which they grow should be moist, but not wet. Give water "a little and often," to avoid the extremes of wet and dryness, which would be fatal to the crop. Should red spider attack the foliage, wash the interior sides of the pit or frame with a little sulphur. There is still time to plant for the latest crop. *Peach-house*.—As the fruit is cleared, go over the trees, and remove any useless wood not required for bearing next year. The trees should be kept well washed every morning to keep down insects, and have a large supply of air, to assist in ripening the wood. If the trees are young, or are making too strong wood, keep the borders dry; on the contrary, weak trees, or which have been overcropped, should have waterings of manure water applied two or three times during the next two months. *Pinery*.—The plants for producing winter fruit should now be showing fruit, and will require plenty of air, to get the shows up strong. The first batch of plants to fruit next season early should now be sufficiently advanced to be potted into fruiting-pots. Pot on successions as they require it; also the suckers taken from the present season's stools. *Vinery*.—When the fruit is all cleared from the early house, let the foliage be kept well washed daily, and every means taken to keep the leaves healthy, as long as possible, to invigorate the Vines for another season. The inside borders, if become dry, should also be watered, taking proper care of the foliage. Vines though early forced may be kept in a good productive state for many years. Attend to late Grapes, by thinning those not yet set, and other points of treatment. Outside borders, after the late dry weather, may require water, but all will depend on the composition.

#### KITCHEN GARDEN.

The crops of autumn Greens and Broccoli should be planted as quickly as the ground can be got ready. All the Kales (including of course the Cottager's), Brussels Sprouts, and Savoys, require to be in early. As these crops will generally follow early Peas or Potatoes, and supposing the ground manured for them, no further preparation will be necessary, beyond digging the land over. A good breadth of Endive may now be sown, and also successional crops of Lettuces, Spinach, Radishes, and Carrots to draw young. The main crop of winter Turnips should now be sown. Snowball, Early Mousetail, and Stone are the best garden varieties. The last crop of Peas may now be sown, using any good early sorts, and also French Beans, and a row or two of the Mazagan or Dwarf Bush, and Broad Beans for the chance of a few in

October. Celery planting should be followed up at every opportunity. Cauliflowers and Walcheren Broccoli may also be planted, and the last sowing to come in this year should be sown at once; we prefer the Walcheren Broccoli and Stadtholder Cauliflower for this sowing. Water must be given liberally whenever the ground becomes dry, or make use of irrigation when practicable.

#### FRUIT GARDEN.

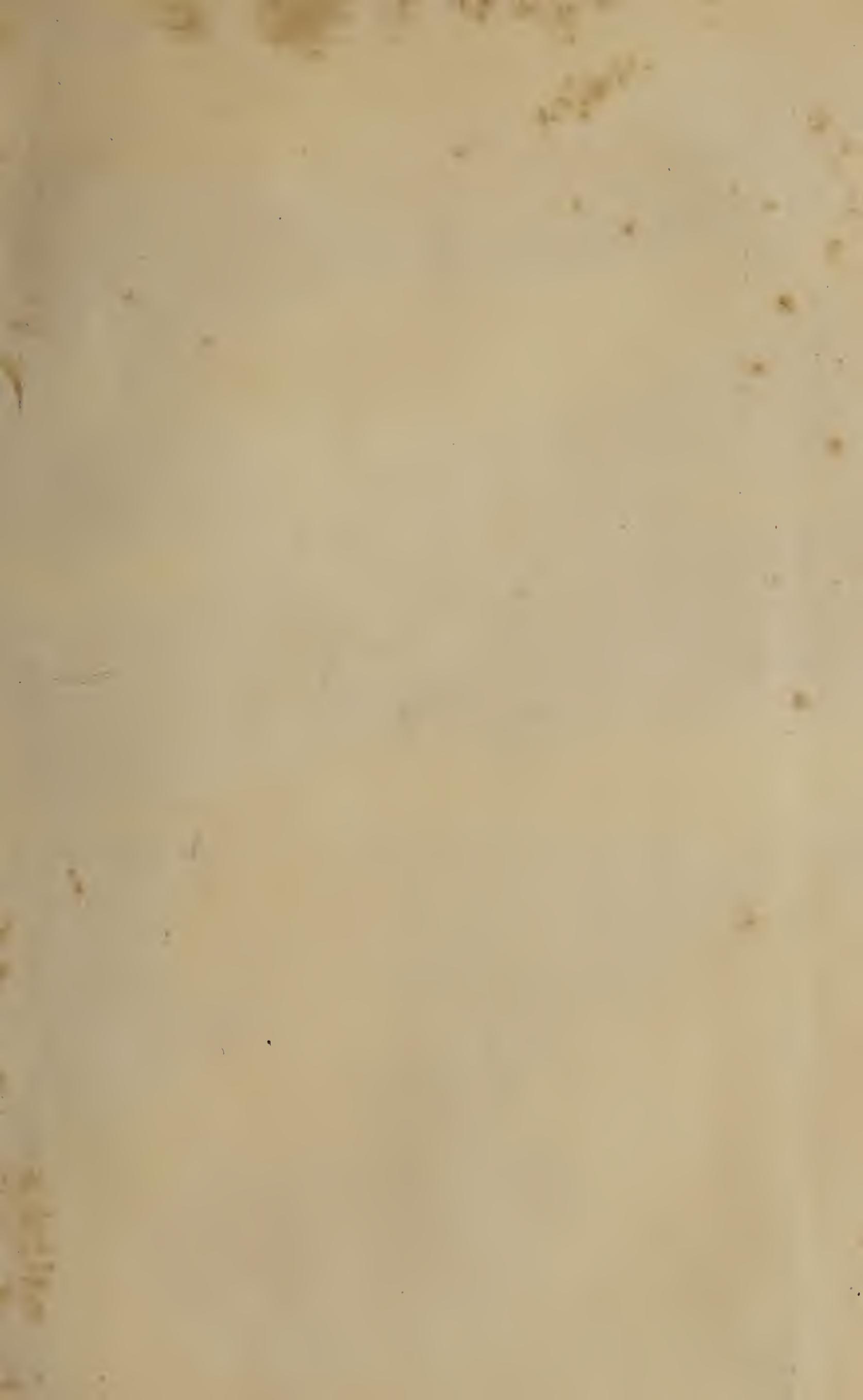
*Hardy Fruit*.—Nothing more can be done to wall trees, beyond what we stated in our last. Protect Strawberries and bush fruit from birds. Strawberry runners should at once be laid into small pots for forcing, and after planting Strawberries will require very liberal waterings; and, on dry soils, Raspberries and bush fruits will be much benefited by mulching over the surface, between the plants, and a portion of the summer's wood cut away immediately after gathering the fruit, if not before.

#### FLOWER GARDEN.

*Cold Frames*.—See our last notice, to which add Achimenes, which may be brought forward nicely in frames, as also Lycopods and Ferns, if kept shaded and damp. *Flower Garden*.—The principal work to be done in this department will be merely of a routine character—tying, pegging, pruning, and training, everything in its way. As the edging of flower-beds is now very generally adopted, these, to be effective, should be kept very neat and regular. Watering will be required to most things until they have covered the ground. Pinch off the blooms when you do not want a very early display, until the plants are well established, when the bloom will be more uniform and regular. Hardy biennials and perennials sown this spring may now be pricked out into nursery-beds, to remain for the present. Keep hedges neatly cut, and the grass and gravel in good order; then an air of high keeping may pervade the whole.

#### FLORIST'S FLOWERS.

*Carnations and Picotees*.—Careful watering must be observed, as it tends to prolong the duration of the bloom. Protect the flowers from the scorching sun and from wet. Should the method of piping be adopted as a means of increasing stock, the sooner it is attended to the better, otherwise layering will be a better plan. *Dahlias*.—Watering, mulching, and keeping down insects, will all help to make these grow luxuriantly. The first and great point towards success is to grow a fine plant, after which skill and judgment in thinning must be brought to bear; and nothing but close observation will accomplish this, as scarcely two varieties require precisely the same treatment. *Pinks and Pansies*.—Propagate these by the usual method of pipings; the latter will require a shady border, but Pinks do best on a slight hotbed.





M.H.F.

*Skimmia oblata* .

F. Waller, lath 18 Eaton Garden .

## SKIMMIA OBLATA.

WITH AN ILLUSTRATION.

IMAGINE the bright-coloured berries of the Holly set amongst the glossy lively green leaves of the Laurel, and something like a picture of this new *Skimmia* will be brought before the mind's eye. Fortunately, however, we are able to annex a more tangible portrait from the pencil of Mr. Fitch; and one which will, we imagine, set all who see it in quest of this beautiful coral-berried hardy evergreen.

In September, 1864, Mr. Standish exhibited before the Floral Committee of the Royal Horticultural Society a specimen, in fruit, of this new hardy evergreen shrub, when it received, as it deserved, a first-class certificate. It was published immediately afterwards by Mr. Moore in the "Gardeners' Chronicle," under the name we here adopt. As a decorative shrub it is immeasurably superior to the ordinary *Skimmia japonica*, as it is called, beautiful and interesting as that may be, in certain situations; for it produces berries of the brightest vermilion red, in contrast with rich green foliage, while that has both foliage and fruit dull-coloured. The plant, which was one of Mr. Fortune's discoveries, must become a valuable acquisition for our gardens and shrubberies.

On examination it has proved to be obviously distinct from all *Skimmias* yet known, in the remarkably oblate figure of its bright red berries, so very different from the oblong fruits of the *Skimmias* we have heretofore possessed. It is also remarkably distinct in the form and texture of its foliage, as well as in habit. It is a free-growing plant, with dense clear green leaves, and erect terminal panicles of white flowers, succeeded by bright-coloured berries nestling amongst the foliage. We are assured by Mr. Standish that, unlike the other species we cultivate, this bears exposure to the sun without injury.

M.

## CHRONICLES OF A TOWN GARDEN—No. XIX.

PELARGONIUMS are over, and they are now reposing in the shade, ripening their wood preparatory to being cut down for cuttings. I omitted to mention in my last paper that I also had *Rose Celestial*, *Symmetry*, small, but very bright; *Fairest of the Fair*, white, with pink blotch, a very free-flowering variety; and *Mrs. Turner*, a fancy variety, carmine rose, with white throat and edges.

Some plants of herbaceous *Calceolarias* occupy their places on the stage, "over-canopied" with masses of vari-coloured flowers. I give them copious root-waterings about twice a-day, when the sun is shining brilliantly; the second libation—an evening one—is occasionally some weak liquid manure water. The foliage is strong, stout, and of a dark green colour—not "sicklied o'er with the pale cast" of that yellowish green hue that betokens poverty at the roots, and too little moisture, manifested also in their flower-stalks and half-developed flowers. My plants are of the dwarf spotted kinds, as they are generally denominated, after the style of those Mr. James, of Isleworth, exhibits so successfully at the metropolitan exhibitions. My plants produce mainly light-coloured flowers—(I do not mean to imply that there is always a preponderance of light flowers in this strain; it may be merely an accident in my own case)—yet the flowers vary considerably in the marking, while they are always large, well-formed, and very showy. *Calceolaria Sultan* still continues to yield me some dark crimson flowers, as a contrast to the lighter-coloured ones of the dwarf spotted kinds.

With the *Calecolarias* are grouped some *Petunias*, both double and single. Of the former *Elize Matthieu*, mauve and crimson, spotted with white; *Inimitable*, crimson purple, margined with white; *Leviathan*, purplish crimson; *Magna Alba*, pure white; and *Magnificens*, large rosy lilae. Of single flowers, the old *Countess of Ellesmere*, deep rose, with white throat; *Crimson Gem*, velvety crimson, with dark throat; *Reine Hortense*, white, striped with purple; and *Jean Hans*, light rose. These all are very pretty, free-flowering, and showy kinds. The plants were grown strongly until they became pot-bound, and now they bloom profusely. I water them very freely, and though the foliage betrays evidence that they are bound at the roots, yet they have copious heads of flower, which, in some of the dwarfier plants, entirely screens the rusty foliage from sight. I am of opinion that *Petunias* are somewhat impatient of imperfect drainage: for instance, I have seen sickly plants standing in windows, in saucers filled with water, the foliage being very small and pale in colour, and the flowers ill-developed. I give my plants plenty of water when they are dry, as it can freely drain away, and the result is highly satisfactory.

Japan Lilies are as yet only in bud, but fast going on towards blooming. The pots are now filled up with a layer of rotten manure, about 4 inches in thickness, and the strong rootlets that issue from the flower-stalk are piercing it, and discovering its rich veins of vegetative wealth. I do not know whether my experience has been general or not, but certainly my Lilies have not done well. I have lost by rot (a kind of semi-dry rot), all my continental bulbs, and among them were two bulbs of *Lilium lancifolium punctatum*, which I had expressly obtained from the continent for trial. The only plants I have left—two of *L. lancifolium roseum* and two of *album*—are small English-grown bulbs. I cannot understand why the great bulbs of continental origin should decay as they do; for it has happened to others as well as to myself; but I think it possible they are allowed to get too dry by our seedsmen. They keep them in some substance, such as moss or silver sand, and they are apt to become shrivelled, and this rot ensues at the base of the bulbs. I have known them perish in this manner soon after they reached England. Should I try continental bulbs again, I shall keep them in moistened cocoa-nut fibre, and I shall not attempt to pot them until they begin to start into growth. I have known growers of *L. lancifolium* keep their bulbs in the blooming-pots of the previous year, until the time for gathering had arrived, and they would be in the finest condition possible.

But then some disappointment or failure will inevitably come. Were it always a series of successes I think that a true florist's enthusiasm would sometimes decay. It is indispensable there should be some difficulties to conquer, or to submit to, in order to give a zest to his keen appetite. Men often make most important discoveries when they are manfully working to turn into successes baffled endeavours. I remember the old war song of bygone political achievements—

“ ——— Freedom's battle once begun,  
Bequeathed from bleeding sire to son,  
Though baffled oft, is ever won; ”—

and so it is with the florist. Dismayed and discouraged often, yet these very reverses are like stepping-stones across the stream of his adversity; they, in their aggregate influence, are the Greatheart that leads him along his pilgrimage, and beyond he sees, where he least expected it, the signs of his coming conquest; and in his own little sphere fidelity and devotion go as far to make up the sum of his successes, as it does in any great God-given work that the world of His creation, and the creatures of His handiwork, have been commissioned by Him to accomplish. . . . Quo.

## RENOVATING BARREN PEAR TREES.

CASES very frequently occur when Pear trees are trained against walls that the leading branches are laid in so closely together as nearly to over-ride each other; hence, unless with very productive varieties, they remain continuously barren. A few straggling fruit may occasionally appear at the extreme point of the shoots, but are generally of an inferior quality. I would not exonerate the roots from criminality, as they may have wandered beyond their allotted space, and pumped into the system matter, both in quantity and quality which the leaves, under the most favourable circumstances, are unable to digest. While the trees are young this close system of training does not materially interrupt fructification, but the damaging effects are progressively creeping on, for by the propagation of offsets, the radius of the spurs increases, proportionately diminishing the penetrating power of heat and light at the base of the young shoots, where these stimulants are most required to insure maturation.

The method by which trees of a robust habit are managed, if management it can be called, is to slash down the growths periodically without considering that the oftener they are cut the stronger they grow. There is no room left for exhaustion, the operator is fighting against the effect, and through it, endeavouring in the most helpless way to conquer the cause.

I believe it is generally admitted among gardeners who have studied the economy of the Pear tree, that horizontal training is preferable to any other kind, and more particularly when confined within the limits of a low wall; but of whatever height, I strictly adhere to this arrangement, because it more completely utilises the circulation of the sap, distributing it equally into each distinct channel, causing one part to balance another exactly. Fan training produces just the opposite effect: the fluid rushes up uncontrolled through the more vertical branches, throwing out during its ascent a mass of unproductive wood, and this abstractive process starves one portion and overfeeds the other, which is always unfavourable to the formation of flower-buds. There are some trees so thoroughly worn out, either by age or other causes, as to resist the most skilful system of renovation, therefore they are unworthy of any consideration and should be cast aside without reserve. Let us take the case of barren trees, whether arising from excessive root-action, or mismanagement of the branches, such as over-crowding, to which I have already made allusion.

The remedial measure that I would adopt with horizontal training would be to arrange the principals as near as can be done to 20 inches apart, and fill up the intervening spaces with young growths selected from the spurs, choosing those that are placed nearest to the wall. The distance between each need not exceed 2 feet—long enough to meet, without being allowed to over-lap each other; while, at the same time, it is hardly necessary to say, that every superfluous spur should be cut clean off, and those that remain reduced as much as possible.

It will be seen that the value of this method consists in having constantly at command an inexhaustible source, whence a supply of young bearing wood can be drawn whenever it may be required. It may be thought that the space left between the principal leaders is unnecessary, yet in practice it will be found that it is not too much—the short shoots or long spurs entirely cover the surface of the wall, every leaf has room to keep its natural position, fully exposed to the direct action of the atmosphere.

I might go further and say that this arrangement is not an imaginative theory, it has been carried out in my own practice; for ever since the formation of this garden, I have had our Pear trees trained exactly on the same principle, looking forward to the time when a supply of young bearing wood would become

a necessity; but I have not deferred the introduction of these go-betweens till then, as some are being brought forward yearly. The conversion of a fan-trained tree into a horizontal form is somewhat difficult, and more time is required to bring about this result than in the former case, as the branches, however favourably situated, are too stubborn to be brought into a uniform position. Much, then, must be left to the ingenuity of the operator as to how this conversion of form is to be managed, for as the phases are varied, so must be the application of means.

The way in which I have been in the habit of treating subjects of this kind, is to snag or cut back the old wood, so as to produce young growths as near as possible to the centre stem, and with the exception of judicious thinning these are allowed to grow unrestrained during summer. Towards the end of next March or beginning of April, they are then inarched at right angles upon the said centre by making an incision just sufficient for admission, and afterwards bound up, as is usually practised in grafting. Detached scions may be inserted, thus offering the privilege of introducing any other variety; but a union in the former case can be depended upon with more security than in the latter.

Should barrenness arise from undue activity among the roots, or an excessive accumulation of sap in the branches, the supply must be moderated, root-pruning must be adopted. But with old trees the inexperienced ought to act cautiously, as there is always some amount of danger in dealing with subjects of this kind, as the roots are for the most part large, they have travelled to a great distance and are destitute of fibres, unless at the extremity which involves their removal. It would be unwise to shorten all at once, the operation should extend over two consecutive years, first to cut off those in front, and, secondly, at the sides, taking care to sever every one growing in a downward direction, as these are the greatest rogues, and give no end of trouble. The best season to manipulate is during the end of September or beginning of October, when the wood has become consolidated and the ground temperature sufficiently high to cicatrise the wounds and hasten the production of granulations, from which spongioles or young roots are emitted. But the object may be unworthy of so much labour, and should it be really so, reject it entirely and give its place to another. What I have stated has been derived from direct experience, which may be useful to a certain extent,—a statement of facts is never without value, but of a higher and trustworthy character, when begotten by our own researches. Then I would say, Let no one sit down at the feet of any instructor, but rather, when knowledge lies within the circle of his own observation, aspire to the use of his intellect and depend as much as possible upon his own investigations.

*The Garden, Tortworth Court.*

ALEXANDER CRAMB.

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## OUR STRAWBERRY CROP.

COMPLAINTS reach us from all quarters in this locality of either a partial or entire loss of the Strawberry crop. The general salutation is—"Ho! how are your Strawberries this season? for mine are a complete failure." It probably will be of some benefit for growers in general to compare notes, or communicate to the public through some of our periodical literature, the kinds which have failed and those which have been successful in producing a crop. Although my opinion is, that kinds have nothing to do with loss of crop this season, last autumn's drought being the principal cause in the majority of cases, at the same time I am obliged to acknowledge that Keens' Seedling and Sir Charles were here a complete failure compared with other seasons,

although growing in a quarter alongside other kinds which bore an excellent crop. Sir Harry, Trollope's Victoria, Oscar, and Empress Eugénie produced an excellent crop in the gardens at this place; Oscar not to equal Trollope's Victoria as regards crop, which is on the whole about as useful a Strawberry for general purposes as a gardener can grow. The Hautbois produced a wonderful crop, but to be successful with this kind the annual treatment recommended by the Rev. Mr. Radclyffe must be practised. Some old rows, three or four years old, produced literally nothing compared with those planted last autumn. I wonder this old Strawberry is not more extensively grown than it is—scarcely any one dislikes it.

*Wrotham Park, Barnet.*

JOHN EDLINGTON.

### THE ALMOND.

IT is from the *Amygdalus communis* of botanists that all the varieties of the cultivated Almond have originated. This tree belongs to the natural order *Amygdalaceæ*, which includes also the Peach, to which it is so nearly allied that Linnæus included both under one genus; the stone of the Peach is surrounded with a thick, succulent, and richly flavoured flesh, while that of the Almond is enclosed in a thin, rather dry, austere or bitter husk, and is not so much furrowed as in the Peach; but the essential characters of both are such as to warrant the belief that they are only different forms of the same species. This was to a certain extent proved by Mr. Knight, who, by impregnating an Almond with the farina of a Peach raised a hybrid, which produced a fleshy and well-flavoured fruit.

The Almond forms a middle-sized tree, from 25 to 30 feet high. The branches are long, straight, inclining upwards, and more vigorous than those of the Peach. The shoots are not so red, but greener and finely dotted. The leaves are alternate, stipulate, and deciduous; long, narrow, and lanceolate; larger, stiffer, smoother, more prominently ribbed and deeply dentated than those of the Peach; they are also more shining, and of a dark greyish green colour. The flowers are set on very short footstalks, and are expanded before the leaves; they consist of five pink or rose-coloured petals, fixed on a bell-shaped calyx, which is divided round the margin into five segments; and enclose from twenty to thirty stamens, in the centre of which is the germ, surmounted with a cylindrical-shaped style. The fruit consists of a compressed, oval-shaped, spongy husk, of a green colour, and covered with a thick down; when ripe it opens longitudinally in two valves, on the side marked with a furrow, exposing a hard, woody, and irregularly-furrowed stone or shell, which contains the kernel or true Almond.

In its natural state the Almond is found distributed throughout the north of Africa, Syria, and the mountainous parts of Asia. It is one of the oldest fruits of which we have any record, and is frequently mentioned in Scripture as one of the most common in the land of Canaan, where it was considered of such importance, that it formed part of the present, consisting of "the best fruits in the land,"\* which Jacob commanded his sons to carry with them into Egypt. When the Princes of Israel disputed which of them should perform the office of the priesthood, God commanded them to lay each their rods in the tabernacle of the congregation before the ark, which being done, on the morrow, "Behold, the rod of Aaron for the house of Levi was budded, and brought forth buds, and bloomed blossoms, and yielded Almonds."† It is also

\* Gen. xlii., 11.

† Num. xvii., 8.

used in Scripture figuratively, to signify old age, on account of its white blossoms;\* and it also symbolises haste, on account of its early flowering.† From Syria it was at an early period conveyed to Greece and the islands of the Archipelago; for we find it mentioned both by Aristotle and Theophrastus, whose works are the most ancient extant that treat of plants. By the early Roman writers, Cato and Varro, it is called *Nux Græca*, from which it may be inferred it was brought to Italy from Greece; but Pliny‡ doubts whether the *Nuces Græcæ* of Cato refer to the Almond, and whether it existed in Italy during the time of that author; and he makes a distinction between *Amygdalus* and *Nuces Græcæ*. § Columella is the first of the Roman geonic writers who treats of the Almond under the name of *Amygdalus*, and he also regards it as distinct from the *Nux Græca*; the one he describes along with the Peach,|| and the other along with the Hazel or Filbert, the Walnut and the Chestnut.¶ But Palladius, who makes no mention of *Nuces Græcæ*, gives the same instructions for the cultivation and management of *Amygdalus*,\*\* as Columella does for *Nuces Græcæ*,†† from which, and the statements of Varro,‡‡ it may be inferred that they are synonymous.

The Almond is generally supposed to have been introduced to this country towards the latter part of the reign of Henry VIII. In 1562 Turner thus speaks of it—"Almond trees growe muche in hyghe Germanye, beside Spyre, in a cyte called Newstat, and great plentye in Italye, and some growe in England, but I have hearde of no greate sterc of the fruyte of them that growe in England."§§ There is, however, an earlier record by Necham, in his work "*De Naturis Rerum*," several manuscript copies of which are in the British Museum. It is there noticed as being cultivated in England in the twelfth century. Necham was Master of the Grammar School of St. Albans, and afterwards Abbot of Cirencester, and died in 1217. It is also recorded in the fifteenth century, by Nicholas Bollarde, in a manuscript in the Harleian collection, where directions are given for planting it. Gerarde, in speaking of it, says—"The naturall place of the Almond is in the hot regions, yet we have them in our London gardens and orchards in good plentye." |||

It is not because the Almond cannot be brought to perfection in this country that it is grown more as an ornamental than as a fruit tree, but on account of large importations of the fruit from the south of Europe, rendering its cultivation both unnecessary and unprofitable. If Peaches could be imported in the same state of perfection as Almonds, their cultivation would be equally as limited, and their existence in British gardens more rare than they now are. Although the Almond is a native of a warm climate, and is not supposed to perfect its fruit on standards north of the 48° of latitude, still it is a native of the same region as the Peach, and if subjected to the same treatment, by being grown against a wall, it may be cultivated with the same success.

The Common or Hard-shelled Sweet Almond is extensively grown on the continent as a stock on which to bud Peaches, for which purpose some cultivators are of opinion that it makes more handsome trees; is better adapted than the Plum stock for light, dry, and deep soils, and, its vegetation being more in alliance with that of the Peach, trees budded on it are less subject to gum than on the Plum. I have found it very suitable for the delicate and tender-growing varieties, such as *Grosse Mignonne* and *Royal George*, which are so subject to gum and mildew on the Plum, the trees being much more vigorous and healthy, and less affected by these diseases when worked on the Almond; but as a stock it is neither so hardy nor durable as the Plum, and, generally speaking, not so well adapted for that purpose in this country.

\* Eccles. xii., 5.    † Jer. i., 11.    ‡ Hist. lib. xv., cap. xxii.    § Hist. lib. xxii., cap. viii.    || Cap. xxv.  
 ¶ Cap. xxii.    \*\* Lib. i., tit. xv.    †† Cap. xxii.    ‡‡ Lib. ii. cap. ix., and Lib. iii., cap. xvi.  
 §§ Herball, vol. ii, p. 38.    ||| Herball, p. 1459.

Almonds are divided into two classes—those with sweet, and those with bitter kernels, both of which were known to the ancients,\* although some authors have stated to the contrary. They are extensively cultivated in the south of France, Italy, and Spain, where they form an important article of commerce. The Tender-shelled, or Jordan Almonds, are chiefly brought from Malaga, and are those which are imported into this country in such large quantities in the shell; another variety, with a sweet kernel, is from Valencia, whence it takes its name. The Bitter Almonds are imported from Mogador. The Sweet Almonds are much used in domestic economy, confectionary, &c., for which purposes they should always be used, to the exclusion of Bitter Almonds, as the kernels do not contain any hydrocyanic or prussic acid, although it is found in the leaves, flowers, and bark of the tree; they have an agreeable flavour, but, to whatever use they are applied, they should first be divested of their outer pellicle. When young and green they are preserved like green Apricots. They supply the Almond oil, and the farinaceous matter which is left after the oil is extracted forms the *Paté d'Amandes* of the perfumers. The oil is employed in the arts for the same purposes as Olive oil; and when used medicinally it is emollient, nutritive, and laxative. It forms the basis of Kalydor, Macassar Oil, Gowland's Lotion, and many other articles of that nature sold by perfumers. Bitter Almonds are injurious to animal life on account of the great quantity of hydrocyanic acid which they contain, and are consequently seldom used except for giving flavour to confectionary, and even then they should be employed in small proportions.

In the environs of Alicante the husks are ground to a powder, and enter into the composition of common soap, the great quantity of alkaline principle and mucilage which they contain rendering them proper for this purpose; and it is said that in some parts of the south of France, where they are extensively grown, horses and mules are fed on the green or dry husks; but to prevent any evil consequences, as the animals devour them with great avidity, they are mixed with chopped straw or oats.

In describing the different varieties of Almonds, I have confined myself to those only which are most commonly cultivated on the continent as esculent fruit. Some of these I have found produce a good crop, in dry and warm seasons, even upon standards in the climate of Middlesex.

## CLASSIFICATION OF ALMONDS.

### 1.—FRUIT, A THIN SPONGY HUSK.

#### A. KERNELS SWEET.

\* *Shell Hard and Woody.*

Common Sweet.  
Large Fruited Sweet.  
Amandier de Tours.

\*\* *Shell Tender.*

Tender Shelled Sweet.  
Sultane.  
Pistache.

#### B. KERNELS BITTER.

\* *Shell Hard and Woody.*

Common Bitter.  
Large Fruited Bitter.  
Amandier d'Italie.

\*\* *Shell Tender.*

Amere à Noyau Tendre.

### 2.—FRUIT, A THICK SUCCULENT FLESH.

Peach Almond.

#### 1. COMMON SWEET ALMOND.—H.

SYNONYMES.—Common, *Hort. Soc. Cat. ed. 3. Down Fr. Amer. 159. Amandier à petit fruit Duh. Arb. Fruit, I. 118. Amandier Commune, Cal Traité. II. 212. Amande*

\* Plinii Hist. lib. xxii., cap. viii.

Commune, *Lind. Guide*, 1. Amande à petit fruits douce, *Toll. Traité*, 103. Amande douce, *French Catalogues*. Gemeine Hartschalige, *Doch. Central Obst*. Süsse Mandel., *German Catalogues*. *Amygdalus communis dulcis*, *Dec. Prod.* II. 531. Kleine Süsse Steinmandel, *Ditt. Handb.* III. 426.

Fruit,  $1\frac{1}{4}$  to  $1\frac{3}{4}$  inch long,  $1\frac{1}{2}$  inch wide and  $1\frac{1}{4}$  thick. Skin, pale green, and covered with a thick down. Stone, very hard and thick, furrowed like that of a Peach. Kernel, sweet, and terminated by a sharp point. It ripens in the end of August. The flowers are always produced before the leaves, and are very pale, nearly white.

This variety is very productive, but of inferior quality. It is the most common of all the varieties, and is extensively cultivated on the continent as a stock on which to bud the other sorts, as well as the different varieties of Peaches, Nectarines, and Apricots. I have had trees of this variety bear abundantly, and ripen fruit in the climate of Middlesex.

## 2. LARGE FRUITED SWEET ALMOND.—H.

SYNONYMES.—Sweet Almond, *Fors. Treat.* 282. Long Hard-shell, *Down, Fr. Amer.* 150. Amandier à gros fruits, *Duh. Arb. Fr.* I. 122, pl. 2. Amande douce à coque dur, *Lind. Guide*, 1. Grosse Süsse, *Doch. Central Obst*. *Amygdalus macrocarpa*, *Dec. Prod.* 2, p. 531.

Fruit, large, about 2 inches long, and  $1\frac{1}{4}$  inch broad, terminated at the point by a nipple, and marked on one side with a deep suture, and covered with a pretty thick down. Stalk, thick and short, placed on one side of the base, and inserted in a deep and furrowed cavity. Stone, thick and hard. Kernel, large, about  $1\frac{1}{2}$  inch long, sweet, and of an excellent flavour. It ripens in the beginning of October.

The tree is very hardy and productive, a strong and vigorous grower. The flowers of this variety are also produced before the leaves, and earlier than those of the other varieties. They are very large, being fully  $1\frac{1}{2}$  inch in diameter, of a beautiful rose colour, and on this account it makes a beautiful ornamental tree.

In favourable springs and warm summers I have succeeded, in the neighbourhood of London, in obtaining a pretty good crop of well-ripened fruit from standard trees.

## 3. PISTACHE.—Duh.

IDENTIFICATION.—*Duh. Arb. Fr.* I. 122, *Lind. Guide*, 2.

SYNONYMES.—Pistachia Sweet, *Down. Fr. Amer.* 151. Pistazien Mandel, *Ditt. Handb.* III. 428.

Fruit, small, less so than the Sultana, about  $1\frac{1}{4}$  inch long, terminating in a blunt point, and covered with fine down. The stone terminates in a sharp point, and is about the size and shape of a Pistachia, hence the name; it is tender, but not so easily broken between the fingers as the Tender-shelled. The kernel is sweet and flavoured. It ripens in the end of August.

This of all others is most esteemed in Provence and the southern departments of France, particularly when it is green, as being then more relishing; but in the north, where it does not attain the same degree of perfection, it is not so much cultivated, as it requires a very warm climate, even that of Paris being insufficient to bring it to full maturity.

## 4. SULTANA.

SYNONYMES.—Amandier à petit fruit et noyau tendre. Amande Sultane, *Duh. Arb. fr.* I. 121. Amande Sultana, *Lind. Guide*, 3. Sultana Sweet Almond, *Down. Fr. Amer.*

151. Sultan, *Hort. Soc. Cat. ed. 3.* Sultans, *Doch. Central Obst.* 179. Kleine Süsse Krachmandel, *Ditt. Handb.* III. 427.

This is larger than the Pistache, but much smaller than the Tender-shelled Almond, of which it is a variety, and possessing the same delicate shell. The kernel is sweet and well-flavoured. It ripens in the beginning of September.

### 5. TENDER SHELLED SWEET ALMOND.—H.

SYNONYMES.—Amandier à coque tendre. Amandier à noyau tendre, *Duh. Arb. Fr.* I. 120, pl. 1. Doux à coque tendre, *Hort. Soc. Cat. ed. 2.* Sultan à coque tendre, *Acc. Hort. Soc. Cat. ed. 3.* Amandier des Dames, *Acc. Duhamel.* Amandier à coque tendre et à fruit douce. *Cal. Traité.* II. 215. Amande douce à la peau molle, *Knoop Fruct.* 89. Soft Shell Sweet, *Down Fr. Amer.* 156. Ladies' Thin-shell, *Acc. Down. Fr. Amer. Jordan, Fors. Treat.* 283. Tender Shelled, *Ibid.* 282. Damen, *Doch. Central Obst.* 179. Prinzessin, *Ibid.* Süsse Krachmandel, *Ditt. Handb.* III. 426. Abellan in Provence. Amande Princesse.

Fruit, above  $1\frac{1}{2}$  inch long, and 1 inch wide; rather oval, at least more so than any of the other varieties, convex on one side, and almost straight on the other, terminated with a small point, and marked with a suture which is higher on one side than the other. Stalk, inserted in a plaited cavity. Shell, very tender, consisting of a network of large fibres, which are easily removed, because the exterior layer is more tender than the interior, so much so that it may be broken between the thumb and finger, and so porous as to be easily rubbed to dust. Kernel, large, white, sweet, and relishing. It ripens in the end of August and beginning of September.

The tree attains a good size, is vigorous, and bears well; the flowers are very small, and of a pale red colour, and are produced at the same time as the leaves.

This is the Sweet or Jordan Almond of the fruit shops. It very frequently has a double kernel.

There are several other varieties of the Sweet Almond mentioned by foreign authors, and enumerated in the catalogues of the continental nurserymen, among which is AMANDIER DE TOURS, which is the largest of all the varieties. The fruit is long and compressed, and the shell half tender.

### BITTER ALMONDS.

Besides the common there are several varieties of the Bitter Almond, such as the Large Fruited, the Tender Shelled, and the Amandier d'Italie, but as they cannot be regarded as esculent fruit, and as they are not likely ever to be cultivated in British fruit gardens, even as objects of curiosity, it is foreign to the design of this work to introduce them here. There is one variety, however, which may attract the attention of the curious, which, though not possessing exactly a bitter kernel, cannot be classed among the Sweet Almonds. It is the

AMANDE PECHÉ of *Duhamel*.—This variety which is of no real value, is singular from being a hybrid between the Almond and the Peach, and possessing a great deal of the character of both parents. It is covered with a very thick and fleshy rind, which is charged with a bitter acid; but in some parts of France it possesses, in warm seasons, a considerable succulence and flavour, even in the neighbourhood of Paris it attains as great perfection as the *Pêches de vigne*. The shell is very hard and thick, as much so as that of the Peach. Kernel, large, long, and pointed, yellowish white, and with a half sweet, half bitter flavour. It ripens the end of October.

It is a very old variety, being mentioned by Camerarius, Gesner, Matthioli, John and Caspar Bauhin, under the names of Amygdalo-Persicus, Persica Amygdaloides, &c. &c.

## PINE APPLES AND CONIFERÆ CONES AT THE ROYAL BOTANIC SOCIETY'S JULY SHOW.

AT the last Exhibition at the Royal Botanic Gardens, Regent's Park, Mr. Barnes, of Bicton, exhibited two interesting collections of Pine Apples, one of which was grown under glass, and the other started under glass, but brought forward and ripened in the open air. Mr. Barnes also exhibited a collection of cones from trees growing in the arboretum at Bicton, celebrated for its rich collection of Conifers, of which many noble specimens there exist such as are to be met with in but few other places in this country.

The Pines grown under glass consisted of—

One Providence.	One Brown Antigua.
One Prickly Cayenne.	One Queen.
One Copper-coloured Montserrat.	One Ripley Queen.

The collection swelled and coloured in the open air, without glass, consisted of—

One Ripley Queen.	One Copper-coloured Montserrat.
One Queen.	One Enville.
One Brown Antigua.	One Lemon-coloured Queen.

The cones were those of the following species:—

<i>Pinus pinaster maritimus.</i>	<i>Abies Douglasii.</i>
<i>pinaster Escarena.</i>	<i>Douglasii taxifolia.</i>
<i>pinaster Lemoniana.</i>	<i>alba.</i>
<i>Fraseri.</i>	<i>glauca alba.</i>
<i>Montezumæ.</i>	<i>dumosa.</i>
<i>patula.</i>	<i>Picea pectinata.</i>
<i>Banksiana.</i>	<i>cephalonica.</i>
<i>monticola.</i>	<i>nobilis.</i>
<i>pungens.</i>	<i>Webbiana.</i>
<i>halepensis.</i>	<i>Nordmanniana.</i>
<i>pineæ.</i>	<i>balsamea Fraseri.</i>
<i>tæda.</i>	<i>Araucaria imbricata.</i>
<i>brutia.</i>	<i>imbricata mascula.</i>
<i>rigida serotina.</i>	<i>Wellingtonia gigantea.</i>
<i>insignis.</i>	<i>Cupressus macrocarpa.</i>
<i>Abies Menziesii.</i>	<i>Lawsoniana.</i>

## ON FLOWERING THE CLOTH OF GOLD ROSE.

I NOW proceed to fulfil the promise I made at page 251 of the last volume, and to describe the method I have of flowering the Cloth of Gold Rose. The stock upon which it is worked is White Banksian, on which is also budded, close down to the soil, Noisette Ophirie. It is requisite to do this, as the stock is more tender than the budded Rose. Five years ago the stock was killed by frost, and the Cloth of Gold was not injured in the least. Ophirie is quite hardy, and covers 4 feet of the bottom of the wall, which has a west aspect. Above there are two buds of Cloth of Gold, the shoots from which are trained, one to the right and the other to the left, at the top of the wall, which is 10 feet high; they are, consequently, 6 feet above the top of Ophirie, and they cover the wall for a length of 20 feet, and nearly every shoot at the top of the wall has a truss of golden yellow blooms, some of which were cut on the 29th of May. I prune but little; for this Rose, if cut much, will grow too strong instead of flowering. I merely shorten the summer's wood about one-third of its length as soon as the bloom is over. About the end of November I protect the Roses on the wall with evergreen boughs. This answers two purposes; it prevents the hares and rabbits barking them, and the frost from killing the

branches back. The top of the wall I cover with mats, as I find the better the protection tender Roses receive the finer their blooms. As a proof of this, I never saw finer Noisette and Tea Roses than are blooming here at the present time (June 5th). The Cloth of Gold has been budded four years, and this is the third year of its flowering. A plant of it budded on the Boursault at the same time, four years ago, has never flowered till this year.

*Elsenham Hall Gardens.*

WILLIAM PLESTER.

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## THE CULTURE OF THE PEA.

AMIDST the multifarious arguments lately put forth through various channels on the subject of Peas, their earliness, and merits, I do not perceive that any one writes aught about their cultivation, or of the influence which that is likely to have upon the growth and consequent quality. For this reason I have thought that a few remarks upon the subject will not be without interest at a time when so many minds are concentrated on it. That Peas are very much influenced as to early maturity, and good quality, by the kind of soil and mode of cultivation cannot reasonably be doubted, for seed out of the same bag may be sown on the same day on two different soils, and there will be several days' difference in the time of their being ready to gather for table: for example, take any early Pea, and sow it on a warm, dry border, the soil of which is light, unmanured, and in fact rather poor than otherwise, and on the same day sow the same sort on a border of strong soil, deeply trenched and highly manured, and when they come to maturity, it will be at once understood how easy it is for cultivators to be misled as to the identity of sorts, and the wonder will cease that the same Pea will come so very different in different persons' hands, or rather on the soils they have to work upon. I have grown Sangster's No. 1 from the same sample 3 feet high in one instance, and 6 feet in another; but in this latter instance, whatever I lost in earliness, was amply compensated for by a greatly increased produce; in fact, one could hardly believe them to be the same Pea, unless they were at the same time well aware of the influence which superior attention to the minutiae of cultivation will have upon the produce.

It has been written by one of our great authorities (Loudon), that "any countryman knows how to cultivate Peas," which may certainly be true in a literal sense; but it is as certainly false as to the inference supposed to be drawn from it, because cultivation implies more than merely digging the soil, drawing drills, scattering seed, earthing up and staking, which I presume to be the knowledge alluded to.

The base of all success is founded on the subject of my remarks at page 145—viz., deep cultivation, coupled with liberal applications of manure. If possible the ground should be manured and deeply trenched during the winter, and in dry frosty weather it should be frequently turned about so as to expose as much of the soil as possible to the influence of the atmosphere, avoiding, however, most carefully the moving the soil whenever there is even the slightest sprinkling of snow on the ground. This is all that is necessary in the way of preparation of the soil. With regard to sowing, I am an advocate for single rows with intervening crops, and in this case the seed may be scattered moderately thick in the drills, but as, from want of space, we cannot always contrive to have them in single rows, and yet have to supply a large consumption, we shall find it most economical in the case of rows side by side to scatter the seed very thinly, so much so that in the case of some of the strong-growing large varieties of the Marrow Peas, they should be an inch apart in the drills, some

have even recommended 2 inches, but one is enough for economy and general usefulness, two may serve for exhibition purposes.

Peas are very impatient of drought, and also of too great heat; the latter cannot be entirely counteracted, but may be greatly modified in its effects by the means to be adopted to counteract the former. In dry weather, therefore, pour plenty of water into the drills previous to covering over the seed, and in earthing-up take care to leave a broad surface on the top of the ridge, so that the water can penetrate to the roots, and occasionally pour some along the rows when drought prevails; and further, as a means of keeping the earth moist and cool, let the surface on each side of the rows be well mulched over with short litter. By adopting these precautions, late Peas may often be made as productive as the best of the general season, but there is no need to apply them in the case of early and midseason varieties, as in most seasons they arrive at maturity before the great heats likely to affect them prevail. The present season, however, has been one of the exceptions, for in the month of April the sun's heat was so powerful as to scorch the blossoms, and shrivel up the incipient pods.

Late Peas are quite as much appreciated by epicures as early ones, and therefore it is worth a little extra trouble in watering and so forth to secure them, and the precautions I have mentioned may well be modified to suit particular situations. In hot and dry soils they are imperative; in strong soils retentive of moisture they are not so unless under extreme circumstances of drought, and even then it is probable that mulching will be found sufficient.

The time at which it is best to make the latest sowings is a vexed question. Experience and observation convince me that locality has everything to do with the matter. I find here that the middle of June is the latest period at which it would be of any good to sow for remunerative produce. In other localities, particularly in some of the warm sheltered gardens on the south coast, the first week in July is not too late in the majority of seasons.

JOHN COX.

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### NOSEGAY GERANIUMS.

IF Donald Beaton had never, in the course of his busy life, raised any other Geraniums beyond Cybister and Stella, every flower gardener ought to be grateful to him for these alone. They are perfection for bedding purposes, easy of culture, and of hardy constitution. They should be in every garden, as no doubt they will be soon, because cuttings must be badly put in if they do not root; and when done properly this takes place most freely, even as eyes in the way Vines are propagated. They are easier to keep through the winter than most of the common older varieties, under the roughing process that all have to undergo in these months; they also begin flowering early, and continue all the season, without any cessation. The weather, and other causes, do not affect them in the way they do Christine, Minnie, Model, Brilliant, and many others; and their trusses fully entitle them to the name of Nosegays. It appears to me that the free-flowering habit of these two varieties is the great secret of their seldom getting into that gross state of growth which so many other varieties do very shortly after they are fully established, completely marring, at a comparatively early season, that effect which has been nine months in maturing. I have only seen one or two of Mr. Paul's new varieties planted out, but I have no doubt they will fully realise all that has been said of them. Amy Hogg is the most beautiful colour of any Geranium in the bedding class; it surpasses all other home-raised or continental varieties. The latter are most frequently unable to keep their colour under our sun, which is the more extra-

ordinary if we consider how much more dry and fierce the heat is in most continental parts than with us; still I know of no variety raised abroad that is to be found as a standard colour in our great bedding gardens. It must be borne in mind that the true test of a bedding Geranium is in the bed or ribbon; and here lies the difficulty of a floral committee. If they could see certain new sorts in beds, adjoining some of the older varieties, they would have less difficulty in deciding. There are also many of the classes of bedding Geraniums, grown remarkably well in pots, that are completely useless for planting out, confinement of the roots being necessary to keep the foliage under, and to produce bloom. It is the reverse with the Nosegay class; this equalising process is not beneficial or necessary for them—the more root the more bloom.

F.

## REPORT ON THE BEDDING PELARGONIUMS GROWN AT CHISWICK, 1864.

BY THOMAS MOORE, F.L.S., SECRETARY TO THE FLORAL COMMITTEE.

(Continued from page 154.)

THE most approved sorts are indicated throughout by an asterisk (\*), and the next grade by an obelisk (†).

### SERIES II.—ZONATE VARIETIES.

#### 1. FLOWERS SCARLET.

*Admiration* (Williams).—Moderately vigorous; leaves dark zoned; flowers bright scarlet.

*Adonis* \* (Hally).—Dwarf, free bold habit; leaves with a dark submarginal zone; flowers large, well formed, in fair trusses, light scarlet, with a white eye.

*Agatha* (Rollisson).—Moderately vigorous habit; leaves dark zoned; flowers small, well formed, light scarlet, in abundant compact trusses; free and showy.

*Amiral Protet* \* (Van Houtte).—Moderately vigorous in habit; leaves with an indistinct zone; flowers large, deep scarlet, of fine shape, and produced in bold effective trusses. It proved a very showy pot plant, under which circumstances only it was grown, and it is to this condition that the marks of merit are intended to apply.

*Attraction* \* (Turner).—Moderately vigorous; leaves with an indistinct green zone; flowers abundant, bright scarlet, in fine trusses, of good form and moderate size. Also called Scarlet Perfection, Sutton's Perfection, Old Perfection, Boule de Feu, and Montfordi.

*Baron Ricasoli* (E. G. Henderson & Son).—Moderately vigorous habit; leaves with sharply defined dark zone; flowers in fair-sized trusses, dull crimson scarlet.

*Beauty* (Bull).—Moderately vigorous; leaves with broad dark zone; flowers large, scarlet.

*Cheshire Hero* † (Wills).—Moderately vigorous habit; leaves with an indistinct zone; flowers soft, light scarlet, with a cerise tint, free.

*Climax* (Bull).—Moderately vigorous; leaves with an indistinct zone; flowers bright scarlet. Indifferent under glass.

*Clipper* \* (Bull).—Moderately vigorous habit; leaves with broad dark zone; flowers bright scarlet, large and of fine shape, produced in good trusses. Equally good as a pot plant under glass.

*Comet* (J. F. Chater).—Dwarfish habit; leaves with dark centre or zone; flowers scarlet.

*Commissioner* † (Bull).—Vigorous habit; leaves with broad dull-coloured zone; flowers in compact trusses, well formed, of a bright orange scarlet, a fine variety.

*Cornelius Hegel* (E. G. Henderson & Son).—Dwarf habit; very broadly dark-zoned leaves; flowers light scarlet.

*Cottage Maid* † (Scott).—Vigorous habit; leaves dark zoned; flowers abundant, in compact trusses, light scarlet, small and well formed. A free showy sort; the same as *New Globe*, or too closely resembling it.

*Editor* (Bull).—Vigorous habit; indistinctly zonate leaves; large bright scarlet flowers.

*Emperor of the French* † (Turner).—Vigorous dwarfish habit; leaves large, very distinctly zoned in a vandyked pattern; flowers large, in bold trusses, light scarlet.

*Etendard* (Salter).—Dwarfish free habit; leaves with an indistinct and unequal broad zone; flowers deep scarlet.

*Firefly* (G. Smith).—Dwarf habit; leaves dark zoned; flowers abundant, bright scarlet.

*Foxhunter* (J. F. Chater).—A small weak plant; leaves marked with a narrow dark zone; flowers scarlet.

*Gaiety* (Hally).—Moderately vigorous habit; leaves darkly zoned; flowers light, bright scarlet, with a pale eye.

*Garibaldi* \* (W. North).—Very dwarf close habit; leaves small, flat, with a broadish well-defined dark zone near the edge; flowers bright scarlet, of good shape, in compact trusses. A beautiful plant for small beds or margins.

*Harry Hicover* † (E. G. Henderson & Son).—Dwarf habit; darkly-zoned leaves; loose orange scarlet flowers. It was considered rather desirable as a dwarf variety for edging flower-beds.

*Hibberd's Pet* (Carter & Co).—Of moderately vigorous habit; leaves dark zoned; flowers light scarlet but not effective, the trusses being small and the flowers loose. It was also of indifferent quality under glass.

*Lilliput* (Turner).—Dwarf; leaves darkly zoned; flowers scarlet, in small trusses.

*Lucien Tisserand* † (E. G. Henderson & Son).—Moderately vigorous habit; leaves marked with a dull broad zone; flowers showy, large, bright scarlet with a light eye.

*Lucius* (Bull).—Vigorous habit; dark-zoned leaves; scarlet flowers.

*Martin Gireau* \* (Rollisson).—Vigorous habit; leaves with broad dull zone; flowers large, in fine trusses, of good form, light scarlet.

*Meteor* (J. F. Chater).—Moderately vigorous; leaves dark zoned; flowers scarlet.

*Neatness* (F. & A. Smith).—Dwarfish vigorous habit; leaves with dark vandyked zone; flowers of good form, large, scarlet, in small trusses.

*Persian* † (Bull).—Vigorous habit; very dark broad zone; flowers fine, large, and well formed, of a soft carmine scarlet.

*Petit Mont Rouge* (E. G. Henderson & Son).—Dwarf habit; leaves with a dark zone; flowers very bright scarlet.

*Philomelle Leseine* (E. G. Henderson & Son).—Leaves marked with a dull zone; flowers light scarlet.

*Princess of Prussia* † (Rev. J. Dix).—Vigorous habit; leaves with an indistinct zone; flowers small, salmony scarlet, in large close trusses. A good pot plant, but not very well developed in this instance.

*Queen Mab* (Hally).—Dwarf habit; leaves dark zoned; flowers orange scarlet.

*Really Good* (Bull).—Vigorous; dark-zoned leaves; flowers light scarlet, of fine shape.

*Red Jacket* (Veitch, Turner).—Vigorous habit; leaves broad with narrow dark vandyked zone; flowers light scarlet. Similar to Emperor of the French, but inferior to it.

*Red Riding Hood* † (Hally).—Dwarf habit; leaves dark zoned; flowers very bright scarlet, of fine form.

*Reidii* (Fraser).—Dwarf vigorous habit; leaves dark zoned; flowers deep scarlet with white eye, in small trusses.

*Rev. Joshua Dix* † (The Society).—Moderately vigorous compact habit; leaves marked with a dull zone; flowers above medium size, of good shape, in compact trusses, and of a very bright scarlet. A seedling raised at Chiswick, and both distinct and good.

*Senator* (Williams).—Vigorous habit; leaves with very dark centre or broad zone; flowers scarlet.

*Victor Emmanuel* \* (Clarke).—Vigorous habit; leaves with broad dull zone; flowers large, in bold trusses, and of fine quality, very similar to those of Punch. One of the best of the zonate scarlets.

*Vivid* \* (G. Smith).—Moderately vigorous habit; leaves with broad dull zone; flowers of fine form, in bold trusses, of a bright scarlet. A very fine sort, one of the best as to the shape of the flowers, and equally good as a pot plant.

*Volcano* \* (Wills).—Moderately vigorous habit; leaves with indistinct green zone; flowers light orange scarlet, large, in bold trusses, and freely developed.—(*Proceedings of the Royal Horticultural Society.*)

(*To be continued.*)

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## THE BIRMINGHAM ROSE SHOW.

THE fourth of these interesting gatherings took place on Thursday and Friday the 6th and 7th inst. at the Town Hall; and in every point of view, except the financial one, it was a decided success. The entries were numerous—much more so than last year—and the quality of the floral display fully realised the expectations which we ventured to indulge respecting it. In the opinion of the most competent authorities, professional as well as amateur, it was quite equal to the best of the metropolitan shows. Every rosarian knows how trying has been the present season, more especially the heat of the last few weeks, to his favourites; and, taking the weather into account, the blooms generally, both in substance and colour, were surprisingly good. As a matter of course, those varieties which are the most deficient in the former property suffered the most. The arrangements, too, were praiseworthy; the ornamental-foliaged plants and garden ornaments being so disposed as to produce an admirable effect. The elements, however, were unpropitious; and if anything could demonstrate the strength of the allegiance to the queen of flowers which pervades the community in and around Birmingham, it assuredly was the considerable muster of visitors whose zeal to render her “suit and service” was not to be overcome by the almost incessant rain which fell throughout Thursday.

One of the features on this occasion was the quantity of new Roses in many of the collections, where they were better represented than in the divisions which were exclusively devoted to them. At their head we should, without scruple, place *Maréchal Niel*, which deservedly attracted much attention. It

was sent out during the past spring; and is said to be one of the hardiest of the Noisettes, and a free bloomer. Of a rich golden yellow colour, with stout petals, and fine contour, it is altogether a splendid flower, bidding fair to supersede Cloth of Gold. It was seen to great advantage in the stand with which Messrs. Paul & Son took first honours for ninety-six varieties, which also contained François Louvat, crimson, shaded with lilac, hardy in constitution, and a free bloomer; Leopold Premier, a bright deep red, large and double; Eugène Verdier, a rich violet, large, full, globular, a strong grower, and not liable to "burn" as some of the dark-coloured kinds; Lælia, silver-shaded, a fine double Rose; Lord Herbert, bright rosy carmine; Sénateur Favre, a deep crimson, grand in shape, with a thick petal; and Emotion, a large white, beautifully tinted with rose colour. This, although catalogued as a Bourbon, is, we understand, a cross between a Hybrid Perpetual and a Bourbon, and the exhibitors propose that, with others of the same origin, it shall be relegated to a distinct class, to be denominated Hybrid Bourbons. Among later acquisitions, the most noteworthy were Alphonse Damaizin, a weak grower, which, under favourable conditions, is magnificent; Maréchal Vaillant; Pierre Notting; Duc de Rohan; Général Jacqueminot; and Madame Victor Verdier. The following is the entire list:—

Anna de Diesbach, Madame William Paul, General Bisson, Maurice Bernardin, Louise de Savoie, Triomphe de Caen, Queen Victoria, Madame Boutin, Virginal, Lord Clyde, La Ville de St. Denis, Lord Herbert, Lamarque, Sénateur Vaisse, Baronne Gonella, Lord Raglan, President, Alphonse Damaizin, Madame William Paul, Eugène Verdier, Emotion, Madame Furtado, Souvenir d'Elise, Madame Valembourg, Madame Victor Verdier, Niphotos, Alphonse Karr, Maxime, La Duchesse de Morny, Comtesse de Kergolay, Victor Verdier, Narcisse, Alfred de Rougemont, La Rhone, Madame de Cambacères, Clement Marot, Maréchal Niel, Louis Van Houtte, Princess Mary of Cambridge, Paul de la Meilleray, Madame Willermoz, Rev. H. Dombain, Comte de Nanteuil, Olivier Delhomme, Celine Forestier, Maréchal Souchet, (Damaizin), Madame Freeman, Paul Desgrand, Souvenir d'un Ami, Lælia, Mdlle. Emain, Madame Caillat, Devoniensis, Modèle de Perfection, Triomphe de Rennes, Bernard Palissy, Alpaïde de Rotalier, La Fontaine, Laurent Descourt, Sénateur Favre, Gloire de Dijon, Louise Odier, Louise Darzins, Turenne, Duc de Magenta, Monte Christo, Duchesse d'Orleans, Pourpré d'Orleans, Madame Rivers, Leopold Premier, Comte de Paris, Baronne A. de Rothschild, Madame H. Jacquin, Beauty of Waltham, Impératrice Eugénie, Pierre Notting, Souvenir de la Malmaison, François Lacharme, La Reine, Maréchal Vaillant, Comtesse de Chabillant, Mrs. Charles Wood, Solfaterre, Madame Julie Daran, Madame Pauline Labonté, John Hopper, Charles Lefebvre, Alba Rosea, André Leroy d'Angers, Sœur des Anges, Duc de Rohan, Madame Vidot, François Louvat, Madame Boll, Marquise de Foucault. In the excellent stand of Mr. Keynes the best specimens were America, a fine yellow Noisette; Jaune d'Or, a large hardy yellow, full and globular in form; Victor Vigier; Madame Charles Wood; Lord Herbert; Docteur Spitzer, a bright red, and symmetrically-built flower; Centifolia Rosea; Gloire de Vitry; Alfred de Rougemont; Baronne de Rothschild; Paul Desgrand; Prince Henri de Pays Bas; and Abbé Reynaud. In Mr. Cranston's collection were fine examples of Lord Raglan; Souvenir de la Malmaison; Maréchal Souchet; Madame Charles Crapelet; Sénateur Vaisse; and Madame Pauline Villot.

Awards.—Ninety-six varieties, single trusses (Nurserymen):—First, Messrs. Paul & Son, Cheshunt; second, Mr. J. Keynes, Salisbury; third, Mr. John Cranston, Hereford; fourth, Messrs. F. & A. Dickson, Chester.

Among the nurserymen who showed forty-eight varieties (three trusses),

Mr. Keynes took the lead, with a collection in which the most prominent items were Louise Peyronny, Charles Lefebvre, Louise Margottin, Gloire de Vitry, La Phocenne, Baronne Gonella, Duchesse de Morny, and John Standish. We insert the names of all the Roses in this stand:—Maurice Bernardin, Comtesse de Chabillant, Gloire de Vitry, Sénateur Vaisse, John Standish, Madame Vigneron, La Ville de St. Denis, Laurent Descourt, Madame Charles Wood, Clement Marot, Triomphe de Rennes, Prairie de Terre Noir, La Brillante, Centifolia Rosea, Sœur des Anges, Baronne Pelletan de Kinkelin, Duc de Rohan, John Hopper, Duchesse de Morny, Baronne Adolphe de Rothschild, Louis Van Houtte, François Lacharme, Baronne Gonella, Monsieur de Montigny, Celine Forestier, Gloire de Santenay, Général Jacqueminot, Comtesse Ouvaroff, Alpaïde de Rotalier, Souvenir de Charles Montault, Maréchal Vaillant, Lays, La Reine, La Phocenne, Devoniensis, Madame Furtado, Anna de Diesbach, Victor Verdier, Gloire de Dijon, Louise Margottin, Belle de Bourg-la-Reine, Alfred de Rougemont, Prince Henri de Pays Bas, Mademoiselle Bonnaire, Souvenir de la Malmaison, Beauty of Waltham, Charles Lefebvre, Louis Peyronny. The second prize went to Messrs. Paul & Son, of whose collection we may specify Maréchal Niel; Leopold Premier; Baronne Adolphe de Rothschild; Souvenir d'Elise Vardon, a white, with a yellowish centre, and one of the finest Tea varieties in cultivation; Celine Forestier, the best hardy yellow, perhaps, with the exception of Maréchal Neil; Arles Dufour, a most desirable dark purple; and Madame Emain, one of the Hybrid Bourbons to which we have already referred.

Awards.—First, Mr. Keynes; second, Messrs. Paul & Son.

For stands of twenty-four varieties (three trusses), Mr. Keynes again stood first, with superior blooms of John Standish, Duc de Rohan, Gloire de Vitry, François Lacharme, Prince Henri de Pays Bas, and Beauty of Waltham. Of Mr. Cranston's stand, we may particularise Duc de Rohan, Souvenir de Malmaison, Gloire de Dijon, Comtesse de Chabillant, and Charles Lefebvre. The premiums for stands of twenty-four singles were smartly contested, Mr. Keynes being first with, among others, La Reine, Virginal, Lord Macaulay, Pourpré d'Orleans, a noble reddish-purple imbricated flower. In Mr. Batley's collection were Auguste Mié, Madame Pierson, Mdlle. Bonnaire, and Mère de St. Louis, which seems to be replacing Virginal.

Awards.—Twenty-four varieties, three trusses:—First, Mr. J. Keynes; second, Mr. J. Cranston; third, Mr. G. Batley, Rugby; fourth, Mr. R. Smith, Worcester. Twenty-four varieties, single trusses:—First, Mr. J. Keynes; second, Mr. G. Batley; third, Mr. R. H. Vertegans, Edgbaston; fourth, Mr. T. W. Coudry.

In the classes limited to nurserymen resident in the counties of Warwick, Stafford, and Worcester, the contributions were highly creditable to the growers. Among the best flowers were Deuil de Prince Albert, Madame William Paul—a purplish crimson and a first-class Rose, Comtesse de Chabillant, Sénateur Vaisse, and Madame Damaizin. Messrs. Perkins showed Souvenir de Charles Montault, Madame Furtado, Madame W. Paul, Madame Victor Verdier, Joseph Fiala, Gloire de Dijon, Docteur Spitzer, Madame Caillat, President Lincoln, Charles Lefebvre, Prince Camille de Rohan, John Hopper, Beauty of Waltham, Madame Vidot, General Washington, Victor Verdier, Sénateur Reveil, Comtesse de Chabillant, Jean Bart, Madame Boll, Louis XIV., Lælia, Deuil de Prince Albert, Mdlle Bonnaire. In the stand of Mr. Hewitt, which obtained the first prize for twelve varieties, three trusses each, the most commendable were Comtesse de Chabillant, Madame Charles Wood, General Washington, Général Jacqueminot, La Reine, and Madame Vidot; and in that of Mr. Vertegans, who was second, John Hopper, Triomphe d'Angers (a lovely carmine), Charles Lefebvre, and Prince Camille de Rohan.

Awards.—Twenty-four varieties, single trusses :—First, Messrs. T. Perkins and Sons, Coventry; second, Mr. J. Parker, Rugby; third, Mr. G. Batley; fourth, Mr. T. Hewitt, Solihull; extra, Mr. R. H. Vertegans. Twelve varieties, three trusses :—First, Mr. T. Hewitt; second, Mr. R. H. Vertegans; third, Mr. J. Parker; fourth, Messrs. T. Perkins & Sons.

The Amateurs mustered in great force, and the competition for precedence was very strongly maintained. The awards are appended; and we select from the principal exhibits the blooms most worthy of mention.

Forty-eight varieties—Rev. S. R. Hole :—André Desportes, which resembles in style Victor Verdier; Triomphe de Rennes, which was better on the second day than the first, having developed more fully in the interval; Souvenir d'un Ami (very fine); Gloire de Santenay; and Prince Camille de Rohan. Mr. Evans showed Anna de Diesbach, Comtesse de Chabillant, and Vicomte Vigier. Mr. Hole's stand contained—John Hopper, Turenne, Alphonse Karr, Gloire de Santenay, Victor Verdier Princess of Wales, Madame Vidot, Prince Camille de Rohan, Sophie de Coquerelle, Madame Furtado, Gloire de Dijon, Le Rhone, Caroline de Sansal, Maurice Bernardin, Coupe d'Hébé, Olivier Delhomme, Madame Bravy, Louise Magnan, Celine Forestier, Jules Margottin, General Washington, Madame C. Wood, Gloire de Vitry, Wilhelm Pfitzer, Duchesse d'Orleans, Souvenir d'un Ami, Professor Koch, Pierre Notting, Auguste Mié, Maréchal Vaillant, Baronne de Heckeren, Charles Lefebvre, Triomphe de Rennes, François Lacharme, Lælia, Robert Fortune, America, La Brillante, Rubens, Baron Gonella, Sénateur Vaisse, Vicomte Vigier, Devoniensis, Comtesse Cecile de Chabillant, Madame Clemence Joigneaux, André Desportes, Madame Charles Crapelet. Of the twenty-four varieties, the finest were—Rev. S. R. Hole :—Gloire de Vitry, Souvenir de Comte Cavour, Gloire de Dijon, Juno, John Hopper. Mr. Hunt :—Baron Gonella, Comte de Nanteuil, Madame Crapelet. Eighteens (three trusses), Mr. Evans ;—Niphotos, Madame Victor Verdier, and Queen Victoria. The stands of Mr. Perry were of uniform merit, though it was evident the show would have suited him better had it been held earlier in the season. Through a mistake, Mr. Brown of Elmdon had entered eighteen single trusses for this section, and although they were necessarily disqualified, they deserved and received great commendation. Twenty-four varieties, single trusses, open only to amateurs resident within fifteen miles of Birmingham. The Rev. P. M. Smythe :—Victor Verdier, Charles Lefebvre, Maréchal Vaillant, Madame Knorr, François Lacharme. The flowers in this stand were—Comte de Nanteuil, Baronne de Heckeren, Triomphe de Rennes, Maréchal Vaillant, Vanqueur de Goliath, Maurice Bernardin, Anna de Diesbach, Madame Knorr, Charles Lefebvre, Celine Forestier, Louis XIV., Baronne Gonella, Jules Margottin, Beauty of Waltham, Acidalie, L'Eblouissante, Madame Clemence Joigneaux, Louis Margottin, John Hopper, François Lacharme, Victor Verdier, Sénateur Vaisse, Vicomte Vigier. Mr. Brown showed Gloire de Santenay, (very fine); and Coupe d'Hébé. Twelve varieties—single trusses, open to amateurs within fifteen miles of Birmingham—Mr. Brown :—Madame Caillat, (fine); Gloire de Santenay, Louise Magnan, and La Reine (fine). Rev. P. M. Symthe :—Anna de Diesbach, Vicomte Vigier, and Baron de Noirmont. Mr. Brown's stand contained—La Reine, Général Jacqueminot, Comtesse de Chabillant, Duchess of Norfolk, Madame Vidot, Beauty of Waltham, Anna de Diesbach, Gloire de Santenay, Louise Magnan, Madame Caillat, Triomphe de Rennes, Sénateur Vaisse.

Awards.—Forty-eight varieties, single trusses : First, Rev. S. R. Hole, Newark; second, Mr. S. Evans, Arbury, Nuneaton; third, Mr. C. J. Perry, Castle Bromwich.

Twenty-four varieties, single trusses : First, Rev. S. R. Hole; second, Mr.

Ebenezer Hunt, Leicester; third, Mr. E. Sage, Gopsal Hall, Atherstone; equal fourth, Rev. P. M. Smythe, Solihull, and Mr. S. Evans, Arbury, Nuneaton.

Eighteen varieties, three trusses: First, Mr. S. Evans; second, Mr. C. J. Perry, Castle Bromwich; third, Mr. E. Hunt.

Twelve varieties, single trusses: First, Mr. E. Hunt; second, Rev. S. R. Hole, Newark; third, Mr. E. Sage; fourth, Rev. P. M. Smythe, Solihull.

Twenty-four varieties, single trusses (open to amateurs resident within fifteen miles of Birmingham only): First, Rev. P. M. Smythe, Solihull; second, Mr. William Brown, Elmdon Hall, near Birmingham; third, Mr. C. J. Perry, Castle Bromwich; fourth, Robert Garnett, Esq., Moore Hall, Sutton Coldfield.

Twelve varieties, single trusses (open to amateurs within fifteen miles of Birmingham): First, Mr. W. Brown; second, Rev. P. M. Smythe; third, Mr. C. J. Perry; fourth, Robert Garnett, Esq.; extra, Mr. T. B. Wright, Perry Barr, and Mr. John Moor, Sparkhill.

No class was more satisfactory than the contributions of amateurs resident within four miles of Stephenson Place, Birmingham, as it afforded an illustration of the extent to which Rose cultivation is spreading in the neighbourhood, and the judgment by which it is directed. The stands, as a whole, would have been excellent for any locality, but they were still more extraordinary when it is remembered that some which took prizes (as for instance those of Mr. Field) were grown at Balsall Heath.

Awards—Twelve varieties, single trusses: First, Mr. C. Cooper, Mosely Wake Green; second, Mr. G. Dymond, King's Heath; third, Mr. E. W. Field, Balsall Heath; fourth, Mr. G. Sansome, Moseley; extra, Mr. W. B. Mapplebeck, Woodfield, Moseley.

Six varieties, single trusses: First, Mr. C. Cooper; second, Mr. W. B. Mapplebeck; third, Mr. G. T. Sansome, Moseley; fourth, Mr. John Moore, gardener to Thomas Lloyd, Esq., Sparkhill.

The offer of special premiums for Moss Roses brought only a small collection of very moderate pretensions, the single award being given to Messrs. Paul and Son, for the subjoined collection, of which *Cristata*, a good white Perpetual with a cluster of buds, was the most conspicuous:—*Cellina*, *Gloire des Mosseuses*, *Bath White*, *Cristata*, *Baronne de Wassanaër*, *Perpetual White*, *Prolific*, *Aristide*, *Captain Ingram*, *Hortense Vernet*, and *Eugène de Savoie*.

The new Roses were as usual interesting; but owing to most of the imported ones being over they did not include many of the present year. The stand of twenty-four varieties with which Mr. Keynes gained the first prize included the following varieties:—*Souvenir de Charles Montault*, *Madame Victor Verdier*, *La Phocenne*, *Sœur des Anges*, *George Prince*, *Lord Herbert*, *Paul Desgrand*, *Joseph Fiala*, *Alfred de Rougemont*, *Laurent Descourt*, *Leopold Premier*, *Vicomtesse Douglas*, *Centifolia Rosea*, *Prince Henri de Pays Bas*, *Baron Adolphe de Rothschild*, *Alphonse Belin*, *Claude Million*, *Docteur Spitzer*, *Alpaïde de Rotalier*, *Bernard Pallissy*, *Madame de Stella*, *Pierre Notting*, *Duchesse de Morny*, *Louise Van Houtte*. *Souvenir de Charles Montault* is a vivid and showy garden flower; and both *Paul Desgrand*, a dazzling red variety, and *Centifolia Rosea*, a bright clear rose, will no doubt be seen to better effect in a less dry season. *Sœur des Anges* is a bad opener, but fine when it does open. *George Prince* is a good-shaped, free-blooming and effective Rose; and *Lord Herbert* has gained for itself a good character this season. *Pierre Notting*, a blackish red with a violent tint, and *Vicomtesse Douglas*, a lilac, are both fine; while *Docteur Spitzer* presents a distinct shade of crimson and is good in form. The following were included in the collection of Messrs. Paul and Son, who were second:—*Louis van Houtte*, *Duchesse de Morny*, *Madame de Stella*, *Eugène Verdier*, *Madame Freeman*, *Baron Pelletan*

de Kinkelin, Emotion, Lord Macaulay, Jaune d'Or, Bernard Pallissy, Pavillon de Pregny, Claude Million, Alpaïde de Rotalier, Madame Valembourg, Duchesse de Caylus, Alphonse Belin, Alba Rosea, Triomphe de Villecresnes, Lord Clyde, Maréchal Niel, Madame Boutin, Sénateur Reveil, Seedling No. 11, Leopold Premier. Of Maréchal Niel we have already spoken in terms of eulogy. Alba Rosea, with a rose centre, full and fine in form, is a splendid Tea-scented sort, useful for pot culture; and Claude Million, a deep dark vermilion, is also pleasing. Duchesse de Caylus, a vivid carmine, introduced during the present year, is a vigorous grower and excellent in form. Jaune d'Or, as its name imports, is an addition to the yellows; and Duchesse de Morny, a clear rose colour, with silvery under petals, though a little thin, may be expected to take a prominent position; and Pavillon de Pregny, a dark violent crimson, with silvery under petals, is very distinct. Mr. Batley of Rugby was third; Messrs. Perkins fourth.

The first prize for six trusses of a new Rose sent out in 1863-4 or 5 was adjudged to Mr. Keynes, for six blooms of Prince Henri de Pays Bas, a very bright crimson, full and globular in form, and Duchesse de Morny; the second to Mr. Cranston, for Madame Boutin; and the third to Messrs. Paul & Son, for Madame Victor Verdier, a vivid carmine, and reckoned one of the finest Roses of last year.

The designs for dinner-table decorations formed a new feature; and we hope in future years to see a considerable increase in the number of competitors. Those sent on this occasion were arranged with admirable taste. The bouquets were an improvement on what we have hitherto seen, but did quite not come up to our expectations.

The decorations were arranged by Mr. Cole and Mr. Tye, and were all that the most fastidious could desire.—(*Midland Counties Herald.*)

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### MR. PERRY'S SEEDLING VERBENAS.

MR. C. J. PERRY is now well known as the raiser of some of the finest Verbenas yet sent out, all of which have been introduced by Mr. C. Turner, of Slough. Taking advantage of my visit to the Great Rose Show at Birmingham, I visited Mr. Perry's garden at Castle Bromwich, to see what seedling Verbenas he had for next year, and I am sure the following will be hailed as great acquisitions, but of course they will not be sent out until next spring.

*Charles Perry.*—This is an improvement on Charles Turner, and a decided improvement on L'Avenir de Bellant, and any other of the same class. Very fine pip and truss.

*Cleopatra.*—Rich deep rose, with clear lemon eye, beating Rosy Morn, and all of that class. Very fine truss.

*Mazeppa.*—A decided improvement on Lord Leigh, and all of that class, having a white instead of a yellow eye, and very fine pip and truss.

*William Dean.*—A great improvement on Black Prince, Lord Elgin, and others. Very rich shaded purple, with clear white eye, fine truss.

*Harry Turner.*—Shaded lilac; very fine pip and truss. An improvement on Magnificens.

*Mrs. Dean.*—Blush, with pale crimson, the centre being more clearly defined than in Madame Herman Stenger. Fine pip and good truss.

*Admiral of the Blue.*—Distinct lilac blue, with large white centre, a great improvement on all of this colour.

*James Walton.*—Bright rosy carmine, with darker shade towards the centre; light eye. Very fine pip and truss.

W. D.

## OUR MONTHLY CHRONICLE.

ROYAL HORTICULTURAL SOCIETY.—At the Floral Committee of the 27th of June, a remarkably fine pure white Verbena, with large pips and trusses, and smooth in outline, was awarded a first-class certificate. It was named Beauty of England, and came from Mr. Gill. Among seedling Pelargoniums, of which several were shown, first-class certificates were given to Mr. G. Smith, of Hornsey, for Chieftain, bright orange scarlet, fine truss, and well-marked horseshoe; and Nosegay La Grande, with large heads of carmine crimson flowers. Mr. William Paul sent several of his new Nosegays, of which Duchess and Indian Yellow had first-class certificates; and Mr. Fleming, of Cliveden, cut specimens of several kinds new in colour, and likely to prove very useful for bedding. Several Orchids were shown, of which Palumbina candida, which Mr. Bateman identified with the Luisia Psyche of Reichenbach, having insect-like flowers close to the stems, received a first-class certificate. Mr. Veitch, of Chelsea, exhibited another new hybrid Orchid, of Mr. Dominy's raising, obtained between Cattleyas Acklandiæ and Forbesii, for which a first-class certificate was given; and a similar award was made to Mr. Holland, gardener to R. Peake, Esq., Isleworth, for Cyclamen Peekianum, with rosy pink flowers, produced continuously, sometimes for three years; for Asplenium trichomanes Harrovii, a pretty dwarf form; and to the Rev. W. H. Girdlestone, Ryde, for Athyrium Filix-foemina fissidens irregulare, found in the Western Highlands. First-class certificates were likewise awarded to Messrs. Jackman's new Clematises Prince of Wales, large, dark purple striped with red; Princess of Wales, paler; and rubella, with more red in the purple. Other subjects consisted of Solanum vescum, from Mr. Mackintosh, of Hammersmith, with purplish lilac flowers, succeeded by ornamental fruit, and stated to be useful for out-door decoration; seedling Roses from Mr. W. Paul; and a handsome Fern, Phymatodes glauca, from Mr. Walker, Hornsey.

At the Fruit Committee, which met on the same day, but few subjects were brought forward. The most important was a new Cherry, raised by Mr. Ingram, of Frogmore, and called Frogmore Early Bigarreau. The fruit is large, white where shaded, with a brilliant crimson cheek where exposed to the sun; the flesh remarkably tender, instead of firm, as in other Bigarreaus, and richly flavoured. A first-class certificate was awarded for this; also for Oulton Park Hybrid Melon, from Mr. Wills, gardener to Sir P. M. de Grey Egerton, Bart., a medium-sized, round kind, with salmon-coloured, tender, melting flesh, of very rich flavour. This was considered a great acquisition.

At the scientific meeting which followed,

Lord Henry Gordon Lennox, M.P., who was in the chair, announced that J. M. Strachan, Esq., and Sir Joseph Paxton, had presented a number of books to the library, which the Society was endeavouring to collect; and with the vote of thanks to Lady Paxton, was united an expression of the deep regret which the Society felt for its loss as well as hers. Mr. Bateman, in the absence of the Rev. M. J. Berkeley, commented on the principal subjects before the meeting, and remarked that the blue Clematis lanuginosa would offer a good contrast when planted along with Clematis Jackmanni. Specimens of coloured foliage, consisting of the leaves of the Purple Nut, Beech, and Black Maple of Japan, were then introduced to notice as being very effective, especially the last, and as a contrast to these the Golden Yew, Holly, Ivy, Japanese Honey-suckle, and Golden Bramble. The white variegated Acer negundo, and many others, might also be employed, and these, it should be remembered, were all hardy, and within the reach of every one. Major Trevor Clarke next offered some observations on specimens which he had brought to the meeting. Liliun testaceum orexcelsum, though it had the reputation of being tender, had been cultivated for some years, and found perfectly hardy in his garden in Northamptonshire. The other subjects consisted of a Monstera or Philodendron, a Stock raised between Mathiola fenestralis and M. incana; and a Gladiolus obtained by crossing Gladiolus cardinalis and a garden variety, and which was interesting as confirming an observation made by the Dean of Manchester, to the effect that the splendid colours of cardinalis are not fully transmitted to the offspring when interbreeding takes place in a colder climate than that to which the species is indigenous. A cross, remarked Major Clarke, which might seem comparatively unimportant, might supply a link in the chain of the evidences in an important investigation, and he urged the Fellows of the Society, and others, to bring to its meetings objects of scientific interest of every kind, whether the results of individual experiments, or gleanings from hill or valley, river or forest, illustrations of nature's wild and wondrous changes. Such objects were too rarely seen on the tables of the Society because the horticultural mind, improved as it is at the present day, has not been turned sufficiently in this direction. Mr. Bateman then delivered a lecture on Rafflesia Arnoldi, in the course of which he stated, on the authority of a Belgian horticultural periodical, that that singular plant, parasitic on the root of certain species of Cissus, and especially Cissus scariosa, had been sown in an incision in the bark, and had been flowered in the Garden of Buitenzorg, in Java, by M. Tyesman.

The Rose Show, which took place on the

1st of July, was probably the best anywhere held this season, both as regards the quality and the extent of the display. The class for seventy-twos, single trusses, was particularly good, especially the stand of Messrs. Paul and Son, of the Old Cheshunt Nurseries, and that of Mr. Mitchell, of the Piltdown Nurseries, Maresfield, between whom the run for the first place was very close indeed, and it was not without long deliberation that the first prize was adjudged to Messrs. Paul. The following varieties were remarkably good:—Maurice Bernardin, Gloire de Santenay, Vainqueur de Goliath, Madame C. Crapelet, Lælia, Sénateur Farre, Madame Furtado, Duc de Rohan, Comtesse de Chabillant, Pierre Notting, Monte Christo, Prairie de Terre Noire, Caroline de Sansal, Madame Alfred de Rougemont, Queen Victoria, the new yellow Tea, Maréchal Niel, Auguste Vacher, Gloire de Dijon, Alba Rosea, Louise de Savoie, Madame Masson, Madame Charles Wood, Wilhelm Pfitzer, Vicomtesse Douglas, Leopold Hausburg, Maréchal Souchet, Madame Julie Daran, Charles Lefebvre, Victor Verdier, George Prince, Madame Boll, Duc de Cazes, Madame Caillat, General Washington, La Reine, François Premier, Cloth of Gold, Alfred de Rougemont, Louise Peyronny, and Devoniensis. Forty-eights, three trusses, made a rich display, and many beautiful trusses were exhibited by Messrs. Paul & Son, and Mr. Keynes, of Salisbury, the former being first, the latter second; but in twenty-fours, three trusses, and the same number of single trusses, Mr. Keynes took the first place. Sénateur Vaisse, Charles Lefebvre, Madame Charles Wood, Madame Boutin, Madame C. Crapelet, Maurice Bernardin, Madame Furtado, Gloire de Vitry, Souvenir de la Malmaison, Triomphe de Rennes, Alpaïde de Rotalier, Louise Peyronny, and Comte de Nanteuil, were in great perfection. In the Amateurs' classes Mr. Hedge, of Reed Hall, Colchester; Mr. Ingle, gardener to G. Round, Esq., of the same place; and R. B. Postans, Esq., of Brentwood, carried off the chief honours. New Roses of 1863 and 1864 were not generally in good condition. The best eighteen came from Mr. Keynes, who, in consequence of having by some mistake, put up two of a sort, was disqualified. Pierre Notting, Paul de la Meilleray, Maréchal Souchet (Guillot) and Maréchal Niel, were seen to most advantage. In other classes beautiful boxes of Devoniensis, Charles Lefebvre, and John Hopper were shown by Mr. Cant, and of Lord Clyde by Messrs. Paul & Son, and Mr. Cant. Yellow, Tea-scented, and Noisette Roses were well represented, but, with the exception of Maréchal Niel, there was nothing calling for special notice. Vases of Roses presented no novelty of design; March's stands were the only kind employed, and the arrangement was almost identical in every case.

At the Floral Committee, held on the 11th,

Nosegay Pelargoniums Dowager Duchess of Sutherland and Lady Constance, from Mr. Fleming, of Cliveden, received first-class certificates. In Duchess of Sutherland the flowers are deep carmine; in Lady Constance bright scarlet, and produced in both cases in large trusses. *Trichinium Manglesii*, from Mr. Thompson, of Ipswich, and *Anætochilus Turneri*, from Mr. Williams, had also first-class certificates, as well as Invincible Sweet Pea, a fine, large, scarlet, very fragrant variety, sent by Mr. Brown, of Sudbury. The subjects brought before the Fruit Committee were few, and no certificates were awarded. At the Scientific Meeting on the same day, the Rev. M. J. Berkeley read an account of some experiments in crossing Vines, which had been originally published in the "Comptes Rendus" of the French Academy of Sciences. It appeared from this that a race of much earlier varieties had been obtained, by growing which it would be possible to have the vintage in the south of France as early as August. Mr. Shortt gave a short account of *Podophyllum Emodi*, of which a plant in fruit was sent to the meeting. The result of his experience was that the best way to grow and fruit it is to let it alone. Mr. W. Wilson Saunders, the Chairman, exhibited a very interesting collection of *Dorstenias*, a genus closely allied to the Fig, and by means of which the fructification of the latter could be better explained than by the Fig itself.

The other shows held by the Society during the month were a show of Fine-foliaged and Variegated Plants on the 8th; of Liliacæ on the 15th; and of Fruit and Vegetables on the 22nd. The last, though pretty extensive, did not present anything very remarkable in the way of fruit. The vegetables were good, especially the Potatoes, and well arranged.

ROYAL BOTANIC SOCIETY.—The last Show for the season was held on the 5th, and was very well attended. Stove and greenhouse plants were still in good bloom, and Fine-foliaged Plants and Ferns in excellent condition, especially those from Mr. Veitch, and Mr. Baines, gardener to H. Micholls, Esq. Orchids were not so numerous and fine as at the previous shows, and Pelargoniums, though good for the season, did not comprise such splendid specimens as on that occasion. The quantity of fruit exhibited was very large, and the quality most excellent. Mr. Barnes, gardener to Lady Rolle, Bieton, sent several Pines ripened in the open air, but what course of treatment was pursued in the earlier stages of their growth was not stated. Of Grapes, some magnificent bunches were shown, especially the Black Hamburgs of Mr. Sage, gardener to Earl Howe, and Mr. Meredith. The latter, among others, exhibited a single bunch of Black Hamburg, with six shoulders, and of the enormous weight of 9½ lbs., a weight which has never before been recorded

in this variety. In three dishes of different varieties splendid bunches of Trentham Black, Black Hamburg, and Black Prince came from the same exhibitor, and of Black Prince, Black Hamburg, and Black Alicante, from Mr. Hill. The weight of his three bunches of Black Prince was 8 lbs. 2 ozs. Peaches, Nectarines, and Cherries, were likewise very good.

**GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—The twenty-second anniversary meeting was held on the 7th, at the London Tavern. J. Jeffery, Esq., of Woolton Hall, Liverpool, the Chairman, in proposing the toast of the evening, "Prosperity to the Institution," stated that there were fifty-seven dependant on the funds, of whom thirty were women, averaging seventy-six years of age; that the Institution had since it was established distributed £12,700, and that it now possessed £5,700 in the funds. The list of subscriptions collected at the dinner amounted to about £380, the largest amount, the Secretary stated, that had been put down at any anniversary of the Institution.

**PLANTING OUT FERNS IN SUMMER.**—M. Stelzner of Ghent draws attention, in the "Journal of the Imperial and Central Horticultural Society of France," to the suitability of some stove and greenhouse Ferns for planting out of doors in summer. He remarks that Ferns which will suffer from the direct rays of the sun, succeed admirably in a shaded place where but few plants grow well; and he recommends leaf or heath mould and plenty of water to promote luxuriant growth. The number which he has tried in this way is limited, and the following are those which proved the best:—*Litobrochia*, or *Pteris*, *aurita*: a young plant of this made fronds from 1 to 2 feet long the first year, and in the following one of from 3 to 4 feet. *Pteris cretica*

*albo-lineata* succeeds well, and may be advantageously employed for edgings. Its fronds out of doors become of a very deep green, but without losing the white striping. *Lygodium mexicanum* forms an elegant climber for covering the trunks of trees, &c.; and *Allosorus crispus* may be employed for the same purpose. *Cheilanthes hirta*, with finely cut fronds, having a woolly covering, stands sun well, and may be used for edgings; and the same may be said of *Nothochlæna nivea* and *N. chrysophylla*, charming species, with the under side of the fronds covered with a silvery powder in the former and golden in the latter. *Pteris scaberula* is very dwarf, and grows well out of doors. *Lomaria punctata* is very ornamental in the second and third year; and *Todea australis* forms fine tufts out of doors. "I have not," adds M. Stelzner, "mentioned the new Japanese Ferns, which may all be planted out in summer; and I am convinced that there are many others, particularly those from Australia and New Zealand—countries which produce such superb tree Ferns as *Cyathea dealbata*, *Cyathea medullaris*, and *Alsophila*—which may be planted out in summer." To this it may be added that *Alsophila australis* is planted out in the sub-tropical department at Battersea Park, and is there thriving very well, the fronds extending 10 feet across.

**SOLDIERS' GARDENS.**—According to a War Office return, there are now 109 acres of garden ground allotted to soldiers in Great Britain and Ireland, of which 61 acres are in the hands of non-commissioned officers.

#### OBITUARY.

**MR. HENRY LANE**, father of the well-known nurseryman of Great Berkhamstead, died there on the 15th of July in his 88th year. He retired from the business about twelve years ago.

## CALENDAR OF OPERATIONS.

### CONSERVATORY AND SHOW-HOUSE

THE conservatory may now be all but cleared of surplus plants, to allow the proper inmates a full share of light and air. Now, also, is a good time for repairing and painting, if required. A few Ferns, Palms, stove plants, and *Achimenes* may be introduced as wanted.

### GREENHOUSE.

*Azaleas* and *Camellias* will now occupy sheltered places out of doors. Do not allow the sun to shine on the pots, as it quickly absorbs all the moisture from the ball, and frequently kills the plants in a few hours. Attend well to keeping them supplied with water, washing the plants overhead occasionally on the evenings of hot days. *Pelargoniums*.—As soon as the plants have broken sufficiently, they should be shaken out of the old soil, and, after having

been disrooted, put into as small pots as they will conveniently go into. Drain carefully, and place some vegetable fibre over the drainage, so as to prevent stoppage. After the plants are potted they should be placed in a frame or pit, and be kept close for a time, and be well shaded during the day. Watering is an operation at this time requiring very great care. The mould must be kept moist but not sodden; still it is necessary when the plants are watered that they have a quantity sufficient to go quite through the pots. When the plants have taken root give air, but use shading only in the middle of the day, or when the sun is very powerful, say for a week or so, when it may be kept off entirely, and air given more freely.

### FORCING.

*Cucumbers*.—A crop for the autumn and

winter supply should now be sown; when up, keep the plants as hardy as you can, as they will withstand mildew much better if grown hardy when young, and will make much longer-lived plants. *Peach-house*.—As the wood becomes ripened, which may be known by its assuming a reddish brown tinge and the leaves becoming yellow, take off the sashes and fully expose the trees. The late houses should have the foliage attended to to keep down insects and assist the ripening process, until the trees, as above, will bear exposure. *Pinery*.—The best grown plants should now be potted into fruiting-pots if not done, for the earliest supply next spring; use pure loam, and well drain the pots; they will then take water often without its injuring the soil. A portion of the stock may remain for two or three weeks longer to keep up a succession. Suckers and succession plants will also require potting, and may have at this season a good shift, as they will grow freely from now to the end of October, and should not be potted again. *Vinery*.—The late crops should be kept growing by a moist atmosphere. Keep down insects, and apply fires to Muscats on wet days. The sashes may now be taken from the earliest-foreed houses, as the wood, by this time, will be well ripened, and the foliage be beginning to decay, and of no further use for supplying nutrition.

#### KITCHEN GARDEN.

The main breadth of Cabbages should be sown at once on well-prepared soil; the old dates used to be about the 12th, but any time from the 1st to that date will secure you good plants, not liable to run to seed. A supply of Cauliflowers for standing over the winter in frames and hand-glasses should be sown between the 20th and the end of the month, and the true Bath Cos, and some good hardy Cabbage Lettuce, at the same time. As the summer crops of Peas, Beans, Cauliflowers, and Potatoes are cleared off, fill up every available space with Coleworts, Winter Greens Brussels Sprouts, Broccoli, &c. Greens of all kinds will be more than useful next spring. Turnips, for winter, may be sown up to the middle of the month; also Spinach and a few Horn Carrots. Earth up the forwardest Celery.

#### FLOWER GARDEN.

The flower garden will now be in full beauty, and, as great attention is now paid to arrangement of colour, any defects in composition, or the substitution of newer and better plants should be carefully noted, and stock procured for next season. Variety is often more pleasing than the mere display of colour; we cannot therefore too strongly insist on the employment of herbaceous plants, as well as of the different shades of scarlet, blue, and yellow. For certain situations the primary colours are indispensable, as, for instance, when there are large spaces of grass adjoining the beds, to counteract the effects of which

warm colours are decidedly required; but for a general garden, containing a number of beds, and especially if on gravel, more variety than is usually seen will prove more agreeable to the majority of persons. The great beauty and order of a flower garden depend much on the training and management of the various plants, whether growing in beds or on walls, trellis, vases, &c. Let everything be kept, therefore, to its proper limits as to training, the grass kept close, and the gravel free from weeds and frequently rolled, and you will go far towards making your garden perfect. The propagation of plants for another year should commence as soon as the cuttings can be spared. There is no better plan for all the scarlet and variegated Geranium class than putting the cuttings in on well prepared sandy soil on a south border, or indeed in any open place, fully exposed. Verbenas strike equally well the same way, with the addition of a hand-glass over them.

#### FLORIST'S FLOWERS.

*Auriculas*.—These plants must now receive attention, after lying dry and comparatively dormant for the last two months. The plants will now require to be shaken out of the old soil, and repotted, using moderately rich but well sweetened soil, to ensure a good growth during autumn and bloom next spring. After repotting keep the plants rather close in a frame or pit for some little time; give air by degrees, and in proportion as they draw root, until they can be entirely exposed to the air, excepting to heavy rains, to which they should never be subjected. Aphides must not be allowed to infest them, or dead foliage to remain on the plants. *Carnations and Picotees*.—Watering must be carefully attended to; this and cutting away dead foliage are the only requisites this month. *Dahlias*.—Water freely during dry weather, and in addition give the plants a good sprinkling overhead every evening, after the sun has left them. Go over the plants regularly twice a-week, and remove all superfluous small shoots and buds; this must be done with care and judgment, only cutting away a little at a time, leaving large varieties full for a time. Secure the side shoots by tying them to stakes, in doing which draw them away from the centre, to prevent weakness by overcrowding of the shoots. Earwigs should be got under as much as possible, to prevent the annoyance generally occasioned by their disfiguring the finest blooms. *Pinks*.—These should be planted into beds that have been prepared for them, as soon as sufficiently rooted. The beds should have been trenched and mixed with good rotten manure, and some loam if the soil is light. By early planting, Pinks winter better and produce larger flowers. The remainder of the stock should be planted out in spare beds much nearer together. Look well after the grubs, so very destructive to the young plants at this season.

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Fig. F.



Fig. C.



Fig. A.

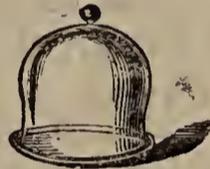


Fig. B.



Fig. G.



Fig. E.

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Fig. D.

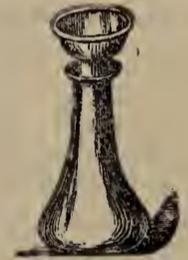


Fig. D.

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12 inches	5 6 each	3 inches	0 4 each	6 inches	0 5 each
14 "	6 6 "	4 "	0 5 "	10 "	0 10½ "
16 "	7 6 "	6 "	0 7 "	14 "	1 6 "
18 "	8 6 "	10 "	1 2 "	18 "	2 5 "
20 "	9 6 "	12 "	1 6 "	20 "	2 10 "
24 "	11 6 "	16 "	3 0 "	22 "	3 4 "
		18 "	4 6 "	24 "	4 0 "
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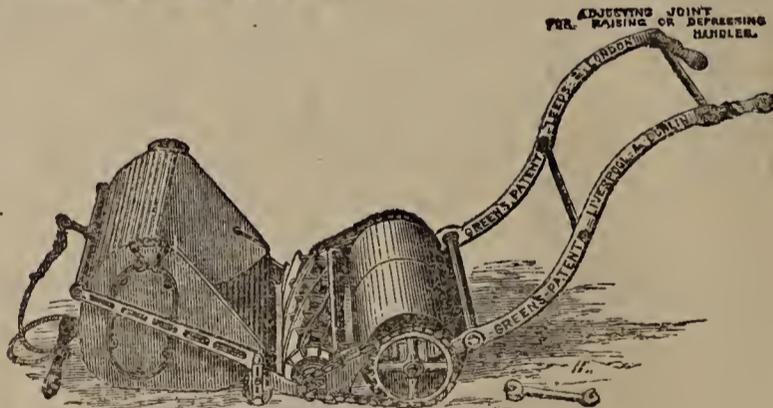
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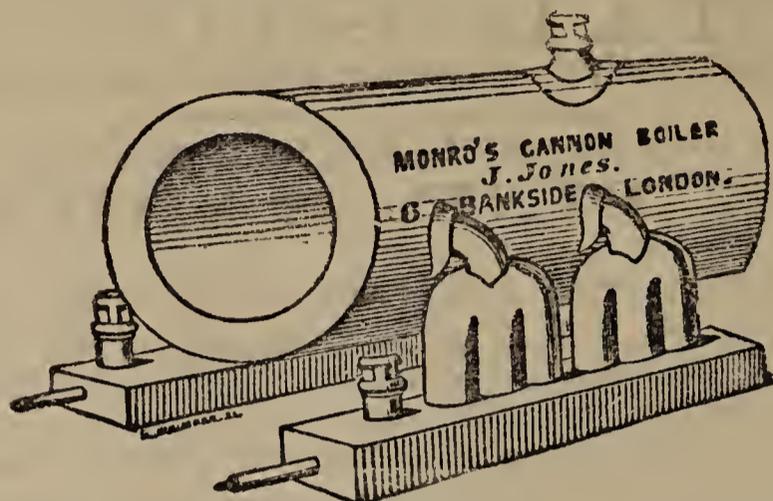
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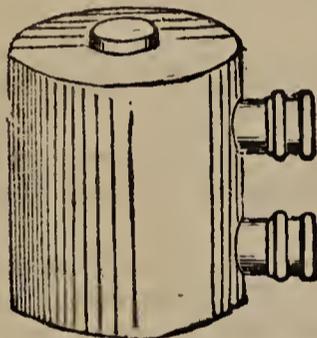
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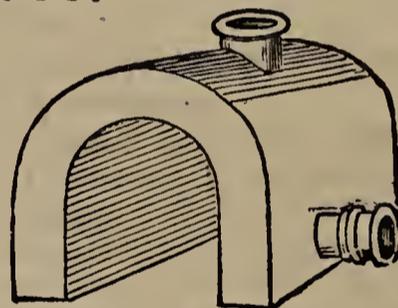
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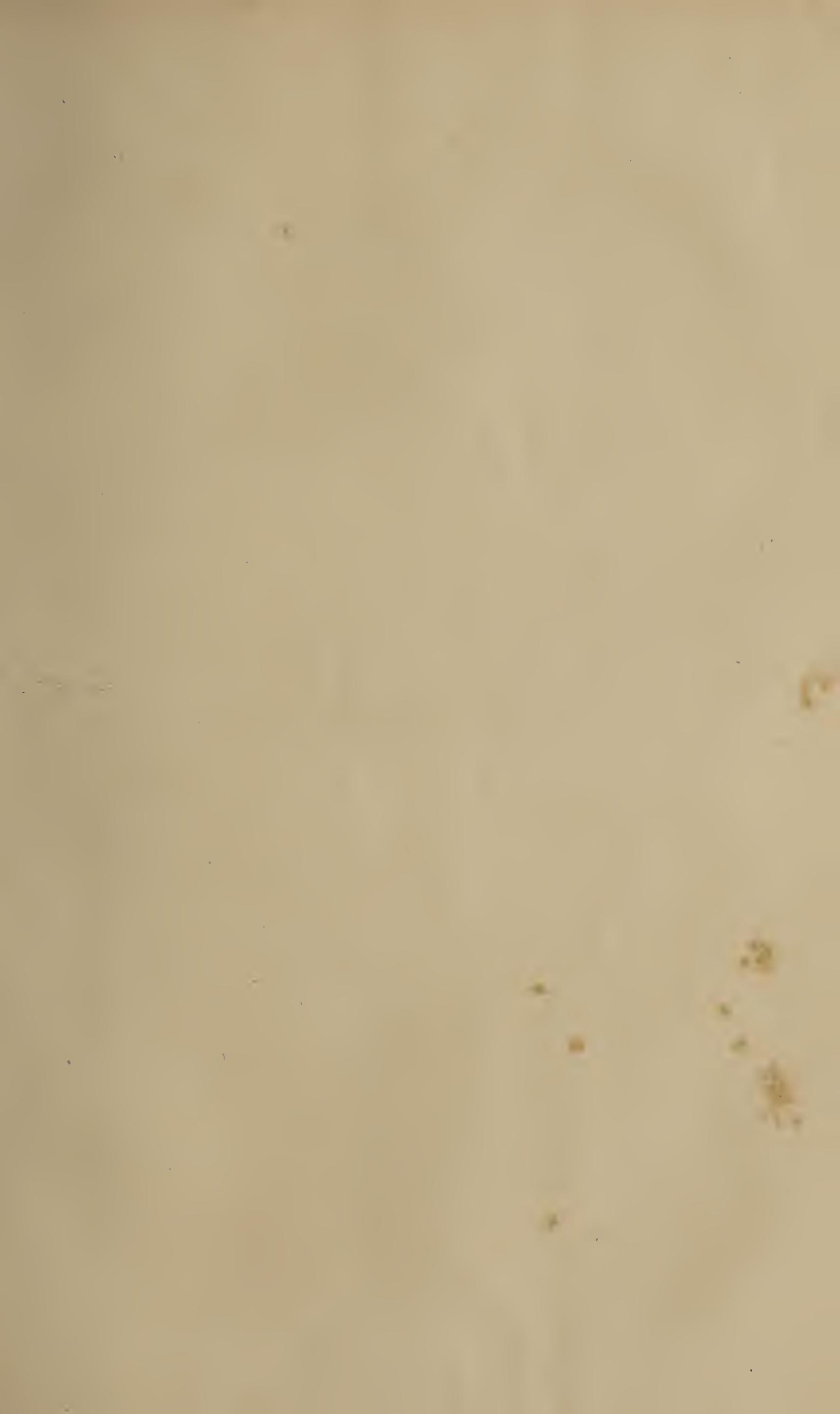
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*Hepatica angulosa.*

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WITH AN ILLUSTRATION.

THE genus *Hepatica* of Dillenius has been one of those unlucky ones over whose fate uncertainty has long hung. Now accepted, now rejected, it had, on the whole, rather made advance in the estimation of the botanist, till the discovery in Kashmir, at no very distant date, of *Anemone Falconeri* completely set aside the chief distinction that had been relied on for their discrimination. The claims of *Hepatica* to be received as a *bonâ fide* genus had in the main rested on the position of its three calyx-like involucral leaves, which were set close below the flower; but in the *Anemone* to which allusion has been made, these leaves, exactly like those of *Hepatica*, are separated some half an inch or more from the true flower, and thus the distinguishing character between the two genera becomes altogether invalidated.

The group of species with which the name has become associated are amongst the most beautiful of spring flowers. The common species, generally called *Hepatica triloba*, but more strictly *Anemone hepatica*, itself yields several varieties with blue, pink, or white single flowers, and both blue and pink double ones. These forms are not uncommon in gardens, and, besides them, we sometimes hear of a double white, which, however, ghost-like, seems to vanish when sought.

Those who are familiar with these old Hepaticas—and there are, doubtless, few of our readers but know something of them—will see by a glance at the annexed figure how much finer a subject for decorative purposes we have in this *Hepatica angulosa*, or, as it should rather be called, *Anemone angulosa*. It is a native of Hungary, and is one of the many beautiful hardy spring flowers which the Messrs. James Backhouse & Son, of York, have been fortunate enough during the present year to bring under the notice of the London public. The Floral Committee of the Royal Horticultural Society awarded it a first-class certificate; and a double-first, if it could have been given, would not have shown too high an appreciation of its merits. We are indebted to Messrs. Backhouse for the opportunity of figuring it.

The habit of this species is exactly that of the allied *A. hepatica*, but the plant itself, as well as its parts, are all at least twice the size of that. Thus, the leaves are fully 3 inches broad, three-lobed, but having the lobes coarsely and rather deeply crenato-dentate. The flowers are upwards of 1½ inch across, of numerous oblong lance-shaped spreading sepals, and of a fine clear greyish blue, set off by the array of numerous black anthers, which surround the tuft of yellowish styles.

The *Anemone angulosa*, first described by Lamarck in the "Encyclopédie Méthodique," is, doubtless, one of the finest hardy plants of recent introduction.

M.

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 CHRONICLES OF A TOWN GARDEN—No. XX.

SLOWLY, as if each minute part of their own laws should be faithfully observed, the Japan Lilies unfolded their blossoms—beautiful as they are, with the bright crimson spots on their frosted petals, like drops of gore on the silver shield of a knight errant, yet these varieties of *Lilium lancifolium* must now yield the palm to the magnificently-arrayed *L. auratum*. A kind friend sent me a plant in bud, and knowing, as I do, how carefully the advent of every flower is now watched, in the expectation that they will develop some new form of the variety already apparent among them, I watched the first appearance

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of mine with increasing interest. It has expanded, and presents to me a flower of the original type of this rich golden-rayed Lily. They appear to be as easy of cultivation as a Lily can well be. The large importations of them recently received are rapidly reducing the price of the bulbs, and soon it will be within the reach of all. Mr. Turner already has some beautiful varieties; already there is a greater variety than among *L. lancifolium*.

My *Gladiolus* are now in full bloom, and form a rather imposing background even to the bright colours of the bedding stuff. Some bulbs of a variety of *G. ramosus*, called *Ne Plus Ultra*, a bright scarlet flower with a white throat, were the first to bloom. It forms a very fine spike, and is exceedingly gay and effective. *Brenchleyensis*, of which I have a good row, were the next to bloom. Some good soil, and the recent rains, have made them very strong indeed; but they have come a kind of salmon scarlet, instead of that intense vermilion colour I have often observed in them. It has been said that there are two or three varieties of *G. Brenchleyensis*, some lighter in colour than the others, and possibly mine are of the light-coloured flowers. Still, rarely do I see such peculiar brilliancy of colour shown in *G. Brenchleyensis* as in those flowers Messrs. Youell & Co., of Great Yarmouth, are in the habit of sending to the London exhibitions, whether it may be attributable to some peculiar conditions of soil and climate, or some particular mode of cultivation.

I have the following varieties of *G. Gandavensis* now in fine bloom:—*Madame Souchet*, delicate flesh, spotted with deep rose, very fine; *Princess Clothilde*, delicate salmon rose, with large purple stains, a very beautiful flower; *Oracle*, deep bright rose, large, and very fine; *Don Juan*, bright orange scarlet, large and showy; *Canary*, pale yellow, striped with rose—with me it has come better than I usually have seen it; *Endymion*, pale rose, slightly tinted with purple, the flowers and spike being of large size; *Neptune*, deep reddish rose, striped and spotted with carmine; *Fanny Rouget*, rosy flesh colour, with carmine stripes; *Prémice de Mont Rouge*, intense fiery scarlet, flowers very stout and showy; *Couranti Fulgens*, bright crimson; *Madame Haquin*, yellowish white, tinted with lilac, the lower petals light yellow, striped with rose; and *Hélène*, pale cream white, tinted with lilac, and striped with purple. These are all on a warm south border, having the full action of the sun, and have been occasionally treated to some liquid manure.

I often wonder that the beautiful summer-flowering *Tritonia aurea* is not more generally grown for greenhouse and winter decoration. Last spring I planted two pots, placing three bulbs in each; they were some time before they commenced to grow, but, when they did, rapidly developed the flower-spikes. The blossoms are orange-coloured, and, when expanded, are very effective. It is much used at this time of the year for decoration in the great conservatory at South Kensington; they are grown in very large pots, and produce masses of rich-looking flowers. I marvel that this valuable Cape bulb is not as popular as the *Gladiolus*.

Two hybrid *Tropæolums*, of the *T. Brilliant* section, used for pillar purposes, are now extremely gay. They had to run the gauntlet of the hot weather, occupying, as they did, a very exposed situation, but passed triumphantly through the ordeal; and, now the wet weather has come, they make good growth, and still bloom abundantly. The one is *Dazzle*, a very bright scarlet; the other *atro-coccinea*, deeper in colour. I have also seen them growing in vases, where they are also very effective.

All the bedding stuff, as well as *Asters* and *Stocks*, have benefited by the rain. A freshness and vigour have been diffused over the whole of the occupants of my garden—Nature has retouched her pictures with a vividness and a reality that yet baffles the highest endeavours of Art; and leafy tree, and shrub,

and greensward, re-created also by the same agency, give a fitting background to the picture; and the refreshed eye, and the gladdened heart, go up before the Great Artist in humble thankfulness for His goodness to the children of men.

Quo.

## THE FAILURE OF THE STRAWBERRY CROP.

THE Strawberry is the most delicious and the most wholesome of all berries, and the most universally cultivated in all gardens in climates suitable to its growth. Strawberries are relished by young and old of all conditions in life; they are also invaluable to the confectioner, communicating their flavour to ices, and forming several delicate preserves. The failure of so important a crop is, therefore, a loss not only to the grower but to the public at large. The Strawberry belongs properly to cold countries; it is of little or no value in hot or southern climates.

The failure of the crop this season throughout the country is, in my very humble opinion, to be attributed to the long continuance of very dry hot weather which we had last summer. Keens' Seedling suffered very much on soils that were light; the plants put forth few runners, and were in general so burnt up that, when rain came, it was the middle of September before they commenced growing, and, the weather continuing remarkably mild and open up to Christmas, the plants continued growing the whole time, not properly maturing the crowns: hence the failure of the crop. Some of the late kinds, as British Queen, Elton, and Eleanor did not suffer so badly; the foliage remained healthy, and they commenced growing after the first rain.

Keens' Seedling was a total failure with me this season. In all my experience I never recollect anything like it. I have had light crops other seasons, but this season there was none at all; and I find most of my neighbours' crops have been nearly, if not quite, as bad. At Knaresborough, where great quantities of Strawberries are grown for Harrowgate, also for Leeds, Bradford, and other markets, the failure among Keens' Seedling has been equally bad. Alice Maude and Princess Frederick William of Prussia have also both failed with me. I grow a few only of Oscar, Trollope's Victoria, and Sir Charles Napier; consequently I cannot speak very positively about them, but with me they have only been light. I grew Sir Harry rather largely after it came out, but, notwithstanding its great bearing properties, and large showy fruit, I have of late years only grown a few rows of plants, as I considered the quality of the fruit very inferior, and the shape very ugly. I was greatly inclined to throw it out altogether; but I am now glad I did not, as my plants have this season borne a heavy crop of fine fruit. I intend growing more of it, and not quite so many of Keens' Seedling as I have done.

The British Queen has been a fair good crop this season with me, and also with others in this neighbourhood. My two-year and three-year-old plants have had nearly as good crops, and as fine fruit, as I generally get from them. The old plants have had but a light crop, and my young plants—last year's runners, layered in small pots, and then planted out, and which generally bear some fine fruit—have been a complete failure. I consider the British Queen the best Strawberry as yet in cultivation. It is an abundant bearer, and the fruit is universally acknowledged to be of first-rate excellence. It is rather tender, and if not protected in the winter will suffer from the severe weather; on this account some people have given up growing it. Early in the autumn, when the plants have completed their growth, I have some partially decayed manure—that having a good deal of short straw amongst it is best for the purpose—put about the plants, packing it well around the crowns with the hands. This

keeps the plants quite safe from injury during the severest weather, and by spring the rains will have carried the soluble part into the soil, leaving a nice layer of clean straw about the plants, which keeps the fruit clean when ripe. This is a preferable plan to putting straw, short grass, tiles, &c., under the plants when the fruit is swelling. Eltons are a fair crop this season, though the flower-stems did not show so strong as usual; but the fine growing weather we had in the latter part of May, and early part of June, brought them on wonderfully. The plants are now full of fruit, which, along with Eleanors, will furnish a supply until the middle of September. I calculate on having, and generally do have, an abundant supply of Strawberries out-doors from ten to twelve weeks. Eleanor has a fair crop this season, though generally a shy bearer with me, and in most places where I have seen it. The fruit is very showy and handsome, and a good dish of it looks very well late in the season. It bears best on rather light land, as it does not then run so much into foliage as it does when grown on strong land.

Jucunda has borne well with me this season. It is of a good strong habit, and profuse bearer, with fine showy fruit, of excellent quality. I believe it is a sort not much known. I got it from a person who had it direct from the late Mr. Nicholson, of Yarm.

I renew about a third part of my Strawberry plantations every season, and destroy about the same quantity of the old plants. As early in the season as I can get any, I lay the runners in small pots, and as soon as they are rooted I have them planted out in rows at from 20 to 30 inches apart, according to the growth and habit of the sorts. From these plants I have generally had some very fine fruit the first year, but of course not heavy crops. This year, with the exception of Eltons, which have a few fruit, they have all failed. I was rather later than usual last season in getting them layered, as, owing to the dry weather, there were no layers until late; then, being also planted out late, they grow late, and continue in a growing state nearly to the end of December, never properly forming and maturing their crowns.

The crop of Keens' Seedling has been a total failure with me this season in plants of all ages. Alice Maude and Princess Frederick William of Prussia have also been failures. Sir Harry and British Queen have borne good crops from two and three-year-old plants. Eltons, Eleanors, and Jucunda have also had fair crops.

The fine rains we had last month (July), have been very beneficial to the plants this season. The great point now is to promote early growth by every possible means. To this end all runners should be removed from the plants at once, if not already done, and all that appear should be kept cut clean away, and the soil between the rows should be kept well stirred with the hoe; when this is properly attended to the plants benefit greatly from the heavy dews which we generally have during this month (August). To get the growth completed as early as possible, and the crowns properly formed and well matured, are the chief points to be aimed at, and no care or labour must be spared for this purpose if we wish to succeed. We may then reasonably hope to have a fine crop of fruit next season.

*Stourton.*

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M. SAUL.

As the failure of the Strawberry crop in 1865 seems to have been general in the neighbourhood of London and elsewhere, perhaps a few remarks on what I think was the cause may be interesting to the cultivators of this delicious fruit. I believe the season of 1864 being so hot and dry during the time the Strawberry was forming its flower-buds, was the principal cause, for, with me, I had the means of thoroughly irrigating my main crops during that time,

and they produced abundantly this year. In the new kitchen garden here gutta percha hose can be applied to hydrants in different quarters, and an unlimited supply of water can be supplied to vegetables and fruits in dry seasons. The crops of British Queen, Empress Eugénie, La Constante, Frogmore Pine, Rifleman and Sir C. Napier, in a quarter which I had irrigated with water and liquid manure last summer, were enormous. The soil of the garden here is very adhesive and stiff, and well mixed with the burnt red clay of the subsoil and from the drains. The British Queen is quite at home in it, and never fails in bearing well. Let the winter be ever so severe the plants never suffer, and I can show some rows planted five years ago that still bear great crops. La Constante is another fine-flavoured Strawberry that does well with me. Frogmore Late Pine and Rifleman I find great acquisitions as late bearers as well as for flavour. Marguerite is a fine large showy Strawberry, but has proved a shy bearer with me, grown under the same circumstances as the other sorts. Perhaps the most valuable Strawberry grown, for fruiting in light or sandy soils, is Rivers's Eliza. Last year it proved with me to be the most fruitful of the preserving sorts, and as such it was recommended to several growers in this neighbourhood, who have found it turn out their best cropper this year. President and Eclipse I have found to be good useful varieties, both for forcing and preserving. Ingram's Prince of Wales is an excellent-flavoured early sort, and likewise forces well very early. The greatest success in growing Strawberries in dry seasons can only be obtained by watering them well, and mulching afterwards to retain the moisture. They ought likewise to be well top-dressed in the end of autumn with some rich and rather strawy manure. The leaves in the spring will grow through the straw and fix it, and the fruit will be kept clean from drenching rains should they occur at the ripening time.

WILLIAM TILLERY.

#### NOTES MADE AT THE FLORAL COMMITTEE.

ON the 25th July there were exhibited a few objects of great interest. One was a white bedding Lobelia, called Snowflake, said to be a seedling from *L. ramosa*, the flowers of which were pure white in colour, and very freely produced. The growth of the plants was rather tall, being some 9 inches in height, although they had been removed from the open ground. It is, however, a capital acquisition, and will be very useful for ribbon-borders, &c. It came from Mr. Cox, gardener to Earl Beauchamp, and was awarded a first-class certificate. The same award was made to Mr. W. Bull, of Chelsea, for *Bignonia argyræa violescens*, from South America, a very beautiful stove climber, the foliage being of a deep bronzy green colour, with pale green veins clearly defined, and also marked with red; also for *Allamanda Hendersoni*, a splendid form of this magnificent stove plant. It was raised by Messrs. A. Henderson & Co., of London, from seed obtained on the Continent, who have disposed of the plant to Mr. W. Bull. The blossoms are nearly double the size of any of the varieties of *A. cathartica*, in colour they are bright yellow, the throat pencilled with bronzy orange. The foliage is large and robust, and from what in these varieties usually forms the terminal cluster of blossoms, there issues another shoot, from which again springs a second cluster of flowers. Among a group of seedling Fuchsias from Messrs. E. G. Henderson & Son, were two, to which were awarded first-class certificates. One was named Father Ignatius, having very large flowers, scarlet tube and sepals, with purple corolla, blotched with red; the other, Enoch Arden, had large dark purple corolla, and scarlet tube and sepals, and was also very large in

size. Both were of good habit, and very free blooming. Another variety, named Light Heart, was in the same style, but with an intensely dark corolla, and smaller in size. Mr. George Smith, of Islington, also had two double white-corolla'd varieties, Grace, and Queen of Whites, the last of great size. Three very promising varieties of Zonale Geraniums, in the way of Cloth of Gold, were produced by Messrs. F. & A. Smith, of Dulwich:—viz., Golden Dwarf, green and gold ground, with bronzy zone; Aureum, creamy gold, with same zone, very dwarf habit; and Bronze Shield, green ground edged with gold, and broad bronzy zone. In each case the habits of the plants were short, stiff, and robust. From the same source came Delphinium Madame H. Jacotot, a variety of the Bee Larkspur, the flowers having a light ground, suffused with azure blue and veined with rose. It is a very novel and beautiful variety. Messrs. Smith also produced some very fine Balsams, of various colours, which fully sustained the reputation of the firm for these popular flowers. Considerable interest attached to a tall specimen of the climbing variety of Rosa Devoniensis. The habit of growth was remarkably vigorous, and was said to be the result of double-budding—first, the Manetti stock with a free-growing Hybrid Perpetual, and then the latter with Devoniensis Rose. Buds taken from the latter and treated in the ordinary way, it was said, reverted to the old well-known form of that fine English Rose. From the Society's garden came several pots of Tritonia aurea, "a bright orange-flowered hardy Caffrarian bulbous plant." They were very effective for greenhouse and conservatory display.

*August 8.*—This meeting was remarkable for the grand display of Liliun auratum, which came from Messrs. Veitch and Turner. Foremost was a magnificent specimen grown from one of the first bulbs that came into the possession of Mr. Veitch. The plant had two flower-stalks; one contained fifteen flowers, the other fourteen, which emitted a beautiful fragrance. It had been grown by Mr. Constantine, gardener to C. Mills, Esq., Hillingdon, near Uxbridge. A group of plants also came from Mr. Turner, in which some five or six different varieties could be observed. Some were heavily spotted with crimson, some also had crimson lines on the segments of the flowers. A first-class certificate was awarded to Mr. Winsor, gardener to J. R. Ravenhill, Esq., Walthamstow, for Zonale Geranium Sir Robert Peel, in colour bright scarlet, large, stout, and very striking. The same award was also made to Mr. C. J. Perry, of Castle Bromwich, Birmingham, for Verbenas Cleopatra and William Dean; the former beautiful clear rose, with conspicuous lemon eye; the latter violet-shaded purple, or rather maroon, with light eye. These two varieties are very fine indeed. The same award was made to Mr. Turner, for herbaceous Phlox Edith, white, with crimson eye, with the dwarf and bushy habit of the old P. Spencersi, and very free blooming. Another variety, named Herbert, a blooming rosy crimson, will be a very useful variety. The same award was made to Mr. Porter, gardener to the Hon. A. J. Ashley, Copt Hall, Epping, for Hollyhock John Laing, in colour, bright salmon scarlet, the flower large, and very full; to Messrs. Downie, Laird, & Laing, for Hollyhock Charles Eyre, crimson scarlet, a fine well-shapen flower, a handsome spike of which was shown; to the Rev. E. Hawke, for Hollyhock Senior Wrangler, bright maroon, also very fine; and to Mr. W. Chater, Saffron Walden, for Hollyhock Firefly, a variety very like the Rev. Joshua Dix, but brighter in colour. A second-class certificate was awarded to Mr. Chater also, for Hebe, delicate pink with rosy salmon centre; to Messrs. Downie & Co., for Mrs. B. B. Todd, carmine, tinted with salmon; and to Messrs. Jas. Garaway & Co., of Bristol, for variegated Geranium Queen of Tricolors, having very handsomely marked foliage, in the way of Mrs. Pollock. One or two seedling Dahlias were staged, but in somewhat indifferent condition. They will no doubt be seen again in much better form. R. D.

## REMARKS ON FRUIT-TREE CULTURE.—No. 1.

THE season is fast approaching for two of the principal operations connected with the culture of fruit trees—viz., planting and root-pruning; and as the subject is one which appears to increase in importance as it becomes better understood, and is at the same time one of the most interesting of all the operations with which a gardener is concerned, I have thought that the time would be appropriate, to endeavour in my humble way to draw the attention of young gardeners to it. There are very few soils so situated and constituted as to be favourable to the production of fruit without preparation of some kind or other, so that I think we may safely take as a starting point, that success in fruit culture is very rarely attained by blind chance work, but consists in a rational adherence to and following out of certain rules, by which practice must always be governed. I do not profess to be able to teach much on the subject, but as it is one which has engaged my attention from my youth, I have observed a few of the causes and effects connected with it, the details of which may probably excite interest and observation, and thus enable others to improve their practice, by proving the truth or fallacy of the theories upon which that practice is founded.

It is necessary to commence at an early stage of the tree, say at the time it is ready to be lifted out of the nursery-bed to be planted in its final destination, and that of course must previously be properly prepared for its reception. The principal object to be kept in view in preparing a site for a tree is, that it may at the outset have a sufficient amount of food presented to the roots, in such a condition as may enable them to take it up with the greatest facility; and as there are undoubtedly some properties in a maiden soil, not previously exhausted by tree roots, which induce a more abundant emission of young rootlets, and consequent healthy development of wood and foliage, it is obviously best to select such soils from an open upland pasture, which is situated on a dry subsoil; because such are always tougher, and more full of fibre, and consequently better adapted for keeping the soil porous and open for the admission of air. Other substances calculated to open the texture, such as burnt earth, old mortar rubbish, charred refuse, roadside scrapings, a small proportion of bones broken small, but not reduced to powder, and in the case of all stone fruits, a portion of salt should be added to, and thoroughly well incorporated with, the loam by frequent turnings; and if this is done during the summer, the compost will be in a suitable condition for use by the planting season, which should always commence early in October. It will, perhaps, be observed, that I have not recommended the addition of strong manure to the above compost, as I consider it by no means admissible in the early stages of the growth of fruit trees, as there will, generally, be found quite stimulus enough in a new compost, and it is only when the energies of the tree become partially exhausted by fruit-bearing, that substances of a more stimulating character become necessary.

So much has of late years been enforced on the subject of thorough drainage, that it would seem almost superfluous to insist upon it; but it is so indispensable that I must urge a careful attention to it. In all cases, where fruit trees are concerned, I recommend deep drains, formed of broken stones, which are very durable, and not likely to become choked up with roots, a mishap to which pipes are very liable, and which renders the best made pipe drains useless after a very few years. After drainage, the compost may be laid in, and as many of my remarks will have reference to what I will call surface cultivation, I do not recommend a greater extreme depth of border for fruit trees than 2 feet for light soils; but rather shallower, and more drainage,

for strong heavy soils. This is quite enough for all practical purposes, because moisture may be retained by mulching, and a stimulus, when necessary, given by superficial applications of manurial matter, which will have the effect of encouraging the roots nearer the surface, and thus bringing them more within the influence of the heat of the sun, which is an important consideration, since, to maintain a control over the branches, it is necessary to have the roots also under control, and this can only be effected by root-pruning and surface cultivation. No tree, which is subjected to an artificial management of the branches, is more unmanageable or unproductive than one the roots of which are deep down in a cold subsoil, and thus far removed from the sun's influence. This idea is further corroborated by the consideration, that the roots and branches act upon each other in both a reciprocal and sympathetic manner, and that any injury, or threatened injury, done to the one, has an immediate counteracting influence upon the other; and because, by severing a branch from a tree, or by cutting off a root, we do inflict an injury, we may safely conclude that the defoliation and manipulation of the branches consequent on pruning operations act upon the roots, and, by a parity of reasoning, root-pruning acts upon the branches, and hence it is evident that upon the perfect comprehension of this reciprocation, the successful application of the principles by which practice should be regulated is influenced.

Now this comprehension, or knowledge of the principles of this reciprocal action, is not intuitive, nor is it to be acquired second-hand from any written observations, because it varies so much under different circumstances, that nothing but a constant habit of observation on the part of the manipulator can enable him to detect that the balance between the two is not equal. It is from knowing this to be the case, that I cannot lay claim to be anything more than suggestive in my remarks, and I would not, if I could, save young gardeners the trouble of proving and thinking for themselves; there is too much knowledge of that sort already within their reach, from which too many imbibe the false notion that gardening may be learned from books. Not so; books are indispensable, but practical experience in the knowledge imparted by books is of infinitely greater importance.

JOHN COX.

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## THE CULTURE OF CUCUMBERS IN WINTER.

CUCUMBER-GROWING during the spring and summer months in structures properly adapted to the purpose, such as are to be found in most gardens, is, indeed a very simple affair; and during the autumn and winter months it is so as compared to what it was in former days on the old dung-bed system. To have a supply of fruit throughout the year is now a very easy matter. To have plenty of Cucumbers from November to February, the seeds should be sown early in July; they should not be sown later than the middle of the month. I believe when people fail in growing Cucumbers during the winter, it often arises from their sowing the seed too late, and having weak delicate plants to go through the short dull days. I need hardly remark that Cucumber seeds sown at any season should be plunged in heat; when sown in July, and put into bottom heat, they will soon be up. The young plants should be potted off singly into small pots as soon as they are fit, and they should be plunged in a steady bottom heat; they should be shaded in the heat of the day until they will stand exposure to the sun without flagging. In a week or ten days they should be shifted into larger pots; they should then have all the light and air possible in fine weather, with a steady bottom heat. In about a month from

the time of sowing the seeds, the plants will, with proper care, be fitted for planting out, and this should not be later than the middle of August. A good bottom heat, as well as a top heat, is necessary for the successful culture of Cucumbers in winter. If the heat be fine, bottom heat is not required in August nor the early part of September, but should wet unfavourable weather prevail, a little bottom heat is then indispensable. Cucumbers in winter should always be trained on trellises. I have always found them do well in a compost of light turfy loam, with plenty of rotten leaves mixed with it.

When planted out, all the air possible should be given, in order to secure short, stiff, vigorous growth in the plants. Attention must be paid to the training of the plants; as soon as they reach part of the way up the trellis they should be stopped; they will then soon push out laterals, which must be also stopped, and tied to the trellises, distributing them regularly all over; but strong, robust, vigorous, healthy growth is the principal point to bear in mind at first, and not a quantity of weak shoots. From the beginning of October a steady, regular bottom heat, of from  $75^{\circ}$  to  $80^{\circ}$ , should be maintained. If the weather be fine, little or no artificial top heat will be necessary until towards the end of the month, when it will become necessary to have it constantly, regulating it according to the weather. The plants should have a good watering whenever they require it, at about the same temperature as that of the atmosphere of the pit or house, and all the air possible must be given when the weather permits. The plants should not be allowed to bear any fruit until November, by which time they will be in a condition to do good work during the dark winter months.

The bottom heat should not range much above  $80^{\circ}$ , nor below  $75^{\circ}$ . The top heat must be regulated according to the state of the weather; a temperature of from  $65^{\circ}$  to  $70^{\circ}$  by night, and  $70^{\circ}$  to  $75^{\circ}$  by day, with an increase by sun-heat of a few degrees, will be a safe one. In very severe cold weather, coverings should, when practicable, be used at night, as they not only save fuel, but it is much better for the plants. On no account should the plants be overcropped; this would be fatal to them at this season. By only allowing a few fruit on the plants at one time, their vigour remains undiminished, and they continue to swell out fine, handsome fruit in the dullest weather, and during the shortest days. If any young gardener, who may have heretofore had some difficulty in growing Cucumbers in winter will carry out the method I have briefly described, he will find the advice given will not disappoint him.

*Stourton.*

M. SAUL.

## ON VARIABILITY IN THE PEAR TREE.

[THE following article by M. Decaisne, which appears in the first Number of the new "Journal of the Royal Horticultural Society," is translated from "Annales des Sciences Naturelles," 1864, and embodies the results of experiments made at the Museum of Natural History, Paris, from 1853 to 1862.]

The almost unlimited and still increasing number of varieties in fruit trees, pulse, and all economical vegetables in general, is a phenomenon to which science has hitherto paid little attention. There is the greater reason to be astonished at this, since it has been remarked even by persons most unaccustomed to the study of plants, and since, from the earliest times, it has been an object of importance on the part of cultivators.

Writers of antiquity—Theophrastus, Pliny, Columella, and others, like those who have succeeded them in ages nearer to the present, the brothers

Bauhin, Ch. Estienne, T. Dalechamp, &c.—have described a tolerably large number of these varieties, especially in fruit trees, where they were the most apparent; but one should in vain search for their origin in their writings. Though they let us vaguely suppose that they are, or may be, the produce of cultivation, none of them says positively that any particular new variety sprang from any other; none of them explains why they have gone on multiplying from age to age. Are these new forms, then, as has been recently alleged, real species, which remained unrecognised up to the time when it was proposed to submit them to cultivation? or are they only modifications of long-known species, endowed with the faculty of assuming different habits, according to circumstance of place and climate? It may seem astonishing that such a question should be brought before the Academy, so natural does it seem to believe that species are subject to variation; but we shall see presently that this question is not one of those which we ought to leave without examination; if it is important as regards practical agriculture, it is not less so as regards science itself.

Two schools, or I should rather say two different hypotheses, divide botanists at the present moment. The most ancient, which I may call that of the Linnæan school, admits the variability of species within limits, which, to say the truth, it is not always easy to define; hence those large, polymorphous, and sometimes vaguely-defined species, though in general easily characterised by a short specific character. The other school, which is more especially modern, and which I believe may be called the school of immutability, denies, in the most formal manner, variability in the vegetable kingdom. In its opinion, specific forms are never in any degree modified, and if two congeneric plants present appreciable differences, however feeble they may be, these two plants are species radically distinct from the origin of things. From this point of view, which has found in M. Jordan of Lyons a very eloquent and conscientious defender, all races and all varieties admitted by the other school become so many species; and so local floras are immensely increased when they have for their authors men of this stamp.

That Linnæan botanists have made species of too great latitude, by uniting under the same specific name forms which are really distinct, is what I am far from contesting; but these are errors of detail which are inevitable in a first review of the general flora of the world, inconveniences which experience corrects every day. But we should be wrong, in my opinion, if we concluded from thence the condemnation of the principle which has directed them—viz., the variability of specific types. We must, however, acknowledge that their opponents have a right to require a proof of this variability, which is almost always more hypothetic than matter of demonstration. It is here, in fact, that we have the point of the question; for if what we have considered as simple alterations of a more general type which is really immutable, if our supposed varieties are species in spite of their apparent affinities, we must allow that our adversaries are right, and admit into our descriptive catalogues all these slight species, whatever may be their number, and however embarrassing a too extended nomenclature may become. But is it in this direction that we really have improved? above all, is this the truth? Many good authorities doubt it; not only are they afraid of seeing descriptive botany degenerate into a science of words, but they ask besides, if, after all, the immutability of forms is better proved than their variability? One way alone is open of solving the difficulty; it is useless any longer to argue; we must observe and bring forward facts, and it is with this view that I have undertaken the experiments with which I have to occupy the Academy of Sciences.

In the eyes of M. Jordan, all our races and all our varieties of fruit trees,

and amongst others Pear trees, are distinct invariable species, remaining always identical through all possible generations ; from whence it follows that these trees do not spring, as it is commonly believed, from a single or even from a small number of specific types which cultivation has caused to vary, but from as many primitive types as there are discernible varieties. Thus, to confine ourselves to the Pear tree, of which nurserymen already reckon more than five hundred varieties, we must admit at least five hundred primitive species, and as these exist nowhere in a wild state, logic induces M. Jordan to conclude that their domestication ascends to the antediluvian period of man, and that we only possess them now because they were preserved in the ark which saved Noah and his family. Strictly speaking, the fact may be conceived as possible ; but how many suppositions must we heap up, one on the other, to render it probable ! Is it not more simple to explain this always increasing multitude of congeneric varieties by the principle of the variability of species, if this variability can be demonstrated ? But I believe that this has been done. The Academy knows already the astonishing transformations which have been observed recently at the Museum in the group of Gourds and Melons, where the varieties are counted by hundreds ; the facts which I have to describe in the Pear tree are of the same order, and lead to perfectly similar conclusions, which are, on one side the contemporary appearance of new races, on the other their instability by crossing, and particularly the specific unity of all the races and varieties of cultivated Pears.

In 1853 I sowed numerous seeds of Pears, chosen the previous years from four varieties, reckoned as very distinct by all nurserymen,—viz., the old, universally known Poire d'Angleterre ; the Poire Bosc, whose form is that of an elongated calabash, and the skin uniformly cinnamon ; the Belle Alliance, short, and shaded with yellow and red ; and the Poire Sauger, a wild, or almost wild variety, so named because the leaves of the tree remind one, by their white down, of the common Sage. For this last sowing I employed all the crop of a tree which grows by itself on the road from Marcoussis to Gué. The seeds of these Pears sprouted the same year in which they were sown, with the exception of those of the Poire d'Angleterre, which did not do so till the following year ; and this was the case in two different sowings in 1853 and 1854, without my being able to discover the cause.

A small number only of these trees has begun to bear fruit, which I regret, because the results which they would have yielded, if all had borne fruit, would have been much more varied, and in consequence more conclusive than those which I have to submit to the Academy. We may see, nevertheless, at the first glance, on an inspection of the coloured figures, how much the fruit, in each of these categories, has been already modified in the first generation.

Thus, in the variety Sauger, four trees which have fructified have yielded four different forms of fruit ; one ovoid and entirely green ; a second short and almost apple-shaped, coloured with red and green ; a third still more depressed ; and, finally, a fourth, regularly pear-shaped, twice as large as the foregoing, and uniformly yellow. From the Belle Alliance nine new varieties arose, of which not one reproduced the mother variety, in form, size, colour, or time of ripening. There were two especially which I shall mention ; one for its size, more than twice that of the Belle Alliance, the other for its short major axis, calling to mind the apple-shaped Pears or Bergamots. The Poire Bosc produced three new fruits different from the type ; one of the three so like one of those obtained from the Sauger, that one could scarcely distinguish it. The variations were not less in the Poire d'Angleterre, where six trees yielded six new forms, so different from each other and from the mother form, that there are amongst

them most of our old varieties; one of them has even yielded winter fruit similar to the Saint-Germain.

It is not only in the fruit that the trees from the same variety have differed, but also in their various precocity, in habit, and in the shape of the leaves. These differences are striking when the trees are near each other in the same beds of the garden; each tree has a different aspect. Some are thorny, some thornless; these have slender wood, those are thick and stubby; in some specimens of Poire d'Angleterre, the variation has proceeded so far as to produce the first year from seed, lobed leaves like those of Hawthorn, or *Pyrus japonica*. Nothing, indeed, would have been easier than to make of these young trees almost as many new species, however slightly one might have adopted the ideas of the modern school, without knowing from whence they were derived.

It is not possible to doubt that cultivation is a great source of variation in plants, and this from the complexity of the elements which it brings into play. The transformations which they undergo in our gardens are rapid in comparison with what takes place in nature; thus, for example, the Poppy, the Cornflower, and the Larkspur always remain very uniform in a wild state, while in our flower-beds they are modified in the most remarkable degree. The flowers of the Poppy pass from a bright red to pure white, or even black, by the extension of the deep-coloured spot which exists at the base of each petal; at other times they are shaded with two colours; or, finally, they become extremely double instead of single as they were in the normal state. The flowers of the Cornflower, and those of the Larkspur, so uniformly blue in the fields, almost always change their colours after some years of cultivation; they become white, rose-coloured, tinged with violet, or wholly violet; it is rare that they preserve their primitive tint. I may remark that we cannot attribute these variations to crossing with other species, since the flowers are fecundated by their own pollen some time before the expansion of the blossoms, and since these variations in the end become hereditary, like the specific characters. The inheritance of forms is not, then, the exclusive privilege of species; it belongs likewise to varieties, or to races whose origin is well known, and in consequence it is not an indisputable criterion by which to decide that any particular form allied to some other, found in a wild state and recognised as hereditary, is on this account a different species from this last.

The theory of Van Mons is very frequently at fault: witness an example taken from amongst a hundred others, and which naturally takes its place here. According to this pomologist, we may anticipate the quality of the fruit of a young seedling tree by the inspection of its wood. If the wood resembles that of known good varieties, the fruit will be of good quality. The Chaumontel, Crassane, Archduke Charles, Easter Beurré, the Urbaniste, are universally esteemed as first-rate fruit; nevertheless the trees differ strangely from each other, some having long slender shoots, others thick and firm, &c. This little group of trees, which I take by chance, offers almost all the variations in size, habit, and wood which are known in the Pear-tree. The experiments quoted above—experiments which show that from the same sowing we have thornless and thorny trees, straight and divaricate, smooth and downy, &c.—come even more closely to the point. There is no truth, then, in the assertion of Van Mons, when he says that the appearance of the wood of the Passe Colmar is reproduced in the Frédéric de Wurtemberg, that the Saint-Germain has given its form to the Urbaniste, that the Rance exactly resembles the Gracioli, and the Doyenné the Poire de Pentecôte, &c.

Everything is variable in the Pear tree, even the nature of the sap. The proof of this latter circumstance is found in the very different success of grafting according to the choice of stock. All races and varieties of Pear tree take on

the Pear tree, but all do not succeed on the Quince; for example, the Rance,\* Clairgeau, Bosc, Duchesse de Mars, &c. When we wish to multiply these varieties, and for want of the wild Pear we are obliged to employ the Quince, the last is grafted on the Jaminette, the Sucrée Verte, the Crassane, the Abbeville, very vigorous kinds, which are suited to this sort of stock; and when the grafts have taken, they receive in their turn varieties whose sap does not sympathise with those of the Quince. It is an operation known and practised by all nurserymen.

The relative size of the flowers and appearance of the foliage offer no less striking variations. Certain varieties, as the Catillac, St. Gall, Epargne, de Vallée, &c., together with wide, rounded and undulated petals, have blossoms 5 or 6 centimetres (from about 2 to 2½ inches) broad; and their trees, in the early stage of foliage, are as white and cottony as the Sauger. Others, like the Héric, Sylvange, Fortunée, &c., with oval or lanceolate petals, have flowers half the size, their diameter not exceeding 3 centimetres (one-fifth of an inch). Finally, we possess at the Museum a Pear tree wrongly named Chartreuse, whose linear-lanceolate petals are scarcely 3 millimetres (scarcely one-fifth of an inch) broad and 9 millimetres (about three-quarters of an inch) long. It is vain, therefore, to seek for specific characters in the proportions of the flower or the parts of which it is made up.

Can characters, however, be found in the size and form of the fruit? We have already seen these elements vary in the experiments detailed above, and these were confined to four varieties, of which a few trees only have borne fruit. The variations would have been far greater had I been able to try all the known varieties of Pear tree. We may judge of the enormous differences which occur in respect of size, when I call to mind that the wild Pears, which botanists have somewhat prematurely called *Pyrus longipes* and *Pyrus azarolifera*, do not exceed the size of a pea, while our enormous Pears called Poires d'Amour and de Livre equal in volume a middle-sized Melon—that is, twelve or fifteen hundred times as much. Analogous remarks may be made as to the colour of the flesh, which is green, yellow, salmon-coloured or red.

But perhaps it may be said these are precisely characters which show a specific distinction in these different kinds of Pear trees. Assuredly I should ask nothing better, for nothing is so pleasing to the mind of a botanist as definite characters, those gaps in the series of congeneric forms, which at the same time facilitate his labour and furnish a fulcrum to his nomenclature. He is satisfied when these specific, well-defined divisions agree with his ideal notions of nature: but unhappily it is not so in the group of Pear trees: from the microscopic *Pyrus azarolifera* and *longipes* we pass by an insensible transition to the Mille-au-godet, a Pear cultivated in the neighbourhood of St. Brienc, which is scarcely larger; from this we arrive at the Sept-en-gueule, or little Nutmeg, another variety, or rather assemblage of varieties, in which the fruit varies from the size of a wood Nut to that of a Walnut. At the same time a multitude of races and sub-races, varieties and variations of wild Pears of all sorts of forms and magnitudes, from that of the Mille-au-godet to that of our common cultivated Pears; and in these we pass from the smallest to the most gigantic by an indefinite series of intermediates, in which every difference of form and colour, from the Musette and Cornemuse, which are so curiously elongated, to those depressed Pears which have been justly compared to Apples.

How then, I say, can we lay hold of a specific character of any value in an assemblage in which all the most extreme forms are united by insensible and

\* At least, if they do succeed, though they may bear abundantly, the fruit is extremely small as, for example, in the Beurré Rance, and scarcely to be recognised when compared with well-grown samples.

numberless gradations? It is looking for what nature has not done, and forcing her to enter into an artificial category.

To whatever hypothesis we may lean, as regards the notion of a species, we cannot help seeing that it presents itself under different aspects, sometimes restricted within narrow limits, strictly characterised, and not varying sensibly, but sometimes also prodigiously broad, polymorphous, and, so to speak, divisible *ad infinitum*. Pear trees form no exception; and many other genera of plants offer the same profusion of secondary forms, and are an equal source of perplexity to classifiers.

Almost all pomologists, at least those who are worthy of the name, have tried to classify Pear trees; but all have failed, in so far, at least, as they have never been able, in consequence of the intermixture of characters, to make an arrangement in the least degree natural, and which would embrace all the known varieties. At the commencement of my studies, like my predecessors, I thought that I might undertake this work with some chance of success; now I am disabused of this hope, and I do not fear to declare that every classification will be purely artificial. The only useful principle which can be adopted here will be, I think, the time of the ripening of the fruit, because in an economical point of view this consideration predominates over all others; and even here, again, we must assign very wide limits to these seasons of maturity.

Neither the form of the fruit, nor their size, nor their colour, nor their flavour, any more than the habit and appearance of the trees, the colour of the wood, the size of the leaves and flowers, &c., can afford any base for a classification, because all these characters are purely individual, which they do not transmit faithfully by way of generation, and, which, as there are not wanting examples to prove, change soon in one and the same individual in consequence of local circumstances which one cannot always explain.

The partisans of the plurality of species may object, in the group of trees with which we are occupied, that if in this multitude of intermediate forms we are unable to recognise distinct specific types, this depends on the fact that the primitive species have intercrossed thousands of times; and their fertile hybrids have increased in an enormous degree the number of crosses, and that from thence have sprung these innumerable forms which are the despair of classifiers. I am far from denying the fact of these crosses or of their influence; I say even that nothing appears to me more probable; at least it is not possible to doubt it, when we see what takes place in a Pear orchard when in flower, where the bees, attracted from a distance of a league, pilfer from morning till evening, mingling the pollen of all the varieties, and disseminating it on stigmas for which it was not destined by nature. But we may remark that these impregnations, which are supposed to be unnatural, are always fruitful, that all the flowers which receive pollen from any kind of Pear whatsoever, set their ovary, and that the fruit when developed always contains fertile seed.\*

But, I ask, will this constant fertility, after all possible crosses, afford a proof of the difference of primitive types? Precisely the contrary conclusion is suggested; and when we have seen the same fact produced in other species, at the same time well characterised, and quite as polymorphous as the Pear tree, for example in the Potiron (*Cucurbita maxima*), the Pumpkin (*C. pepo*),

\* I know no apparent exception to this fertility, except in the *Poires sans pepins* and *Comte de Flandre*, whose fruit contains no seeds; but this does not prove a want of power in the pollen, which, besides, might as well be that of its own parent tree as of a tree of any other variety. In fact I have ascertained that this defect of seed depends, in the first of these varieties, on the more or less complete abortion of the ovaries, and in the second of an absolute want of ovules.—J. D. In *Cucurbita moschata*, the fruit of which, at least in the *Courge pleine de Naples*, closely resembles the Pear in many respects, there is sometimes a total abortion of ovaries, and the fruit beneath the rind consists merely of a mass of parenchymatous tissue.—REV. M. J. BERKELEY.

the Musk Gourd (*C. pepo*), the Bottle Gourd (*Lagenaria vulgaris*), and the Melon (*Cucumis melo*), where likewise the strangest differences of form, size, colour, consistence, and taste are seen in the fruit, one is forcibly led by analogy to admit in the Pear tree only a single natural species. Besides, we may remark, in all specific groups which are so polymorphous, it is the fruit which varies the most, and also that in all these the fruit is inferior—that is to say, formed by a receptacle in which the ovaries are immersed. The adherence of the ovary should seem then to be the organographic condition which has the greatest tendency to variability in the fruit. What we know of Umbelliferae, Cupuliferae, and the genera Medlar and Rose, in which equally the fruit is inferior, certainly does not weaken this kind of view.

Does grafting, as some maintain, modify the character of varieties? For my part I do not think so; I have never, at least, observed anything to confirm this opinion. Duhamel, for example, remarked a century ago, that the Imperial Oak-leaved Pear (a curious variation of foliage which I might have indicated before), had never more than three cells in the ovary instead of five. This is the case still; the fruit has only three cells, notwithstanding it has been propagated by grafting only since the time of Duhamel. Many other facts of the same nature might be brought forward in support of the inability of the graft to modify the characters of varieties—those, for example, which the flavour of fruits, so remarkably different from each other, affords.

It is, then, an error against which it is well to protest—viz., the belief that the degeneration of our races of fruit trees is a consequence of the constant practice of grafting for their propagation. Not a single authentic fact can be adduced in its favour; those which have been alleged depend on entirely different causes, amongst which we must place in the first line that of climates, or of soils incompatible with the peculiar exigencies of the variety, and very frequently also bad cultivation, or the abuse of pruning so frequent in our days, which would fain pass for perfection. Our old Pears, so justly esteemed one or two centuries ago, are still the same as when they were more in request; they ripen at the same seasons, and keep also as perfectly. It suffices, in fact, to quote the Epargne, Crassane, St. Germain, Doyenné, Chaumontel, Winter Bon Chrétien and Easter Beurré, known now as the Doyenné d'Hiver, to be convinced that our old varieties have lost nothing of their good qualities. If we neglect them, it is not because they have degenerated, it is only because the nurserymen are interested in sending out their novelties. This degenerating of old races, accepted without opposition, is in reality nothing more than one of those works of industrial acuteness so easily excused in our days.

Is it then more true, as Van Mons had asserted, and as most pomologists believe, that the seeds of good kinds of fruit produce Crabs with harsh fruit, reverting to what are supposed to be the specific types? I do not hesitate to affirm the contrary; and I defy any one to quote a single example of a fruit of any quality impregnated with the pollen of its own flower, or of others of the same race, whose seeds have given rise to a Crab. If a variety of merit is impregnated by a variety with harsh fruit, there will certainly spring from its seeds new varieties, which for the greater part, if not altogether, will be inferior in quality; there may even be found some whose fruit shall be as bad as that of the wild plant which has furnished the pollen; but this degeneration, if we may give it the name, is nothing more than the consequence of an ill-assorted crossing. We may consider it certain that every distinguished variety of Pear tree, and I may say of all our fruit trees, if it is fecundated by itself alone, will give birth to good fruit; it may and will probably differ, sometimes by one character, sometimes by another from the mother variety, but no one will assume the characters of the wilding, any more than our Cantaloup Melons

resume, by sowing, the form, size and taste of the little wild Melons of India, or our Cauliflowers or Cabbages revert to any of the wild kinds so different in habit and quality which grow on the cliffs of the ocean and Mediterranean.

Whatever, then, the partisans of immutability may say, species in the vegetable kingdom are endowed with great flexibility; and it is not a vain hypothesis which refers to the same specific type races and varieties, sometimes very different in appearance, but having the same morphologic organisation and capable of breeding with each other by crossing as members of the same family. I allow that there will always be doubtful cases, even after the proof of fertile crossing in the whole series of possible generations; but this is no reason for separating, as so many primordially distinct entities, what so many observed facts and so many analogies prove to be able to proceed, by way of evolution, from a single primary specific type. If we transport any one of our race of Pear trees into all the regions of the globe whereon it is able to exist, it will tend to place itself in harmony with the media, and we may be sure that after some generations it will have given rise to new and numerous varieties. This fact, which is realised in the sight of man in all the economical plants which are spread through the globe, affords the key to those polymorphous species, so embarrassing to the botanist, and which have become so only because nature has itself spread them over immense extents of country.

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## REPORT ON THE BEDDING PELARGONIUMS GROWN AT CHISWICK, 1864.

By THOMAS MOORE, F.L.S., SECRETARY TO THE FLORAL COMMITTEE.

(Continued from page 175.)

THE most approved sorts are indicated throughout by an asterisk (\*), and the next grade by an obelisk (†).

### SERIES II.—ZONATE VARIETIES.

#### 2. FLOWERS CERISE, ROSY SCARLET, OR ROSE.

*Alice* (E. G. Henderson & Son).—Vigorous spreading habit; dark-zoned leaves; flowers cerise scarlet.

*Apollo* (Hally).—Vigorous habit; leaves zonate; flowers cerise. Of no use.

*Aspasia* † (Bull).—Moderately vigorous habit; dark-zoned leaves; deep rosy scarlet flowers. The marks indicate its value as a pot plant.

*Beauty* † (Williams).—Vigorous spreading habit; leaves with a broad dull zone; flowers large, rosy scarlet, of good form, and in fine trusses.

*Bonnie Dundee* † (Bull).—Moderately vigorous and compact habit; leaves with a dark well defined zone; flowers of good form, in compact trusses, of a cerise colour. It is a very pretty free-blooming pot plant, fully deserving on this account an equal number of marks with those given for its bedding qualities.

*Bridesmaid* (E. G. Henderson & Son).—Moderately vigorous; dark-zoned leaves; flowers cerise, with paler edges.

*Caroline* (Bull).—Moderately vigorous; leaves with a broad dark zone; flowers rosy scarlet, in large trusses.

*Cecilia* † (Bull).—Moderately vigorous habit; dark-zoned leaves; rosy scarlet flowers. Inferior to *Roi d'Italie*; but a free showy variety as a pot plant, for which it was approved.

*Cedo Nulli* (Williams).—Dwarf vigorous habit; leaves with broad zone; flowers bright rosy cerise.

*Celina* (Bull).—Vigorous spreading habit; leaves marked with a dull zone; flowers rosy scarlet.

*Chancellor* (Bull).—Moderately vigorous; leaves with a dark zone; flowers salmon rose.

*Cherry* (Hally).—Moderately vigorous compact habit; leaves darkly zoned; flowers cerise scarlet.

*Comte de Clapier* (Van Houtte).—Moderately vigorous; leaves marked with an indistinct zone; flowers cerise. It was poor under glass.

*Comte de Morny*† (Low, Scott).—Moderately vigorous habit; leaves with a broad, dull, vandyked zone; flowers cerise, of fine shape. A very handsome variety for pot culture under glass.

*Conqueror of Europe* (Williams).—Vigorous spreading habit; leaves with broad, dull, vandyked zone; flowers large, of good form, cerise, in fine trusses, but wanting in distinctness.

*Countess* (Bull).—Moderately vigorous; leaves dark zoned; flowers bright rosy scarlet.

*Culford Rose* (E. G. Henderson & Son).—Moderately vigorous; leaves marked with a distinct dark zone; flowers cerise.

*Effective*† (Bull).—Moderately vigorous; leaves with a broad, dull, darkish zone; flowers of good form, cerise scarlet, free and showy. The marks indicate its value as a pot plant.

*Effie* (Bull).—Moderately vigorous; leaves with an indistinct zone; flowers in small trusses, but free, rosy scarlet. As a pot plant it has no particular merit.

*François Chardine*† (Low & Co, Fraser).—Vigorous habit; leaves marked with a dark vandyked zone; flowers cerise scarlet, finely shaped, and in bold trusses. A very fine pot plant.

*General Early* (Wills).—Moderately vigorous; leaves dark zoned; flowers rosy scarlet.

*Giralda*† (Low & Co.).—Moderately vigorous habit; leaves with a broad dull-coloured zone; flowers large, of fine shape, deep cerise.

*Hector*\* (Bull).—Moderately vigorous habit; leaves marked with a dark well-defined zone; flowers of good shape, in compact trusses, and of a bright cerise. It resembles Bonnie Dundee, but is decidedly better. It proved equally good as a pot plant.

*Herald of Spring*\* (Turner).—Vigorous habit; leaves with a broad, dark, vandyked zone; flowers of fine form, large, in compact trusses, cerise scarlet. A fine variety, larger and paler than François Chardine.

*King Arthur* (Wills).—Moderately vigorous; leaves with indistinct zone; flowers cerise.

*Lord of the Isles*\* (Williams).—Moderately vigorous habit; leaves with a broad dull zone; flowers rosy scarlet.

*Louisa* (Bull).—Vigorous habit; dark zoned leaves; light rosy scarlet flowers.

*Marie Henri* (Van Houtte).—Vigorous spreading habit; leaves marked with a broad dark zone; flowers deep cerise.

*Minimum Nosegay* (Turner).—Dwarf habit; leaves marked with an indistinct green zone; flowers loose, in small trusses, light magenta colour.

*Monsieur Martin*\* (Rollisson, Fraser).—Moderately vigorous habit; leaves with dark vandyked zone; flowers cerise scarlet, of fine form, in bold trusses. A very fine sort for pot culture.

*Mrs. Turner* (Wills).—Moderately vigorous; leaves with dark broad zone; flowers cerise.

*Nora* \* (Bull).—Of fine and rather vigorous habit; leaves with a broad dull zone; flowers large and of good form, rosy scarlet, in compact trusses. A fine variety out of doors, and of nearly equal merit under glass.

*Paquitta* (Salter).—Tall vigorous habit; leaves with a dull vandyked zone; flowers cerise.

*Paul Labbé* † (Fraser).—Moderately vigorous; leaves with a dull broad zone; flowers large and finely formed, of a salmony rose. A very fine pot plant.

*Pink Pearl* † (E. G. Henderson & Son).—Dwarf spreading habit; leaves rather small, dull green, with a narrow zone; flowers very abundant, of a light magenta rose. Although the flowers were loose in form, they were abundant enough to be very effective.

*President Reveil* (Van Houtte).—Moderately vigorous; leaves marked with a broad zone; flowers cerise, of good form.

*Prince Christian* (Salter).—Moderately vigorous habit; leaves marked with a broadish dull zone; flowers freely produced, of good shape, cerise.

*Princess of Wales* (E. G. Henderson & Son).—Vigorous habit; leaves marked with a dull zone; flowers small, cerise-coloured.

*Provost* (Bull).—Vigorous habit; leaves with a broad dull zone; flowers rosy scarlet, of good form. Tolerably effective as a pot plant.

*Regalis* (Bull).—Vigorous habit; leaves with an indistinct zone; flowers large, well formed, rosy scarlet, in compact trusses, freely produced.

*Roi d'Italie* \* (Low & Co.).—Dwarf and vigorous habit; leaves marked with a bold dark zone; flowers freely produced, large, of excellent form, salmony or cerise scarlet. A very fine variety for all purposes.

*Rubens Improved* (Carter & Co.).—Dwarfish habit; leaves faintly green zoned; flowers deep cerise scarlet.

*Rubens Improved* (Wills).—Moderately vigorous; leaves with a dark centre or zone; flowers rosy scarlet.

*Umpire* \* (Bull).—Vigorous spreading habit; leaves with an indistinct and unequal zone; flowers of fine shape, large, in bold trusses, rosy scarlet. A beautiful pot plant.

*Unit* (Bull).—Tall and vigorous habit; leaves marked with a narrow vandyked zone; flowers cerise. Too thin as a pot plant.—(*Proceedings of the Royal Horticultural Society.*)

(*To be continued.*)

## BOUGAINVILLÆA SPECIOSA.

It was with great pleasure that I read "F's" article on the "Bougainvillæa and Bottom Heat," as we have a plant here which has been in bloom in the same room for the last six weeks, and to all appearance it will last another month there and still maintain that fine colour peculiar to this plant. There are but few plants that will bear the confinement of a room as this has done, and I consider it most valuable either for room decoration or exhibition, as it is quickly grown into a good specimen plant. The above was struck and grown in a Melon-pit two years ago. Last summer it was kept in a greenhouse, and stopped at every third joint, so that in the course of the summer it became like a miniature Gooseberry bush, and was potted in a nine-inch pot in equal parts of peat and loam, with a nice quantity of silver sand to keep the soil porous. Manure water was given two or three times a-week while growing; but in the winter when it is partly at rest but little water will be required.

The above plant was removed in February, to a vinery just started, where it

remained till it came into flower at the end of every shoot. There were twenty-six racemes of bloom on a plant 2 feet high, and as much through, and which was the admiration of all who saw it. One thing in favour of the *Bougainvillæa* is, it requires but little support—only one stick to keep the plant upright being sufficient.

*Elsenham Hall Gardens.*

WILLIAM PLESTER.

### OUR MONTHLY CHRONICLE.

ROYAL HORTICULTURAL SOCIETY. — The scientific meeting of the 25th of July was unusually interesting. The Rev. Mr. Dix called attention to a climbing *Devoniensis* Rose, of which Mr. Rivers had sent a specimen, produced by budding a sport of the common *Devoniensis* on a strong-growing Hybrid China, itself budded on the Manetti stock. Buds taken from the blooming-shoots of the climbing variety so obtained, reverted, however, to the normal condition of the variety, if worked in the ordinary way, and the case was the same with cuttings. This discovery was of importance; for Mr. Rivers stated that Tea-scented and weak-growing Hybrid Perpetuals were much invigorated when treated in a similar manner, *Gloire de Dijon* making shoots 8 or 10 feet long in a single season. Dr. Hogg, before adverting to the subjects brought before the Fruit Committee, directed attention to the report of the early Peas grown this year at Chiswick. By this it appeared that Dillistone's Early Prolific, Carter's First Crop, Dickson's First and Best, and Sutton's Ringleader, having been all sown on the same day, and treated in all respects alike, were found to be identical, or so nearly so as not to be worth distinguishing. Dillistone's itself was considered by those well acquainted with Peas to be nothing but a pure stock of the old Early Kent. Of other Peas, Laxton's Seedling was very similar to the Auvergne and Dickson's Favourite; Carpenter's Express was the same as Sangster's No. 1, and a number of others were synonymous with Veitch's Perfection. Princess Royal was considered to be an improvement on the old Dwarf Marrow, and Blue Exeelsior was remarkably distinct. Dr. Hogg next called attention to a collection of Grapes from Mr. Rivers, belonging to what the French call "Muscats," and the English Frontignans, and which, though possessing a Muscat flavour, like the Chasselas Musqué, do not crack like that variety, and, like it, ripen earlier, and in a colder temperature than the true Muscats. They consisted of Muscat Salomon, or Early Golden Frontignan, three weeks earlier than the Black Hamburgh, bunches from 12 to 18 inches long, golden or deep amber-coloured; Early Smyrna, or Muscat de Smyrne, a form of White Frontignan, not so early as the pre-

eeding, but hardier, and probably capable of being ripened out of doors—at all events it would do so in an ordinary greenhouse; Early Silver Frontignan, larger in berry, and eight or ten days later than Early Golden Frontignan, and as much earlier than the Black Hamburgh; and Black Bordeaux, or Muscat à gros grains, more sugary, and a month earlier, than the Black Hamburgh. Muscat Champion, from Mr. Veitch, was stated to be a most valuable acquisition, having berries as large as those of the Mill Hill Hamburgh, with a strong Muscat flavour. The merits of a very large Raspberry, shown by Mr. Graham, of Cranford, could not be decided upon till it had been seen again; and of some Cherries sent by Mr. Rivers, Large Purple Gean came in after the Bigarreaus were over, and Love Apple Cherry belonged to the Late Duke class, was an inch across, had colourless juice, and was furrowed like a Tomato. Referring to two Apriect trees in pots, Dr. Hogg remarked that they had been sent by Mr. Rivers to show that Apriects *can* be grown in pots, and that the ripe fruit may be transmitted to a distance on the trees. The whole secret of cultivating the Apriect in pots, Mr. Rivers stated in the communication sent along with them, simply consists in giving the trees plenty of ventilation whilst in bloom; even 3° or 4° of frost will not injure them. On the other hand, if the orchard-house is kept close, there is such an amount of moisture in the air that fertilisation cannot take place. The subject of the Rev. Mr. Berkeley's remarks on this occasion was a supposed hybrid Fern found on the banks of the Schuylkill, about eight miles from Philadelphia, surrounded by *Camposorus rhizophyllus* and *Asplenium ebeneum*, and presenting some of the characters of both these. Mr. Berkeley remarked that the production of hybrid Ferns would be very profitable, and pointed out the means by which success would probably be attained, stating that the subject would be more fully explained in the new Journal of the Society.

A Show of Ferns and their allies was held on the 29th of July, and the number of specimens exhibited was considerable. Messrs. Ivery, of Dorking, and Stansfield, of the Vale Nurseries, Todmorden, had large and admirable collections of British Ferns, including many rare forms.

The principal subjects shown at the Floral Committee of the 8th of August it will be unnecessary to recapitulate here. At the Fruit Committee of the same day, a very interesting collection of fruit was shown by Mr. Rivers, among which were included several Plums. July Green Gage was a very early variety, ripening in July, but in every other respect like a good, medium-sized, highly-coloured Green Gage, the flesh separating from the stone, and richly flavoured. Bavay's Early Gage is rather larger than the preceding, but not so early, nor so highly-coloured; the flesh adheres to the stone, and is likewise of delicious flavour. Reine Claude de Berger was found to be synonymous with the Peach Plum, and Minsterworth Plum is probably the same as Damas Violet. It is much grown in that part of Gloucestershire from which it takes its name, and is a good, early, very productive, black market Plum. Cluster Damson was a very prolific form of the English Damson. Of Cherries, the best were Drogan's Yellow Bigarreau, a fine large sort, of a clear sulphur yellow colour, and far superior in size and flavour to Bütner's Yellow; and Rival, a black Bigarreau, of medium size, and a profuse bearer, hanging till the end of August, or beginning of September. Being a valuable late Cherry, this was awarded a first-class certificate. A similar award was made to Messrs. Garaway & Sons, Durdham Down, Bristol, for a new Ridge Cucumber growing from 16 to 18 inches long.

INTERNATIONAL HORTICULTURAL EXHIBITIONS.—Foremost comes the great Exhibition to be held in London in 1866. The schedule of prizes represents an amount never before offered in this country at any one horticultural exhibition; there are no less than 237 classes, and very nearly £2,500 in prizes. The General Committee consists of a long list of noblemen and gentlemen, and most of the leading horticulturists in the kingdom; and the Executive Committee is principally composed of those residing near London, and who can, consequently, pay better attention to their duties than those who live far from the metropolis. Dr. Hogg is General Secretary; Mr. T. Moore, of Chelsea, Exhibition Secretary; and Dr. Berthold Seemann, the Secretary of the Congress, which it is proposed to hold in connection with the Exhibition. The date of this is not yet definitely settled, but it will probably take place in the week between Epsom and Ascot races, or about the end of May. There can be no doubt that the Exhibition will be on a scale never before witnessed in this country, and it should be the effort of every horticulturist in the kingdom to make it at least equal to the exhibitions of a like character which have been, of late years, held on the continent. Already an international horti-

cultural exhibition is projected in connection with the Paris Universal Exhibition of 1867, and another has been set on foot at St. Petersburg for 1868, with Dr. Regel at the head of its committee.

ROSE SHOW AT BRIE-COMTE-ROBERT.—Roses are very extensively grown in the district around this small town, there being no less than 1,033,080 plants of all sizes cultivated by eighty-nine rosarians. The exhibition held on the 9th and 10th of July was, notwithstanding the unusually dry and hot season, very brilliant, there being no less than 65,000 Roses sent by forty exhibitors, and the visitors numbered more than 6,000. A new Rose called M. Camille Bernardin, which owes its parentage to Général Jacqueminot, made its appearance at this show, and is spoken highly of as being a new bright red, large, and perfect in form. M. Gloede has obligingly favoured us with the following account of the show, and which arrived too late for insertion last month.

"Whoever has not had the good fortune to witness this most gorgeous display of the 'queen of flowers,' cannot form an idea of its grandeur. The Show was held under a vast tent of about 150 feet long by 50, in the middle of which were large beds, and all around, upon stages, were set the various collections. Imagine the effect thus produced by upwards of 60,000 Roses. There was one bed consisting of about 5000 blooms of that old but still much-valued Rose du Roi, and a show it was of itself, well deserving the gold medal awarded. The finest collections were shown by M. Granger, of Suisnes, near Brie-Comte-Robert, consisting of 380 splendid varieties; by M. Scipion Cochet, of the same place, 375 varieties; and by M. Aubin Cochet, of Grisy, Suisnes, 220 varieties. Of smaller collections, not less admired, there was M. Gautreau, père, and M. Cochet, père, both of Brie-Comte-Robert, 120 varieties, and M. Ledechaux, of Villecresnes, 180 varieties. Of seedlings, M. Granger, had Exposition de Brie-Comte-Robert; and M. Gautreau, père, Camille Bernardin, both very fine Roses, universally admired, and which will, no doubt, be welcomed on the other side of the water when sent out. For bouquets and table decorations, several prizes were given, as well as for smaller collections of Roses, which, though small, were not without interest. I understand that henceforth an annual show of Roses will be held at Brie, and I therefore earnestly advise British rosarians to come next year and see for themselves such a sight as they will never see at home. Those who call from time to time upon the Parisian Rose merchants, have no idea of the extensive cultures of the real growers at Brie.—FERDINAND GLOEDE, *Les Sablons, Seine et Marne.*"

THE INGRAM TESTIMONIAL consisting of a handsome silver tea and coffee service, manu-

factured by Messrs. Garrard, of the Haymarket, a gold watch by Frodsham, and a purse of 150 guineas was presented to Mr. Ingram, of Frogmore, on Saturday, the 29th of July, by a deputation of the Committee of Management. The deputation consisted of Dr. Hogg, Chairman of the Committee; Mr. John Lee, of Hammersmith; Mr. Edward Brown, of Slough, Secretary to the Committee; Mr. Charles Turner, of Slough; Mr. Stains, of Harewood Square; and Mr. John Fleming, of Cliveden. Dr. Hogg, in presenting the testimonial, which was accompanied by a list of the subscribers engrossed on a roll of vellum, said, "Mr. Ingram,—It would be affectation on my part if I were to assume that you were unaware of the object of our visit to you to-day. I have reason to believe that you are not ignorant of the fact that for some months past a number of your friends have entertained the idea of presenting you, on this, the fiftieth anniversary of your services at the Royal Gardens at Windsor and Frogmore, with a substantial testimonial of their esteem for your personal worth, and their appreciation of your professional ability. That idea has become a reality, and we are here to-day—a deputation from the subscribers to that testimonial—to perform the pleasing duty of presenting it to you. I am flattered, sir, that it has fallen to me to perform this pleasing act; but I feel, also, that there are others to whose hands the work might have been more advantageously committed. There are those present, and there are among those whose names are inscribed on this roll some who have known you far longer than I have done, and on them I should have preferred that the office had fallen. But, although my personal acquaintance with you may not have extended so far back as theirs has done, yet, connected as we are with the same country—nay, even with the same locality—my knowledge and appreciation of you extend to a lengthened period; and, therefore, I feel that I am not entirely out of place in performing this service. For fifty years you have served the Royal Family of this country, with fidelity to them and honour to yourself—for fifty years you have occupied a prominent position in an arduous situation—one requiring the exercise of the greatest discretion, coupled with decision and courtesy. In that situation you have, doubtless, had to exercise much self-denial, and while in the performance of your duty and your high trust, to give offence when you would rather have conveyed pleasure. For fifty years you have adorned the profession of horticulture, and assisted in no small degree in promoting and fostering its pursuit; and for far upwards of fifty years you have lived a life that has endeared you to many friends, and made you respected by all who know you; and it is for these reasons that we are now here to present to you these testimonials from your friends,

whose names are inscribed on the accompanying roll. In the good providence of God you and Mrs. Ingram have been spared to live far beyond the allotted span, and it is our earnest wish, and that of all your friends, that you both may yet be long blessed with the enjoyment of each other's society, and to receive the hearty congratulations of all those who have the privilege of your acquaintance." The watch bore the following inscription:—"Presented to THOMAS INGRAM, Esquire, by his friends on the 50th anniversary of his services in the Royal Gardens, Windsor, July 1865."

MEMORIAL TO SIR J. PAXTON.—A Committee has been formed with the view of erecting a memorial to Sir Joseph Paxton, and which includes the names of the Dukes of Devonshire and Sutherland, Earl Granville, Viscount Palmerston, Lord Egerton of Tatton, the late Speaker, and Mr. Gladstone. Mr. G. Grove, of the Crystal Palace, is the Secretary, and will receive subscriptions to the memorial, which, it is proposed, shall be a statue of white marble to be executed by Mr. Spence, of Rome, and placed in the grounds of the Crystal Palace.

HORTICULTURAL SCHOOL AT VILVORDE.—M. J. Debrichy has been appointed Director of the Belgian State School of Horticulture at Vilvorde. This appointment was previously held by the late M. de Bayay.

LILIUM AURATUM.—A magnificent specimen of this popular Japanese plant was produced at the meeting of the Floral Committee on August 8th. It was said to be the first bulb that came into the possession of Messrs. Veitch & Son, of Chelsea, and was sold by them to Charles Mills, Esq., Hillingdon, near Uxbridge, from whom it had been obtained for exhibition on this occasion. The bulb this season produced two shoots, the one of which was surmounted by twelve expanded, and three unexpanded blossoms; the other also had twelve expanded flowers, and two not yet open. The flowers were very large, and wondrously fragrant, the marking of the blooms being identical with the first flower of *L. auratum* exhibited in London. At the same time Mr. Turner, of Slough, exhibited about two dozen plants, among which could be seen some five or six distinct varieties. Some of these were richly marked with crimson, and thickly studded with large crimson spots. Differences in the foliage were also manifest, and there is no doubt but that very shortly there will be a great variety of this remarkable plant.

LOBELIA SNOWFLAKE.—A pure white variety of *L. ramosa* was produced at the meeting of the Floral Committee on July 25th. It was shown by Mr. Cox, gardener to Earl Beauchamp, Madresfield Court, the plants having been lifted from the open ground, and

placed in pots for exhibition. The colour is snow white, the flowers are large and well-formed, and freely produced. It grows from 6 to 9 inches high, and from all appearances it will prove an invaluable plant for beds and ribbon-borders.

OBITUARY.

SIR WILLIAM JACKSON HOOKER, Director of Kew Gardens, died at Kew on the 12th of August, at the advanced age of 80. He was descended from the same Exeter family as the "judicious Hooker," author of the "Treatise on Ecclesiastical Polity" in the sixteenth century; was born at Norwich on the 6th of July, 1785, and received his education at the High School of that city. Having been left an ample independence in landed property by his godfather he was able to devote himself to the study of natural history, for which he at an early age manifested a strong inclination. For some time entomology occupied much of his attention, but it was directed to botany soon afterwards in consequence of his having made the acquaintance of Sir James Edward Smith, who was the purchaser of the collections and library of Linnæus, and founder of the Linnean Society. It is a singular fact that Norwich should be so prolific in great botanists, for Sir James was likewise a native of that city, and not far from it too was born Dr. Lindley. Indeed, Norwich had been so prolific in botanists before these three came to renown that Sir James published a "Biographical Notice of Norwich Botanists." Probably this love of flowers may be traced to the Flemings who were driven from their native country by the tyranny of the Spaniards, and settled at Norwich in the end of the sixteenth century and established the staples of the place. To return from this digression, Hooker when he came of age made extensive excursions in Scotland, and in 1809 he visited Iceland, but all his notes and drawings were destroyed in consequence of the burning of the ship in which he returned, himself having a narrow escape. The recollections of this journey furnished him materials for his first work "Recollections of a Tour in Iceland," which was published in 1811, and this was followed by a "Monograph of British Jungermannia" or Scale Mosses, illustrated with beautiful copperplate engravings of magnified dissections of that lowly tribe of plants of unknown uses. This work, completed in 1816, established his reputation as a botanist. Having married in 1815 he settled at Halesworth in Suffolk, but still kept up his intimacy with numerous eminent botanists, and there it was that he commenced the formation of his great herbarium which was afterwards transferred to Kew. In 1818 he completed, in conjunction with Dr. Taylor, a work on British Mosses entitled "Muscologia Britannica," and this was followed by "Musci Exotici," a description of the foreign species then known. Having

some time previous to his marriage sold his landed property, with the view of proceeding to Ceylon, and invested the amount realised in other securities, which ultimately became much deteriorated in value, he was led to accept the appointment of Regius Professor of Botany at Glasgow, the emoluments of which at that time were little over £100 a-year, the number of botanical students being only twenty-one; but his lectures became so popular that his pupils increased to a hundred, and his income from his professorship and fees to upwards of £800 a-year. In 1821 he published "Flora Scotica," in 1823 "Flora Exotica," arranged according to the natural method; and the former work a few years later was extended to the whole of the United Kingdom. In 1826 he became editor of the Botanical Magazine, a standard botanical authority, which he carried on up to the time of his decease, and left in a much improved form; and in 1827 commenced, in conjunction with Dr. Greville, "Icones Filicum," a series of plates and descriptions of Ferns. Besides the above, botanical literature was enriched during his residence at Glasgow with several other works, such as "Icones Plantarum," the botany of several arctic expeditions, and "Flora Boreali-Americana." In 1835 he was knighted by William IV.; and in 1841 he was appointed Director of Kew Gardens, on the retirement of William Townsend Aiton, Esq. The gardens were then very different from what they now are; the public were admitted under restrictions which were felt to be vexatious; the amount of money devoted to keeping them up was comparatively small; the structures were falling into decay; the grounds were neglected; there was even some danger of the establishment being altogether broken up. But before any steps were taken the Government called on some gentlemen to report on the state of Kew and the other Royal Gardens, and the result of their recommendations was that a more liberal policy was resolved on, and it was determined to place Kew Gardens on a footing commensurate with the dignity of the nation and their importance to science. The first step taken was the appointment of Sir William Hooker to the directorship, and no one could have been better fitted for carrying out the task, uniting, as he did, untiring energy and perseverance to his great botanical attainments, and the experience which he had acquired in the management of the Glasgow Botanic Garden. Accordingly, in a few months after his appointment, we find that old boundaries had been broken down, old houses had been repaired, and new ones were being erected, that four acres had been added to the grounds, and thickets of worthless bushes had been swept away. A new order of things had been inaugurated; and Kew went on year by year improving in appearance and increasing in importance, till it has

become the grandest and most complete national botanic garden in the world, and the resort of distinguished men of science of every country—the resort, too, of multitudes who, without any special scientific object, are there content to breathe the fresh air of the country, and read a lesson from the book of Nature in the bright green lawns, the shadowing trees, and far-fetched riches of tropical lands. How much of a moral as well as a material influence may thus have been exercised we will not venture to speculate; but, certain it is that Kew has greatly assisted in bringing to light the vast and

hidden resources of our many dependencies, and in fostering botanical science both at home and abroad. The men of the generation passing away have been but the pioneers of other generations and further progress—progressing, ever progressing, until the final perfection of which man is capable shall be attained. If, then, a great man has departed from amongst us, let us not despair that another will not worthily fill his place; and, in this instance, the sire has left a successor scarcely less renowned than himself in his son Dr. Joseph Dalton Hooker, to whose mission in Northern India we owe so many valuable introductions.

## CALENDAR OF OPERATIONS.

### CONSERVATORY AND SHOW-HOUSE.

THIS house should be got ready for receiving plants by the end of the month. Let any repairs which may be requisite for the roof or heating apparatus be completed at once, that every preparation may be made for arranging the pot plants, now standing out, when bad weather arrives. Attend to the creepers on the roof, which at this season are growing fast, and require frequent attention. Avoid formality, and do not overcrowd the roof, to obstruct too much light.

### GREENHOUSE.

*Azaleas and Camellias.*—Plants out of doors, if the weather is stormy and wet, should be placed in the house towards the end of the month. See to the drainage before housing the plants, and let the pots be washed and the surface soil loosened, adding a little fresh compost, to give a neat appearance. Where the buds of Camellias are set too thickly, they should be thinned out, having regard to the strength of the plants. *Cinerarias.*—Those that have been struck early will now require every attention. Pot off into small pots, say small 60's, using a nice turfy loam, with an admixture of well-decomposed manure and leaf-mould, a little silversand being necessary to drain the soil. Shift into a size larger pot such seedlings as are ready, and prick off the second crop; as soon as established, give all the air possible, to prevent mildew. Select from the first-struck plants for specimens; take care that these have good strong stems, as they will require stopping in due season. Shift into larger pots as soon as they reach the outside of the pots. When about 3 or 4 inches long, pinch out their centres, and as soon as broken sufficiently, pot deep into flowering-pots. Fumigate occasionally, to prevent the green fly, and sulphur whenever mildew makes its appearance. *Hardwooded Plants.*—Heaths, Epacrises, and New Holland plants are very impatient of too much wet, and therefore should heavy rains occur, some means of protecting them should be resorted to, such as by making a slight frame of wood

over them, on which to throw some waterproof materials during heavy rains. These plants grow much more freely out, from July to the commencement of October, if protected as described. From this season, we should prefer their having the full sun, and to be placed sufficiently wide apart for the plants to grow equally on all sides. Use sulphur over parts infested with mildew, and see that worms do not gain admittance into the pots. *Relar-goniums.*—All will have been shaken out by this time; if not, it should be no longer delayed. Those first done for May blooming will have filled their pots with roots, and should receive their final repotting towards the end of the month. The following will be found a very valuable composition:—Two-thirds maiden loam, and one-third sheep or deer dung, all well decomposed; a little silver sand, to assist in keeping it porous. Let the pots be well drained, to allow the water to pass freely. The first-struck cuttings should be stopped to make strong bushy plants, and the young stock in general will require much care and attention. Let all plants be well housed and kept warm and dry. Give plenty of air while the weather remains open. Geraniums, to flower well, should make their principal growth before Christmas. Seedlings should be repotted.

### FORCING.

*Cucumbers.*—Attend to last directions. The best road to success in growing winter Cucumbers is to get the plants sown early and kept hardy by a cool temperature and abundance of light. When the plants have good foliage and a hardy constitution, they withstand the attacks of mildew and other diseases much better than weakly overforced plants, and will produce fruit through the dark days of winter much better. Plants in dung frames, exhausted by long bearing, may be well cut in, and 6 inches of fresh compost spread over the roots. The renewal of the linings will also give a stimulus to the roots, and induce a fresh growth, which will keep the plants in bearing for some time to come. *Peach-house.*—Remove

the sashes from the late houses, and fully expose the trees. *Pinery*.—Finish potting the plants to fruit next year; as the succession pits are cleared, to fill up the fruiting-houses; set the young plants wider apart. Fruit swelling should be kept moderately moist, and will require a little fire heat when the night temperature falls below 60°. Renew the linings to plants grown by dung-heat, so as to keep the night temperature 60°, as above. The largest fruiting plants required to produce fruit next March, April, and May, should now be kept comparatively dry, and have a large share of air, to throw them into a state of rest. *Vinery*.—Late Muscats should at once have fire heat applied, to assist their ripening; and this will also apply to the St. Peter's, if not likely to ripen without artificial assistance. Let the air of the houses be kept dry, with as much air as can be admitted safely. Now is the best time to prepare composts for new borders.

#### KITCHEN GARDEN.

The sowing of vegetable crops will be nearly over. A few Radishes, Lettuces, Cauliflowers, and Spinach, may be sown early in the month; to stand a chance, should anything occur to the regular crops, for it is always well to be provided against contingencies; and, therefore, all that remains in this way is to see well to the growing crops, and more especially to fill up all vacant ground with Greens, Broccoli, &c.; thin out winter Spinach, Lettuce, Turnips, and prick out the winter Cauliflowers and Cabbages, &c., hoe and keep clean all advancing crops, earthing up Celery and Cardoons, and blanching Lettuce and Endive as they advance. Tomatoes against walls should be stopped, and have a few of the leaves taken from before the fruit, to assist to ripen it. The Potato crop may be taken up as soon as the tops are ripened off.

#### FLOWER GARDEN.

The work of propagation will now require much attention, as, on the early striking of the stock for next year, the health and hardiness of the plants will mainly depend. For all kinds of Geraniums, no better plan can be adopted than what we advised in our last, in sticking the cuttings in the open ground (at any rate for the middle and south of England): a south border, over which spread a few inches in depth of light soil mixed with sand, is all that is necessary; it will assist some of the tender kinds, as Mountain of Light, Golden Chain, and Lady Plymouth, to put a sprinkling of white sand at the bottom of the drill, for the base of the cuttings to rest on; make the cuttings firm. When a large stock of soft things is required, as Petunias, Verbenas, Senecios, Ageratums, Lobelias, Anagallis, &c., a cheap way is to make a slight hotbed, 2 or 3 feet high, to hold a number of hand-glasses; cover over with 2 or 3 inches of sandy soil, and then, when the soil gets slightly warmed, insert the cuttings in squares, and cover them

with the glasses. Shade in bright sunshine and, when the plants commence growing, give air gradually, and when fully rooted, remove the glasses altogether. Plants struck in this way are remarkably strong and stocky. As we winter this class in shallow propagating-pans, we have only to lift the plants in bunches sufficient to fill a pan, when they are rooted and place them in a sheltered place, to harden off for the winter. All the above may likewise be struck by inserting the cuttings in shallow pots, and placing them in an empty frame. Take care of the seed of choice annuals as it ripens, and mark all good seedling plants for further trial. For routine see our last, as to keeping all clean, &c.

#### FLORISTS' FLOWERS.

*Auriculas*.—Those that have not been repotted should be done so at once. Little attention will be required for some time to come. The plants should be placed in a nice cool frame, fixed on a well-drained border, giving as much air as possible, and a moderate supply of water. Protect from rains, and pick off all dead foliage, and look carefully after the green fly. If any start for bloom, pinch off the buds only when above the foliage. *Carnations and Picotees*.—The soil required for wintering the plants in small pots should be kept well turned and tolerably dry. The principal attention required will be to remove all dead foliage from the layers. Water regularly and carefully. Pot the young stock from the stools any time after 15th of the month, if sufficiently rooted. *Dahlias*.—Protecting the blooms for exhibition, if grown for show, or enjoying their gay colours and noble form, if cultivated for decorative purposes only, will be the principal work of this month. In shading for exhibition, avoid doing so more than six or seven days before the time required, as it spoils the richness of the colour, and causes many varieties to quill. When confined from the air in too young a state, they do not so freely develop or grow into their true character. Seedlings will require constant attention, particularly if they have not proper distance afforded them in growing, or some of the finest flowers may be overlooked. *Hollyhocks*.—Continue to put in cuttings or plant them out in beds; by these means, a large stock of plants may be procured if diligently attended to. If the seed is sown as soon as ripe, and pricked off into thumb-pots, one in a pot, they will be ready to plant out in April, and will flower well the following August and September. *Pinks*.—Plant out into beds, towards the end of the month, for next season's blooming; should the weather be wet, defer it for a little. Pinks thrive best in a good rich soil, and should be planted about 6 inches apart. *Tulips*.—The soil should now be prepared for blooming these in. Look carefully after the roots, the green fly being so apt to attack them. Fumigate if necessary. Finally, arrange the roots preparatory for planting.

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  - D.—Hyacinths and other Spring Flowers.
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ESTABLISHED 1750.



Fig. F.



Fig. G.



Fig. C.

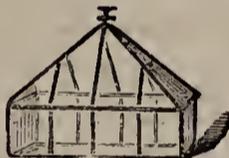


Fig. A.

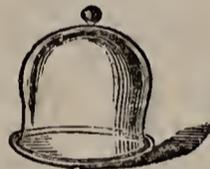


Fig. B.

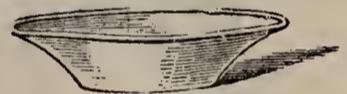


Fig. E.

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ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers and others.

20 in. by 12 in.	per 100 ft.	Best.	2ds.	3ds.	4th.
20 in. by 13 in.		16 oz.	18s. 0d.	16s. 0d.	13s. 6d.
20 in. by 14 in.		21 oz.	27s. 6d.	24s. 0d.	18s. 6d.
20 in. by 15 in.					14s. 6d.

## SMALL SHEET SQUARES.

6 in. by 4 in.	9 in. by 7 in.	Best.	2ds.	3ds.	4ths.
6½ in. by 4½ in.	9½ in. by 7½ in.				
7 in. by 5 in.	10 in. by 8 in.				
7½ in. by 5½ in.	10½ in. by 8½ in.				
8 in. by 6 in.	11 in. by 9 in.				
8½ in. by 6½ in.	11½ in. by 9½ in.				



Fig. D.



Fig. D.

Fig. A. Hand Glasses.		Fig. B. Propagating Glasses.		Fig. C. Milk Pans.	
	s. d.		s. d.		s. d.
12 inches	5 6 each	3 inches	0 4 each	6 inches	0 5 each
14 "	6 6 "	4 "	0 5 "	10 "	0 10½ "
16 "	7 6 "	6 "	0 7 "	14 "	1 6 "
18 "	8 6 "	10 "	1 2 "	18 "	2 5 "
20 "	9 6 "	12 "	1 6 "	20 "	2 10 "
24 "	11 6 "	16 "	3 0 "	22 "	3 4 "
		18 "	4 6 "	24 "	4 0 "
		20 "	6 0 "		

Fig. D. Hyacinth Glasses.		Fig. E. Hyacinth Dishes.		Fig. G. Rolling Pins.	
Common,	2s. 6d. per dozen.	6 inches	1s. 0d. each.	1½d. per running inch.	
Improved,	3s. 3d. "	9 "	1s. 6d. "		
		12 "	2s. 6d. "		

Fig. F. Cucumber Tubes.		Opal Ditto.	
1d. per running inch.		14 inches	3s. 6d. each.
		16 "	4s. 0d. "
		18 "	4s. 6d. "

Intermediate sizes in proportion.

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Packets of 100 seeds, 7s. 6d.

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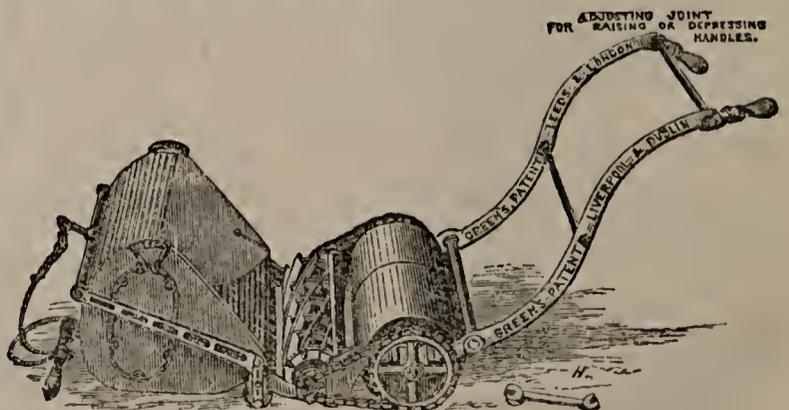
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*Anthurium Scherzerianum.*

## ANTHURIUM SCHERZERIANUM.

WITH AN ILLUSTRATION.

THE genus *Anthurium*, one of the *Orontiaceæ*, is remarkable rather for the beauty of its foliage than for the showiness of its inflorescence. Some species of recent introduction, as, for example, *Anthurium cordifolium*, *aliàs magnificum*, and *grande*, furnish, indeed, leaves which vie with those of almost any other plants we cultivate—so graceful is their outline, so soft the blendings of their velvety colours, and so pleasing the contrast afforded by the flowing lines of ivory white, marking the course of their nerves and nervures; but these, and indeed the majority of the species, can claim no importance from an ornamental point of view, in regard to their inflorescence, which comprises a spathe of dull green, and a spadix of an equally dull tone of colour.

In the subject of our present plate we have floral beauty combined with brilliancy of hue in no common degree, winning for its subject one of the foremost places amongst stove plants recently introduced to our gardens. Its improvement since first brought into notice, too, has been wonderful. Shown first in 1862 in company with the glorious *Lilium auratum*, it was, indeed, admired, but elicited little warmth of admiration; and the figure which about that time appeared in the "Botanical Magazine," shows the plant in a state ludicrously inferior to that in which it has been shown the present year, as represented in our plate. In the older figure just mentioned the spathe measures  $1\frac{1}{3}$  inch in length, and three-quarters of an inch in breadth, while as now grown, and as shown in the accompanying portrait, it measures about 3 inches in length and  $1\frac{7}{8}$  in breadth. In this improved state it ranks, indeed, amongst the finest of decorative plants.

*Anthurium Scherzerianum* is a native of Guatemala and Costa Rica. It was introduced in 1862 by M. Wendland to the Royal Gardens of Hanover, and from this source, we believe, was received by Mr. Veitch, of Chelsea, by whom it was first exhibited in this country, and by whom the wonderfully improved plants just adverted to were also produced. It is a dwarf-habited herbaceous plant, having a short erect stem, on which the petiolate, elongate-oblong, acuminate, leathery leaves are closely packed, and from which roots are protruded between the leafstalks. From between the leaves spring up the flower-stalks, which are coloured red, and terminated by an oblong, ovate, rich scarlet spathe, which forms the most attractive part of the inflorescence, and is always bent back against the stalk. The spadix, which is orange-coloured, is quite exposed, and vermiform. The plant is easily cultivated in the stove. We are indebted to Mr. Veitch for our figure.

M.

## CHRONICLES OF A TOWN GARDEN—No. XXI.

A FEW plants of *Gladioli*, forming a kind of supplement to the list of those then in flower given last month, are yet in bloom; somewhat later than the others, it is true, but later just because they happened to occupy a cool and somewhat shady border, not so much open to the action of the sun's rays as that occupied by those varieties whose time of flowering I chronicled last month. They were a little drawn in stature—lanky without being lean, for they produced good spikes of flowers, though the colours were not so brilliant as if they had occupied a more open position. The bright scarlet *Bowien-sis*, generally a tall grower, was seen to be overtopping all the rest, and yet it was so fine and showy as to make me marvel it is not more generally

L

found in cultivation. Then there were Achille, clear red with white marking, and very fine; Louis Van Houtte, a brilliant scarlet flower, but pale with me in consequence of "reposing in the shade;" Raphael, vermilion with white centre, very fine under almost any circumstances; Penelope, white, shaded with clear rose and yellow, very pretty; Vesta, white, with purplish carmine stains, but not so pure in colour as I have seen it when grown under better conditions; Eveline Bryère, delicate blush with purple marking, a beauty; Dr. Andry, bright orange red, a good and useful flower; Clemence, pale rose, with carmine stains, extra fine; and Janire, clear orange scarlet.

Unless rain come, and with it the mild westerly wind, that plays uninterruptedly at this season of the year about the shrubs that screen the Gladioli from the morning sun, and that invariably tears to shreds every fragment of a flower it chances to meet with when at its wild revels, these Gladioli will remain in bloom till winter shall warn us that it is ready to assume the sovereignty of that portion of the year allotted to it in the economy of nature.

How strange to be hinting of winter, even just when the hottest weather of the year is passing and drying up the vegetative life about us. The wetness and coldness of the harvest month has changed to the burning heat of July, and the dimmed and bespattered occupants of the flower garden have again

"Risen up to meet the light of day,  
Spread all their leaves and flowers and tendrils forth;  
And, bathed and ripened in the genial ray,  
Pour forth their perfume to the wandering gales."

"And at night so cloudless and so still! Not a voice of living thing—not a whisper of leaf or waving bough—not a breath of wind—not a sound upon the earth or in the air! and overhead bends the blue sky, dewy and soft, and radiant with innumerable stars, like the inverted bell of some blue flower, sprinkled with golden dust, and breathing fragrance!" So says Longfellow, and singularly appropriate is his description at the present moment.

My Lilioms, now out of flower, are put by in a dry cool place to ripen the bulbs. Occasionally I give them a small quantity of water, just enough to slightly moisten the soil and prevent any decrease of vitality. Here they will rest till February, when I shall repot them for next year's blooming. Fuchsias also have been discarded from the window; they are also in the shade, ripening their wood preparatory to being placed in their winter quarters. The other plants also, that stood with those in the window, are undergoing their term of probation, or rather, their period of rest, for that comes in due season, as do the buds and blossoms. The sole occupants of the in-doors department are some Asters in pots, consisting of Truffaut's Pæony-flowered, Dwarf Chrysanthemum-flowered, and some remarkably fine specimens of the Crown-flowered Emperor, crimson, with white centre; a very excellent variety for decorative purposes. The two former are also very effective, and as they are full of flowers, they make quite a display. I shade them during the day, though they occupy a window that is visited by the sun only for a short time, and occasionally they are treated to a little well-diluted manure water, which they seem to like excessively. I think this has been a remarkable Aster year, wherever I have seen them they have been marvellously fine. Generally, failure results from some error in cultivation, for so sharp is the competition among the trade in Germany that seed from good varieties only must be sent into this country if the reputation of any house would be maintained. Mr. Macintosh, of Hammersmith, who is the London agent for Mr. Wendel, of Erfurt, had a magnificent batch of Asters in several varieties this season, and he informs me that for the past three or four years Mr. Wendel's varieties can compete with any in the trade.

Indications are not wanting that already the advent of the autumn season

is at hand. Soon the winds will have a whisper, gradually rising to a loud expression as the autumnal procession moves onward, that will prophesy death for much of what is now so bright and beautiful. Already I am gathering about me Snowdrops, and Crocuses, and Tulips, and Aconites, and other spring-flowering bulbs, to be ready for planting when the inevitable desolation comes. And so, whether it be the glare of summer, or the darkness of winter, there is always some form of beauty coming on to gladden the eyes of the sons of men, and to touch the human heart and cause it to vibrate with the highest joy.

"More servants wait on man  
Than he'll take notice of. In every path  
He treads down that that doth befriend him,  
When sickness makes him pale and wan.  
Oh, mighty love! Man is one world, and hath  
Another to attend him."

Quo.

### REMARKS ON BRUGMANSIA SUAVEOLENS.

THIS fine old plant, when covered with a profusion of its large, pendulous, bell-shaped, fragrant, white flowers, is one of the finest ornaments of our conservatories. It is of the easiest culture, which is an additional recommendation in its favour. It is freely propagated from cuttings of the young wood; or the eyes taken off a one-year-old shoot, like those of Vines, and put in sandy soil in bottom heat, will readily strike.

It can be grown and flowered well in large pots or tubs, but being a great feeder, and requiring a good soil and plenty of room to develop itself, it is only when planted out in the borders of a conservatory that it can be seen in all its beauty and grandeur.

A compost of good rich loam and peat, in equal portions, with a little sand, suits it admirably, provided the border be of good width and tolerable depth, and well drained. Young plants when first planted in a border of good soil must not be supplied too liberally with water, for they will generally make very luxuriant growth as they root into the fresh soil. Old plants should, however, have a great supply of water during the summer months, and particularly when the flower-buds are forming. Young plants should be kept to a single stem, to the height of 4, 6, 8, or more feet high, according to the size of the structure or situation they are in; they should then be made to form heads, and ample room should always be allowed for the branches to spread out properly.

Plants grown in this manner, when in full flower, are really very grand objects, and are well deserving a place in every conservatory that can afford space for their growth. After the plants have done flowering, water should be gradually withheld that the wood may get matured before the winter. During the winter plants in borders will scarcely require any water, as they should be kept then as dry and torpid as possible. The plant bears pruning well. Any time during the winter the shoots should be cut back, regulating the operation according to the shape and size the plants may be required to attain. As soon as the buds begin to swell in March, the border should have a good soaking of water so as to moisten the whole of the soil as far as the roots extend. No more should then be given until the young growth begins to advance, when water should be given freely and regularly, increasing the supply as the plants progress in growth. In hot weather an occasional syringing with clean water will be very beneficial to them. The great space required for the growth of this plant in the borders of a conservatory is no doubt an objection to its admittance into small houses; but for these it can be grown sufficiently large in pots or tubs by pruning the plants well in, and shaking out every season as

much of the old soil from the balls as can well be done, and potting afresh in new compost.

These plants can be started into growth in vineries, and only be taken to the conservatory when coming into flower, and after done blooming they could be removed to some other place; thus they would only occupy space in the conservatory while in flower, and few plants are more ornamental than they are when in full bloom.

*Stourton.*

M. SAUL.

---

### SALVIA PATENS.

How grand this has been! and even now, September 18th, it forms one of the most effective beds in our flower garden. All blue beds here pale before the *Salvia*—Purple King looks weedy, *Ageratum* extremely dull—in fact, for effect, it is almost unsurpassed. The last few years it has not been used much for bedding-purposes; the rage for novelty has, to some extent, put a good many things we once highly prized into the background. I should like to know whether *Salvia patens* has generally done well this season; if so, I fancy it might be employed far more extensively another year. We lift all our old plants and pot them, keeping them in a cold house, and in spring introduce them into some of the forcing-houses, where they throw up a good crop of cuttings, which strike freely at that season. We also save all the seed possible; seedlings make first-class plants for bedding, and if sown early in March, in heat, will make strong plants by the third week in May, and will commence blooming early. This *Salvia* requires to be bedded out rather thickly, and kept well pegged down at the outset; when the bed is well covered it may then be allowed to throw up its spikes of azure blue, which are surpassingly brilliant on a bright day.

*Wrotham Park.*

JOHN EDLINGTON.

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### REMARKS ON FRUIT-TREE CULTURE.—No. 2.

IN my last I observed that the best season for planting is October, and as early in the month as possible; and although the operation may be performed at any time from then to the beginning of April, it is very certain that late-planted trees are, with every care and trouble that can be bestowed upon them, invariably far in the rear of the early-planted ones, and, to my thinking, the reason is very obvious—because at the beginning of October the principle which vegetable physiologists call the descending sap is in motion, and the effect of this is, as I have proved from repeated observation, to produce an abundant emission of rootlets; and the mere act of lifting the tree, if carefully performed, does not interfere with this principle, and therefore the tree will commence at once to re-establish itself by striking out roots and otherwise preparing for the call which will be made upon its energies with the returning spring. Such a tree, for all practical purposes, is a good season in advance of one which is planted after the time when the roots will be called upon to perform their functions, and assist in the future development of the exterior branches. In fact, when planted so late, the tree necessarily becomes partially exhausted in the mere struggle for existence; so that by the time the roots and branches can begin to act upon each other, the tree is only able to make a good autumn growth. Although much may be done with this by careful treatment, it rarely ripens perfectly, and is often of a pithy or spongy nature, and not nearly so well to work upon in future operations as the wood which is formed in the

spring, and consequently requiring a much more severe heading-back to the firm and solid wood than would be necessary in the case of trees planted early in October, which by making a good spring growth would leave the operator at liberty to check the autumn growth, and divert the sap which produces it for the purposes of strengthening the permanent shoots.

It is necessary here to make a few remarks as to the preparation of the tree. When we plant trees in a situation intended to be a permanent one, we plant them at such a distance apart as will allow space for the future development of the branches; but it is very certain that for some years they may be grown without any detriment whatever in a much more confined space, in which, in fact, they may be brought up to the bearing point before being permanently planted out; and as the operation of lifting would be equivalent to a careful root-pruning just at the time when it would probably be most needed, and also, as the trees would then be placed in an entirely new compost, it is only reasonable to expect that they would commence to pay for the enlarged space at once, which space may previously have been advantageously employed for other purposes.

Now this work of preparation is one which pays well for a careful attention, and is worthy of a few general remarks. In order to carry out the system thoroughly, it is necessary to commence at first with maiden trees, or in other words, such as have only made one year's growth from the bud or graft. They should be planted in nursery-beds in October, but should not be headed-back at the time of planting; this should be left until the beginning of March, at which time cut the shoot back to within five or six buds from the base. This first heading-back is against nature, but as the tree is destined to artificial management, and must be kept within certain bounds, it is necessarily severe; but afterwards the operator should endeavour to avoid the use of the knife as much as possible, and this can only be effected by checking the strong shoots in their young state, and, either by spurring or the entire removal of superfluous growth, equalising the number and the strength of the permanent shoots.

In the case of pyramids and standards, this process may be repeated from year to year without its becoming necessary to resort to the use of the pruning-knife; but in the case of espaliers and trained trees for the wall, it will be necessary to head back in the second year, but not so severely, in fact from 9 to 18 inches long, according to the strength of the shoots. Disbudding must be attended to early, because at this stage spurring for fruit is of no use, and it is only necessary to have a sufficient number of shoots to start a well-furnished tree, after which, if the summer work is timeously and carefully attended to, there will be very little use for the knife in winter, and that merely by way of removing the immature extremities of the shoots, or shortening those of very long growth, such as is sometimes seen in Peaches and Nectarines; but at the same time, since the effect of cutting well back is to produce a stronger growth of wood, it may become necessary, when a tree requires to be better furnished in any particular part, to head certain shoots back, so as to supply the deficiency. I do not wish to be understood as decrying the proper use of the pruning-knife, but I do say that the indiscriminate slaughter which I have seen inflicted upon trees at the winter pruning, is, when we consider their sensitive nature, painful to witness, enhanced by the reflection that it is entirely unnecessary if only trees are kept clean and carefully managed through the summer.

Six years of preparation in nursery-beds is not at all too much, and the first three years the trees may stand tolerably close together, but should then be all lifted and replanted at greater distances, and when this is done all roots having too much of a downward tendency should be removed, for reasons which will be shown hereafter. I cannot see any reason why nurserymen, whose proper busi-

ness it is, should not be able to produce fruit trees which by careful lifting and transplanting would commence bearing at once; such trees would be well worth double and treble the money which they now ask for trees of the same age, but which have been constantly headed back to keep them within bounds, making fine heads it is true, but giving a very knotty starting point for the future development of the tree, which is often shown by a peculiar enlargement of the stem at that point, caused by the endeavours of the tree to case the knots over with new wood, in which, indeed, it is often successful; but the germ of decay must be left in the interior. Trees in a state of nature are never headed back except by mischance, and although we subject them to an artificial management, and bend them as it were to our will, there are certain laws which we cannot ignore, and to which we in our turn are compelled to submit; and amongst these laws is that to which I have before referred, of the reciprocal action between the roots and branches, which, to my thinking, very clearly points to the great mistake of constantly heading back young shoots, by which utility and productiveness are sacrificed to an arborescent growth for the crotchet of symmetry.

JOHN COX.

#### NOTES OF THE FLORAL AND FRUIT COMMITTEES.

A MEETING of these was held at South Kensington on the 19th of September, and though the entries were not numerous, several objects of interest were staged. A first-class certificate was awarded to Mr. Shortt, of Fulham, for *Lomaria Bellii*, a new and beautiful variety; and also a label of commendation for *Litobrochia tripartita*, a very handsome variety. A first-class certificate was given to Mr. Earley, gardener to F. Pryor, Esq., of Digswell, for *Polystichum angulare* var., a very handsome and robust Fern. A special certificate was awarded to Mr. W. Howard, gardener to J. Brande, Esq., Balham, for *Dendrobium formosum giganteum*, having large and very showy white flowers, with orange and yellow throat. Mr. Howard also had a flowering specimen of the beautiful *Ionopsis paniculata*, which looks like a very delicate *Oncidium*; and *Cattleya bicolor*, also in flower. Mr. Wills, of Oulton Park, Tarporley, had a cut specimen of a handsome *Oncidium*, and also *Cattleya* species (Weir). Second-class certificates were awarded to Mr. H. Legge, Marsh Side, Edmonton, for seedling Dahlias, Golden Emperor, bright yellow, a finely-shaped flower of good substance, though a little low in the centre as shown; and Lilac Perfection, a small-sized, but well-shaped flower, in colour bright lilac shaded with crimson, good substance, and close high centre. The same raiser also had Mr. Gibson, a small, but well-formed bright scarlet; and Lizzy, a delicate-ground flower, shaded and slightly tipped in the centre with lilac. Mr. Pope, of Chelsea, had a seedling fancy Dahlia of great promise, named Fanny Sturt, bright crimson, tipped with white; a flower of good substance and outline, and one certain to be very useful to the exhibitor. It has been purchased by Mr. Turner, of Slough, a circumstance suggestive of high character on the part of the flower. Mr. Turner had the following seedlings:—Bullion, golden yellow, with great depth of substance, close centre, and fine outline; Freemason, rosy purple, a flower of fine substance and outline, and close high centre; Princess Alice, a deep-purple-edged, light ground flower, of good form and outline, and close centre; Sportsman, orange scarlet, with crimson centre and shading, small, but very promising; Le Domino Noir (fancy), crimson, heavily tipped with white, a finely-formed medium-sized flower; Fair Imogene, bright ground, tipped with lilac, very distinct and full, a beautiful flower; Epau-

lette, golden buff, tipped with purple, great depth of substance, large and full, but scarcely in condition for exhibition. It promises to be one of the best flowers of the season. Lastly, Arrah-na-Pogue, pale lilac, was a very beautiful shade of colour, large, and of good outline. A second-class certificate was awarded to Mr. G. Rawlings, Bethnal Green, for bedding Dahlia Sambo, dark crimson; large, close, well-shaped flowers, very free blooming, and dwarf close habit. A good dark lilac variety of bedding Dahlia also came from Mr. Turner. Some certificates were awarded to Mr. Turner's flowers, but we were unable to glean the names of the varieties so favoured.

Among the fruits staged for the inspection of the Fruit Committee were the following from Mr. J. B. Whiting, of the Deepdene, viz:—Ingram's Golden Russet, a very good-looking fruit; Thompson's Pear; and Fondante d'Automne; also a dish of very fine Cox's Pomona Apples. From Mr. Joseph Morgan, of Torquay, came a seedling Pear, named South Devon Beurré, a small early fruit; but it had become damaged in travelling. From Mr. Thomas Rivers, of Sawbridgeworth, came several seedling Peaches, viz.:—No. 88, called Princess of Wales; No. 98; No. 134, very fine fruit; 64, fruit with rich golden hue, and No. 44; also fruit of Reinette van Mons, and the old Golden Pippin Apples, from trees in pots in an orchard-house; and Plums, Belle de Septembre, or Autumn Beauty, and Rivers's Autumn Compôte, the last a large oval-shaped fruit, the skin of a bright red colour. It is said to be of first-rate quality for preserving-purposes. From Mr. Turner came Raspberry Belle de Fontenay, a high-flavoured late kind, and some fine Cox's Orange Pippin Apples.

There was some sharp competition with Peaches and Plums for some prizes offered by the Fruit Committee. In class A., Mr. J. B. Whiting was first, Mr. Turner second, both with Walburton Admirable Peaches. In class B., Mr. Turner was first with a dish of Stanwick Nectarines; second, Mr. Westcott, of Dulwich House, with Pitmaston Orange; the same exhibitor also had Violette Hâtive, the fruit of each variety being small. In class D., Mr. Westcott was first with Late Admirable and Walburton Admirable Peaches; Mr. Cox, of Cornbury Park, being second. With three dishes of Plums, Mr. J. B. Whiting was first, with fine fruit of Reine Claude de Bavay, Ickworth Impératrice, and Coe's Golden Drop; and Mr. Earley second, with Autumn Gage, Coe's Golden Drop, and Impératrice. Mr. Cox, of Redleaf, had Impératrice, Black Diamond, and Coe's Golden Drop.

Mr. Smythe, gardener to Lord Sondes, Thetford, staged two collections of Apples and Pears, twenty dishes of each. Among the former were good fruit of Reinette du Canada, Hawthornden, Cellini Pippin, Dr. Harvey, Gloria Mundi, Emperor Alexander, Ribston Pippin, King of the Pippins, Scarlet Pearmain, Royal Russet, Golden Russet, and Fearn's Pippin. Of Pears, there were Duchesse d'Angoulême, Beurré de Rance, a large Bergamot, said to be Gansel's, but not true; Easter Beurré, Beurré Diel, Beurré de Capiaumont, Winter Nelis, and Chaumontel. Mr. William Paul also had a collection of Apples from his nurseries, comprising Hoary Morning, Round Winter Nonesuch, Lord Suffield, Northern Spy, Scarlet Admirable, Wadhurst Pippin, Cox's Orange Pippin, King of the Pippins, Golden Noble, Margil, Cellini, Wellington, Tower of Glammis, Tibbett's Incomparable, Dutch Mignonne, Cockle Pippin, Claygate Pearmain, Newtown Pippin, Court-Pendu-Plat, and Winter Hawthornden.

Despite the hot and scorching weather, Mr. Paul contributed some boxes of cut Roses, that had a delightful freshness about them, though somewhat small. There were really very creditable examples of H.P.'s. Madame Victor Verdier, Triomphe d'Alençon, Madame Caillat, Victor Verdier, George Prince, Maré-

chal Vaillant, Jules Margottin, Charles Lefebvre, Auguste Mié, Beauty of Waltham, and Jean Touvais; Tea, Souvenir d'un Ami, Gloire de Dijon, Souvenir de Elise Vardon, and Madame Falcot; Bourbon, Souvenir de Malmaison, and Noisette Celine Forestier.

R. D.

## STRAWBERRIES.

I HAVE read the articles on Strawberries by Mr. Saul and Mr. Tillery in the September *Florist*. They have given the main reasons of the failures this year. These are not to be attributed entirely to the demolition of blooms by spring frosts, but also to the lack of water after cropping and after planting in 1864. The Strawberry bloom here was quite a floral scene; but I find that in many places the plants did not bloom at all. Why was this? The old plants were burnt up in 1864, and the runners were taken too late to form crowns; or, not being watered or mulched to keep the ground moist, the rootlets of the young plants were burnt up as soon as they were made. Mr. Saul says the failure was owing "to the long continuance of very hot dry weather;" and Mr. Tillery says, "The greatest success in Strawberry-growing in dry seasons can only be obtained by watering well, and mulching afterwards to retain moisture." To these assertions I quite assent. One, however, of the grand wards in the key of success, as regards new plantations, is to get them in early, so as to be established before winter sets in. In hot seasons, like the last and present one, both the worked and new plantations require much water. I have had two men employed this week (preceding September 17th), in watering Roses and Strawberries. Success next year, in both cases, mainly depends on this. September is the autumnal root-making month; but how can plants make roots in dry soils, in such weather as we have had, without a deal of water to cool the land, which here is as hot as a fryingpan? The market gardeners near London grow Strawberries on such a large scale, that they cannot water them; but there is no excuse for small holders. Peaches, also, both under glass and out of doors, fail for want of water. The leaves are ruined by red spider, and the fruit is dwarfed for want of water at the roots. Plants take up their food in solution; but how can they do this when the earth is as hot as a salamander, and baked as hard as a Bath brick?

As market gardeners cannot water their Strawberry crops, it seems to me that they should grow sorts that are so strongly foliated as to protect the roots. They want good croppers, and such as bear all large fruit, or heavy crops of saleable fruit. Moreover, they want sorts that run plentifully and early, and are quickly established. I recommend, to such as do not know them,

*Sir Joseph Paxton*, early, handsome, all large fruit, and a most vigorous plant.

*Eclipse*, early, handsome, good, and excellent plant. The fruit is medium-sized and abundant.

*Rivers's Eliza*, delicious, a most abundant bearer, medium-sized; sure cropper, and the best specimen of a Strawberry plant.

*Empress Eugénie*, fine cropper, all large fruit; stalwart plant.

*Ne Plus Ultra* (De Jonghe), hardy, strong plant, great cropper, all large fruit; fair flavour.

*Frogmore Late Pine*, large, handsome, delicious, late, a sure setter, great cropper, all large fruit; fine strong plant.

*Wonderful*, great cropper, delicious, all large fruit, late; hardy plant.

These are all firm, or tolerably firm. Of old sorts, superseded here by the

Frogmore Pine, I should think Elton Pine to be a good sort for market gardeners.

It is plainly of no use for market gardeners to keep sorts that will not defy black frosts, and that have not a sufficient quantity of foliage to cover their blooms mainly from the destructive spring hoar frosts. Taking *everything* into consideration, the Royal Hautbois, Rivers's Eliza, Wonderful, Eugénie, and Frogmore Late Pines are the five best that I have ever had. If to these five you add Sir J. Paxton, Eclipse, Bicton White Pine, the Scarlet Pine, John Powell, and the old Red and White Alpines, you will have a very good lot of Strawberries, and all kinds of flavour.

Eliza, Wonderful, and Frogmore Pines are gaining ground in this country, even with the Queen-growers, who have signally failed these last two seasons.

To return to watering. It is of no use watering plants unless you give sufficient to touch all the points of the roots; nor should water be confined to the plants, it should be poured as freely over the space between them. After every picking I water the rows picked. This enables the plants to complete their several averages. In hot dripping summers, so much watering is not needed. Clay lands, in which for a while the plants are watered by capillary attraction, do not at first need so much water as our chalky and sandy lands, but when they are once dry no amount of water that we can give will be of any avail. You must never allow the soil in the fruiting season to become dry. You must establish plenty of pumps, and give the men extra pay and some beer, and then you will have good crops of Strawberries, Peaches, Roses, and other things. Beer and extra pay will drive the men; and "aqua pumpaginis" will, with a West Indian sun, drive the fruits and flowers in well-prepared lands.

I have here on trial, Dr. Hogg, a fine healthy plant; Cockscomb, ditto; and Glory of Westerham. These have been partially tried under unfavourable circumstances, and they are both good—viz., Mr. Ingram's Fairy Queen and No. 10. The latter I think will prove a fine late variety.

Among the rejected Strawberries that I have had in my hands are the following:—

1. FIRST-RATE SORTS, BUT NOT SUITABLE TO MY SOIL AND SITUATION.—British Queen, Carolina Superba, La Constante, Filbert Pine, Myatt's Pine Apple, Hendries' Seedling, Rifleman (Ingram's), La Chalonnaise, Crimson Queen, Magnum Bonum, and Lucas. Leaving out La Constante and Filbert Pine, all the others are of the Queen line. 1, 7, 8, and 10 especially dislike chalk, and the severe valley hoar frosts in the spring. 2, 9, and 11 did the best, and are more suitable for general lands. 1 and 3 succeed best in clay, or deep rich loams. In such lands they do not mind severe cold. A northern aspect is better for them than a southern. If plants can be got in early, they do best as annual plantations. In some lands they will crop well for two or three years.

2. GOOD STRAWBERRIES REJECTED BECAUSE THEY ARE NOT SO GOOD AS RIVERS'S ELIZA, WONDERFUL, AND FROGMORE LATE PINE.—Alice Maude, President, Trollope's Victoria, Adair, Prince of Wales (Ingram's), Marguerite, Sanspareil, Eleanor, Elton Pine, Sir C. Napier (the last three are, in wet seasons, the superacetate of potash, and are superseded in all respects by the Frogmore Pine), Sir Harry (two sorts), Ne Plus Ultra, Patrick's Seedling, Le Baron, Triumph, Marquise de La Tour Maubourg, Bonté de St. Julien, La Vineuse de Nantes,—late, hardy, good cropper, level berry; and only rejected because it exposes its beautiful snow-flake trusses above its stalwart dense green foliage, and liable in valleys to be cut up by the spring hoar frosts. The above are honest sorts that have much good about them.

The following Hautbois sorts are good—but they have been superseded here by Rivers's Royal Hautbois, a great and sure cropper—namely, the Black Hautbois, very rich, but too small in berry; the Monstrous Hautbois, and Belle Bordelaise. The last is said to be a cross between the old Hautbois and the Alpine—two stubborn races that have never yet been broken into!

*Tarrant Rushton.*

W. F. RADCLYFFE.

## NEW FRUITS AT THE SAWBRIDGEWORTH ORCHARD-HOUSES.

PERHAPS one of the greatest treats the lover of fruit culture can find is to visit the orchard-houses of Messrs. Rivers & Son, at Sawbridgeworth, which are now in their most attractive condition. We have already made frequent visits to this establishment, and have never come away without being not only wiser than we went, but deeply impressed with the wonderful field which has yet to be explored in fruit culture. For some years past Mr. Rivers, sen., has addressed himself to the work of originating new varieties of fruits which should supply the deficiencies of those with which our gardeners have been so long familiar. His first attempt was to obtain varieties either very much earlier, or very much later than those already in cultivation; and, reasoning from a commercial point of view, in securing a crop of fruit a week or ten days earlier than it is customary for the ordinary varieties to appear in the markets, the fortunate possessor of such gains must necessarily obtain an advantage over all other cultivators. This has been strikingly illustrated by the Early Prolific Plum, which Mr. Rivers raised now many years ago. This is well known to be, if not the earliest, at least one of the earliest, Plums in cultivation. When Mr. Rivers saw what the future must be, he attempted, but very unsuccessfully, to induce large market gardeners and orchardists to plant this Plum on an extensive scale, and thereby secure the supply of the home markets before the foreign importations commenced, and before the old varieties of home fruit were nearly ready. Mr. Rivers pressed his views in vain, and the large stock of young Early Prolific Plum trees which he expected would have been bought up with avidity was left on his hands, much to his disappointment. Great, however, was his faith in the correctness of the views he had adopted; and seeing the public would not accept the advantage he offered he secured it for himself, and the trees that he could not sell he planted in rows in his own grounds. How many thousands of bushels of fruit these trees have since yielded, and how many hundreds of pounds sterling that fruit has since produced, we are almost afraid to say; but true it is that for some years past the first Plums to be found in the streets of London are Rivers' Early Prolific, and we believe the supply comes mainly from these trees to which we have referred.

This is one illustration of the advantage of procuring varieties of fruit which can be brought to market when the great mass is not in season; and it is to attain this end that Mr. Rivers has devoted so many years to the acquisition of such desiderata, and he has been beyond measure successful in arriving at the desired result. This season has witnessed the realisation of the most sanguine expectations in new varieties of the Peach. For many long years the Red Nutmeg and Early Anne were the earliest and best of which we could boast. Then came the two small but nice varieties, Acton Scot and Springrove, but neither of them was such as ardent fruit-growers could be satisfied with. Then we had from across the Atlantic a new race in the form of the Early York

which Mr. Rivers introduced a few years ago ; and from this, manipulated in the most extraordinary way with Nectarines, Clingstone Peaches, and the most heterogeneous and anomalous alliances, Mr. Rivers has succeeded in raising a number of varieties, some of which in earliness and others in excellence of flavour far surpass anything already in cultivation. We have had the opportunity for the last two or three years of watching the development of these ; and now, after repeated trials and comparisons, the following have been selected from a large number, all of which are good.

The first is EARLY ALFRED, raised from the seed of Hunt's Tawny Nectarine ! Singular fact ! It is a Peach of the ordinary size, rather larger than otherwise, and marked with a deep suture that is rather higher on one side than the other. The skin is remarkably tender, pale straw-coloured on the shaded side, and somewhat mottled with bright carmine on the side next the sun. The flesh is white, with the jelly-like transparency of that of a Pine Apple, perfectly melting, richly flavoured and vinous, having an exquisite briskness that excites the salivary glands, and cleans instead of clogging the palate.

This delicious Peach ripens early in August.

THE DAGMAR is another of those exquisitely flavoured Peaches, not quite so large as the Early Alfred. It is the second generation from the Early Albert, another excellent variety raised by Mr. Rivers. The fruit is round, and marked with a shallow suture, which is deepest at the apex. The skin is very tender, more than usually downy, of a pale straw colour, almost entirely covered with minute crimson dots, so dense that they almost form a solid mass of colour ; but here and there small patches of the yellow ground colour show through and give the appearance as if the fruit were mottled with yellow. Flesh white, with that gelatinous appearance that the whole of these new sorts possess ; it is so tender as to melt entirely away in the mouth, and the flavour is very rich and vinous. This ripens about the 10th of August.

ALEXANDRA NOBLESSE is a noble Peach, and a great gain—a great gain in many ways, for it is of the largest size, and has all the peculiar richness of flavour of the old Noblesse ; but, unlike that variety, it has glands on the leaves, and is never subject to mildew. It is a remarkable fact, which we should like to have explained on physiological principles, that almost all the Peaches and Nectarines that have glandless leaves are subject to mildew.

This excellent variety was raised from the old Noblesse, and, as we have already said, is of the largest size, round, and marked with a deep suture. The skin is covered with a rough down, and is quite pale without any trace of colour upon it. The flesh is white, even to the stone, and is very melting, juicy, richly flavoured, and vinous.

A very handsome and excellent Peach, which must take the place of the old Noblesse. It ripens early in August.

DR. HOGG.—This is also a grand early Peach, both for its size and the excellence of its flavour. It differs, however, from all of the preceding in not having that very melting flesh that they have, but one more firm and solid. In this respect it has a great advantage, as it renders the fruit more portable and not so subject to injury from transmission to a distance. As a Peach, therefore, for all establishments where the fruit is grown for sale, or sent by public conveyance, this will be invaluable ; no other variety, that we know, possessing these qualities, combined with such richness of flavour and so early.

The fruit is large and round, with a very distinct suture, which is deeply cleft at the apex. Skin thin but tough, lemon-coloured, dotted with crimson on the shaded side, and with a faint crimson cheek next the sun. Flesh yellowish white, somewhat firm but melting, with a rich full sugary flavour,

which adheres to the palate notwithstanding its fine briskness; it is very deeply stained with red at the stone.

This ripens about the 10th of August, and is the largest early Peach known. As an exhibition variety, it will be in high repute on account of its size and remarkably full flavour; and for market purposes, its earliness, size, and the ease with which it bears carriage, will render it the most valuable Peach in cultivation. The tree is a very strong grower, remarkably vigorous and healthy, and bears immensely. It was raised from a very hardy Peach which Mr. Rivers procured in Brittany, called *Pêche Deniaux*.—(*Journal of Horticulture*.)

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### IN MEDIAS RES.

SAUNTERING the other day through the pleasant grounds of the Royal Horticultural Society at South Kensington (a distinguished *littérateur* has recently suggested that these gardens should be set apart as a cemetery, seeing that they have to all appearance been designed for that purpose),—I was intercepted, and like the ancient mariner, held in somewhat unwilling audience by a fair correspondent, who pleaded with me to give her, through the pages of the *FLORIST AND POMOLOGIST*, a list of spring-flowering bulbs, such as Hyacinths, Tulips, Crocuses, &c., of the cheap and easily accessible kinds, but which were to be at the same time “worthy of cultivation.” I suggested the catalogues of Messrs. Paul and Cutbush; but this resource was instantly repudiated. My vanity was flattered by being informed that I knew well which were the best of the cheaper varieties, and that I must do the bidding of the fair *femme sole*, who would “take no denial.” I was also requested to add “cultural hints,” in the simplest form in which they could be put. Thus to the task.

Her talk of sad experience as a grower was but as an echo of what has reached me before. All was vexation of spirit, if not vanity, for there had been much pains taken, and but poor results. Many of the subjects she sought to cultivate had plainly been killed by kindness—a few, for want of the requisite knowledge. In reply to my remark, “Of course you grow Crocuses?” it was said, “Yes, but they have always been so unsatisfactory. I have hitherto had them in pots and boxes (out of doors); but what with the frost and the cold spring winds, they have never bloomed to please me, and when I have attempted to grow them in-doors I get all foliage and no flowers. Last spring those out-of-doors threw up their buds, but never expanded into flowers, the cold spring withered them up.” And so we parted; and as I walked away I found myself repeating the lines—

“Is the flow’ret’s sleep eternal,  
When its cup,  
Folded up,  
Waits the breezes vernal?”

And I thought it possible that my fair friend might yet see the “folded cups” of her Crocuses unwrap themselves under the genial influence of the “breezes vernal” and the warm spring sunshine, and disclose such beauty and freshness, as not only to crown her labours abundantly, but to awaken in her soul something akin to the gentle humility of this lovely atom in the wondrous creation of the Great Father of all.

For her yellow Crocuses she should select Cloth of Gold; for white, Queen Victoria and Mrs. Beecher Stowe; for striped, Sir Walter Scott and Duchess of Sutherland, a small but very beautiful heavily striped flower; and for purple or blue, David Rizzio and Ne Plus Ultra, this last having an edging of

white. Her boxes must be refilled with good fresh soil, and planted by the end of October. The surface of the soil should be quite  $1\frac{1}{2}$  inch below the top of the box. The box must then be filled quite full of fine coal ashes, raised in the centre to throw off the wet; and by-and-by when the balmy spring days come round, if these ashes are gently cleared away, it will be found that the bulbs have sent up strong shoots about 1 inch in height, from each of which will surely emanate a plurality of fine blossoms. Should severe weather by chance ensue, some simple means of defence can be extemporised to meet the necessities of the case.

And then, respecting Hyacinths, I counsel my correspondent to grow none of the cheap double kinds, and therefore I shall not recommend her any. For her half-a-dozen glasses I suggest Mimosa, dark, and Grand Lilas, light, single blues; Robert Steiger, deep red; Duchess of Richmond, deep pink; and L'Ornement de la Nature, or Emmeline, delicate waxy blush; these three are classed as single reds, and Queen Victoria or Grand Vainqueur as single whites. The twelve for pots should be Baron Van Tuyl, Charles Dickens, Orondates or Regulus, and Prince Albert, single blues; Monsieur de Faesch, Madame Hodson, Sultan's Favourite, and Tempel van Apollo, single reds; Cleopatra, cream; Themistocles or Madame Talleyrand, pure single whites; and Heroine and King of Holland, single yellows.

To grow these Hyacinths in glasses, clear spring or fresh rain water can be used, which should merely be allowed to touch the base of the bulb. Rain water should not be employed unless it is quite fresh, or otherwise it soon becomes putrid, and causes the roots of the bulbs to decay. Two or three lumps of charcoal put into each glass about two days before the bulbs are placed in them, in order to allow of its becoming thoroughly saturated, and sinking to the bottom, will keep the water from becoming rank, and prevent the necessity of its being often changed. Place the glasses in a dark and rather cool situation until the roots have nearly reached the bottom of the glasses, when they can be brought to the light. The most airy and lightest part of a sitting-room—but as far from the fire as possible—is the best position for them. When the bulbs have been in the water about twelve or fourteen days, the base of each should be examined, and any decayed or slimy substance removed. As the bulbs make growth evaporation will take place, therefore the water should be replenished at intervals, care being taken that that which is supplied be not lower in temperature than that in the glass.

The foliage of the plants should be kept scrupulously clean from any dust or dirt; a small piece of sponge will remove this with but very slight trouble. When the flower-spikes begin to show colour, the glasses should be kept filled to the brim with water, as at the period of flowering the bulbs absorb a great quantity of moisture. The flower should be removed from the action of the mid-day sun, as the bloom will thus be considerably prolonged.

Successful cultivation in pots will depend in a great measure on the quality of the soil used for the purpose. It should be composed, one half of good fibrous loam, the other half of equal proportions of well-rotted dung and leaf soil. The pots should be from 5 to 6 inches in diameter. About two-thirds of the bulb should be buried, and the soil must not be pressed too hard about the base of the bulb, or in the act of rooting the fibres will be unable to penetrate the soil, and the bulb will be forced upwards. After planting the pots can be placed in a cool, dry, dark cellar, or out of doors, in a spot somewhat screened from wet, and if the pots can be stood on tiles or slates, so much the better. They should have a thorough soaking of water, and then be covered with fine ashes to the depth of from 2 to 3 inches. If planted about the end of October they will have made shoots 1 inch long by the beginning of March,

and they can then be arranged in the conservatory, or wherever it is intended they shall flower.

I was requested to name twelve varieties of early Tulips, three of them to be double varieties. The double flowers should be the common Tournesol, yellow Tournesol, and the bright crimson Imperator Rubrorum. Duke of York, violet, edged with white, can be substituted for the yellow Tournesol, should the price appear to be too high. The first named is the best and most showy of all the double flowers; but it is very scarce and dear this season. Of single flowers two yellow varieties should be used, Golden Prince and the striped Pottebakker, or, better still, the gorgeous Marquis de Wessenrode, should the price admit of its being employed. Then White Pottebakker, pure white; Queen Victoria, rose; Vermilion Brilliant, brilliant scarlet; Feu Rouge, scarlet, flamed with orange; Royal Standard, white and red striped; Keizers Kroon, red, edged with golden yellow; and Globe de Rigaud, pale violet, faintly streaked with white. Excepting the last two and Vermilion Brilliant, which is also very scarce and dear this season, these single varieties are very reasonable indeed in regard to price. Should better, or rather more expensive flowers be wished for, though it can hardly be supposed, even from the instructions I received, any bulb list can be searched for them; what I have given are well "worthy of cultivation." The soil and treatment should be the same as for the Hyacinths, their bulbs should be placed in a pot, and they should be quite covered by the soil. Let me entreat my fair correspondent *not* to attempt to grow any of these Tulips in sand, or moss, or water within doors; but to bloom *all* of the varieties she intends to cultivate in-doors, removing them there, or at least to a warm sitting-room, just as the buds show themselves.

I trust that what I have here written will meet the requirements of my correspondent; if it does not, I shall take pleasure in assisting her to the utmost of my power in a subsequent number of the FLORIST AND POMOLOGIST. It may be that it will come as a "word in season" to others who are equally desirous of receiving some such hints for their future guidance. If these remarks should tend in however small a degree to minister to the high enjoyment which the successful cultivation of "these stars of earth—the golden flowers" invariably imparts, the writer will feel that he has "not laboured in vain."

BARON VAN TUYLL.

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## ESCRICK PARK,

THE SEAT OF THE RIGHT HON. LORD WENLOCK.

THIS beautiful place is situated six miles south of the city of York. The country for miles around is flat, but well wooded. At the time of our visit (the 11th of September), the flower gardens were very gay and brilliant, notwithstanding the very heavy rains we had a short time previously. All the best "bedding" Geraniums are here very extensively used, and to enumerate all would be little less than furnishing a nurseryman's list. We shall, however, notice a few sorts that were very effective—and foremost amongst them were four large beds of Stella; these were very conspicuous objects amongst the blaze of colours about them. There were also four beds of Christine, very fine, but this variety has been very fine with ourselves this season, and in every garden we have seen. Helen Lindsay is not worth growing. There were several beds of François Dubois very fine; Madame Vaucher was good, but beginning to run too much into wood, as were, also most of the scarlets. Monsieur Martin and Roi d'Italie are both very effective in beds. Some beds of Verbena Venus, with Bijou Geranium mixed, were very good. Varie-

gated Geraniums were all good and very telling. All the gold-leaved kinds do in the gardens what gilding does in the drawing-room.

There are two flower gardens, one on gravel and the other on grass. The larger one is on gravel, and is more immediately under the windows of the mansion; the walks between the beds are wider than are generally seen in such gardens, thus affording room to inspect the beds well. We, however, must confess that we ourselves much prefer gardens on grass; and the one here, though much the smaller, pleased us better than the one on gravel.

Leaving the flowers for the pleasure grounds, which are extensive, we passed along a large ribbon-border. The back row of plants were Tritomas, which were very fine, and, backed as they were by a Yew hedge, showed to great advantage. Among dark-foliaged plants *Perilla nankinensis* and *Coleus Verschaffelti* were generally used; the *Coleus*, owing to the fine hot season, having done well. There is a Rose garden in the pleasure ground, bounded by Yew hedges; and from the growth the plants have made, Roses do well here.

Conifers have been very extensively planted in the grounds, and all seem to be doing remarkably well. *Wellingtonia gigantea* appears to be at home here from the remarkably healthy growth of the trees. There are two very fine specimens about 20 feet high, and well proportioned; one of them is a very handsome variety, being of a much deeper green than the generality of plants; the habit of the plant is also very beautiful and graceful. It is a variety which deserves to be largely increased. We saw a number of *Cedrus deodara* that were killed nearly to the ground by the frost of December, 1860; they have recovered wonderfully, and are making fine plants again. Of *Pinus excelsa* there are a number of specimens, but one in particular of more robust growth and better habit than the others. *Pinus insignis* was killed here, as in all other places in this part, by the frost of 1860. Of *Pinus pyrenaica* there are several very promising specimens. Of *Piceas* there are a great number of very fine specimens; there are several good plants of *P. nobilis*, also of *Nordmanniana*; there are good plants of *P. grandis*, *amabilis*, and *lasiocarpa*; between the two latter there is some resemblance, and some people consider them as identical, but the specimens are very distinct. There are very good specimens of *P. pinsapo* and *cephalonica*; and we noticed one of *Webbiana*, which was in fair condition, considering how liable this sort is to suffer from late spring frost. *Abies Morinda* is largely planted in the grounds, and all are doing well. We also noticed a nice specimen of *Larix Kæmpferi*, and a pretty little plant, *Thuja pygmæa*, a number of plants of *Thujopsis borealis*, and *Cupressus Lawsoniana*. The grounds contain many fine specimens of Cedars of Lebanon, some fine Yews, and good trees of deciduous Cypress, &c. *Rhododendrons* do very well here, as the appearance of the plants abundantly proved.

In the reserved ground, Mr. Mitchell, the very obliging and intelligent gardener, showed us a great number of young Conifers; there were a number of very fine young *Wellingtonias*, and a nice lot of *Picea nobilis*, also a quantity of the newer Conifers, which have been planted out two years, and stood the last winter unprotected, and may be regarded as hardy. Among them were nice plants of *Cryptomeria elegans*, *Sciadopitys verticillata*, *Thujopsis dolabrata*, *T. dolabrata variegata*, *T. Standishii*, *Retinospora obtusa*, *R. pisifera*, *R. pisifera aurea*, &c.

Having carefully inspected these recent additions to our ornamental trees, we next turned into the kitchen garden. We were very much pleased with the rooms for the young men who reside in the gardens; a high regard seems to have been paid to their comfort. The glass structures are numerous, and to go in detail through them would take up too much space;

we shall therefore merely confine our remarks to a few of the principal things which we observed. In the early vineries the Grapes were all cut, and the first house for next season's forcing was partly pruned. In the late houses there were very heavy crops of fruit. The Muscats in one house were very good. One house was all Barbarossa, and a beautiful sight they were; Mr. Mitchell fruits these chiefly on the rod system. In the pits we noticed a number of fine Melons, a variety of the Beechwood. In the Cucumber-house, the plants for winter-bearing were promising well. Nearly all the in-door Peaches were over; but the trees looked well, and have plenty of good wood for another season. We observed some fine young trees on the open walls. One large house contained a miscellaneous collection of stove plants and Ferns. In another house there was a fine lot of good specimen Azaleas, &c. Notwithstanding the long dry summer we had, the vegetables were everything we could wish; and here, and throughout the entire place, the highest order and good keeping were manifest.

We cannot conclude this imperfect notice of this fine place, without expressing our obligations to Mr. Mitchell, for his very great courtesy and kindness to us.

M. S.

## REPORT ON THE BEDDING PELARGONIUMS GROWN AT CHISWICK, 1864.

BY THOMAS MOORE, F.L.S., SECRETARY TO THE FLORAL COMMITTEE.

(Continued from page 202.)

THE most approved sorts are indicated throughout by an asterisk (\*), and the next grade by an obelisk (†).

### SERIES II.—ZONATE VARIETIES.

#### 3. FLOWERS SALMON OR FLESH-COLOUR.

*Auricula* † (Bull).—Moderately vigorous; leaves dark zoned; flowers shaded salmon, rather effective. It also proved free and good, deserving of an obelisk, as grown under glass.

*Aurora* \* (Hally).—Dwarf habit; leaves distinctly dark zoned; flowers free, flesh colour.

*Chione* (Rollisson).—Moderately vigorous habit; leaves with dark zone; flowers flesh colour with deeper centre.

*Enamel* (Hally).—Moderately vigorous habit; leaves darkly zoned; flowers of a deep salmony flesh colour with a white eye,

*Enchantress* (Bull).—Vigorous habit; leaves broad, with a dark zone; flowers deep flesh colour. Indifferent under glass.

*Ernest* (Bull).—Moderately vigorous habit; leaves with dark vandyked zone; flowers showy, of good form, deep flesh colour.

*Fanty* † (Bull).—Moderately vigorous; leaves with dark zone; flowers flesh coloured with deeper salmon eye, freely produced and showy.

*Madame Chardine* (Low & Co.).—Vigorous habit; leaves with dark zone; flowers flesh colour with deeper centre.

*Madame Lemoine* (Bull).—Moderately vigorous; leaves with an indistinct zone; flowers pale salmon pink.

*Prince of Hesse* † (Ingram).—Moderately vigorous habit; leaves with dark zone; flowers salmon pink with deeper centre.

*Prince of Wales* (E. G. Henderson & Son).—Moderately vigorous habit; leaves dark zoned; flowers salmon colour, paler at the edge.

*Princess Mary* \* (The Society).—Vigorous habit; leaves broad and flat with a very broad dark zone; flowers in the way of those of Prince of Hesse, shaded salmon pink, of fine form, and produced in good trusses. A seedling raised at Chiswick.

*Rosamond* † (Bull).—Moderately vigorous habit; leaves with broad dark zone; flowers free, the trusses compact, the blossoms deep salmon pink, of fine shape.

*St. Fiacre* \* (Salter).—Rather dwarf habit; leaves with a deep dull zone; flowers abundant, salmon pink, deeper in the centre. Also free, showy, and of the first quality as a pot plant.

*Souvenir du 8 Juin* † (Van Houtte).—Rather dwarf in habit; leaves marked with a dull zone; flowers freely produced, flat, and of good form, salmon pink, deeper towards the centre, which forms a small pale eye. This was only grown as a pot plant, and received an obelisk for its quality under glass.

#### 4. FLOWERS WHITE.

*Eugène Dufoy* (Carter & Co.).—Vigorous habit; leaves with broad dull zone; flowers blush white. Of no particular merit under glass.

*Flag of Truce* (Wills).—Vigorous habit; dark-zoned leaves; flowers blush white.

*Lady Blanche* (Salter).—Moderately vigorous habit; leaves with a dark vandyked zone; flowers blush white.

*Madame Cornelissen* (Salter).—Dwarf habit; leaves dark zoned; flowers white, with a broad salmon eye.

*Madame Vaucher* \* (Low & Co.).—Vigorous habit; leaves with dark zone; flowers in good trusses, white changing to blush. The most useful of the whites grown in the collection.

*Purity* (Bull).—Vigorous habit; dark zoned leaves; blush white flowers. It proved a shy bloomer under glass.

*Snowball* (Carter & Co.).—Dwarfish vigorous habit; leaves dark zoned; flowers white, in the way of Mrs. Vaucher, but the plants were not in character. It bloomed better in pots, but the flowers were set too close down to the leaves.

*The Swan* (Bull).—Vigorous habit; leaves with dark vandyked zone; flowers white, in large trusses, sometimes showy. Under glass it bore long-stalked trusses, and was in some states a rather desirable variety.

*White Perfection* \* (J. F. Chater).—Vigorous habit; leaves marked with a broad zone of dull brown; flowers blush white. Under glass this proved of the first quality, as indicated by the above mark; the flowers being pure white, of good shape, and thrown well up.

#### 5. FLOWERS WHITE OR PALE-COLOURED WITH SALMON EYE.

*Amelina Grisau* \* (Salter).—Moderately vigorous habit; leaves marked with a broad dark zone; flowers large, of fine shape, white, with a bright salmon eye. Altogether a very fine sort, with the colours bright and well-defined.

*Beauty* \* (E. G. Henderson & Son).—Moderately vigorous habit; leaves marked with a dark zone; flowers of very fine shape, white, with a salmon-coloured eye, forming an edging to the base of the petals. One of the best of the race.

*Bel Demonio* (Carter & Co.; Williams).—Vigorous habit; leaves with broad brown zone; flowers with salmon-coloured centre. It proved to be shy both out of doors and under glass.

*Display* (Williams).—Moderately vigorous habit; leaves with broad dark zone; flowers white, with salmon eye.

*Erin-go-Bragh* (Bull).—Moderately vigorous habit; leaves marked with a broad dark zone; flowers white, with salmon eye.

*Eugénie Mezard* \* (Salter, E. G. Henderson, & Son, Turner).—Moderately vigorous habit; leaves with a broad dark zone; flowers white at the edge, with salmon centre, showy, well-formed, and produced in good handsome trusses. This was received also under the name of Madame Rudersdorff. It was of the first degree of merit as a pot plant.

*Eva* (Bull).—Vigorous habit; leaves with broad dark zone; flowers white, with pink eye.

*Fascination* (Williams).—Moderately vigorous; leaves with a dull zone; flowers salmon, paler at the edges.

*François Desbois* \* (E. G. Henderson & Son).—Moderately vigorous habit; leaves with a dark submarginal zone; flowers white, with a bold, deep, salmon eye, freely produced. A good pot plant, but not equal to Amelina Grisau.

*Henri de Beaudot* (Low & Co.).—Vigorous habit; leaves dark zoned; flowers white, with deep salmon centre.

*Léonie Nivelet* \* (Van Houtte).—Moderately vigorous; leaves broad, marked with a dark zone; flowers of good form, white, with salmon eye, in fine trusses. It proved also to be a first-rate pot plant, with fine elevated trusses of salmon-flesh flowers, paler and whitish towards the edges.

*Loveliness* (Wills).—Moderately vigorous; leaves dark zoned; flowers salmon, with pale edges.

*Marie Labbé* † (Van Houtte).—Moderately vigorous; leaves with a dark centre or zone; flowers of fine shape, white, with a pink eye formed by markings at the edges of the petals near their base; it resembled Beauty.

*Mrs. Moore* (Wills).—Vigorous habit; leaves dark zoned; flowers white with salmon eye.

*Nelly* (Bull).—Vigorous habit; leaves with very broad dark zone; flowers white, with salmon eye. It proved a good free-blooming pot plant, in the way of Eugénie Mézard, but too much resembling it to be also required.

*Neptune* (Bull).—Vigorous habit; leaves marked with a dull zone; flowers white with salmon eye.

*Pauline* (Bull).—Vigorous habit; leaves marked with a broad black zone; flowers white, with salmon eye. Tolerably effective under glass.

*Pretty Polly* (Wills).—Moderately vigorous; leaves with a dark centre or zone; flowers white, with pink centre.

#### 6. FLOWERS ROSE PINK.

*Aglaia* (Salter).—Vigorous habit; leaves with broad dull zone; flowers of good shape, rose-pink, white at the base.

*Amy* † (Rollisson).—Vigorous habit; leaves with a dark vandyked zone; flowers in fine trusses, large, pale rose pink, with a white base.

*Chancellor* (Bull).—Moderately vigorous habit; leaves with an indistinct green zone; flowers rose pink, with a white base.

*Charmer* (Bull).—A good rose pink, paler than Madame Cassier. It was only grown as a pot plant.

*Eve* \* (Bull).—Of rather vigorous habit; leaves marked with a broad dull zone near the centre; flowers large, in large trusses, of fine shape, light rosy pink with white base. A very fine pale variety in the open borders, and of nearly equal merit as grown in pots.

*Flora* \* (Van Houtte).—Moderately vigorous habit; leaves with an indistinct green zone; flowers large, pale rosy pink or peach, white at the base, and of fine shape. A fine, large, pale peach-coloured sort, grown only under glass, under which conditions it was of first-class quality.

*Helen Lindsay* \* (Carter & Co.).—Of rather vigorous habit; leaves with a broad indistinct zone near the centre; flowers abundant, in fair-sized trusses, deep bright rose pink. A very lively and bright-coloured variety.

*Madame Cassier* † (Van Houtte).—Moderately vigorous habit; leaves broad and very flat, marked by a dark zone; flowers deep rose pink, with white base, and of good shape. Under glass it was of second-rate merit, and the leaves became indistinctly zoned.

*Minnie* † (Rollisson).—Moderately vigorous habit; leaves with a dark zone; flowers in good trusses, pale rose pink with a white base.

*Mrs. Whitty* (Carter & Co.).—Moderately vigorous habit; leaves marked with a dull, broad, unequal zone; flowers deep rose pink, white at the base. Much in the way of, but not so good as, Helen Lindsay.

*Rose Rendatler* \* (Downie & Co.).—Moderately vigorous habit; leaves with a dark vandyked zone near the centre; flowers lively rose pink, with a white base of good shape, and borne in compact trusses. A fine sort both for beds and pot culture.

*Roseum Nanum* (Salter).—Dwarf, free habit; leaves dark zoned; flowers of good shape, rose pink, white at the base. A useful free-flowering variety.

#### SERIES III.—MARBLED-LEAVED ZONATE VARIETIES.

*Dayspring* (Dixon).—Moderately vigorous habit; leaves with yellowish green radiating centre, and no dark zone; flowers deep scarlet. A rather pretty variety, and quite distinct in its foliage.

*Lady of Loretto* (E. G. Henderson & Son).—Moderately vigorous spreading habit; marbled leaves; flowers cerise scarlet.

*Pigmy* (Hally).—Dwarf habit; leaves marbled; flowers scarlet.

*Prince Arthur* (Hally).—Moderately vigorous, spreading habit; leaves marbled and very darkly zoned; flowers light scarlet.

*Rose of Lee* (Hally).—Vigorous habit; leaves marbled; flowers cerise scarlet.

*Sheen Rival* \* (Kinghorn).—Moderately vigorous habit; leaves darkly zoned and marbled with light green; flowers bright light scarlet, of good form, in fine trusses.

#### SERIES IV.—NOSEGAY VARIETIES.

##### 1. LEAVES ZONATE.

*Beaton's Pet* (Carter & Co.).—Very dwarf habit; leaves marked with a dull zone; flowers loose, in small trusses, of a bright rosy crimson. The plant was in a weak condition.

*Carminatum Improved* (Carter & Co.).—Moderately vigorous habit; leaves indistinctly zoned; flowers crimson magenta.

*Carmine Nosegay* (E. G. Henderson & Son).—Moderately vigorous habit; leaves with a faint narrow green zone; flowers deep cerise, in moderate trusses.

*Cybister* \* (Carter & Co.).—Full vigorous habit; leaves large, with dull olive zone; flowers in large trusses, well thrown up, narrow petaled, scarlet. It is of a very effective colour, brighter and lighter than Stella, but with longer and narrower petals.

*Imperial Crimson* (Turner).—Dwarf spreading habit; leaves with a faint narrow green zone; flowers loose, narrow-petaled, in small trusses, magenta rose.

*Lady Cullum* † (Carter & Co.)—Dwarf habit; leaves marked with an indistinct zone; flowers free, loose, lilac pink, with a white base.

*Lord Palmerson* † (Carter & Co.).—Dwarf and moderately vigorous habit; leaves with very faint zone; flowers in small trusses, the plant being weak, cerise-scarlet, changing to magenta.

*Madame P. Gaspard* (Salter).—Moderately vigorous habit; leaves with an indistinct green zone; flowers thin and loose, deep rose pink.

*Magenta* † (E. G. Henderson & Son).—Vigorous habit; leaves broad with a darkish vandyked zone; flowers distinct and showy, of a semi-nosegay character, the trusses thrown well up, and freely produced. Approved chiefly for colour.

*Merrimac* \* (Salter).—Moderately vigorous habit; leaves with a broad dull zone; flowers in immense heads, deep cerise or carmine rose, the blossoms broad-petaled for one of the Nosegay race. It was grown only in pots, and was in this way quite first-rate.

*Merrimac* † (Carter & Co.).—Moderately vigorous habit; leaves with narrow olive zone; flowers broad-petaled, in moderate trusses, cerise rose.

*Monitor* † (Carter & Co.).—Rather dwarf spreading habit; leaves lobed, with a dull brown zone; flowers large and broad for one of the Nosegay race, dull orange scarlet. Desirable from its colour.

*Red Nosegay* (Taylor).—Moderately vigorous habit; leaves with faint narrow green zone; flowers cerise scarlet, in moderate trusses.

*Rival Nosegay* (Carter & Co.).—Moderately vigorous habit; flowers large and broad-petaled as a Nosegay, in good trusses, of a deep magenta shaded with crimson. Not one of the semi-nosegay race.

*Stella* \* (E. G. Henderson & Son).—Vigorous habit; leaves with dark zone; flowers in bold trusses, broader-petaled than *Cybister*, and of a deeper scarlet. One of the finest of all *Pelargoniums* for effect.

## 2. LEAVES VARIEGATED WITH WHITE.

*Variiegated Nosegay* \* (Turner).—Moderately dwarf habit; leaves whitish at the edge, cupped; flowers abundant and effective, but loose, cerise pink.—(*Proceedings of the Royal Horticultural Society.*)

(*To be continued.*)

## OUR MONTHLY CHRONICLE.

THE EDINBURGH INTERNATIONAL HORTICULTURAL SHOW.—This was held on the 6th of September, and proved a complete success. Although Scottish exhibitors predominated, there was a good attendance of those from the southern part of the kingdom, and some very creditable productions came from Ireland; but the only exhibitor from abroad was Mr. Knight, gardener at the Château de Pontchartrain. The Music Hall and Assembly Room in George Street, both under one roof, afforded a large area, in which the show was held; but so numerous were the subjects brought for exhibition, and so large the attendance of visitors, that from an early hour in the forenoon till late at night, the show was inconveniently crowded—a drawback, however, for which the Committee are not to be blamed, for the extent and success of the show far exceeded their most sanguine anticipations. The arrangements were admirable in every respect, and the courtesy with which every duty connected with the exhibition was performed, gave entire satisfaction. The great feature was the fruit, of which the display was magnificent, particularly the Grapes, which were in the greatest perfection; indeed, such a collection of splen-

did bunches had never, probably, appeared before at any one exhibition. In the class for eight varieties Mr. Fowler, gardener to the Earl of Stair, Castle Kennedy, had splendid bunches of *Muscats*, *Trebbiano*, 12 lbs. 9½ oz.; *White Niece* (?), 9 lbs. 6½ ozs.; *Black Barbarossa*, *Black Prince*, *Black Gibraltar*, *Lady Downe's*, and *Muscats* *Hamburgh*. Mr. Meredith, of Garston, Liverpool, came second with beautifully grown *Black Hamburgh*, *Muscats* *Hamburgh*, *Black Alicante*, *Barbarossa*, *Muscats* of *Alexandria*, *Black Prince*, *Chaptal*, and *Child of Hale*, a large white kind. The same exhibitor took the first place in the class for two bunches of *Black Hamburgh*, with beautifully coloured bunches, weighing 9 lbs. 10 oz.; and he held the same position for a single bunch of the same variety. *Muscats* from Mr. Fowler and Mr. D. Thomson, Archfield, were very large and admirably ripened. The heaviest bunch of any black kind was *Barbarossa*, from Mr. Greenshields, gardener to the Marquis of Ailsa. This weighed 10 lbs. 15 ozs.; Mr. Fowler came next with a fine bunch of the same variety. Mr. Meredith exhibited a fine bunch of *Black Hamburgh*, weighing 4 lbs. 12 ozs., in the same class. The heaviest

white Grape was White Nice (? Syrian), 11 lbs., from Mr. Fowler; Child of Hale, 8 lbs. 10 ozs., from Mr. Meredith, being second. For flavour, Duchess of Buccleuch and Muscat of Alexandria, from Mr. W. Thomson and Mr. Anderson, Torwoodlee, stood equal first among white kinds, and Muscat Hamburg among the black. Pines were not remarkable either for number or size. A very large and handsome Queen, of 6½ lbs., was shown by Mr. W. Thomson in a collection of fruit; also three fruiting plants in pots of Smooth-leaved Cayenne, with noble fruit, but not then ripe. Collections of fruit, consisting of twenty sorts, sixteen sorts, and six sorts, comprised several admirable exhibitions from Mr. W. Thomson, Mr. D. Thomson, Mr. Melville, Dalmeny Park, and others; and among fruiterers Messrs. Carstairs and Mr. Brown, Edinburgh, contributed extensive collections. Of other fruit Melons, Peaches, Gooseberries, and Currants, Apples, and Pears, were well represented by numerous exhibitors. Among vegetables was a large and very productive Onion, from Mr. Stewart, gardener to the Rev. H. Vernon Harcourt, Nuneham Park. In the floral department of the show were good examples of Ferns and other ornamental-foliaged plants, Heaths, Fuchsias, and Geraniums, together with some stove and greenhouse plants and Orchids. Among the latter was the rare *Phalænopsis Portei*, with nearly twenty blooms. This was exhibited by Mr. Lees, Tynninghame, and was, we believe, sent to him by mistake for *P. amabilis*. In cut blooms Gladioli, from Messrs. Downie, Laird, & Laing, Messrs. Dickson, Newtonards, Ireland, and Mr. Marshall, Sand House, Northumberland, were very fine, as were also Hollyhocks from Messrs. Downie & Co. Dahlias, both in the Nurserymen's and Amateurs' classes, were shown in great perfection. Messrs. Downie & Co.'s stand of twenty-four was remarkably fine, and consisted of Criterion, Anna Keynes, Harry, Alexandra, Baron Taunton, Willie Austin, Queen of Primroses, Favourite, Miss Henshaw, Lord Derby, Leah, Excelsior, Leopold, Delicata, Ne Plus Ultra, Miss Roberts, Imperial, Garibaldi, Golden Admiration, Charlotte Dorling, Golden Gem, Scarlet Gem, Stella Colas, and Princess Alice. Mr. Harrison, Darlington, Mr. Thompson, Preston Tower, and Mr. Vair, Gogar Bank, likewise contributed excellent blooms. Among miscellaneous subjects were cones of various Pinuses and other Coniferæ from Mr. Robson, gardener to Viscount Holmesdale, M.P., Linton Park, Staplehurst, and ornamental fruit of various kinds of Pyrus and Cratægus, from Messrs. Osborn, Fulham.

In the evening a dinner, served in the first style, was given at the Douglas Hotel, St. Andrew's Square, Sir William Gibson Craig, of Riccarton, in the chair. About two hun-

dred sat down, among whom were Messrs. W. Paul, Moore, Standish, Turner, H. Veitch, Fortune, Williams, Parker, and other English horticulturists.

INTERNATIONAL HORTICULTURAL EXHIBITION AND BOTANICAL CONGRESS.—It affords us great pleasure to announce that her Majesty the Queen has graciously signified her intention of becoming the Patroness of this important national undertaking, and has also subscribed the handsome sum of fifty guineas to the fund now forming in aid of carrying out the designs of the promoters. His Royal Highness the Prince of Wales has also consented to become a Patron, and in earnest of his good wishes towards, and kindly interest in, the undertaking, has subscribed the sum of thirty pounds towards its realisation. With such distinguished patronage, backed as it is by generous public support, the scheme cannot fail to become a great success.

[*C. D.*, Leamington.—We may state that the schedule of prizes of the projected International Exhibition is already compiled, and that on a most liberal basis; but it is waiting the fixture of the exact date for holding the exhibition previous to being put into circulation. The fixture of the date is regulated by circumstances over which the promoters have no direct control. This also replies to the queries of *R. H.*, Eye, and *W. Smith*, Truro.]

DIRECTORSHIP OF KEW GARDENS.—The appointment of Dr. Joseph D. Hooker to this important post will be received with general satisfaction. His great botanical attainments and the experience which he has gained in connection with these gardens, at once pointed him out as the most fitting successor to his father.

PRESENTATION TO MR. W. THOMSON OF DALKEITH.—On the occasion of the above Show, nine of those who had been foremen to Mr. Thomson, but are now head gardeners themselves, presented him with a testimonial of their regard in the shape of a very handsome gold watch, on the back of which was this inscription—"Presented to Mr. William Thomson, by nine of his late foremen." Incorporated with the surrounding decoration, were the initials of the donors, who were—Mr. H. Rose, Floors Castle, N.B.; Mr. Dell, Stoke Rochford, Grantham; Mr. D. Brown, Corehouse, N.B.; Mr. John McIntosh, late of Raby Castle; Mr. W. Prentice, Shugborough Hall, Rugeley; Mr. William Dick, Wynyard Park, Durham; Mr. James Morrison, Auchincruive, N.B.; Mr. Harry Knight, Château Pontchartrain, near Paris; Mr. John Simpson, Wortley Hall. The subscription was strictly confined to those who had served as Mr. Thomson's foremen, though many others would gladly have availed themselves of the opportunity of joining in such a tribute of respect.

**FRAXINUS DIMORPHA DUMOSA.**—M. Carrière gives an account in the "Revue Horticole" of this extraordinary variety. It forms so dense a bush that even when the leaves are off one can hardly see through it. This arises in a great measure from the spine-like shoots being generally without a terminal bud, in consequence of which numerous bifurcations are produced, forming a complicated network of ramifications. Each bush is a thicket which increases in all directions. The species from which this variety has sprung is a native of Algeria, and, singularly enough, produces an upright leader of rapid growth, whilst its branches are on the contrary almost horizontal. If this dense-growing variety could be rapidly propagated, adds M. Carrière, it might be used as a hedge plant, but unfortunately this is not the case, for it has to be increased by grafting, a means which is not sufficiently expeditious for the purpose.

**NEW CONIFERS.**—In the same publication, M. Carrière asks what are *Abies reginae*, *Amaliae*, *panachaica*, *Monte-Draco*, *Nova-Draco*, &c., recently offered to the public? and answers, Nothing else but an old acquaintance, *Abies cephalonica*, which is synonymous with *A. Appollinis*, sometimes also sold as *A. Luscombeana*.

**LILIUM AURATUM.**—At the July meeting of the French Imperial and Central Horticultural Society a plant of this was exhibited, in which the flowers showed a tendency to become double, three inner petals having been formed; but the number of stamens remained unaltered. The bulb was bought in London about eighteen months previously, and was one of a lot imported direct from Japan. M. Malet states in a memoir in the Journal of the same Society, that he has been successful in fertilising *Lilium speciosum* (*lanceifolium* of gardens) with *L. auratum*. He gathered the pollen of four flowers of the latter on the 20th of July, 1864, kept it in a paper bag in a dry place, and on the 17th of August applied it to flowers of *speciosum*, from which the anthers had been removed. The seeds were sown in pans in a greenhouse on the 21st of October, and about thirty of them vegetated. What the flowers will be like time alone will show.

**FLOWERING OF AN AMERICAN ALOE AT THE BOTANIC GARDEN AT LOUVAIN.**—A large plant of this Aloe, the last survivor of four (three of which flowered previous to dying), having in the middle of April exhibited signs of flowering, the head gardener, M. Sterckmans, had it planted out in the open ground; the result was a flower-stem 26 feet in height, resembling a gigantic candelabrum, on the branches of which were not less than a thousand flowers. The present is believed to be the eleventh case of the American Aloe flowering in Belgium; a plant flowered in the same garden about ten years ago.

**IDENTITY OF ÆCIDIUM CANCELLATUM AND PODISOMA SABINÆ.**—M. Ørsted, professor of Botany at Copenhagen, has communicated a paper recently to the French Imperial and Central Horticultural Society on the identity of these funguses; and from which it would appear that the *Æcidium* above named (also known as *Rœstelia cancellata*), which attacks the leaves of the Pear tree, and the *Podisoma* of the Savin (*Juniperus Sabinæ*), are merely different forms of one species. Having noticed some imported plants of the Savin severely attacked with the *Podisoma*, and finding that the *Æcidium* made its appearance during the same summer on Pear trees planted near them, he was led to suspect that the two parasites had some connection with each other. Accordingly he planted some of the infested Savins in the Botanic Gardens as an experiment. In the following season the *Æcidium*, which had never before been seen there, made its appearance, and only on the Pear trees in immediate proximity to the Savins. This aroused his suspicions, and on the 18th of May he took sporidia of the *Podisoma* which were ready to grow, and placed them on the leaves of young Pear trees, covering them with bell-glasses to keep the air about them constantly moist. By the 25th, yellow spots had formed on the leaves where the mycelium had begun to run; and, two or three days later, the first traces of spermatogonia were observed in the shape of transparent vesicles. The number of these went on increasing for several days, and at the time he wrote his paper they had nearly all discharged the mucilaginous contents of their spermatia.

It is a popular notion that the neighbourhood of the Berberry causes the rust in Wheat, and, although authorities were long divided on the subject, this idea was set down as erroneous, but M. Ørsted states that he has come to the conclusion that *Æcidium berberidis*, or the Berberry blight, and *Puccinia graminis*, or the rust, are only two forms of the same fungus; and hence that the popular belief is founded on fact. M. de Bary, adds the writer of the above paper, has succeeded in producing the *Æcidium* of the Berberry from the *Puccinia*. Some interesting experiments by M. Decaisne, for which we have not space at present, are strongly confirmatory of the correctness of M. Ørsted's views with regard to the *Æcidium* of the Pear tree.

**TRUFFLES IN FRANCE.**—This is to be a prodigious year for Truffles. A few have already been brought to market, much sooner than is usually the case; but the harvest has not yet begun, and the precious subterranean Mushroom is still acquiring size and fragrance in the ground. Not only will the crop be unusually large, but the quality will be something very remarkable. The hot sun, which came after some rains in August, has been

highly favourable to the perfume of those black diamonds of gastronomy. A century ago the whole of the Truffles annually gathered in France did not amount to a value of a million francs; they are said now to produce more than 30 millions. Truffles are found in almost every part of France, and in many departments their collection and sale is a great resource to the poor in winter. Hitherto it has not been generally allowed to collect Truffles in the forests of the State, but that prohibition is expected to be shortly removed.—(*Times*.)

**HERB GARDENS AT MITCHAM.**—Few people are aware of the extent to which various herbs are grown in Mitcham and its immediate neighbourhood, for distillation and other purposes. At Mitcham alone 750 acres are devoted to their culture. Of this area about 224 acres are cropped with Peppermint, 175 with Lavender, 121 with Roses, 60 with Chamomile, 30 with Liquorice, 25 with Henbane, and 120 acres with other things of a similar character.

**CINCHONA PLANTATIONS AT DARJEELING.**—Dr. Anderson's report on the progress of the plantations during the month of April, shows very favourable results. The growth of the

plants had everywhere been most satisfactory, and especially at the lowest plantation; the condition of all the species could hardly be surpassed, the plants being covered with luxuriant foliage, and the largest sending out vigorous branches from the axils of the three or four upper pairs of leaves. The total number of plants and partially-rooted cuttings of all species was 49,486 on the 30th April. The number permanently planted out was 3256. The number of plants added during the month to the number to be retained as stock plants was 9820; all of these belonging to *Cinchona officinalis* were planted in beds in the open air. The increase by cuttings during April far exceeded the number obtained since the commencement of the experiment, 12,104 cuttings of all species were made. None of these are buds, only vigorous shoots were used, as it was considered preferable to have healthy stock than a large monthly increase of cuttings taken from over-pruned plants. The 7214 cuttings made during March had all rooted and were ready to be potted off. Of the 49,486 plants there were of *C. succirubra*, 10,850; of *C. Calisaya*, 61; *C. miranthera*, 1554; *C. officinalis* and varieties, 31,929; and of *C. Pahudiana*, 5092.

## CALENDAR OF OPERATIONS.

### CONSERVATORY AND SHOW-HOUSE.

FROM this time the conservatory will be used as a promenade, and probably as a working-room for the ladies in bad weather; care should therefore be taken to have everything kept as neat as possible. Avoid crowding the house for the present, as many things may be kept under temporary shelter; but keep up a good stock of sweet plants, with enough of plants in bloom to make it attractive.

### GREENHOUSE.

*Azaleas and Camellias.*—These will now be housed. Pick off decayed leaves, keep the plants rather dry, and give plenty of air, that the wood may become thoroughly ripened, which will make the blooms finer next season. *Cinerarias.*—This is the month for progression with this plant. We suppose that now there are plants in abundance from the early-struck cuttings. Every encouragement should now be given to aid a free growth. Shift such of the early-potted plants as are ready into a size larger pots, in a compost of equal parts turfy loam and well-decomposed stable manure; leaf mould will answer the same purpose should this not be at hand. Keep them as near the glass as possible, and ventilate freely. As frosts may now be expected, it would not be advisable to expose them at night. Look well to mildew, and sulphur such as have it. A slight fumigating now and then with tobacco will be found the best preventive against the

green fly, which is a great pest in the cultivation of this plant. Should compost not be prepared, it should be attended to forthwith. Give the final shifting to such as are required for winter flowering. *Hardwooded Plants.*—These will require placing under the protection of glass at once. Allow plenty of room and all the air you can, to get the wood well ripened before winter. Before placing them in their winter quarters look to the drainage, and have the outsides of the pots well washed; no plant can thrive well when the surface soil and outside of the pot are covered with vegetation. *Pelargoniums.*—These should all be housed without delay, if not already done; and, after they are all got in, a good fumigation is necessary, to clean them thoroughly of green fly. Those plants that are intended to flower early, and have not received their final shift, more especially the specimens that are selected for the early exhibitions, must not be delayed. Repot young plants as needed. Water carefully when they require it, and shut the house up soon in the afternoon; and towards the end of the month, if the weather is damp and cold, slight fires will be required at night, so as to keep a dry atmosphere; and when the weather is fine, an abundance of air should be given.

### FORCING.

*Forcing-Ground.*—Rhubarb and Sea-kale may be started towards the end of the month,

and the empty Melon and Cucumber pits should have the soil turned up and watered, and the pits filled with French Beans (which may have been sprouted for the purpose in heat), Lettuce, Endive, Parsley, and other things required for winter. Plant the Beans, if you have the room to spare, in pits heated so that you can give them a little fire-heat by-and-by; they will frequently continue bearing till Christmas, or even later. We prefer the Newington Wonder. *Vinery*.—The earliest house of Vines, if Grapes are required next April, should be pruned at once, the Vines dressed, and the sashes put on towards the end of the month, previously covering the border, if outside, with a good coat of leaves or fern.

#### KITCHEN GARDEN.

Plant a good breadth of Cabbage for early spring use; also Cauliflowers sown last month should be pricked out in well-enriched soil five or six together, to be covered hereafter with hand-glasses. Another portion of the plants should be pricked into cold frames, to be protected by glass during severe weather, and a portion also may be pricked out on a warm south border, to take their chance. A portion of the true Bath Cos Lettuce may also be treated the same, and fill up the bases of walls and other sheltered places with good hardy varieties of Cabbage Lettuce, to stand the winter. Broccoli, Borecole, &c., should be frequently hoed between, and finally earthed up before frosts come on. Continue earthing up Celery and Cardoons, and tying up Lettuce and Endive, as the weather permits, and have the ground well stirred between every growing crop. Potatoes and Carrots may now be taken up and stored away; take especial care the latter are quite dry when put away. Remove all kinds of litter, decayed vegetables, &c., from the ground, and spread quicklime over the newly cleared ground; this will kill slugs, and save you much trouble in the spring.

#### FRUIT GARDEN.

*Hardy Fruit*.—Many kinds of Apples and Pears should be gathered at once, where not already done; a few late-ripening kinds may remain longer on the trees. In keeping the fruit, let all the finest specimens be laid separately in the fruit-room, and handled as slightly as possible, even when being gathered; those intended for long keeping should on no account be tumbled together.

#### FLOWER GARDEN.

All the one-year-old Scarlet Geraniums, including, too, the variegated class, which it is practicable to winter in any shape, should be taken up on the approach of frost, and either potted or packed in boxes, in dry sandy soil. These plants will bloom much earlier and more profusely the second year than the first, however well they are prepared; indeed,

we are in the habit of keeping some kinds as long as we can, as we find them much more telling for certain purposes than young plants. Some of our vase Geraniums have six or seven hundred heads of bloom open at one time, and these in very small vases. When the above are potted, they should be placed under glass for a short time to enable them to recover themselves, after which their wintering will depend on what accommodation exists. Salvias, Fuchsias, tall Lobelias, &c., may also be lifted, and, if done with care, they will soon rally, and become very ornamental for mixing with greenhouse and conservatory plants. Now is a good time to put in cuttings of Caleolarias. Get the rest of the propagating finished quickly, and harden off those already struck. Pay attention to order and neatness by picking off decayed blooms and leaves and keeping the grass and gravel clean.

#### FLORISTS' FLOWERS.

*Auriculas*.—These may be removed to a southern or western situation for the winter; the latter is preferable. Cleanse the frames and glass, that when necessary to cover the plants these may have the full benefit of the light. Continue to keep the soil moist through the month, and open the surface as often as it appears closed. Look well after insects. *Carnations and Picotees*.—Potting for winter should now be completed. Never take the layers from the stools when in a wet state. Remove dead foliage, and grow them as hardy as possible. *Dahlias*.—Seed should now be saved as often as it can be gathered ripe and dry. Remove all dead petals, otherwise the seed will rot in the pods, there being so much moisture at this time; a long piece of the footstalk should be gathered with it. See that all are correctly named before the frost arrives; also mark promising seedlings. *Hollyhocks*. The stools of choice kinds may be potted-up, to produce cuttings during the winter. Cuttings will now strike readily if a little bottom heat is used; repot those first struck in nice light rich soil. *Pinks*.—If not already done, finish planting out into their blooming-beds, to enable them to get thoroughly established before winter. Great care should be taken after planting to keep the surface in a pliable state by stirring or hoeing on a dry day, as this will tend to facilitate their growth. The taller-growing varieties should be secured by small sticks, to preserve them against strong winds. At the end of the month, pot up such varieties as are required for wintering in pots. *Tulips*.—Examine the bulbs, and if not previously done, let them now be arranged for planting, making any alterations and improvements noted down at blooming-time. New varieties should now be procured, and then rearrange them. The bed should now be prepared, that they may be got in about the 1st of November.

# FLORIST AND POMOLOGIST ADVERTISER.

No. XLVII.—NOVEMBER.

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Fig. F.



Fig. C.

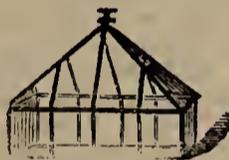


Fig. A.

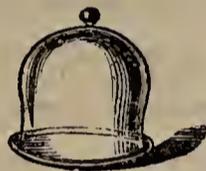


Fig. B.



Fig. G.



Fig. E.

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20 in. by 12 in.	16 oz. 18s. 0d.	16s. 0d.	13s. 6d.	11s. 0d.
20 in. by 13 in.	21 oz. 27s. 6d.	24s. 0d.	18s. 6d.	14s. 6d.
20 in. by 14 in.				
20 in. by 15 in.				

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Size	Best.	2ds.	3ds.	4ths.
6 in. by 4 in.	9 in. by 7 in.			
6½ in. by 4½ in.	9½ in. by 7½ in.			
7 in. by 5 in.	10 in. by 8 in.	17s. 3d.	14s. 8d.	12s.
7½ in. by 5½ in.	10½ in. by 8½ in.			10s. 6d.
8 in. by 6 in.	11 in. by 9 in.			
8½ in. by 6½ in.	11½ in. by 9½ in.			



Fig. D.

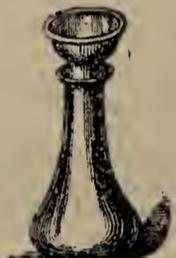


Fig. D.

Fig. A. Hand Glasses.	
	s. d.
12 inches .....	5 6 each
14 " .....	6 6 "
16 " .....	7 6 "
18 " .....	8 6 "
20 " .....	9 6 "
24 " .....	11 6 "

If open top, 1s. extra.

Fig. B. Propagating Glasses.	
	s. d.
3 inches .....	0 4 each
4 " .....	0 5 "
6 " .....	0 7 "
10 " .....	1 2 "
12 " .....	1 6 "
16 " .....	3 0 "
18 " .....	4 6 "
20 " .....	6 0 "

Fig. C. Milk Pans.	
	s. d.
6 inches .....	0 5 each
10 " .....	0 10½ "
14 " .....	1 6 "
18 " .....	2 5 "
20 " .....	2 10 "
22 " .....	3 4 "
24 " .....	4 0 "

Fig. D. Hyacinth Glasses.	
Common, 2s. 6d. per dozen.	
Improved, 3s. 3d. "	

Crocus Glasses.	
Common, 1s. 9d. per dozen.	
Improved, 2s. 3d. "	

Fig. E. Hyacinth Dishes.	
6 inches .....	1s. 0d. each.
9 " .....	1s. 6d. "
12 " .....	2s. 6d. "

Fig. F. Cucumber Tubes.	
1d. per running inch.	

Intermediate sizes in proportion.

Fig. G. Rolling Pins.	
1¼d. per running inch.	

Opal Ditto.	
14 inches .....	3s. 6d. each.
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**COUNTRY GENTLEMAN,**

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AND

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*Narcissus graminifolius.*

*F. Waller lith. 18. Hatton's Gardens.*

## NARCISSUS JUNCIFOLIUS.

WITH AN ILLUSTRATION.

“A BEAUTIFUL dwarf-growing hardy bulb, from stony pastures of the Pyrenees, having neat rush-like foliage, and comparatively large bright yellow flowers, from one to three on a scape, and remarkably showy.” Such is the description of this plant published in the Report of the May Meeting of the Royal Horticultural Society, at which it was exhibited by Messrs. Backhouse and Son, of York, to whom we are indebted for the opportunity of figuring it. The plant, as will be seen, well merits all that is said in its favour.

The accompanying drawing by Mr. Fitch, accidentally mislabelled *N. graminifolius*, will give a very good idea of the elegance and beauty of this rare spring-flowering bulb, as well as of the slight variation in the form and colour of its flowers, which was apparent in the tuft shown by Messrs. Backhouse, and has been very well indicated by our artist. The plant must become a favourite with those who love spring flowers.

Dean Herbert notices three varieties of *N. juncifolius*, differing, however, chiefly in stature; but it is probable that these, coming as they do from different localities, may be rather taken as indications of difference of soil or climate, than permanent variations; although, as we have said, the species does vary to a certain extent, both in colour-tint and in the lobing of the coronet. The following is the technical description of the plant, indicative of its distinctive peculiarities:—Scape, one to three-flowered; leaves, very narrow; flowers, bright yellow; limb, about twice the length of the cup, the margin of which is undulated and indistinctly lobed. It is a native of the southern mountainous provinces of France, and of Spain and Portugal; and, according to Kunth, includes the *Queltia pusilla* of Herbert, and the *Philogyne minor* of Haworth.

The Narcissi are so interesting and valuable as spring flowers, and there is so much to be gained amongst them by the well-directed efforts of the hybridiser, that we venture to commend to the especial attention of any of our readers, who may have leisure to engage in a similar task, the following record of results communicated last spring to the *Gardeners' Chronicle* by Mr. W. Backhouse, of Wolsingham:—“The Daffodils (*Narcissus major*, *Ajax*, *Pseudo-Narcissus*, *minor*, and *moschatus*,) cross with one another, and they produce seeds as freely as the parents. The colours are not merely intermediate, but of all shades, between the colours of the parents, where these differ as in *moschatus*. *N. bicolor* seeds badly, and is deficient in pollen; but from crosses of the other Daffodils with it I have raised some of the largest and finest of the class. These also seed badly, and their produce has a tendency to revert to the Daffodil. The roots of *N. bicolor* are very much larger, and shaped somewhat differently from the others, and the crosses from it have the same peculiarity; the colours of the seedlings vary from those of the parents, through white with lemon cups, to almost pure white

“From the Daffodils crossed by *N. angustifolius*, the kinds called *fatidus* by Dean Herbert, are produced; and the cross is intermediate between the parents when *N. major* and *Pseudo-Narcissus* are used; but with *N. poeticus* the variety is greater, and some with very fine expanded cups occur. The variety seems to be also greater when some of the seedling varieties of Daffodil are used. These crosses seed very sparingly, but may occasionally be got to produce seed by a cross with either parent; those with the Daffodil having shorter cups than *N. major* or *moschatus*, and those with *N. poeticus* or *angustifolius* being intermediate, and with generally a red edge to the cup. Seeds I have sown from plants not artificially impregnated produce the same result, some showing the

Daffodil, and others the *N. angustifolius* type. The orange tints on some of these crosses vary in different seasons. On many the cup will one year be orange-tinted, and the next plain yellow.

“The Daffodils crossed by *N. Tazetta* produce plants intermediate between the two in general; but sometimes the cup is not longer than in *Tazetta*. The flowers on each stalk vary; two, four, and up to six occurring. These crosses vary in colour and size, according to the nature of the parent *Tazetta*; but the produce does not seed with me, except that last year one pod, producing one seed, occurred from, perhaps, a couple of hundred flowers. A warmer climate than mine might produce different results. No pollen is to be got from it to cross with the Daffodil parent.

“The per-centage of seedlings showing striking peculiarities is but small from any of these crosses, and the colours only partially follow what might be expected from the parents; the cross from *N. moschatus* by *angustifolius* not being always white, and I have from *foetidus* by *angustifolius* some with green flowers. Before dusting with pollen I cut out the stamens, except in the kinds which only seed when crossed; but in out-of-door plants, where there are numerous others about of the same genus, there is no certainty but that sometimes the bees may be the authors of a different cross. I have sometimes tied the mouth of the cup in the Daffodils for a time to prevent access, but in most cases the result shows the intended cross to have taken place.”

M.

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## ON THE CULTURE OF GLADIOLI IN POTS FOR THE CONSERVATORY.

To those who sometimes find it difficult to provide a continuous succession of plants in bloom for the conservatory, a word or two on the above subject may not be uninteresting.

Of all the flowers that have recently become popular, there are none to my mind more deserving of attention than the Gladiolus. It can be grown in pots without heat or under glass, and can be had in almost any colour, from white to deep crimson; and during the months of August and September, when the variety of plants is rather limited, it makes a very pleasing and graceful display. I exhibited ten varieties at the recent autumn show of the Southampton Horticultural Society, and they awakened considerable interest in that part of the country, and were much admired by all who saw them.

I do not advise a trial of the very newest sorts, but such as Jeanne d'Arc, Auchine, Fanny Rouget, Adonis, Hélène, Berenice, Penelope, Madame Coudère, Sulphureus, Celine, M. Blouet, and Albertus, which can be obtained from any nurseryman at the rate of from 6s. to 9s. per dozen. I can confidently recommend these twelve varieties, having grown them very successfully by the following method:—

I pot up my bulbs about the middle of April, and am always very particular about the nature of the compost I use. It is composed of half maiden loam, and for the other parts leaf mould, or peat, rotten dung, and silver sand, in equal proportions. I mix these ingredients well together, but do not sift the soil after mixing, as when sifted it is apt to get sour on account of the plants requiring a great deal of water during their growth. The pots I recommend are sizes known as 16 and 24-pots, but they can be grown in 32 or even 48-pots, but so fine a spike cannot be obtained from the small-sized pots. When potting I am always careful to have good drainage, and to bury the bulb 2 inches under the surface, so as to leave room for the new bulbs to form, as they

always do at the top of the old one. When all are potted, I give them a good watering, and plunge them in an open space of ground well covered with ashes to prevent the ingress of worms at the bottom of the pots. They will soon show themselves above ground, and then I am careful not to let them want for water. When they are showing for bloom, I remove them to their quarters in the conservatory, and when they bloom I am amply repaid for the trouble taken by the gay and lively appearance which the conservatory presents. They must be freely watered, especially in hot dry weather.

*Crabwood, near Southampton.*

J. C. HIGGS.

## CHRONICLES OF A TOWN GARDEN.—No. XXII.

As I write—on a calm and clear autumn night—there are not wanting indications that a break-up of the warm bright weather is imminent. There have fallen refreshing though heavy rains, and these have brightened up the parched and browned pasture lands and lawns, and given a new bloom of vigorous life to grass-plat and garden; and the night or two of howling winds that succeeded the rains have changed into the peaceful quiet of the repose of nature; but the evening sky, brightening in the approach of the coming change, and flashing forth its lines of silvery light, betokens that “panting Time” is rapidly whirling onwards that season of the coming year,—

“When the winter heapeth  
In hoary fields the everlasting snows.”

I shall be sorry to lose, amid the inevitable destruction that will come upon many of the present occupants of the garden, a band of dwarf bedding Dahlias, that with the *Gazania splendens* keep very gay even up to this unusually protracted period of flowering. Should the mild weather continue longer, it will be possible to have Dahlias and Chrysanthemums in bloom at the same time. Of the bedding Dahlias I have some eight varieties, that I got when they were strong plants from pot roots. I planted them about the end of June (which has made them a little late in flowering), in some well-manured soil, and carefully attended to the wants of their “thirsty souls” throughout the long drought, watering freely at the roots, and sprinkling the plants overhead night and morning. While they grew vigorously they kept nice dwarf bushes, and flowered very freely indeed, and generally still continue to do so. I have one white, *Alba Floribunda Nana*; one yellow, *Orb of Day*; one orange, *Orange Boven*; two crimson, *Prince Arthur* and *Crimson Gem*, the former having a good deal of purple in its colour; two scarlet, *Sir James Watts* and *Beauté de Massifs*; and *Little Dwarf*, blush, edged and shaded with violet. I wish now that I had employed *Crystal Palace Scarlet* instead of *Sir James Watts*; the latter, with me, flowered earliest of all, and is now nearly bare of blossoms, while *Crystal Palace Scarlet* is a capital late variety, and can now be seen in the Parks a mass of bright scarlet flowers. In fact its lateness is against its being employed in cold and exposed situations, as I have known it cut down by frost almost before an opportunity was afforded it of coming into bloom. *Little Dwarf* has small, but nicely rounded and very pretty blossoms; the two yellows have also done remarkably well.

The bouquet Dahlias, of which *Little Dwarf* is the type, and which have flowers smaller in size, and more compact than the ordinary bedding varieties, are fast elbowing these last out of existence. The blossoms of many of the bouquet kinds are models of form, minute as they are, and there is a great variety of colour among them. They produce their flowers profusely, and the habits of the plants, while free growing, are remarkably close and bushy. I

saw the other day a collection that had come from Mr. Turner, of Slough, and I was vastly charmed with them and their great attractiveness.

It appears to be a somewhat singular characteristic of the *Gazania splendens* that, whereas in the midst of summer the flowers will not expand unless under the action of the sun, at this season of the year they will open in the absence of the sun, when it is dull, if it only be clear. I saw a bed of it in Hyde Park, a few days ago, covered with fully expanded blossoms, and a large number of buds were coming on to succeed the flowers.

I am inaugurating the time for planting bulbs out of doors by trenching that part of the flower garden to be devoted to them. The bedding stuff, &c., has been removed, and a moderate dressing of road sand and manure applied, which I have thoroughly mixed with the soil. I think road sand to be an admirable ingredient to mingle with the soil in which bulbs are to be planted. I shall plant them out about the second week in November. Later than this Crocuses, especially, begin to shrivel and decay, and some of the Tulips will suffer in a like manner.

Two nights ago I saw the sun sink in the western heavens behind a bank of deepening clouds, and the moaning wind increased its tone to shrillness as it came souging across the woods in the direction of the great city, among whose many buildings, and along whose numerous streets, it could gambol and sport as it wended its way, journeying to the eastern hemisphere. It was portentous of the wreck of much that was bright, gay, and beautiful. There was a weird gaiety in it as it caught off the leaves from the trees, sported with them for a moment, and then dashed them headlong down to the earth, where they became drowned in the wayside pool, or strangled among the long rank grass.

“ But above this wild delight an overmastering greatness rose.  
I saw the woods consuming in a many-coloured death,  
Streaks of yellow flame down deepening through the green that lingereth ;  
Sanguine flashes like a sunset—an austere shadowing brown ;  
And I saw the long dark hedges all alight with scarlet fire,  
And the berries, pulpy ripe, had spread their bird-feasts on the Briar.”

But from it all there seemed to come forth the great eternal thought, that this decay was but the preparation-day for a new creation, and after a brief pause there would arise a new dominion, the which the Great Designer should people with lovely aspects and beauteous forms, for Spring to gather in her arms, and present as a fit offering to the Source of such wondrous creative skill and power.

“ O cheerful, tender strain ! the heart  
Singing so trustful to the dreary blast :  
Though on the world's autumnal time,  
'Mid withered hues and sere, its lot be cast.  
That is the heart for watchman true,  
Waiting to see what God will do.”

Quo.

## REMARKS ON RUSSELIA JUNCEA.

PLANTS of a drooping habit produce a very graceful and ornamental effect when suspended from the roof of the conservatory and stove. Plants of this character have lately been much sought after, so that we have now very many well adapted for the purpose, but few, if any, are more appropriate than *Russelia juncea*. I have myself grown it trained upright to sticks, and I have often seen it exhibited among collections of stove and greenhouse plants trained in this way ; but beautiful as it is even when grown in this manner, it is far more beautiful and graceful when suspended from the roof of a conservatory, and the branches allowed to pursue their natural drooping tendency without interruption. Being a native of Mexico it requires to be grown in a stove of

a not very high temperature—one where the thermometer ranges during the winter months between 50° and 60°, with an increase by sun heat in bright weather. During the summer months, when in active growth, a higher temperature and moister atmosphere should be given to it. As it flowers during the summer months it should be taken to the conservatory when coming into bloom, and suspended from the roof; it will there last in flower for three or four months. On the approach of cold weather in the autumn it should be taken back to the stove. A compost of good loam and peat with a little sand suits it admirably. It should never be allowed to get pot-bound, as it likes plenty of pot room, and a good supply of water when in a growing state. It should be syringed freely to keep it clear of insects, to the attacks of which it is subject if not well attended to. Cuttings of the half-ripened shoots put into sandy soil and placed in a little bottom heat, strike freely. When rooted they should be potted off singly into small pots, in rather sandy soil, and kept close for a few days until they begin to root into the fresh soil, when they should be removed to the shelves of the stove. They should be shifted into larger pots as often as they require it. When the branches begin to hang over the pots the plants should be suspended from the roof, and as in this situation the soil dries rapidly in hot weather, they should be well attended to in watering. By this treatment the cuttings struck in spring will make good flowering plants towards the latter end of summer; the following season, with proper attention, they will be splendid specimens. When the plants get very large a good deal of the old shoots should be well thinned out after the plants have done flowering, and as much young growth as possible encouraged the following season. By attending to these matters the old plants can be kept clean and in good health for a number of years; but as they are easily raised from cuttings, and good young plants are soon obtained, it is best to throw away any old plants that become the least unsightly. There are few plants that better repay the trouble of cultivation, or look more graceful, than good specimens of *Russelia juncea* in full flower suspended from the roof of the conservatory.

*Stourton.*

M. SAUL.

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### NEW ROSES.

THE following new Hybrid Perpetuals are announced by M. Liabaud, of Lyons, whose descriptions we give, and will be sent out on the 1st of this month:

**MARCELLA.**—Very vigorous, ample foliage, something like that of the Lettuce. Shoots thick, almost thornless. Flowers large and full, salmon rose, unique in colour.

**JEAN CHERPIN.**—Vigorous, handsome foliage. Flowers very large and full, velvety reddish purple, with a lighter brilliant centre.

The above two were raised by M. Liabaud, and are very effective.

**BEATRIX.**—Vigorous, and of upright growth, almost thornless. Flowers bright rosy carmine in the inside, the outer petals pale rose, fine form, and cupped like the Centifolia Rose. Raised by M. Cherpín, an amateur grower.

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### CONCERNING THE HOLLYHOCK.

I OWN to having a lively regard for three flowers, which are emphatically "favourites" with me, the last two of the trio being the Rose and the Neapolitan Violet. The former is prized for summer and autumn flowering, the latter for winter and spring blooming. The Rose—well, I need not dilate on its peculiar charms, for are they not "as familiar in our mouths as household

words?" The Neapolitan Violet has from me special attention, because of the beautiful perfume it exhales; and when mingled with other cut flowers, it is ever, and deservedly so, highly popular. In its season, the simple yet beautiful Neapolitan Violet can hold its own against any contemporaneous flower. The third of the trio is the Hollyhock, and whether I view it as an exhibition flower, or as grown simply for rendering ornamental the flower garden, in each case it has ever been with me one of the "petted" of the great family of flowers.

When employed for the latter purpose I have used the Hollyhock with great effect as a background for a broad ribbon border in which Dahlias were also employed, and which gradually shortened down to Lobelias, used as an edging, or front-row plant. A second method of using the Hollyhock was as a centre for round beds 12 feet in diameter, and surrounding it with two rings of dwarf bedding Dahlias, having *Alba multiflora* for the inner circle, and for the outer, *Crystal Palace Scarlet*. A second bed had for an inner circle of Dahlias, *Orb of Day*, bright yellow; and for an outer ring, *Purple Zelinda*. Named sorts of Hollyhocks were used, and the colours were quite distinct. I employ, for the centre of these beds, one-year-old plants which had been potted up in the autumn. The strongest plants, carrying about three strong shoots each, were used, and planted in March, when the shoots had reached a foot high, each shoot being secured to a small stake. When the shoots have attained another foot of growth, the small stakes should be removed for stouter ones, which, however, need not be more than 2 feet out of the ground if they are driven firmly into it, as tall stakes that rear their heads up among or above the flowers, are unsightly things in the flower garden. Round the centre of strong plants can be planted a circle of Hollyhocks, the shoots of which should have their tops removed when they reach a height of 5 feet, by this means the centre plants will be from 12 to 18 inches higher than the outer ones.

Hollyhocks can also be used for shrubbery decoration, if space can be afforded for the free action of their roots, as it must be understood that if the roots of large trees or shrubs interfere with the growth of the Hollyhocks, the shoots will be thin and spare, and the flowers meagre and small. To be really effective when thus employed, some good and well-rotted manure should be dug into the soil, to the depth of 18 or 20 inches, in which they are to be planted, and the plants allowed to carry but one leading shoot. Under these circumstances they will grow from 6 to 8 feet in height, and have a good effect in the blooming season.

In shrubberies the Hollyhock is also very useful for breaking a flatness or sameness that often prevails when plants have reached something like a uniform height; and seeing the many shades of colour it gives, from the purest white to the shade of *Black Knight*, it cannot be too highly commended for this purpose.

I have little to add to what has already been so well said by others in reference to the Hollyhock as an exhibition flower, though I have been a constant exhibitor for many years past. I would, however, strongly advise any one who may be contemplating growing for that purpose, to ponder well the pages of Mr. William Paul's valuable little book, entitled "*An Hour with the Hollyhock*," wherein the history of this flower is traced for the last twenty years: and also to consult the pages of the catalogues of the leading Hollyhock growers for the valuable practical instructions they convey to the amateur grower.

My method of propagation is by cuttings taken from the "collar" of the plant when the shoots are about the length of one's finger. This should be done in September; and some eight cuttings should be put round a 32-pot, a light sandy soil being used. The cuttings should be pressed firmly into the soil and

freely watered, after which but very little water will be required, or they are apt to rot beneath the soil. They should remain in these pots till March, and then be potted off singly, and grown on in the usual manner. Should there happen to be a scarcity of plants, and if the old ones have been retained, cuttings taken then and placed in a good bottom heat will rapidly root and make blooming plants for the same season.

They can also be propagated by division of the old roots; the plant should be potted up in October, and wintered in cold frames; and in this way they will make strong plants for planting out the following spring. The mode of propagation from "eyes" is essentially a nurseryman's method, and is one I would not recommend to gardeners or amateurs.

Seed sown in February or March in heat, and the plants potted off as soon as they are strong enough, and grown on, will invariably flower the same season if it is at all favourable. The very best seed should be secured, as only good flowers can be obtained from seed saved from the choicest varieties.

*Elsenham Hall Gardens.*

WILLIAM PLESTER.

## FERN-HUNTING IN THE ISLAND OF ARRAN,

### IN THE FIRTH OF CLYDE.

THE Island of Arran is one of the most interesting in the kingdom, and presents a rich field to the botanical and geological explorer. On the south side of the island the climate is similar to the Isle of Wight; this can easily be seen by the half-hardy plants now growing there, and never in the least injured by the severest winters. Whether the gulf stream has any effect on the climate of the western islands of Scotland or not, is a question not easily solved. The following list of plants may be found growing at Brodick Castle, or in the grounds of the hotels at Invercloy and Corrie:—*Leycesteria formosa*, in large bushes and full of fruit; the common *Hydrangea*, 12 feet high, with large bunches of flowers; the Port Famine *Fuchsia* (*Fuchsia discolor*), variety *Riccartoni*, has grown into little trees, and is everywhere seen planted near the fishermen's cottages; the *Coronilla glauca* grows quite unprotected as a bush; *Myrtles*, the Sweet Bay, *Benthamia fragifera*, and *Arbutus* of sorts are quite hardy; and on the walls of the hotel at Corrie may be seen large plants of *Clianthus puniceus* and *Escallonia macrantha* in full flower, and never covered in the winter. It is, however, in the varieties of British Ferns that Arran is worthy of a visit from collectors. Near the shore road at Corrie, where the Devonian, or old red sandstone, crops out at the base of Goatfell, the Filmy Ferns (*Hymenophyllum tunbridgense* and *Wilsoni*) are found plentifully on the damp shaded rocks. In the same locality the *Asplenium marinum* may be found amongst the boulders close to the sea. Between Brodick and Corrie a small cataract tumbles from the precipitous side of Goatfell. In the winter months and during heavy rains it is swelled to the size of a small rivulet, and must be singularly grand, as its fall is many hundred feet high, and can be seen from the Ayrshire coast, though the distance is thirteen miles off. At the base of the mountain, as far as the Hazels and other trees and bushes ascend, it leaps amongst the boulders of the old red sandstone rock, and is quite the home of the Fern tribe. The *Blechnum spicant* grows finer than I ever saw it before, some of the fertile fronds being 18 inches long. The *Asplenium viride* is likewise plentiful, as well as *Asplenium lanceolatum*. *Polypodium dryopteris*, *phegopteris*, and *alpestre*, and *Lastrea maculata* may be found in places, and all the common Ferns in abundance. Near the hotel at Invercloy, there is a ravine, where *Allosorus crispus* and *Cystopteris fragilis* may be found

plentifully. Near Loch Ranza are the ruins of a royal castle, and on its mouldering walls may be found the *Ceterach officinarum* and the *Asplenium trichomanes*. The noblest of British Ferns, the *Osmunda regalis*, grows to a large size in Arran in damp situations. The root of one plant was brought to me with fronds 8 feet high, and was too large to bring away. The beautiful annual plant *Erythræa centaurium* grows plentifully on the sides of the hills near the sea. It forms dense heads of pretty pink flowers, and if manageable would make a nice bedding plant.

Nearly all the Island of Arran belongs to the ducal house of Hamilton, and the late Duke was a great benefactor to its inhabitants by erecting handsome hotels at Invercloy and Corrie. His Grace, likewise, built a new castle at Brodick, and the young plantations and shrubberies planted round it, and by the shore road, are thriving amazingly. The scattered huts of the Highlanders at Brodick village have been pulled down, and neat houses and villas have taken their places, on the other side of the bay at Invercloy. Brodick Castle is situated on the base of Goatfell, the highest mountain in the island. It rises abruptly, and forms an obtuse pyramid, nearly 3000 feet in altitude, and is a prominent feature in the island when seen at a distance. From its precipitous sides the glens of Rosa and Sannox slope off, and nowhere in the kingdom can more romantic or beautiful scenery be seen. Glen Ranza, in the north end of the island, is likewise very beautiful, but not so extensive as the others. To the geologist the Island of Arran presents the most unique succession of strata of perhaps any island of equal extent in the kingdom. Crystals and Cairngorm pebbles are found in quantities on the mountains, being disintegrated from the granite and mica slate which compose their summits and sides. Formerly a mine of barytes was worked near Glen Sannox, but it is now discontinued; on account of spoiling the scenery of the glen.

The Islands of Bute and the Cumbraes are likewise situated in the Firth of Clyde to the south-east of Arran, and are said to enjoy the mildest climate in Scotland. To the Fern-collector they likewise offer a fine field for collecting some of the rarer species.

WILLIAM TILLERY.

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### IN MEDIAS RES.

It is due to "my fair correspondent" that I should express a little more clearly the last clause of the paragraph in my paper with the above heading that appeared in last month's *FLORIST AND POMOLOGIST*, in which I gave her brief hints for the cultivation of her Tulips. What I meant to recommend was this:—To bury the Tulips in ashes, out of doors, as I presume she will her Hyacinths, and when they have started into growth about an inch or so in length, to remove them either to a conservatory or a sitting-room for them to flower. Because I have seen so many miserable failures ensue from amateur cultivators growing Tulips solely within-doors in sand or moss, I wished to guard her against the possibility of such ill-success.

I am favoured with a communication from her. To her first request that I will address her as "Stella," I most readily comply. One of her favourite books is "Thackeray's Lectures on the English Humourists," and she loves, as every true woman must love, to dwell on the slight sketch of that charming creature as struck off by such a noble spirit as that of our great, though dead, satirist. With him, she "casts a flower of pity on that grave," and echoes his sentiment from the depth of her womanly heart—"The brightest part of Swift's story, the pure star in that dark and tempestuous life of Swift, is his love for Hester Johnson."

To "Stella's" second request that I would name some Hyacinth other than King of Holland, single yellow, that while it would possess something of that shade of colour, would not be a single yellow—to this I reply that she can substitute for it Norma, single red. Still, so sure am I that "Stella" would be pleased with King of Holland, that I venture to press her to adhere to the list I gave her last month.

To the third request that "Stella" makes, that I would give her a very short list of a few other spring-flowering bulbs for out of doors, as a supplement to the list of last month, to this task I now address myself. Candidly admitting that she is still *in statu pupillari*, I am enjoined to continue as far as I can the "cultural hints" attempted last month. I will do this, and if my simple instructions are followed, it may be the pleasant lot of "Stella" in the coming spring months to see—

" Her flowers with sweetest odours blow,  
Hear music in each bush and tree,  
All nature filled with harmony."

For very early flowering, the quaint little *Bulbocodium vernum* can be employed. On emerging from the ground it presents the appearance of a thick green tusk; this opens, and unfolds a light purple unexpanded flower, streaked with white. At this stage the flowers are remarkably pretty. When they expand, they become large and ragged. The slugs are apt to attack them, and at the first evidence of their onslaught they should be looked for and destroyed. With these would also come into bloom the Snowdrops, if "Stella" is not as yet without them. The curious little Winter Aconite, and the pretty blue *Scilla præcox*, or *sibirica* as it is generally termed, would follow these in the order of blooming. If the Aconites are planted close to the edge of the border, and the Scillas just behind them, they will form a very pleasing contrast indeed. Any tolerable garden soil will grow all these, and the bulbs can be obtained at a very reasonable cost indeed. To these may also be added a few purple Dog's-tooth Violets. They are very handsome, and the foliage is also so beautifully marked as to be highly ornamental also. The most ordinary treatment suffices for these.

Then "Stella" should certainly have a few *Narcissi* for her borders. The pretty *N. bulbocodium*, or Hoop Petticoat *Narcissus* should be one, as it gives such a profusion of golden yellow flowers. It grows some 6 inches in height, and if planted in little clumps will add much to the gaiety of her garden; also *N. maximus* Trompet Major, and its twin, Trompet Sulphur, the first having large yellow leaves, the latter pale sulphur. Like *N. bulbocodium* these are single flowers. The varieties of *N. maximus* grow from 12 inches to 18 inches in height. Then a few of the double white sweet-scented can be added—and I would advise "Stella" to procure roots that have been imported from Holland—also, two large and showy double varieties known as Orange Phoenix and Sulphur Crown. The former has a centre of orange on a pale yellow ground, the latter is a pale-sulphur-coloured flower, with yellow centre; and both grow some 12 inches in height. A few of the double and single Jonquils should also be obtained, they are both yellow, and the last sweetly fragrant. The common Campernelle Jonquil must not be omitted. The flowers are produced in trusses like a *Polyanthus*, and are very gay. The first two grow about 12 inches, the last-named 18 inches.

For later flowering, *Anemones* and *Ranunculuses* can be employed—of the former some fine double mixed, and of the latter some fine mixed Persian. The *Anemones* are quite hardy, and will flourish in any garden. A good light rich soil is invariably recommended for them, and from October to March is the time at which they are generally planted. The *Ranunculus* has a rather

finer constitution, and should be grown, if possible, in a warm and sheltered part of the garden. They can be planted from January to April, and the soil should be of good loam, with a subsoil of well-rotted manure placed from 8 to 12 inches below the surface of the bed. As they are fond of moisture, care must be taken that they do not suffer for want of its application.

Thus I have compiled for "Stella" the short list she asks for. The power to achieve success with them rests mainly with herself. I think that by-and-by in the balmy spring months, after the parenthesis of winter has been struck out by the revolution of time, many "bright flow'rets" will look up into the face of the sun, reared by the careful tending of their devotee, and crown her humble efforts by quickening her love for these "stars of earth, these golden flowers;" and beget in her humble gratitude to Him whose all-embracing, all-pervading love they reveal as they bloom and glow on every hand, telling us in their own simple language, "Spring is born."

BARON VAN TUYLL.

## KIRBY HALL.

THE SEAT OF H. S. THOMPSON, ESQ.

THIS place lies west of York, about twelve miles distant, and is easily reached either from York, Knaresborough, or Harrogate, by railway to Cattall station, which is a little better than two miles from the Hall; but the drive or walk from the station to the Hall will not be wearisome or monotonous to the visitor, as the country around is very beautiful. Shortly after leaving the station, when the visitor reaches the top of the rising ground at Providence Green, by looking to the right he will see the pretty village of Green-Hammer-ton; and beyond it, over the river, and rising high above the trees, the handsome spire of Newton church, and beyond that the woods of Beningborough Hall, where two of our best Grapes were raised—namely, Lady Downe's and Foster's White Seedling. Beyond these woods are those of Red House, and Marston Moor, and beyond and high above every surrounding object York Minster; looking to the left we see the park and woods of Stourton, with the towers of the mansion rising high above the noble Oaks which wood the park; beyond these is seen the beautiful new church of Knaresborough with its chaste spire, and beyond that High Harrogate, Arlow Hill Tower, and the west moors; looking northward in the hollow is Kirby Hall, with a fine extent of country beyond, which is bounded by the Hambleton hills.

The principal entrance to the park is close to the village of Great Ousebourne; but the visitor, if on foot, can reach the gardens by a shorter route, if, after leaving the village of Little Ousebourne, instead of turning to the left he goes straight on until he comes to Mr. Thompson's home farm (this is well worth inspection), a description of which was given in the *Agricultural Gazette* last year; here there is a pathway that leads direct to the gardens. By this route we ourselves entered the gardens on a recent visit we paid them. We found Mr. Purchase in the new range of houses, erected here about eighteen months since, on Sir Joseph Paxton's principle. The range is 400 feet long, divided into eight compartments. Entering the range at the east end, the first house is an orchard-house; all the trees are planted out; they are Cherries, Apricots, and Plums, and were in the highest possible state of health and cleanliness, and showed every promise of an abundant crop the next season. We were too late to see the fruit this season, but Mr. Purchase informed us the trees bore good crops of fine fruit. The next house is also an orchard-house, and the trees are all planted out, and, if possible, they looked

better even than those in the first house. It is proper to remark that both houses are heated by hot-water pipes. The next house is a Peach-house. The trees are planted to root out into the outside border, and the branches are trained to trelliswork as in an ordinary Peach-house; but the trelliswork is kept low enough to allow the sun to reach the back wall, against which trees are also planted. I need scarcely remark that these trees also look well. This house, like the others, is heated by hot water, indeed the whole range is well heated. We understand the hot-water work was done by Messrs. Jones & Sons, of Bankside. The next house is a plant-stove, and contains a nice collection of all the leading kinds of good stove plants. There is a break in the range here, a walk from the enclosed garden leading through to the outer garden. Going onwards through the range the next house we entered was a greenhouse, containing a nice lot of young promising specimens; the other three houses are vineries. All the best kinds of Vines have been planted, and have made remarkably strong fine wood for the short time they have been established. There were a few bunches on some of the strongest, which were very good, fit to compete at the International at Edinburgh. There is a long wall of Peach trees covered with glass, but no heat. The trees looked very promising, the leaves being quite green and healthy, very different from our own trees and those of all our neighbours, which were unprotected, and which have been completely denuded of all their foliage by the myriads of flies which settled on them in the early part of September. Besides the glass already mentioned, there is an early vinery and early Peach-house; also two other vineries, one a very large one, which has borne immense crops for a number of years. These two, we understand, are to be removed in consequence of some contemplated improvements which are shortly to be made. Out-door fruits have been an average crop except, perhaps, Strawberries, which were only partial. We noticed a number of fine young Pear trees on quince stocks, laden with good crops of very fine fruit; but the soil of the district suits fruit trees. A fine sheet of water separates the kitchen garden from the mansion and pleasure ground. There are immense large patches of the white Water Lily in it, which have a fine effect when in full flower. By a bridge which spans the lake we pass over to the pleasure grounds, these are not very extensive, but they are very well kept, as indeed is the whole place. The flower garden is large, and is one of the old-fashioned kind; some of the large beds and borders were planted with Roses and hardy perennials, but Geraniums and other bedding plants monopolise the greater portion of the garden. This garden is so well sheltered that if anything in the sub-tropical way were attempted, we do not know another place in Yorkshire where it would be so likely to succeed.

M. S.

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## NOTES OF THE FLORAL AND FRUIT COMMITTEES.

SOUTH KENSINGTON, OCTOBER 3RD.

ONE of the "gems" submitted to the Floral Committee was a Nosegay Pelargonium, named *La Grande*, from the veteran Mr. George Smith, of Tollington Nursery, Hornsey Road. The flowers are bright orange scarlet shaded with purple, remarkably stout and well formed for a flower in this section; a large and very striking truss, and the habit dwarf and stiff. A first-class certificate was awarded to it. A second-class award was made to Mr. Turner for seedling Fancy Dahlia *Le Domino Noir*, crimson tipped with white; good outline, and close centre. Mr. Turner also had *Arrah-na-Pogue*; *Artemus Ward*, pale chocolate ground, tipped with rosy purple, small, but promising; and *Arthur*, a full-sized flower, colour rosy lilac, large petals, and good outline. Mr. Bragg, of

Slough, had the following seedlings:—Commander, golden buff; Commodore, orange shaded with red; and Lady Gerald Wellesley, a light ground flower, with a rosy purple edging. The dry hot weather that so recently prevailed has seriously marred the appearance of the seedling Dahlias this autumn. A very interesting group of bouquet Dahlias came from Mr. Turner, and they appeared to be a great advance on what has hitherto been seen of these. The flowers were models of symmetry, and the colours remarkably varied, and very showy. Of deep crimson and purple shades there were Little Mistress, Prince of Liliput, and King of Purples; and Burning Coal, golden ground colour, edged deeply with fiery crimson, a very striking variety. Of bright scarlet colours there were Little Wonder; Little Julius, D. Webb, and Northlight; Glowworm, bright orange scarlet; Everard, fawn suffused with orange; Mr. Koch, golden buff; and of shades of rose and lilac, Little Love, and some seedlings unnamed. A special certificate was awarded to these. One variety was selected for the highest award, to wit, a first-class certificate—namely, Little Beauty, golden buff, edged with fiery crimson, very free and striking. A huge basket of the new *Solanum capsicastrum hybridum* was shown by Mr. Macintosh, of Hammersmith, it is the result of a cross between *S. capsicastrum* and *S. pseudo-capsicum*, its height and size of foliage are a stage between the two, and it will be a good ornamental conservatory plant. The handsome *Nerine Fothergilli* was produced by Messrs. Paul & Son; its bright scarlet blossoms make it a capital conservatory plant at this season of the year. Messrs. Downie, Laird, & Laing had a pan of *Alternanthera* species, a very dwarf hardy variegated edging plant, the foliage being brownish green and red.

Excellent boxes of cut Roses came from Mr. Turner and Messrs. Paul & Son, a special certificate being awarded to each exhibition. Among Mr. Turner's flowers were remarkably good examples, when the season of the year is remembered, of the new French Tea-scented Rose *Maréchal Neil*, which pleased me vastly; also of the same division *Souvenir d'un Ami*, *Gloire de Dijon*, *Madame Villermoz*, and *Devoniensis*; *Bourbon*, *Souvenir de Malmaison*; *Noisette*, *Celine Forestier*; and Hybrid Perpetuals, *Victor Verdier*, *Jules Margottin*, *Charles Lefebvre*, *Madame C. Wood*, *Lord Raglan*, *Madame C. Crapelet*, *Comte de Nanteuil*, *La Ville de St. Denis*, and *Duc de Cazes*. Messrs. Paul and Son had their new Hybrid Perpetual *Princess Mary of Cambridge*, not in good condition certainly, but which I think will take the front rank among Roses; *Madame C. d'Offay*, a beautiful flower, similar in build and colour to *Senateur Vaisse*, but brighter; *Maréchal Vaillant*, *Madame Boll*, *Maurice Bernardin*, *Lord Clyde*, *Vainqueur de Goliath*, *John Hopper*, *Jean Touvais*, *Auguste Mié*, *Madame Victor Verdier*, and *Charlemagne*; *Bourbon Baron Gonella*, and *Catherine Guillot*; *Tea Gloire de Dijon*; and *Noisette Lamarque*. Mr. Turner had a single bloom of a seedling Hybrid Perpetual, *Princess of Wales*, colour rosy crimson, and not sufficiently developed to judge of its merits. Mr. C. Southby, of Clapham, had a dwarf-growing *Cineraria maritima*, named *nana*, the foliage of which appears to be smaller and more compact. A very handsome Kidney Potato greatly resembling the *Fluke* in appearance, and named *Freedom*, was shown by Mr. William Hand, it is said to be a very valuable late variety.

At the Fruit Committee there was a competition with three dishes of dessert Apples; Mr. Earley, gardener to F. Pryor, Esq., of Digswell, being first with *Ribston* and *Cox's Orange Pippins*, and *Sam Young*. Mr. Earley also had another lot consisting of fine *Fearn's Pippin*, *Golden Winter Pearmain*, and *Sam Young*. Second, Mr. John Cox, of Redleaf, with *Ribston* and *Cox's Orange Pippins*, and *Pitmaston Nonpareil*. These were finer fruit than Mr. Earley's, but were inferior to his in flavour. Mr. John McLaren, of Erdington Park, Bedford, had very fine *Ribston Pippins*, and *Melon*, and

Margil Apples, the two last small. Mr. Whiting, of The Deepdene, Dorking, had Ribston Pippin, a russet unnamed, and Sudbury Beauty. With three dishes of dessert Pears, Mr. Whiting was first with Marie Louise, Comte de Lamy, and Thompson's. Second, Mr. Earley, with Marie Louise and Gansel's Bergamot, both very fine; and Brown Beurré. Mr. Whiting had also Marie Louise, Beurré Diel, and Althorp Crassane. Mr. Ivery, of Dorking, had Marie Louise, Comte de Lamy, and Thompson's. Mr. John McLaren had Glou Morceau, Beurré Bosc, and Marie Louise, the last very fine. Mr. Bragg, of Slough, had dishes of very fine Marie Louise Pears, and Cox's Orange Pippin Apples. James Crute, Esq., of Holloway, also had fine Blenheim Pippin Apples.

F. J. Graham, Esq., of Cranford, had a splendid fruit of Autumn Nelis Apple, and a brace of Graham's Autumn Nelis Pear. From the Society's garden at Chiswick came a collection of late Plums, consisting of Royal Bullace, White Impératrice, White Bullace, German Prince, Mirabelle Tardive, Dunmore, Coe's Golden Drop, St. Martin's Quetsche, Coe's Late Red, Downton Impératrice, and Ickworth Impératrice. Messrs. Paul & Son, also, had fruiting branches of the following Raspberries:—Merveille de Quatre Saisons, red, and the same yellow; and Belle de Fontenay, a high-flavoured and deep-coloured fruit. From the Society's garden came bunches of Large Monthly, Brinckle's Orange, and Cushing. To all appearance these three were identical with the others. Lastly, a special certificate was awarded to Mr. Ruffett, of Brockett Hall, for a magnificent Providence Pine, weighing considerably over 9 lbs.

R. D.

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### REMARKS ON FRUIT-TREE CULTURE.—No. 3.

BUT after all it will be a mere matter of convenience whether the trees, previous to being planted in their permanent situations, are brought up to the bearing point by the course of preparation before recommended, or whether they are planted permanently in a younger state of growth. The difference will be, that in the latter case the trees will have to undergo precisely the same discipline and manipulation, if they are to be kept within certain bounds and subjected to artificial management, and at the end of some years will be no farther advanced than they would have been if subjected to the same in a limited space; and here the question arises as to how far cropping the spaces between the trees with vegetables may be carried on without injury to the trees. Now as a principle I object entirely to cropping over the roots of fruit trees, whether it be pyramids in the open quarter or wall fruit trees, although, unfortunately, like many another, I cannot always avoid it for want of space; and it is for this reason that I would urge that it is more economical in the end to bring the trees elsewhere into what may be called a paying state of growth before being permanently planted out. They would then be better able to hold their own against any inevitable cropping, or if that could be avoided they would then be in the best of all conditions to profit by it; and for the furtherance of this latter object I would prefer, especially in the case of pyramids in the open quarter, to plant the trees nearer together, so as to occupy so much less ground as to preclude the possibility of cropping with advantage, rather than to plant at wider intervals to give room for intervening crops. It is very certain that one or the other must be done where perfect cultivation is desired, for there is no steering midway between these two antagonistic interests; and for the good of both they should be kept separate, or they will prey upon each other to their mutual detriment.

This principle, however, is only applicable to those cases in which the ground is permanently occupied by fruit trees; and although foreign to the subject, I would observe that the case is widely different in that of temporary kitchen-garden crops, which arrive at maturity in a given time and are then cleared off. Here it is perfectly legitimate, and indeed very often a sheer necessity, to plant other crops in the intervening spaces between standing crops, such, for example, as that of planting Cabbages or the Brassica tribe generally between the rows of early Potatoes before they are ready to lift for use. They are not injured thereby, because by the time the plants are ready the Potatoes have made most of their growth, and have only to ripen off; and moreover, the movement of the soil consequent upon lifting the crop is highly beneficial to the plants.

Perhaps I have dwelt on this too long; but there is yet another argument in favour of abstaining from cropping over or near the roots of fruit trees which ought to be taken into consideration in making arrangements for planting—which is, that in order to do those vegetable crops anything like justice the ground must be deeply moved by trenching or very deep digging; and when we consider what a strong tendency there is in fruit trees growing in a healthy soil to throw out their young fibres in all directions to a great length, it is evident that this deep moving of the soil must lacerate some and cut off a great number of others of those fibres, and that, too, probably at a time when the tree most needs them for the development of a healthy growth. Now we are advocates for root-pruning in its proper place as a means of checking luxuriant growth and inducing a fruitful habit; but I must say that it is not well to root-prune in this awkward and blundering manner. Root-pruning should be performed at one particular season, and only becomes necessary under peculiar circumstances, and many trees never require it at all, but, on the contrary, need all the encouragement and space which can be allotted to them, to enable them to maintain a healthy existence. I repeat, then, that I consider to plant trees nearer together, so as to leave the soil undisturbed except for the purposes of surface-cultivation, is preferable to planting at wider intervals to allow of intervening crops; and again, it seems a retrograde sort of movement to take every possible pains to make up a suitable compost for fruit trees, and then to suck out all its goodness with vegetable crops.

I do not say but that I have now and then seen good vegetables growing among plantations of fruit trees, and also on the borders for wall fruit trees; but in the latter case I have never been surprised to find that the trees often require renewal, nor that in the former case, the practice should so soon be found unprofitable and injurious in both ways.

I make these remarks principally by way of inducing young gardeners to give the subject a thought now and then, and on the supposition that those who purpose to plant are intending to give that attention to cultivation that will soonest bring the fruit trees into a bearing and profitable state of growth. The case is different where a plantation is made and left to fight its way amongst other crops until it so far predominates as to render it useless to plant them, the planter, of course, looking to his crops for repayment of outlay for some years; but this plan can only succeed when the soil is particularly favourable to fruit trees and needs little or no preparation. But this is not cultivation, it is mere chance-work; and although it may succeed very well in some few instances, there are many in which it certainly does not, and in which the system is a means of bringing certain destruction on many varieties, which dwindle away under the treatment and eventually perish, thus leaving many blanks in the plantation very difficult to fill up afterwards when the roots of the larger trees have taken possession of the ground—as difficult,

in fact, as it is to rear a plantation of young Vines on a border in which old Vines are left growing for the sake of a year's fruit, and which are sure to take possession of the new soil provided for the young Vines. The same principle runs through the whole of what I have advanced on the subject, and, therefore, I consider it a matter worthy of the attention of planters.

JOHN COX.

## REPORT ON THE BEDDING PELARGONIUMS GROWN AT CHISWICK, 1864.

BY THOMAS MOORE, F.L.S., SECRETARY TO THE FLORAL COMMITTEE.

(Concluded from page 228)

THE most approved sorts are indicated throughout by an asterisk (\*), and the next grade by an obelisk (†).

### SERIES V.—SILVER VARIEGATED VARIETIES.

#### 1. LEAVES ZONATE AND MARGINATE.

##### (a) Margins white.

*Argus* \* (G. Smith).—Moderately vigorous habit; leaves with whitish edge and indistinct pink zone; flowers very bright light scarlet, well formed and in good trusses

*Burning Bush* (Hally).—Dwarf habit; leaves with whitish edge and pink zone; flowers light scarlet.

*Countess of Warwick* \* (Kinghorn).—Vigorous free habit; leaves whitish at the edge and with a dark red zone; flowers abundant, scarlet.

*Elegans* (E. G. Henderson & Son).—Moderately vigorous habit; leaves white-edged and faintly pink-zoned; flowers cerise.

*Fontainbleau* \* (E. G. Henderson & Son, Scott).—Dwarf habit; leaves with a whitish margin and a faint pink zone; flowers cerise.

*Julia* † (Turner).—Vigorous habit; leaves with very slight pink zone and whitish margin; flowers scarlet, in good trusses.

*Little Beauty* (E. G. Henderson & Son).—Dwarf habit; leaves very white at the edge, with a deep red zone; flowers scarlet.

*Picturatum* \* (Turner).—Dwarfish habit; leaves flat, with whitish edge and well-marked pink zone; flowers light scarlet.

*Rainbow* (Scott).—Moderately vigorous; leaves with pink zone and whitish edge; flowers light scarlet.

*St. Clair* \* (Turner).—Free and moderately vigorous habit; leaves cupped, whitish at the edge, and having a dull zone; flowers rather narrow-petaled, in fine trusses, pale cerise pink. Also grown as Victoria.

*Silver Chain* † (Scott, E. G. Henderson).—Compact dwarf habit; leaves with a broad whitish edge, flat, with indications of being zonate; flowers bright rosy cerise, large and well formed, darker than those of Venus, which it very closely resembles; the foliage however is better.

*The Countess* (E. G. Henderson & Son).—Vigorous and coarse in habit; leaves with whitish edge and dark zone; flowers scarlet.

#### 2. LEAVES MARGINATE, NOT ZONATE.

##### (a) Margins white.

*Alma* \* (Scott, Turner).—Moderately vigorous habit; leaves with a broad whitish edge, flowers deep scarlet. Of free healthy growth.

*Bijou* \* (Low & Co., Turner).—Moderately vigorous; leaves flat, with a

whitish edge; flowers of good form, scarlet. Considered better than Jane, but of a more compact-growing habit.

*Jane* \* (Turner).—Moderately vigorous habit; leaves whitish at the margin, rather cupped; flowers scarlet. Of good free habit, covering the ground well.

*Mangles's Variegated* (Scott).—Of free spreading habit; leaves lobed, with a broad whitish edge; flowers small, pink. Useful.

*Mountain of Light* (Fraser).—Dwarf habit; leaves whitish at the edge; flowers scarlet.

*Mountain of Snow* (Fraser).—Dwarf; leaves with whitish edges; flowers loose, scarlet.

*Mrs. Lennox* (Taylor).—Dwarfish habit; leaves white-edged; flowers scarlet. The whitest-marked in the collection, but considered to be practically superseded by Bijou and Jane.

*Queen of Queens* \* (Bull).—Moderately dwarf; leaves whitish at the edge; flowers scarlet. A free grower, and dwarfer in habit than Jane.

*Variegated Dandy* (Scott).—Very dwarf and compact; leaves very small, with a narrow whitish edge. Useful in some situations.

(b) *Margins cream-coloured.*

*Annie* † (Kinghorn).—Vigorous habit; leaves large, with a broad creamy edge; flowers scarlet, of a free and rather coarse habit.

*Flower of Spring* \* (Turner).—Moderately vigorous compact habit; leaves broadly edged with cream colour; flowers large, of good form, deep cerise-scarlet.

*Hendersonii* (E. G. Henderson & Son).—Of rather coarse habit; leaves creamy at the edge; flowers scarlet.

*Koh-i-noor* (Scott).—Dwarfish habit; leaves with creamy edge.

*Lady Plymouth* (Turner, Fraser).—Of free spreading habit; leaves bipinnatifid, with creamy edges. An old useful sort.

*Maid of Orleans* (Scott).—Dwarf habit; leaves with cream-coloured edges; flowers pale cerise-scarlet.

*Meteor* † (Dixon).—Moderately vigorous habit; leaves with a broad creamy-white edge; flowers deep scarlet.

*Silver Queen* \* (Taylor).—Vigorous habit; leaves large, round, scarcely lobed, flat, with a well-defined broadish creamy edge; flowers abundant, loose, rose-pink.

*The Bouquet* (E. G. Henderson & Son).—Moderately vigorous habit; leaves creamy at the edge, cupped; flowers dull cerise.

*Variegated Prince of Orange* (Fraser).—Dwarf compact habit; leaves small, lobed, scented, narrowly edged with cream colour.

*Venus* (E. G. Henderson & Son).—Dwarf compact habit; leaves with a broad creamy edge; flowers bright rosy cerise, Similar to Silver Chain, but a few shades less pure in the colour of the leaf.

SERIES VI.—GOLDEN VARIEGATED VARIETIES.

1. LEAVES ZONATE AND MARGINATE.

*Golden Baron Hugel* (Wills).—Very dwarf spreading habit; leaves with a bronzy zone; flowers scarlet.

*Golden Woodwardiana* (Wills).—Rather vigorous habit; leaves yellowish green, with indistinct bronze zone; flowers scarlet, of good form.

*Lottie* (Wills).—Dwarf habit; leaves yellowish with bronze zone; flowers cerise-scarlet.

*Mrs. Milford* (E. G. Henderson & Son).—Vigorous habit; leaves with a

very broad bronze-coloured zone, becoming at length yellow; flowers deep scarlet, distinct.

*Mrs. Pollock* \* (E. G. Henderson & Son).—Vigorous habit; leaves flat, with a broad yellow border and zone of deep red; flowers scarlet. A very beautiful variety.

*Sunset* (E. G. Henderson & Son).—Dwarfish and spreading habit; leaves smooth, flat, with a broad yellow border and distinct zone of light orange red; flowers cerise scarlet. A very beautiful variety.

## 2. LEAVES MARGINATE, NOT ZONATE.

*Cloth of Gold* \* (Veitch, Turner).—Dwarf habit; leaves flat, downy, deep yellow, with small bright green disk; flowers deep scarlet.

*Golden Cerise Unique* (Veitch).—Moderately vigorous and free habit; leaves with yellow edge and reddish zone; flowers small, cerise.

*Golden Chain* \* (Scott, Turner).—Spreading habit; leaves broad, flat, surrounded with a deep yellow edge; flowers deep cerise scarlet.

*Golden Fleece* \* (Veitch, Turner).—Dwarf spreading habit; leaves flat, yellow, with green disk; flowers abundant, bright scarlet. Appears to be of freer habit than Cloth of Gold.

*Golden Harkaway* † (E. G. Henderson & Son).—Dwarf habit; leaves lobed, and having yellow margins; flowers loose, orange-scarlet, tinted with cerise.

## 3. LEAVES WHOLLY YELLOW.

*General Longstreet* (Wills).—Apparently not free; leaves yellowish; flowers scarlet.

*Golden Leaf* (Carter & Co.).—Dwarf habit; leaves yellow; flowers scarlet.

*Golden Little David* (Wills).—Dwarf habit; leaves yellow. This plant was not vigorous enough to produce flowers,

*Robert Fish* (Wills).—A gold-leaved variety, with orange-scarlet flowers of the semi-nosegay character, and highly promising as dwarf sort for edging, but not well developed.—(*Proceedings of the Royal Horticultural Society.*)

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## CULTIVATION OF CAPE HEATHS.

THE soil required for Heaths is fibrous peat, mixed with sand. The peat ought to be selected from a moor, where the wild Heath grows luxuriantly, and laid up in sheds, or built on a dry bottom, in ridges, so that the rain may run off. By this means it will always be found dry, and in good condition for use. When wanted for potting, it ought to be broken or torn up, not cut with the spade, as cutting is apt to reduce the fibre, and mixed with about one-quarter of sand, more or less, according to the nature of the peat. The more good strong fibre it has, the less sand will be required. Pit or river sand will do, provided it is sharp and pure; but silver sand is better.

Some cultivators consider the season of potting to be of great importance—some recommending spring, some early summer, and even midsummer has its advocates; but I do not think the season of potting to be of so much importance. I prefer potting just whenever the slightest appearance of fresh growth is observed. This varies a little with the species and the locality, but is generally in early spring. By this time the roots will have made a little progress, and be in good condition for laying hold of the fresh soil. A shift of about 2 inches will generally be found sufficient; but a new system of potting has come out within the last few years, which is to shift a plant from a thumb pot into one of 9 or 10 inches, using the soil in as rough a state as possible. If

you have separate houses for growing your plants in, and good fibrous soil, by all means adopt this system; but if your soil is not first-rate, it is impracticable; and as a small plant in a large pot is very unsightly, I would rather recommend the older system. The pots ought to be of as soft and porous a nature as possible, because when a plant has received an over-supply of water, if the pot is porous it absorbs a considerable quantity, which it is ready to yield when the plant again becomes dry, thus materially assisting to prevent those extremes of drought and moisture to which those plants are so very liable.

Drain well—that is not to say fill the pot half-full of crocks, but put one large piece on the bottom; arrange carefully a few smaller pieces above that, all with their convex sides uppermost; and a few smaller still, and cover all with a thin layer of moss.

Care must be taken that the plant be in a medium state as regards moisture when it is potted, because if it is too dry, you may water till the fresh soil be sour without giving the old ball a proper supply; and if it is too wet, the operation, which should be one of pleasure, will become nasty and disagreeable. Neither must the plant be very firmly pot-bound; because if it is so, a stick must be used to prick out the roots, which is very apt to destroy a number of them.

The roots are very tender subjects to deal with, and must be used very carefully, if anything like success is expected. Let us suppose our Heath to be in good condition; if it is not, it had better be sent to the rubbish heap at once, because if a Heath once gets out of condition, there is very little hope for it—at least, it very seldom recovers, so as make a good specimen. If it is not too heavy, turn it out on the hand, remove the crocks carefully, then beat the ball with the palm of the hand, shaking it gently the while, so as to loosen the fibres a little. Put some of the rougher parts of your soil in the pot; place in your plant to see that it is at the proper height to leave room for water. This, of course, must be in proportion to the size of the pot. Supposing it is what is called a six-inch pot, the neck of the plant should be about three-quarters of an inch below the level of the rim. If this is all right, and the plant exactly in the centre, fill in some soil all round, pressing it in with a thin stick, so as to make it very firm; then give a thoroughly good soaking of water, and remove to the greenhouse or heathery, which should be a light, airy house, fully exposed to the sun, having most perfect means of ventilation, and a little fire heat at command to avert injury from severe frost. A span roofed house, having a sparred stage in the centre, and benches round the sides, also sparred, is most suitable; the top and side sashes ought to be moveable, and there should be ventilators near the bottom of the walls, so as to admit of a current of air to pass up through the plants. If a covering a degree or two thicker than that used for shading could be made to roll not only down the roof, but also down the sides as far as the glass extends, the use of fire heat might be in a great measure dispensed with; because in winter Heaths will stand a few degrees of frost much better than a few degrees of fire heat. The late Mr. McNab (father of the present respected curator of the Edinburgh Botanic Garden), who was a most excellent Heath-grower, used not to concern himself although he found his plants frozen to the benches. His plan in such cases was to apply fire heat only if he considered the frost likely to stand for some time, to prevent the temperature from falling lower, but by no means to drive out the frost, leaving that to be done entirely by natural means.

Heaths are very clean growers—that is, free from nasty insects. Scale will sometimes attack them, but that is easily removed with a dry brush. Mildew is their only real enemy, because if it once gets established it is very difficult to eradicate. It is caused by the atmosphere of the house being close and

damp, or by the plants being injudiciously watered in dull weather. It appears like a slight down or pubescence, generally on the young shoots. When a plant is found to be infested with it, remove it from among others of the same genus, and dust it with sulphur. The sulphur may be put on with the finger and thumb; or a box, with a perforated lid like a pepper bottle, may be used; but better still, the sulphurator, which is a conical instrument, the base being a wooden lid which screws off, so that the instrument may be filled with sulphur. The sides are of leather, stretched on hoops, which gradually diminish towards the apex, which is a wooden mouthpiece, having a fine wire netting, through which the sulphur is puffed on to the plants. But prevention is said to be better than cure; so to prevent it, get the wood well ripened by fully exposing the plants to the light. Keep the house dry in dull weather, and be very careful not to over-water in winter. Avoid rust—that is a brown, withered appearance, which exposure to the cold cutting winds which prevail in spring produces. When such winds prevail, keep the weather side of the house closed; but leave the ventilators at the bottom of the walls and the lee side of the house open, so as to keep up a current of fresh air.

Of the training of Heaths comparatively little can be said; however, the stakes ought to be thin, painted to match the foliage, and finely pointed, so as not to injure the tender roots. Many of the best sorts require no staking, and must be kept regular by pinching out the points of the shoots; and such as *E. hyemalis*, *E. Bowieana*, and others of like habit, will require to have the flower-shoots cut out immediately after flowering. Some species, such as *E. elegans*, that are inclined to produce seed freely, ought to have the seed picked off as soon as it appears, as they often exhaust themselves in ripening the seed, and die soon after.

Much difference of opinion exists as to whether they ought to be kept indoors, or put out during summer. I think it is of little consequence which course is taken; but if they are left in, they must have plenty of room; so I would advise putting part of them out. Prepare a bed of rubble, and cover it with ashes at least deep enough to plunge your pot in half-way down. Put out your plants about the beginning of June, and take them in about the beginning of September.

A few remarks on watering and shading, and we have done with this part of our subject. Be very careful to water only when the plant is dry; but remember that many species, and especially the more stunted-growing sorts, will never raise their heads again, if once they are allowed to droop for want of water. Syringe gently in the evening when they are growing, leaving plenty of air on so as to carry away the superfluous moisture. Shade only during bright sunshine—in fact, if the burning rays of the sun can be prevented from reaching the roots, there is no occasion for shading. Give all the air possible during summer, and winter too, in mild weather.

Propagation comes next to be considered, and first by seed. The seed ought to be sown in May, in shallow pans, well drained, and filled with sandy peat. The seed-pans should be put into a cold frame, and kept close and moist until the seedlings come through the soil. They must then get air freely. They ought to remain in the seed-pans during the first winter, and in spring they should be pricked out round the edges of three-inch pots.

Second, by cuttings. Pots for cuttings should be filled to within about 2 inches of the brim with drainage; a thin layer of peat fibre ought to cover the drainage, then about 1 inch of very sandy peat, and then fill up with fine washed silver sand. The cuttings ought to be taken in May from the young wood. They should be about an inch in length; the foliage should be cut off the lower half, and the end trimmed with a sharp knife; they may

then be dibbled into the pots. Water well with a fine rose, and cover with a bell-glass, then plunge in a bottom heat of about 70°. The more free-growing sorts will be rooted in a few weeks, when the glass must be taken off. After they have grown a little, the tops will require to be pinched out; and when they have started again, remove to a cool house. They had better be left in the cutting-pot during the winter, and potted into thumb pots in spring. The hard-wooded varieties will take longer to strike, but they may be treated in the same manner.

I might mention several other systems of propagating Heaths, such as putting the plants in heat in January, taking the cuttings in February, striking, and having them established in thumb pots by autumn, or taking cuttings of wood nearly ripened, and keeping in bottom heat during winter; but I think the system I have detailed is the best suited for gardeners, as the second generally incurs the loss of the parent plant, and the third is very troublesome, owing to the glasses requiring to be wiped every day.—(G. M. W. in *West of Scotland Horticultural Magazine*.)

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### GENTIANA ACAULIS.

As long as I can remember the garden in which I used to sport when sprouting into a schoolboy, I have the liveliest recollection of the beautiful blue Gentian. Its name was the first botanical *nomen* I ever mastered. The colour of this flower is the most beautiful and intense blue that can be imagined, when the plant is grown in a good position—open, clear, and airy. “The name of *Gentiana*, and its English form *Gentian*, was bestowed by Dioscorides on some species of medicinal plant—the virtues of which were believed to have been discovered by Gentius, King of Illyria. Linnæus adopted it as a generic name; but it is doubtful whether his genus includes the *Gentiana* of Dioscorides and Pliny.” Let tradition—if it is nothing more reliable—say what it will about the origin of its name, it is one of those lovely little unobtrusive flowers that are the property of all. “On the verge of the snow-line in our frozen Arctic regions” it brightly smiles, but it is doubtful if this variety is the “glorious azure-tipped *Gentianella* (*Gentiana acaulis*),” so well known in our gardens, although its “claims to be indigenous rest on a somewhat dubious footing.”

The Blue Gentian is frequently used as an edging for beds, as the flowers are large, and, the stems being very short, it blooms close to the ground. I think it does better in the moister climate of the midland districts of England, than in the drier and hotter south. I have seen it employed very much in some parts of Yorkshire as an edging for beds, and when the plants are covered, as they sometimes are, with a number of the striking blue flowers, it is very handsome. Sometimes two or three beautiful blossoms can be seen issuing from a very small root, too small apparently to produce flowers. It should be grown in a soil of which sand or peat forms a portion, and can be propagated, like many other herbaceous perennials, by dividing the plants in the spring. I have known seed of it imported from France and Germany, but I am not aware if it seeds in England. It deserves a place in all gardens, and is one of those “old-fashioned” plants, as they are termed, that some of the present generation of gardeners think they can willingly spare; and so a word or two in favour of a deserving old friend and schoolboy companion in the great academy of nature has been written by—

AULD LANG SYNE.

## OUR MONTHLY CHRONICLE.

NOVEMBER bids fair, if we may judge by the weather with which it is ushered in, to maintain this year its title of "gloomy November." For the last fortnight rain has been the order of the day—rain not in heavy showers, but a steady fall of small drops, and during that time, near London, at least, the sun has rarely shone. After the long-continued heat and drought the thirsty earth drank in the moisture with avidity, and the soil from being dust-dry is now saturated. The total fall of rain since this wet period set in amounts (up to October 25th) to nearly  $4\frac{1}{2}$  inches of rain, or roughly four hundred and fifty tons per acre. Meadows and lawns that were browned have resumed their verdant hue, and crops that had been sown and planted for winter and spring use, and which had been brought to a standstill by the drought, have again begun to grow. From all parts of the country we hear of the extraordinary effects of the late hot weather—of Pears that have bloomed again, of Strawberries bearing a second crop, and of Horse-chestnuts flowering in autumn, with many other strange and "modern instances"—deviations from the ordinary course of vegetation. Asparagus and Strawberries, not, however, in quantity, were to be had very lately in Covent Garden, being the second production of beds out of doors. What will be the effect of the almost tropical heat which prevailed so late in the season, and for such a length of time, followed now by a heavy rainfall? Will it be favourable or the reverse to the prospects of next year's crops? These are questions to which time alone can give a satisfactory answer; but we believe that the effects of the heat and drought will be beneficial rather than otherwise, at least in the majority of cases, to fruit trees, by securing the thorough ripening of the wood and buds; whilst the great rainfall, coming at a time when the leaves are off the trees, will sink into the earth to a depth which it could never reach in summer, when the leaves throw it off or evaporate it almost as fast as it falls. In the valley of the Thames the complaint of fruit-growers for the last few years has been want of water—that their trees are always too dry at the root. Perhaps this may arise in some measure from the diminished volume of water which the river contains at low water, causing the springs to fall below the level which they otherwise would do, as well as from these being tapped by sewers and the other subterranean ways which are extending in all directions round London. By the market-gardeners, then, except those in low-lying situations, the heavy rains will be regarded as a boon.

The old writers on gardening considered that the gardener's year began in November, and such was indeed the case in their days,

when bedding plants were not cultivated. Now, however, when these have to be propagated by the thousand in August, that month has some claim to be considered the beginning of the year in the floral department; for active operations for the embellishment of the flower garden in the following season are then first commenced. As regards the fruit and kitchen garden, however, November is still the beginning of the year, and in both the ornamental and the useful departments of the garden it is then that anxieties begin to be multiplied—anxieties which will continue with but brief intermission till the same month come round again.

The approach of winter has now to be provided for, and all sorts of contrivances have to be resorted to in order to afford warmth and shelter to a multitude of plants, and for forwarding crops to produce before their natural season. The earth in this month is usually warmer than the air, and moisture rises from its surface, and is either condensed as rain, or remains suspended in the atmosphere as fog. Evaporation is checked from this moist condition of the air, as well as from its diminished temperature; and it therefore becomes the duty of the cultivator to guard against mildew and damping, which are almost the certain consequences of too much moisture in the soil or air of the places where plants are growing. The supply of water must therefore be greatly reduced, and as much ventilation given as possible, in order that the atmosphere of frames and other structures may be in the most favourable condition for preserving the foliage in a healthy condition. Plants when in a damp soil or atmosphere are also much more liable to injury from frost than when kept dry.

**GIGANTIC TULIP TREE.**—Growing on a farm at Monmouth, New Jersey, was a gigantic Tulip Tree, which has been recently cut down. It stood upon the most elevated part of an open field, unsheltered since the original forests were cleared away, probably more than 150 years ago. The older inhabitants assert that formerly a similar one grew near it, but, struck by lightning, died. A few years ago this gigantic tree exhibited a vigorous growth with its large Tulip-shaped flowers and green foliage. The trunk, the limbs, and top were all of proportionate size, so as greatly to deceive the eye in regard to its real magnitude, until a near approach discovered its immense dimensions. It was cut down in April last, the trunk perfectly round and straight, and near the ground, much enlarged; its roots occupied a space of 52 feet in circumference, or a diameter of 17 feet 4 inches. Above, it slightly and gradually tapered to the

limbs, measuring 28 feet from the lowest. At one foot above the earth its circumference was 34 feet 5 inches; three feet, 27 feet 4 inches; at six, 22 feet 19 inches; at eighteen, it was 20 feet round; averaging 32 feet in height, the tree divided into five branches, the larger measuring respectively 10, 12, 13, and 15 feet 9 inches in circumference. One of them extended 60 feet from the trunk, and with the opposite branch made the distance of 106 feet. In another direction the top measured 86 feet across. Its whole height reached about 110 feet. The bark around the lower part of the trunk, or as far up as visitors could well reach, has been abraded, and marked with their initials or names, as they wished thus to hand them down to posterity. Above, the bark remained in its natural state rising in furrowed ridges, some 4 inches deep, and covered with thin, flat Lichens, presented the appearance of having braved and stood the rains and storms of past centuries. Since cut down, the age of this great tree is ascertained to have been about 225 years. The central part of the trunk for about 3 feet in diameter was found to be decayed, but the rest perfectly sound. Its stump measured 11 feet through, and it required the work of one man for seven days to cut down this remarkable king of the forest, and the chips filled five wagon loads. — (*Horticulturist*.)

AMERICAN MARKET GARDENS.—The following extracts from the same publication are relative to the market gardens from which New York is supplied. These are embraced within a half circle of ten miles from the City Hall and are about 1000 acres in extent. It is questionable whether there is an equal area anywhere else in the country so thoroughly cultivated, or with such profitable results. In many cases the returns are £310 per acre, and it is perfectly safe to say that the whole average is £208 per acre. This high degree of fertility is only obtained by the highest cultivation, and it takes about three years to break in farm lands and bring them up to this high standard. The varieties of vegetables cultivated are few in number, and mostly different from those of Long Island, whose lands embrace a much greater extent, but are not so highly cultivated. The vegetables grown are principally Cauliflowers, Cabbages, Beet, Spinach, Onions and Lettuce for a first crop, followed by Celery, Horseradish, Thyme, Sage and other herbs for a second crop. To produce the above results the soil must be kept at work, and as soon as the spring crops are off in July, the plough and harrow again invade mother earth, and she is planted with the fall crop. The particular manner of cropping is something like this; Cauliflowers, for instance, are planted out 2 feet between the rows and 15 inches between the plants, setting Lettuce between the rows, which is fit for market before the Cauliflowers

are large enough to be injured. The Cauliflowers in turn are marketed the last of June or first week of July, when the ground is prepared and planted with Celery in the following manner. After the soil has been well pulverised by ploughing and harrowing, lines are struck out 3 feet apart, but no trenches are made as is usual in private gardens. The plants are set in the lines 6 inches apart, and the ground kept clean by the cultivator until September, when the plants are strong enough to allow the earth to be laid up against them by the plough, and the banking is completed with the spade. The variety best suited for this market is known as the French or Incomparable Dwarf. Another feature peculiar to the Jersey market gardeners is the forcing and forwarding of early vegetables by hot-beds and cold frames, immense numbers of which are used, some growers having upward of 2,000 sashes, principally for the forwarding of Lettuce and Cucumbers in cold frames. This frame is very simple, being two boards 9 to 10 inches wide, fastened to end boards 6 feet long, on which 3 by 6 feet sashes are placed to any desired extent. The Lettuce plants are set in them in March, 8 inches apart, or 50 plants per sash. By the middle of May the Lettuce is fit for use. As soon as a few heads are cut, seeds of Cucumbers are sown in their places. They come up quickly and take the place of the remaining Lettuce as it is removed.

LOUIS VILMORIN STRAWBERRY.—This was raised by M. Robine, and is stated by him to be possessed of a high degree of merit. He describes it as being heart-shaped, bright red, of a somewhat deep tinge; the seeds prominent and not over-numerous; flesh firm, bright rose at the centre and red towards the outside; very juicy, not very sugary, but with a high perfumed flavour. The berries keep well for several days after ripening or gathering. The plant is described as dwarf and sturdy, and a good bearer in the first year of planting, bearing tolerably early, and also among the latest. The variety is very productive, vigorous, and hardy, and although in wet soils it suffers in winter, it quickly re-establishes itself when severe frosts are past. In addition to the other good qualities ascribed to it, it is said to be a good forcer.

AILANTHUS FLAVESCENS.—Under this name M. Carrière describes, in the *Revue Horticole*, a near relative of *Ailanthus glandulosa*. It was received from China in 1862 and proved perfectly hardy. It forms a vigorous tree, grows as rapidly as the older species, and the leaves have not the same offensive odour. The leaves are composed of from 13 to 17 pairs of leaflets; the rachis, or leafstalk, upwards of a yard in length, and yellowish; the leaflets of a shining deep green on the upper side, somewhat glaucous beneath, and having a yellowish midrib.

## CALENDAR OF OPERATIONS.

## CONSERVATORY AND SHOW-HOUSE.

THIS department will now require every care to maintain a display of bloom, and to preserve the necessary neatness and order, that at the same time it may afford an enjoyable retreat in bad weather, or during the evening, if it is accessible from the mansion. Heliotropes, Mignonette, Jasmines, Tea Roses, Daphne indica, Violets, and other sweet-scented plants, should be largely introduced; and more showy plants, as Chrysanthemums, Salvias, tall Lobelias, Fuchsias, Gesneras, Belladonna and Guernsey Lilies, and many kinds of Amaryllis, may also be added, to set off the permanent occupants, and warm up the building by giving colour. A most useful conservatory plant is *Heterocentrum roseum*, which, under good cultivation, flowers profusely at this season. A few things may be added from the stove, as *Hedychiums*, *Crinum*s, and *Begonias*, as they come into bloom. Fires will now be necessary, and should be stirred up briskly on damp mornings to dry the atmosphere after watering and cleaning out, giving air at the same time. Night temperature, 45°.

## GREENHOUSE.

*Azaleas and Camellias*.—The buds of the *Camellias*, where set too thickly, should be thinned out at once. During winter, the plants intended for blooming late should be kept cool, but at the same time well attended to with water, as the buds are now filling themselves; weakly and underpotted plants will be benefited, even now, with weak manure water occasionally. Place a few of the earliest-rested *Camellias* in a rather warmer house to bring them into bloom quicker. Small plants are invaluable for rooms during the winter, and should be brought on in succession. *Azaleas*, keep cool, and with a dryish atmosphere. A few good forcing kinds may now be placed in a warmer house to forward them. *Cinerarias*.—This and next month are the worst for the culture of this plant, being subject to mildew; great care must be taken to sulphur such as are infected by it. Specimen plants will now require great attention: thin out all small and decaying leaves, and peg down the strong, to admit the light and air. Such as are required for early flowering may now have their final shift; stop—that is, pinch out, the tops of their shoots as soon as thoroughly established. In potting, give a light compost, viz.,—two parts good turfy loam, with a good admixture of well-decomposed stable manure, and leaf mould; use sand liberally. In placing, keep as near the glass as possible. *Hardwooded Plants* will now be under glass; water only when the soil in the pots becomes dry, and then thoroughly; give air on all opportunities both

day and night in mild weather, and set the plants sufficiently wide apart to prevent drawing, and also to preserve the foliage healthy down to the edges of the pots. Any Heaths affected with mildew should be dusted with sulphur, or washed with a weak solution of Gishurst compound. *Pelargoniums*.—These will require much care to prevent their getting drawn, when growing freely, and therefore will want plenty of air at all favourable opportunities. Make fires only in frosty and very damp weather, both of which may now be anticipated. If previous directions have been attended to with early specimen plants, little can be done this month, except with the training of the young shoots; let them be tied out carefully, as it will greatly benefit and strengthen them. Avoid crowding the plants; let them have all the room that can possibly be spared. Be careful in watering at this season; only water those that are really dry, and avoid wetting the foliage. Continue to repot any plants that require it, and also stop young struck plants. Cuttings will strike freely now in heat, and withal attend strictly to cleanliness.

## FORCING.

*Forcing-Ground*.—Mushroom-beds should now be made for winter. Where there is a large family to supply, *Seakale* and *Rhubarb* should be started at once, that the forcing may be slow—always attended with the best success. Where space is not an object, and there is plenty of leaves or stable manure, we prefer the old plan of covering the crowns with pots, and then forcing by covering with leaves, or litter and leaves mixed. In the other case, *Rhubarb* roots may be taken up, potted, and introduced wherever there is a slight heat; and *Sea-kale* may be successfully forced by packing the roots closely together in a common frame or pit, and working them by linings; the crowns should be covered with a dry material to blanch them. Fill a pit or frame with *Asparagus* roots (good three or four-year-old plants) over a gentle bottom heat, when a supply is wanted in November. *Peach-house*.—The sashes may be placed on the earliest house when *Peaches* are required in May. Dress over the trees and train them regularly, and surface over the border with fresh loam. Fires need not be applied for a fortnight, and then only by day, as artificial heat to a small extent will be required. *Pinery*.—Plants swelling their fruit should be supplied with a moist warm atmosphere, more especially by day. When the sun is bright close the house early, but allow air to be given freely early in the mornings when the weather is mild; the night temperature may be 65°, with a steady bottom heat. Successions should now be kept drier, but do not allow either the bottom or top heat to fall below

the point which would check the plants. 60° and 80° are safe points for the night and day thermometers to range from, and the bottom heat should not be much less than 85°. *Vinery*.—If, as directed last month, the Vines in the early house have been dressed, borders covered, &c., gentle fires may be lighted on dull cold days, so as to keep the temperature to 45° by night and 60° by day, with a pretty liberal admission of air. We prefer the border being covered only with leaves, Fern, or dry straw, and afterwards coated over with coarse mortar or concrete to exclude wet, to putting fermenting dung on the border. Keep a dry atmosphere to ripe Grapes, and remove all superfluous leaves to admit the air to the bunches. In wet weather let the fires be lighted in the morning to dry the air of the house, and let it go out in the evenings, air at all times being admitted.

#### KITCHEN GARDEN.

Look to your Potatoes and other roots stored away. Take up Endive in quantities on the approach of frost, and fill empty frames, sheds, or other places where you can keep it dry and preserve it from frost. Lettuce must have the protection of glass to get it good through the winter. Earth up Artichokes to preserve the crowns from frost; and Parsley should be hooped over to be ready for protecting when required. Give plenty of air to Cauliflowers, Lettuces, and Radishes under hand-glasses, and see that a quantity of the two former are planted in sheltered places for further protection in severe frost. A sowing of Peas for the first crop may be made towards the middle of the month, and at the same time a few rows of Mazagan Beans may be planted. Trench and ridge up vacant ground to expose it to the weather.

#### FRUIT GARDEN.

*Hardy Fruit*.—Go over the Apples and Pears stored away, and remove decayed specimens. Keep the room cool, and ventilate pretty freely until the sweating process is over, after which a rather close, dry, and cool atmosphere is best adapted for keeping fruit. Now is the best time for planting fruit trees, and where additions are wanted, or new borders made, no time should be lost in getting the materials together, and the trees in the ground. Pruning may commence at once with such trees as have lost their leaves; and Peaches, Nectarines, and Apricots should have their ripe leaves removed with a slight besom, to admit the sun and air to the wood.

#### FLOWER GARDEN.

Continue to place under protection half-hardy plants taken up from the garden, as room can be found for them. Those who have an orchard-house will find it invaluable for wintering many things in this way, which suffer more from damp than cold. Give the

recently struck cuttings as much light and air as you can, to get them established and hardened off before winter, or they will most likely fog off. Scarlet Geranium cuttings may yet be put in, placing the pots with the cuttings on the shelves of any house where they can be kept dry. Those who are deficient of room for wintering Scarlet Geraniums may keep them in any dry out-house open to the south, that the plants may get what sun there is till sharp frosts set in, when any place secure from frost, but dry, will keep them for a long time uninjured; give them no water whatever, nor allow the rain to fall on them. The great secret is getting the wood hard and well ripened; and then when kept dry they will break freely on the return of warm weather. The beds of the flower garden, as the summer plants are cleared away, should either be neatly raked over or the beds filled with dwarf shrubs, bulbs, early flowering herbaceous plants, and annuals previously sown for this purpose. To make a display in spring, a very nice arrangement of colours may be made with Crocuses and early Tulips, followed by Narcissus, later Tulips, Hyacinths, Scillas, and Anemones, &c.

#### FLORISTS' FLOWERS.

*Auriculas*.—There is often trouble at this season in keeping these plants sufficiently dry, to prevent damping of the foliage. Give all the air possible without allowing them to have rain. If the plants are in an elevated position, so much the better. Remove dead foliage as often as it appears. *Carnations and Picotees*.—Treat these plants nearly similar to the Auricula, so long as wet weather continues, and water but sparingly in clear weather. Cleanliness, with plenty of light and air, is the principal thing to attend to, to ensure success. All should by this time be in their winter quarters. *Dahlias*.—These should, if not already done, be taken up and stored for wintering the first time the soil is tolerably dry; dry them thoroughly, with some of the soil about them. Seed will require much attention to prevent its rotting in the pod. *Hollyhocks*.—A cold pit or frame is sufficient to winter well-established plants if kept near the glass, but they should have sufficient pot-room, and not be over-watered. Those now striking will be liable to damp off from over-moisture, which must be guarded against. *Pinks*.—If not already done, a few pairs should be potted up, to fill vacancies in beds that may occur during the winter, as well as some of the more tender-growing kinds, to ensure them against eventualities. A small bed of such planted out in spring will be very useful, and will in some seasons produce the finest flowers. *Tulips*.—Complete planting without delay, the beds having been prepared as previously recommended. The beds may remain open and unprotected till after Christmas.

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50 Splendid RANUNCULUS .....	14s.	and	1 0 0
50 Mixed .....	4s.,	8s.,	and 0 10 0
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## THOMAS MILLINGTON

### HORTICULTURAL GLASS WAREHOUSE,

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ESTABLISHED 1750.



Fig. F.



Fig. C.



Fig. A.

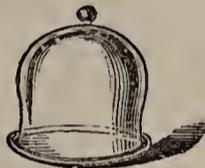


Fig. B.



Fig. G.



Fig. E.

### NEW REDUCED TARIFF.

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers and others.

Size	Best.	2ds.	3ds.	4th.
20 in. by 12 in.	16 oz. 18s. 0d.	16s. 0d.	13s. 6d.	11s. 0d.
20 in. by 13 in.	21 oz. 27s. 6d.	24s. 0d.	18s. 6d.	14s. 6d.
20 in. by 14 in.				
20 in. by 15 in.				

### SMALL SHEET SQUARES.

Size	Best.	2ds.	3ds.	4ths.
6 in. by 4 in.	17s. 3d.	14s. 8d.	12s.	10s. 6d.
6½ in. by 4½ in.				
7 in. by 5 in.				
7½ in. by 5½ in.				
8 in. by 6 in.				
8½ in. by 6½ in.				
9 in. by 7 in.				
9½ in. by 7½ in.				
10 in. by 8 in.				
10½ in. by 8½ in.				
11 in. by 9 in.				
11½ in. by 9½ in.				



Fig. D.



Fig. D.

Fig. A. Hand Glasses.		Fig. B. Propagating Glasses.		Fig. C. Milk Pans.	
	s. d.		s. d.		s. d.
12 inches	5 6 each	3 inches	0 4 each	6 inches	0 5 each
14 "	6 6 "	4 "	0 5 "	10 "	0 10½ "
16 "	7 6 "	6 "	0 7 "	14 "	1 6 "
18 "	8 6 "	10 "	1 2 "	18 "	2 5 "
20 "	9 6 "	12 "	1 6 "	20 "	2 10 "
24 "	11 6 "	16 "	3 0 "	22 "	3 4 "
		18 "	4 6 "	24 "	4 0 "
		20 "	6 0 "		

If open top, 1s. extra.

Fig. D. Hyacinth Glasses  
Common, 2s. 6l. per dozen.  
Improved, 3s. 3d. "

Crocus Glasses.  
Common, 1s. 9j. per dozen.  
Improved, 2s. 3d. "

Fig. E. Hyacinth Dishes.  
6 inches ..... 1s. 0d. each.  
9 " ..... 1s. 6d. "  
12 " ..... 2s. 6d. "

Fig. F. Cucumber Tubes.  
1d. per running inch.

Intermediate sizes in proportion.

Fig. G. Rolling Pins.  
1½d. per running inch.

Opal Ditto.  
14 inches ..... 3s 6d. each.  
16 " ..... 4s. 0d. "  
18 " ..... 4s. 6d. "

Crystal Glass Shades, Ebony and Gilt Stands, Gas and Lamp Glasses, Chimnies and Globes, &c.  
*Anti-Corrosion Paint, of all Colours, 3s per Cwt., Packed in Casks of various sizes. Prepared Oil for ditto.*  
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List of Genera in Van Houtte's Catalogue No. 109.

The so-called DUTCH BULBS are all planted here before the end of October, and consequently till another year no finer Bulbs can be procured.

Amaryllis	Calliprora	Cummingia	Gesnera	Nerine	Scilla
Ammocharis	Calopogon	Cycas	Gloxinia	Ornithogalum	Serapias
Amorphophallus	Camassia	Cyclamen	Griffinia	Pancreatium	Sisyrinchium
Anemone	Chrysophyllum	Cypella	Hæmanthus	Pandanus	Sparaxis
hepatica	Cissus	Cyrtanthus	Hymenocallis	Pentlandia	Sphæroggyne
Anomatheca	Coburgia	Dischidia	Hypoxis	Phædranassa	Stenomesson
Anthurium	Coccocypselum	Dracentium	Imantophyllum	Phormium	Sternbergia
Arum	Colchicum	Erythronium	Ipomœa	Ranunculus	Trichonema
Asterostigma	Convallaria	Eucharis	Iris	Reineckia	Triteleia
Babiana	Cordylina	Eucodonopsis	Ixia	Rogiera	Tritonia
Bobartia	Corydalis	Eurycles	Lycoris	Sanguinaria	Tropæolum
Brodiaea	Cossignya	Ferraria	Mappa	Sansevieria	Uvularia
Brunsvigia	Crinum	Galanthus	Maranta	Sarana	Vallota
Calanthe	Crocosmia	Gardenia	Nægelia	Saurauja	Zamia

Contents of Van Houtte's Catalogue No. 110.

Abelia	Brassia	Dendrobium	Ilex	Odontoglossum	Saccolabium
Abutilon	Broughtonia	Desfontainea	Illicium	œnocarpus	Sarcanthus
Acacia	Burlingtonia	Dillwynia	Indigofera	Olea	Sarcopodium
Acampe	Cactuses	Dioscorea	Iochroma	Oncidium	Sarracenia
Acanthophippium	Calamus	Dipladenia	Ionopsis	Oncosperma	Saurauja
Acanthus	Calanthe	Diplothemium	Iriartea	Ophiopogon	Sauromatum
Acineta	Calathea	Disa	Jovellana	Opuntia	Saxe-Gothea
Acrocomia	Calceolaria	Dracæna	Jubæa	Orchids	Saxifraga
Adenandra	Callicarpa	Drimys	Kennedy	Oreodoxa	Schismatoglottis
Aerides	Calonyction	Drosera	Kleinia	Ornithogalum	Schizostylis
Agapanthus	Camellia	Drymophlæus	Knightia	Ourisia	Schomburgkia
Agathea	Caryota	Echinocactus	Korthalsia	Oxalis	Scottia
Agave	Cassia	Echinopsis	Labichia	Oxylobium	Seafortia
Agnostus	Castanea	Echites	Lacæna	Palms	Sedum
Alocasia	Castanospermum	Edwardsia	Lachenalia	Pandanus	Selenipedium
Alstroemia	Cattleya	Elæagnus	Lælia	Paphinia	Sempervivum
Amaryllis	Centaura	Elæis	Læliopsis	Parochetus	Serissa
Amphicome	Cephalotus	Elæodendron	Lagerstrœmia	Passiflora	Skimmia
Andromeda	Cephalotus	Enkianthus	Lambertia	Pelargonium	Smilax
Angræcum	Ceratopetalum	Entelea	Lapageria	Pescatorea	Sobralia
Anguloa	Cereus	Epacris	Latania	Phædranassa	Solanum
Anæctochilus	Chamædorea	Epandrum	Laurelia	Phajus	Sollya
Anopterus	Chamærops	Eranthemum	Laurus	Phalænopsis	Sophonitis
Ansellia	Chorisma	Eriopsis	Leiospermum	Philesia	Stanhopea
Anthurium	Chrysoglossa	Eriostemon	Leptotes	Phœnicophorium	Stenantha
Aphelexis	Chysis	Eucodonopsis	Leucophyton	Phœnix	Stenocarpus
Aralia	Cirrhopetalum	Eucomis	Leucopogon	Phyllocladus	Stenomesson
Araucaria	Cissus	Eurybia	Libertia	Physurus	Stevensonia
Arca	Clianthus	Euterpe	Libocedrus	Pilocereus	Syagus
Arenga	Coburgia	Euonymus	Licuala	Pimelea	Synechanthus
Arthrotaxis	Cocos	Ferns	Ligularia	Pinanga	Tacsonia
Arundina	Cecogyne	Fitz-Roya	Ligustrum	Pincenectitia	Tasmania
Arundo	Colletia	Galeandra	Lilium	Pinus	Tecoma
Astelia	Convolvulus	Gastrolobium	Limatodes	Piperomia	Testudinaria
Astrocaryum	Correa	Gastronema	Lithospermum	Pittosporum	Thibaudia
Attalea	Coryanthes	Gentiana	Livistona	Plectocomia	Thrinax
Azalea indica	Corypha	Geonoma	Lomatia	Pleroma	Torreya
Bactris	Cosbæa	Gesnera	Luculia	Podocarpus	Tremandra
Bambusa	Crocosmia	Gompholobium	Luzuriaga	Pogonia	Trichopilia
Banksia	Crowea	Gonocalyx	Lycaste	Polianthes	Trithrinax
Barkeria	Cummingia	Grammatophyllum	Magnolia	Primula	Tropæolum
Berberidopsis	Cunninghamia	Grevillea	Mahonia	Pritchardia	Uropedium
Berberis	Cupressus	Griselinia	Malortiea	Pultenæa	Vaccinium
Bertolonia	Cycas	Guilielma	Mammillaria	Punica	Vanda
Beschorneria	Cyclamen	Habranthus	Manettia	Quercus	Vanilla
Bessera	Cyclopa	Hakea	Mappa	Raphia	Verschaffeltia
Bignonia	Cyenoches	Hardenbergia	Maranta	Raphiolepis	Wachendorfia
Blandfordia	Cymbidium	Harina	Marianthus	Regelia	Wallichia
Bletia	Cypella	Helichrysum	Martinezia	Reineckia	Warrea
Bolbophyllum	Cyrtanthus	Hemiantra	Mauritia	Renanthera	Warszewiczella
Bomarea	Cyrtopodium	Heterotoma	Metrosideros	Restrepia	Watsonia
Bonapartea	Cytisus	Hibbertia	Metroxylon	Rhapis	Weinmannia
Boronia	Dacrydium	Houlletia	Miltonia	Rhodea	Witsenia
Brabejum	Dæmonorops	Hovea	Mitraria	Rhodeleia	Xanthorrhœa
Brachysema	Dammara	Huntleya	Monochaetum	Rogiera	Yucca
Brahea	Dasyliion	Hyopporbe	Mutisia	Rubus	Zamia
Brassavola	Daviesia	Hyphæne	Nandina	Sabal	Zygopetalum

THE FLORIST AND POMOLOGIST ADVERTISER.

Van Houtte's Catalogue—Continued.

Contents of Van Houtte's Catalogue No. 111.

Abies	Calycanthus	Exocordia	Lonicera	Populus	Silphium
Acantolimon	Calystegia	Fagus	Lotus	Potentilla	Sisyrinchium
Acanthus	Campanula	Farfugium	Lupinus	Prunella	Skimmia
Acer	Caragana	Ferns, hardy	Lychnis	Prumnopitys	Smilacina
Achillea	Carex	Festuca	Lythrum	Prunella	Soldanella
Aconitum	Castanea	Forsythia	Maackia	Prunus	Solidago
Acorus	Catalpa	Framboisiers	Maclura	Ptelea	Sorbus
Actæa	Catananche	Francoa	Magnolia	Pterocarya	Spergula
Actinidea	Ceanothus	Fraxinus	Mahonia	Pterostyrax	Spigelia
Adenophora	Cedrus	Funkia	Malus	Pulmonaria	Spiræa
Adonis	Celastrus	Gaillardia	Malva	Punica	Stachyurus
Ægopodium	Celtis	Gaultheria	Megasia (Saxifr.)	Pyrethrum	Staphylea
Æsculus	Cephalanthus	Gazania	Melissa	Pyrus (Poirier)	Statice
Agrostemma	Cephalotaxis	Genista	Melittis	japon. (Cyp.)	Stephania
Ailanthus	Cerastium	Gentiana	Menispermum	Quercus	Stipa
Aira	Cerasus	Geranium	Mentha	Ramondia	Stokesia
Ajuga	Cercis	Geum	Menziesia	Ranunculus	Strawberries
Akebia	Ceterach	Ginko	Mespilus	Raphiolepis	Struthiopteris
Alnus	Chænomeles (Cy-	Glaudiolus	Michauxia	Rehmannia	Sureau (Sam-
Alstrœmeria	donica jap.)	gandav.	Monarda	Reineckia	bucus)
Althæa frutex	Chamæcyparis	dwarfs	Moræa	Retinospora	Swertia
(Hibiscus syr.)	Cheranthus	ramosus	Morina	Rhamnus	Symphytum
Alyssum	Cherries	Glechoma	Morus	Rhaponticum	Symphoricarpos
Amelanchier	Chelone	Gleditschia	Myosotis	Rheum	Syringa
Amorpha	Chimonanthus	Glycyrrhiza	Napæa	Rhexia	Tamarix
Amelopsia	Clematis	Griselinia	Narthex	Rhodiola	Taxus
Amygdalus	Clethra	Gunnera	Nordmannia	Rhodod. (Hardy)	Tecoma (Big-
Andromeda	Colutea	Gymnocladus	Nymphæa	Rhodora	nonia)
Androsace	Comptonia	Gynierium	Oenothera	Rhodotypus	Tellima
Anemone	Convallaria	Gypsophila	Omissions	Rhus	Thalictrum
Anthericum	Corchorus (Ker-	Hedera	Onoclea	Ribes	Thermopsis
Apios	ria)	Hedysarum	Ophiopogon	Robinia	Thuia
Apples	Coreopsis	Helenium	Ophrys	Rohdea	Thuioptsis
Apricots	Cornus	Helleborus	Orchis	Roses	Thymus
Aquilegia	Corthusa	Helonias	Orme (Ulmus)	anemonæflores	Tiarella
Arabis	Corydalis	Hemerocallis	Ornus (Fraxinus)	Banks	Tilia
Aralia	Corylopsis	Hepatica	Orobus	Bengale	Tilleul (Tilia)
Araucaria	Corylus	Heracleum	Orontium (Roh-	bract. (rem.)	Torreya
Arenaria	Cotoneaster	Heterotropa	dea)	Capucines	Tricyrtis
Arisæma	Cratæus	Hibiscus	Osmanthus	Cent-feuilles	Trifolium
Aristolochia	Cryptomeria	Hieracium	Osmunda	mousseux	Trillium
Armeniaca	Cucumis	Hoteia	Ourisia	Danas	Tritomanthe
Armeria	Cunninghamia	Hovenia	Oxalis	hyb. de Noi-	Troëne (Ligus-
Arthrotaxis	Cupressus	Hydrangea	Pæonia her-	sette et d'Ille-	trum)
Arum	Cyclamen	Hypericum	bacæe	Bourbon	Trollius
Arundo	Cydonia	Iberis	Coll. Calot.	Ile Bourbon	Tropæolum spe-
Aselepias	Cypripedium	Ilex	Parm.	Lawrenceana	cies
Asphodelus	Cystopteris	Indigofera	Paliurus	Noisette	Tulipier (Liriod.)
Asplenium	Cytisus	Iris	Papaver	Provins pana-	Tussilago
Aster	Czackia	Jasminum	Pardonanthus	chês, &c.	Ulmus
Asterocephalus	Dactylis	Jeffersonia	Paulownia		Umbilicus
Astragalus	Delphinium	Juglans	Pavia	Roses	Uvularia
Astrantia	Dentaria	Juncus	Peaches	remontants	Vaccinium
Astilbe	Deutzia	Juniperus	Pears	(hybr.)	Valoradia
Athyrium	Dianthus	Kalmia	Periploca	Thé	Veratrum
Aubrietia	Dictamnus	Kerria	Pernettya	Rottlera	Verbascum
Aucuba	Dielytra	Kniphofia (Tri-	Phalaris	Rubus	Vernis du Japon
Aulne	Dervilla (Wei-	toma)	Phalodendron	Rudbeckia	(Ailanthus)
Azalea, hardy	gela)	Koelreuteria	Philadelphus	Salisburya	Veronica
Bambusa	Dioscorea	Lamium	Phlomis	Salix	Viburnum
Baptisia	Dodecatheon	Larix	Phlox	Salvia	Vignes
Bellis	Draba	Lastrea	Phormium	Sambucus	vierges (Ampe-
Berberis	Dracocephalum	Lathyrus	Plums	Sanguinaria	lopsis)
Betonica	Dracunculus	Laurus	Physalis	Sauromatum	Vinca
Betula	Echinacea	Ledum	Picea	Saxifraga	Viola
Bignonia	Elæagnus	Leontice	Pinus	Scabiosa	Viorne (Vibur-
Biota	Epilobium	Lespedeza	Pterosperma	Sciadopitys	num)
Blechnum	Epimedium	Leucogum	Platanthera	Scolopendrium	Virgilia
Bocconia	Eranthis	Liatris	Platanus	Scrofularia	Vitis (Vignes)
Bomarea	Eremostachys	Libocedrus	Platycodon	Scutellaria	(„ d'ornem.
Broussonetia	Erica	Ligularia	Plumbago	Sedum	Weigela
Buddleia	Erodium	Ligustrum	Podophyllum	Sempervivum	Wellingtonia
Butomus	Erpction	Lilium	Polemonium	Sequoia	Wistaria
Cæsalpinia	Eryngium	Linnæa	Polygonatum	Serapias	Woodsia
Calophaca	Euphorbia	Linum	Polygonum	Shepherdia	Woodwardia
Calopogon	Eurya	Liquidambar	Polypodium	Sidalcea	Yucca
Caltha	Euonymus	Liriodendron	Polystichum	Silene	Xanthorrhiza

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**Van Houtte's Catalogue** - *Continued.*

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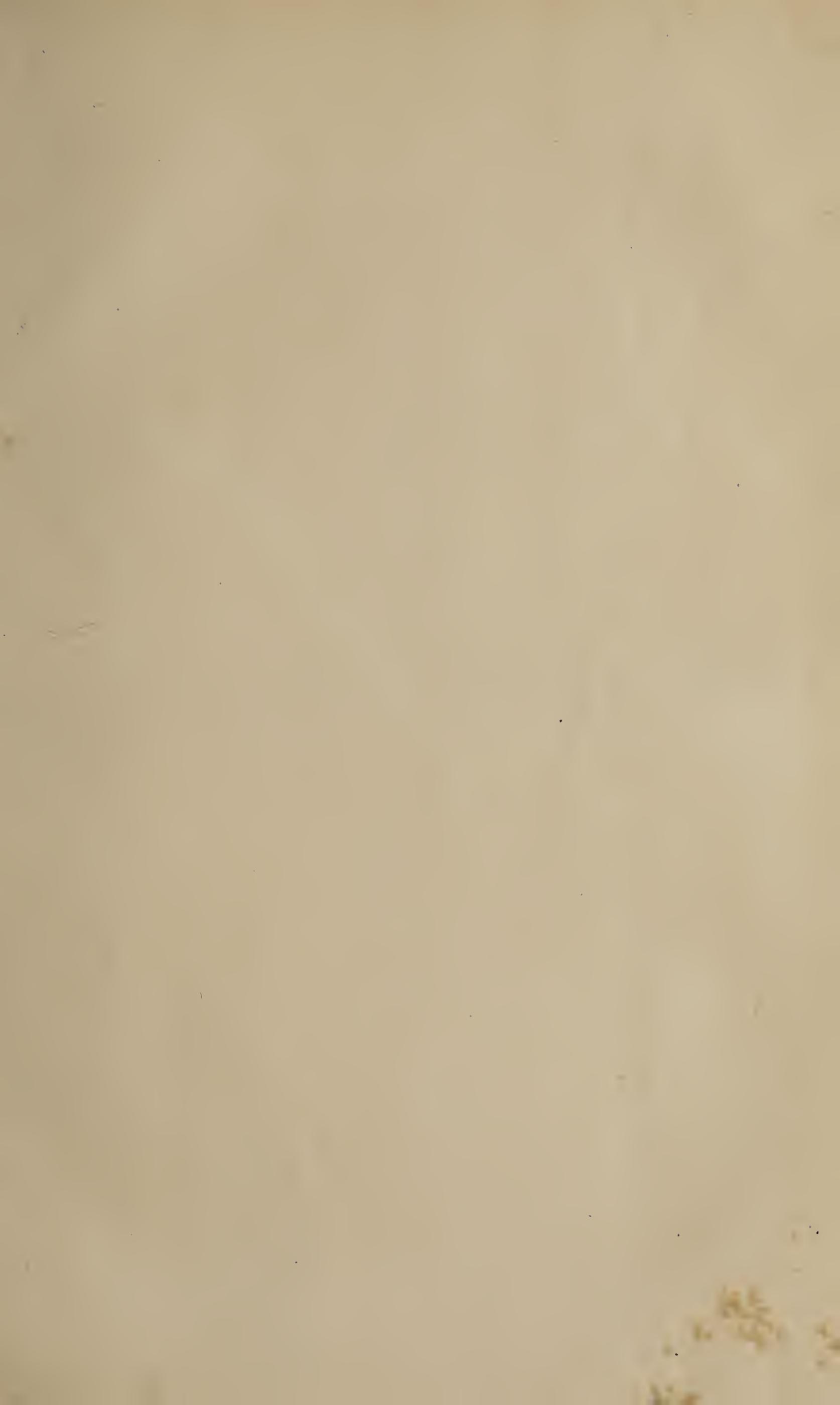
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Also on offer, a fine collection of FRUIT TREES of leading kinds, trained and untrained, and for the Orchard-house.

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**ROSES.**—The following for One Guinea, strong Plants in Pots (on own roots):—12 choice Teas and Noisettes; 12 Hybrid Perpetuals and Bourbons, distinct and true to name, package included, and carriage paid to London. For choice NEW PLANTS, &c., of 1865, see fifty-six page Catalogue, free for one stamp. Post-office Orders on Castle Heddingham.

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*Phalaenopsis luddemanniana*.

*F. Waller lith. 18. Hutton Garden*

## PHALÆNOPSIS LÜDDEMANNIANA.

WITH AN ILLUSTRATION.

THE present year has brought in several acquisitions in the genus to which the subject of our illustration belongs, and in which the great white-flowered species, known as the Indian Butterfly-plant, had till then been the most familiar to our Orchid growers. Now, however, types altogether different have made their appearance in our gardens—some minute-flowered and curious in a high degree, as in *P. Parishii*, *P. Wightii*, and *P. amethystina*; and others larger and extremely ornamental, as in *P. sumatrana* and *P. Lüddemanniana*, the subject of our plate.

The habit of this plant is very much like that of *P. rosea* (or *equestris*, as it is more correctly called), so much so, indeed, that it was distributed under that name before its flowers were produced. It is, however, far more beautiful than that small-flowered species, and has been named in compliment to M. Lüddemann, of Paris, in consequence of his having been the first amongst European cultivators to bring the plant into blossom. The leaves are from 4 to 6 inches long, leathery and polished, of a deep green colour, and disposed in two ranks. The flowering stem is comparatively short, and bears but few blossoms. These, however, are of considerable size, and very beautifully coloured, the oblong spreading sepals and petals having a pale, almost white, ground colour, and being marked all over with crowded transverse bars, which in one variety are of a deep cinnamon brown, and in another are of a delicate purple. These coloured bars show also on the outer surface of the flower. The lip is three-lobed, the larger and prominent middle lobe of an intense violet, the lateral ones whitish with yellow markings.

This plant is a native of the Philippine Islands, and was introduced to this country by Messrs. Low & Co., of Clapton. It seems to be of easy culture, but of course requires a considerable amount of heat.

We add a brief notice of the newly introduced species to which reference has been made:—

*Phalænopsis sumatrana*.—A beautiful dwarf stove epiphyte, with oblong spatulate acute leaves, and short spikes of white flowers, in which the sepals and petals are marked by a few distant transverse brownish red bars, and the lip is marked with a few longitudinal streaks, and is densely pilose towards the tip. This comes from Sumatra.

*Phalænopsis amethystina*.—A curious little epiphyte, with oblong leaves tapered to the base, and small cream-coloured flowers, having an amethyst-coloured lip. It is supposed to come from the Isle of Sunda.

*Phalænopsis Parishii*.—A curious little epiphyte with oblong, ligulate, bluntish leaves, and short spikes of diminutive cream-coloured flowers having a purple lip. It is a Moulmein species.

*Phalænopsis Wightii*.—A curious little epiphyte, with ligulate, elliptic, or ovate leaves, and yellowish white flowers spotted with purple, the lip being amethyst-coloured. This comes both from Burmah and Southern India.

When to these we add *P. amabilis*, *grandiflora*, *Schilleriana*, *intermedia*, *Portei*, *rosea*, and *Lowii*, it will be seen that the Phalænopsids now constitute a very interesting and extensive, as well as beautiful, group in our Orchid-houses.

M.

## CHRONICLES OF A TOWN GARDEN.—No. XXIII.

FOR the past two years I have endeavoured to furnish for the pages of the FLORIST AND POMOLOGIST, in the form of some light gossiping papers, a kind

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of calendar of the operations carried on in a small suburban garden. They have simply chronicled a series of every-day experiments, which could claim nothing of originality or even novelty; but they had for myself, as the operator, a peculiar interest notwithstanding, the which I have sought, in some small degree, to impart to others through the medium of these monthly papers: and I venture to indulge the hope that the simple effort has been appreciated. These monthly discoursings are now brought to a close, and it is only due to a few friends (and notably among them Mr. James Cutbush, of Highgate), who have kindly sent me some interesting subjects for cultivation, that I should say I still hope to furnish notes of these by-and-by, through the same medium by which I have been wont to chronicle my doings. My little garden will be still, to me, a mimic microcosm of wonders and beauties, which by the agency of my pen shall express themselves occasionally in these pages while "round about me they are glowing," smiling on the genial influences which combine to give them birth.

Quo.

## ON THE CULTURE OF THE RED AND WHITE GUAVAS.

(*PSIDIUM FOMIFERUM* AND *PYRIFERUM*.)

THESE are natives of both the East and West Indies. They have nearly the same habits, and grow in a wild state to a nice bush, 8 or 9 feet high; but when cultivated they become quite large trees. The fruit of both is eaten, not only by the natives, but by Europeans. The fruit of the White Guava is, however, more esteemed than that of the Red. The flesh of the former is red, melting, and of a pleasant taste; the fruit of the latter is equally fine to look at, but is not equal in flavour to that of the White. As they are very easily cultivated, requiring only the temperature of an ordinary vinery, and as the fruit makes a nice addition to the dessert during the autumn months, it has always appeared strange to me that their growth should be limited as they are.

They are readily propagated by cuttings of the half-ripened wood, which, if put into sandy soil and plunged in a nice bottom heat under glass, soon strike root. When the cuttings are rooted they should be potted off singly into pots, which should be well drained with potsherds, using a compost of good rich loam. They should then be plunged again in a bottom heat of about 80°, and the temperature of the atmosphere of the pit or frame should be kept at about 70° by night, and about 80° by day, with an increase of 10° or more by sun heat. The lights should be kept rather close until the plants begin to root into the fresh soil, when air should be admitted freely in fine weather. When the roots get through the ball of earth to the sides of the pots, and before they become matted, the plants should be shifted into larger pots, and again plunged in bottom heat. The plants should be freely syringed, and a moist atmosphere should be maintained. In a few weeks the plants will require another shift, and this time the pots should be large enough to carry them through until the next season. When potted they should be again plunged in heat, and treated as before until towards the end of the summer, when more air should be given. On the approach of autumn they should be taken to the stove, and kept moderately dry during the winter months. Early in the following spring they should be started into growth. The plants should be shifted into large pots once or twice during the season as they may require it; they should have liberal supplies of water during the growing period and plenty of air in hot weather. With this management the plants will be sufficiently large to flower and fruit the third season; and as they grow large, every season they will bear greater

crops of fruit, and will continue to do so under proper management for many years.

They flower and ripen their fruit well in vineries. During the growing season they should have liberal supplies of water, and occasionally liquid manure to the roots, especially large plants in pots or tubs, and be syringed frequently with clean water over the tops.

Though the plants bear very freely in pots and tubs, they bear better crops and finer fruit when they are planted out in a properly prepared border. In a place I once lived at as foreman, we had a plant planted in the inside of a vinery, and trained against one end. The Vines were principally Muscats, and were generally started in the end of March, ripening in September, and all the fruit was cut by the end of December. The temperature of this house suited the Guava very well, as it grew well and bore great quantities of very fine fruit, which were used in the dessert and much esteemed by the family. During the winter months, when the Vines were at rest, the Guava was kept quite dry, and it never suffered in the least, as the temperature of the house was seldom much below 40°. The tree required very little pruning, merely thinning out the shoots when too crowded, and plenty of water at the roots when growing. This amounted to all the attention that was bestowed on it, and it furnished a nice variety to the dessert for several weeks every autumn. As far as my experience goes, it does not require one-quarter the care and attention to ensure a good crop of fruit, that any of the fruits that we grow under glass do.

*Stourton.*

M. SAUL.

#### REMARKS ON FRUIT-TREE CULTURE.—No. 4.

PRESUMING, then, that a careful attention to cultivation, and not a blind trusting to chance, is to be the rule of guidance, and that the borders for wall-fruit trees, or in the open quarters for espaliers or pyramids, have been prepared by drainage and the addition of new composts for the reception of the trees, and that it is intended to make a speciality of them by studying their habits as well as their likings and dislikings, we may now enter more particularly into the practical part of the subject, and commence with planting. If the trees are reared at home the operator will have every chance of lifting his trees in a careful and painstaking manner, so as to preserve the roots as much as possible from being injured during the operation, for which purpose a wide trench should be opened out at a distance from the tree proportioned to its size, so as to give plenty of room for the roots to be disencumbered of the superincumbent soil; this should never be performed with a spade, which for such purposes may be more properly termed a root-lacerator. On the contrary pointed instruments only should be used, such as can be inserted between the roots so as to gently disengage the soil from them with as little injury as possible. Some injury cannot be avoided under any circumstances, but notwithstanding that, I am no advocate for taking up with a large ball of earth in order to avoid that injury, because I believe, for one, that unless there are powerful mechanical means at command for lifting, and the ball is securely and firmly boxed-up, that it more often results in a greater amount of injury, in consequence of the weight of earth clinging to the fibres and dragging them off during the necessary shaking and moving about always attendant upon the operation during the transmission from place to place. And this points to the necessity for studying the composition of the soil in which the trees are prepared for final transplantation, and if possible to select it of a light and rather sandy nature, so that there may be no difficulty in disentangling the roots from it. Very heavy and stiff land is so unsuitable for the purpose, and so unpro-

fitable, that whenever its use cannot be avoided, a heavy outlay for the purpose of applying material to secure openness of texture will not only be justifiable but the most economical method in the end. In light soil, easily worked, and easily permeated by the roots, there will always be a much more numerous formation of fibres than in heavy land, and as it is on the careful preservation of these that a great part of the success in transplanting will depend, it is obvious that any state or condition of soil, which renders such care more than usually difficult, is not exactly that condition which one would choose where success would be expected to be a certainty. For these reasons I advocate the use of light soil in the preparation of the trees, and to carefully clear it all away from the roots before attempting to move the tree at all, which can easily be done by taking plenty of room and undermining the roots so that the soil may fall through rather than be hocked out from the top.

Great care must be observed to preserve the roots moist so as to retain their vitality, as it is very injurious to them to be dried up when the distance to which they have to be removed is trifling. The operation of lifting may in most cases be performed with sufficient celerity to prevent the necessity for adopting any particular means for keeping them moist, but where they have to be transmitted to long distances, it is absolutely necessary to cover them with some material capable of retaining moisture, and at the same time so soft as not to injure the roots; for this purpose there is nothing better than the use of an abundance of wet moss, and to envelope the whole in matting. It must be observed that all this extra care and attention necessarily implies a considerable outlay both of time and money, but for all that, I am decidedly of opinion that it is the most economical in the end. If the nearest way of arriving at the desired end is required to be taken through a niggardly principle of economy, it is probable that the operator, although knowing better, will be compelled thereby to follow in the old beaten track, and lift the tree out of the ground by spade leverage, and plant in the usual manner, taking the chances of life and death, and in most cases involving the necessity for a severe cutting-in, so that a year or two are lost in the work of bringing the tree into that state in which it would have been at once under a more liberal system of management; for by using the extra care which I have recommended, the trees may be so lifted and replanted as not only not to suffer from being moved but to be positively benefited thereby, because they will receive just that amount of check to the growth which will contribute to the formation of fruitful wood, and the trees will be early brought into a bearing state.

In planting remember that the action of the sun upon the soil has a great influence upon the roots, and, therefore, great care must be used to plant at such a depth that they shall not be far removed from its influence; deep planting is a serious evil, and must always be avoided. No particular rule can be laid down for this depth, because the roots will vary in formation and number, and the soil must be removed to a depth in accordance thereto; but a general rule may be laid down that the collar, or that part of the stem from which the roots radiate, should not be below the surface—in fact, in planting, it is better to place it considerably above the surface level, both to allow for sinking, and also that the tree may eventually stand on a gently sloping mound. Care must be taken to select the finest portion of the compost and work it carefully amongst the roots and fibres, which must be spread out so as to radiate equally in all directions. Do not by any means adopt the plan of holding the tree partly out of the soil, and after giving it a good shaking plump it down again, this often dislocates many of the fibres by doubling them up; if the soil is fine enough, and put in in small portions at a time, there will be no difficulty in covering the roots properly without this barbarous practice of shaking. Lastly, take

care to secure the trees from the effects of wind, no tree which is shaken by the wind can ever root securely, but if well secured at first, it will much sooner be able to stand without any support. Trees against a wall are easily secured by strong shreds and nails, but pyramids of any size should be secured by means of a strong collar made of gaskin and rope yarn, which is looped round the stem of the tree at from 4 to 5 feet from the ground, and to which is attached three lengths of galvanised wire, of the size which is about one-eighth of an inch in diameter, and these again are fastened to three stakes, driven nearly home, and placed triangularwise round the tree, at a distance of 3 or 4 feet, according to its size. Espaliers can, of course, be secured by means of the trellis to which they are to be trained.

JOHN COX.

## NOTES OF THE FLORAL AND FRUIT COMMITTEES.

NOVEMBER 7TH.

A SPLENDID fruit of Charlotte Rothschild Pine Apple, a new variety recently sent out by Mr. B. S. Williams, of Holloway, was sent by Mr. Challis, of Wilton Park gardens, and was awarded a certificate of merit, it weighed 6 lbs. From Mr. H. Dewar, of Newcastle-on-Tyne, came some vegetables, among them Dewar's Northumberland Champion Celery, a large white variety, the sticks being of great size, solid, crisp, and well flavoured; and Dewar's Improved Short-top Red Beet, an excellent stock of Dwarf Red Beet, of a bright crimson colour, to which a certificate was awarded. Messrs. Stuart & Mein, of Kelso, sent some fine heads of the Yellow Savoy, also Tom Thumb Savoy, the heads of which were like a very large Brussels Sprout; it is said to be very early and dwarf; also some Miniature Drumhead Cabbages, said to be also dwarf and early. From Lady Dorothy Nevill came a ripe fruit and a leaf of *Monstera deliciosa*, which attracted considerable attention; and collections of Gourds were furnished from the gardens of the Society, and by the Rev. M. J. Berkeley. A very nice collection of Apples was also produced, among them were good fruit of several of the following:—Caroline, Gogar, Melon, White Nonpareil, Pomme Water, Winter Strawberry, King of the Pippins, Hawick Golden Pippin, Golden Noble, Boston Russet, Rhode Island Greening, Court-Pendu-Plat, Royal Somerset, Legende Reinette, Waltham Abbey Seedling, Holland Pippin, Augustus Pearmain, Wormsley Pippin, No Core, Fall Pippin, and Landberger Reinette. There were also a dish of Belle Agathe Cherry, a very late variety, and some good fruit of the Guava, *Psidium Cattleianum*; a bunch each of Lady Downe's Seedling Grape, Laterode Noir Grape, with black oval-shaped berries, a very good-looking variety; and Diamant Traube, having the character of the Sweetwater. These varieties of Grapes, and the collection of Apples were from the garden of the Society.

Mr. Bull produced his fine collection of medicinal and economical plants, to which the Floral Committee awarded a special certificate. The same received a certificate of merit for *Selaginella Martensii variegata*, bright green foliage, largely variegated with white, a beautiful variety. The same award was made to Messrs. Osborn & Sons for *Parochetus communis*, a blue-flowered trailing plant, "said to be hardy, and likely to be useful as an autumn-blooming basket plant for greenhouses." From Mr. Fleming, of Cliveden, came some variegated Primulas, and some variegated Pelargoniums, one of these last was considered to be an improvement on Golden Chain. From the Society's garden came some excellent Primulas, among them *P. Carminata splendens*, bright carmine, very novel and striking, and well fimbriated.

First-class certificates were awarded to Mr. J. Salter, of Hammersmith, for

Chrysanthemums *Gloria Mundi*, brilliant golden yellow, beautifully incurved, high centre, and very fine form; and *Golden Ball*, deep golden amber, large and full, a fine incurved variety. Second-class certificates were also awarded to Mr. Salter for *Golden Beverley*, bright canary yellow, finely incurved, a sport from the white "*Beverley*"; and for *Hereward*, a beautifully incurved flower, colour rosy crimson, the backs of the petals having a silvery hue. Besides these Mr. Salter had *White Trevenna*, a variety with neatly formed flowers, a sport from the pink "*Trevenna*"; and *Prince of Anemones*, a large Anemone-flowered variety of good form, colour dull pinkish rose. Messrs. Downie, Laird & Laing had the blooms of *Chrysanthemum Striped Queen of England*, a variety which appears to sport very freely.

R. D.

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### JASMINUM SAMBAC FLORE PLENO.

THIS forms a most desirable object when planted against the back wall of a stove or the pillar of a warm conservatory, and it blooms more or less all the season—in fact, when properly managed, it is seldom without blossom, and the delicious fragrance of its pearly-white flowers is almost too powerful when the house is closed. We spur it in, taking care to preserve as much young wood as is convenient, without overcrowding the plant. As soon as one crop of bloom is over, we partially cut back; at the same time other parts of the plant are in bloom. It requires an abundance of moisture from syringing, watering, &c., being somewhat liable to the attacks of red spider. Its only drawback is that it sheds its bloom too quickly when cut, otherwise it would be a most delicious flower for bouquets.

*Wrotham Park.*

JOHN EDLINGTON.

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### UNITED HORTICULTURAL SOCIETY.

A MEETING of this Society was held in the Guildhall of the City of London, on the 14th and 15th of November. This announcement is really startling. Fancy, a flower show in the City of London in the month of November! Singular enough in itself, but how much more so to be held in the ancient Guildhall of the City! What next? A reform meeting in St. Paul's Cathedral? The Christy's Minstrels in the Royal Exchange? Or a match of football in Westminster Hall? On the sharp, keen, yet dull morning of the first day of the Show, I passed into the noble civic hall of the foremost city of the world, grateful that its chief magistrate had given up the City's great feasting-house to such a purpose: that there, in the very centre of "London's rich and famous town"—in the midst of the mighty torrent of

"That fierce tide that steals  
Through the City's long and sinuous veins"—

the citizens could go in from out of its rush and swell, and look upon the productions of gardens, once forming the suburbs of their business centre, but now almost daily receding farther and farther from the heart of the great hive of industry. Crowds flocked to see this rare City spectacle, and put gladness into the hearts of its promoters; for to what grander object could they devote their surplus—a large one, it is to be hoped—than to that of succouring the sick, and smoothing the pillow and relieving the heart of the distressed one?

"Who drieth up a single tear, hath more  
Of honest fame than shedding seas of gore."

On entering the Hall, I found the last touch being given to the arrange-

ments, preparatory to the incoming of the civic cavalcade, for the Show was to be opened in state by the Lord Mayor and Sheriffs of the City. The mist had congregated within, and hung about in sable-looking folds up in the roof of the Hall, making it necessary that the gas should be lit up, which had the effect of bringing out more distinctly the dull colours of the Chrysanthemums. Along the walls of the ancient "Hall of Guild" were seen the decorations that gave life to the recent banquet on Lord Mayor's day, and the statuary, recently cleansed and redecorated, stood out distinctly from among the trappings that surrounded them. At the lower end of the Hall, stood, on their accustomed pedestals, the two great giants—Gog and Magog, newly bedizened by the hand of the artist—keeping watch and ward over the scenes of their ancient renown. What a contrast between these fierce-looking yet inanimate worthies, and the humanising picture spread beneath them!

The Judges of the Chrysanthemums—and worthy men they are—Messrs. G. Smith, D. Monk, and Bloxom, had just commenced their task. I found they had placed Mr. James, of Stoke Newington, first, with six blooms of large-flowering Chrysanthemums, sent out in 1865, who had the following varieties remarkably fine: Prince of Wales, Mrs. Kaines, delicate flesh, with lemon centre, a very fine incurved flower; Lady Carey, Venus, Sam Weller, and Mr. Brunlees. Mr. A. Forsyth was second, with fine blooms of Golden Ball, Eve, Venus, King of Denmark, Sam Weller, and Golden Dr. Brock. Mr. James was also first with six blooms of 1864, having splendid flowers of Empress of India, Prince Alfred, Princess of Wales, Robert James, Lady Slade, and the Rev. J. Dix. This was the only stand of flowers exhibited in this class.

With six cut blooms of any year Mr. Morgan, of Plymouth, was first with wonderful specimens of Princess of Wales, General Slade, Prince of Wales, Venus, remarkably fine; Prince Alfred, and Golden Dr. Brock. In other stands in this class were splendid flowers of Beauty, Beverley, Antonelli, Golden Eagle, Dr. Brock, very fine; White Globe, very fine; Lady Harding, Empress of India, White Queen of England, General Bainbrigge, Jardin des Plantes, splendid yellow; and Antigone. With twelve blooms Mr. Morgan was again first, having very fine flowers of Nil Desperandum, Princess of Wales, General Slade, Cherub, Beauty, Rev. J. Dix, Prince Alfred, Prince of Wales, Oliver Cromwell, Robert James, Venus, and Duchess of Wellington. Looking over the other stands I noticed excellent examples of Abbé Passaglia, Empress of India, General Harding, Plutus, Lady St. Clair, fine pure white; Orange Perfection, Mr. Brunlees, Rifleman, Pio Nono, Duchess of Wellington, and Sir Stafford Carey.

With thirty-six blooms Mr. A. Forsyth was placed first, having the following flowers selected from it very fine: Dr. Maclean, Jardin des Plantes, Venus, Nonpareil, Plutus, Beverley, Anaxo, Cherub, Hercules, Eve, General Slade, Lucidum, Mrs. Haliburton, and Princess of Wales. This was the only stand of thirty-six blooms in this class. Of plants of the large-flowering kinds, there were capital specimens of Vesta, Jewess, Alma, Insigne, Annie Salter, Golden Christine, Defiance, Prince Albert, Christine, Little Harry, and Beauté du Nord. These were nice dwarf bushy plants, with good heads of bloom. Some excellent plants, grown as standards, of both large-flowering and Pompon kinds, were dotted about here and there amid the groups of dwarfer plants, and had a very pleasing effect.

A large number of Anemone-flowered kinds were produced, the best being Antonius, Mr. Astie, Madame Chalonge, Astrea, Rose Marguerite, Jeanne Hachette, Madame Montels, Regulus, Gluck, Empress, Margaret, George Sands, Louis Bonamy, Fleur de Marie, Prince of Anemones, and Mrs. Pethers. I

confess that I should never be able to get up much enthusiasm over these, but with some growers they are wondrous favourites. The flowers appear to me to lack bulk, and form, and brilliancy, but perhaps I am deficient in taste.

My eye has just caught a specimen of the extraordinary new Russian Violet, The Czar, from Mr. F. J. Graham, of Cranford, with foliage like a young plant of a Hollyhock, and large blue flowers, stout, and well coloured: and I had passed on to look over a large collection of Apples and Pears from Mr. Turner, preparatory to commencing the remaining half of the Hall, which was devoted to fruit—and very much of it very fine; when a commotion among the visitors announced that the civic procession, consisting of the Lord and Lady Mayoress, the Sheriffs, and several of the Court of Aldermen, preceded by the outlandish-looking sword-bearer, and his equally strange-accoutred colleague, the mace-bearer, were approaching the Hall, to look at the contents of the Show. All hope of “taking notes” was now at an end, and taking a hasty glance at the remainder of the Exhibition, I left the stage to the new actors, who were to perform the inaugural ceremony.

Quo.

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### THE MUSTARD TREE OF SCRIPTURE, SALVADORA PERSICA.

THIS interesting plant, the “supposed” Mustard Tree of Scripture, and to which a special interest attaches because of its association with the ministry of our Lord, is this autumn catalogued in the new plant list of a well known London nurseryman. The seed of the above plant is said by eastern travellers to be remarkably small, and yet produces a plant that waxes into a great tree, with numerous branches. It is also said that the “seed possesses the same properties, and is used for the same purpose as mustard, and has a name *Khardal* in Arabic, of which *Sinapi* is the true translation; and the plant moreover, grows on the very shores of the sea of Galilee, where our Lord addressed to the multitude the parable of the mustard seed. Schwarz gives it the Hebrew name *Al chardal*, and says it is grown in large quantities near Hebron, where 7 lbs., Bavarian weight, only fetch two pence. It grows there to the height 6 or 8 feet; but it appears from testimony, that in olden times it attained a very great height.”

In “Speke’s Travels” it is described by Capt. Grant as only attaining the size of a bush on the Upper Nile, and it would appear from the testimony of modern travellers, that it is only seen as a mere bush. Dr. Hogg says, in his “Vegetable Kingdom,” in reference to this plant, “*Salvadora persica* is supposed by Dr. Royle to be the *Mustard Tree* of Scripture; but I have been told by the late Mr. Barker, who resided the greater part of his life in Syria, and also by Dr. Keith, who has travelled so much in that country, that there the common Mustard plant attains the dimensions of a small tree, and that they believe it is the plant referred to by our Saviour.”

The Rev. M. J. Berkeley, who is no mean authority in the matter, entertains some considerable doubt as to the *Salvadora persica* being the plant alluded to in the parable, “for the name of one plant was sometimes in course of time transferred to another; thus the old Primrose was our Daisy, and the old Eglantine was certainly not our Sweetbriar.” Mr. Berkeley considers that the balance of evidence is nevertheless in favour of the Mustard of Scripture being the same as our own. The testimony of the Rev. Albert Barnes, the distinguished American commentator, is, on the other hand, that the Mustard tree of the parable “was very different from that which was known among us;

it was several years before it bore fruit, and became properly a tree." If botanical knowledge should have weight in the discussion, it is very probable that the opinions of Mr. Barnes are of little value comparatively.

E. W.

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## ON THE CULTIVATION OF THE CHRYSANTHEMUM FROM CUTTINGS TAKEN IN JUNE.

WHEN the summer, with its golden sunshine, its carolling of birds, its gentle winds, its delicate flowers, with their beauty of bloom and fragrance, has passed away; when the chill winds of winter have begun their work, and the strong Oak, unable to resist their influence, has shed its foliage—

"There is a beautiful Spirit, breathing now  
Its mellow richness on the clustered trees."

In the darkest November there are some days of sunshine to remind us that all is not dull and dreary; and so in the florist's world, when other gems of the garden are gone, then, alone in its splendour, appears autumn's queen, the bright\*Chrysanthemum, to fill the place that must otherwise be void and desolate. My method of procuring a supply of this beautiful autumn flower is as follows:—

In June I take the tops from the old plants of each variety, and place them in 48-sized pots well drained, the soil being made up of a mixture of equal parts of loam, leaf mould, and silver sand. I generally insert in each pot about a dozen cuttings, and then place them in a frame, slightly water them every morning, and shade them from the sun. I soon find them rooted, and when well established I shift each plant into a 60-sized pot, and place them in a cold frame, still watering gently as before. I stop their growth at about the third or fourth eye, and let them remain till the end of July, when I repot them into 32-sized pots, using for soil half loam, rotten dung, and a little sand. When potted, I plunge them in an open border, well covered with ashes or sawdust, to prevent the worms getting into the pots. I continue stopping till the end of August, and then repot into 24 and 16-sized pots, and, discontinuing stopping, place them back in the border. I am now careful to allow plenty of room for a free circulation of air amongst them. About the middle of October I remove them to the orchard-house, giving air freely to prevent their being drawn; I now also give them a liberal supply of liquid manure twice a-week; the earliest in flower I remove to the conservatory, and thus secure a good supply of bloom for six or seven weeks.

By the above treatment I have plants about 18 inches high, bushy, with fine foliage from top to bottom, and well covered with splendid trusses of bloom.

*Crabwood, near Southampton.*

J. C. HIGGS.

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## GREAT CROPS OF APRICOTS.

I SEE in the last "Proceedings" of the Royal Horticultural Society, that Mr. Rivers gives his method of growing Apricots in pots, and that he ascribes his success to the chalky loamy soil in which he grows them, and to ramming it hard in the pots. This corroborates my experience in growing Apricots on a wall when I used a quantity of old lime mixed with the soil of the border, and had a layer of the roughest lime and brick rubbish laid 6 inches thick in the bottom of the border for drainage. I was told the trees would not thrive

in such a mixture, and that they would gradually die branch by branch; but the reverse is the case, no canker having yet appeared, and the trees are so fruitful year after year, that the Apricots here cannot be all used or preserved. The length of the wall is 360 feet, and the height 13 feet, and the trees, when planted in 1859, were lifted from the old kitchen garden, and filled all the available space at once. The trees when in the old garden never bore regular crops, and from £5 to £6 was usually spent every year in buying Apricots to supply the deficiency. After the trees were planted in 1859, the bad seasons of 1860 and 1861 occurred, but they bore good crops, and very large ones in 1862, 1863, and 1864. This year I left 270 dozen to ripen, but as the summer turned out so dry and hot, and the border being only about 15 inches deep, I had to water and mulch the roots well; the fruit, therefore, of all the large sorts swelled to the usual size. This Apricot wall is covered every spring with long hothouse lights, which were saved from the old kitchen garden hothouses. They are put on as soon as the blossom-buds begin to swell; and to this covering, and the border, I ascribe the uniform success in getting good crops. Apricot trees when in blossom cannot be kept too dry and airy for the fruit to set well; and the lights, not being put too close together, and open at the ends, just fulfil this purpose, keeping all the rain, hail, and snow showers off. A slight degree of frost, or cold winds, will not injure Apricot blossoms so long as they are kept dry. On this wall I have planted a few younger trees of the newer varieties of Apricots for successional purposes, and find that the St. Ambroise is an excellent early variety.

*Welbeck.*

WILLIAM TILLERY.

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### NEW BOOK.

*The Orchard-House.* By THOMAS RIVERS. Twelfth Edition. London: Longmans, Green & Co.

THE fact that this work has reached its twelfth edition is almost sufficient guarantee of its merit, apart, even, from its coming from the pen of so eminent a horticulturist as Mr. Rivers. The present edition gives his latest experience on a mode of culture which is daily becoming more general, and practised with greater success; and further directions are added on several subjects, such as laying out large houses, portable orchard-houses, the culture of standard Peach and Nectarine trees in borders with a solid surface, on Apricot culture, vineyards under glass, the cultivation of the Tangierine Orange, and the management of Apple and Pear trees. We can heartily recommend the work to our readers, as one that may be read with pleasure as well as profit.

As more failures occur in the pot-culture of the Apricot than, perhaps, with any other fruit, and as Mr. Rivers has shown by the examples which he exhibited before the Fruit Committee of the Royal Horticultural Society how successfully Apricots can be grown in pots, and what beautiful objects they form when so grown, we extract the following:—

“The best trees for pot-culture are such as have been in pots one or two years: if these can be purchased, so much the better. The next best are trees that have been removed and cut down one year in the nursery. If neither of the above can be found, ‘dwarf maiden trees’ will do. Trees taken from the open ground must not be potted till the end of October. Presuming that potted trees have been procured, they may, early in October, (or, if omitted then, in November or December), be repotted into pots of the size selected for this system. I have named 11-inch pots, because they are portable, and the trees may then be shifted into large pots as they advance in growth; 11-inch

pots will, at any rate, do well to commence with. October, November, and December are the best months for potting trees; they may indeed be potted till March, but then no fruit must be expected the first season. If fruit-bearing trees grown in pots have been procured, they cannot be potted too early in October.

“If you examine an 11-inch pot, you will find it 8 inches across at the bottom, and the aperture from 1 inch to  $1\frac{1}{2}$  inch in diameter. Take a light hammer, and enlarge this aperture to 5 inches in diameter; \* then place four or five large pieces of broken pots or tiles across, so that they rest on the inside ledge left by the hammer, leaving interstices for the free emission of roots. On these place some of the most lumpy part of your compost; then your tree, not too deep, but so that the upper parts of its roots are a little below the rim of the pot: if it has a ball of earth, loosen it. Fill up with compost; ram the earth down firmly, as you fill, with a stout blunt-pointed stick. Place it on the border where it is to grow during the summer; give it two or three gallons of water, with a top-dressing of some manure to lie loosely on the surface, and the operation is finished.”

The compost which Mr. Rivers recommends for the Apricot and all other fruit trees in pots, is the top spit of a tenacious loamy soil, exposed to the air for two or three months in summer, two-thirds, chopped and well mixed with one-third rotten manure. He states that the result of his latest experience is, that the addition of calcareous matter to the compost is necessary in the cultivation of stone fruits, and if not necessary, most beneficial to all kinds of fruit trees; and to the circumstance of his soil containing a considerable percentage of finely comminuted chalk, he attributes a portion of his great success. To Apricots, in particular, he believes calcareous matter to be indispensable, and recommends it to be mixed with the compost in the shape of finely powdered chalk or lime rubbish in the proportion of one-tenth.

As regards pruning, the following are his revised directions:—

“We will suppose that our tree, a nice dwarf bush, with five, six, or seven branches, † is potted. It may rest till February, and then be pruned: a pleasant simple operation, the performance of which is more easily shown than described. I may as well now state, that the pruning recommended here for Apricots will serve for all bush fruit trees under orchard-house culture, except Peaches, Nectarines, and Figs. Each branch must be shortened with a sharp knife to 10 inches: these shortened branches will form the foundation of a nice regularly-shaped bush. In May each branch will put forth three or four shoots: all of these but the topmost one, as soon as they have made seven leaves must be pinched off to within five full-sized leaves of their bases: they will form fruit-bearing spurs. These will continue all through the summer to make fresh shoots, which must always be pinched off to five leaves. The leading shoots, which will make vigorous growth, should have their tops pinched off to seven leaves when they have made nine or ten leaves; and when young shoots break forth from these pinched shoots, they should again and again be pinched to five full-sized leaves. In other words, if every young shoot has its top pinched off as soon as it has grown 5 inches, and this all through the summer, it will be safe practice. The summer is past; the month of October is with us. The tree has ceased to grow; its shoots are ripe; it must be put to rest for the winter by lifting up the pot, and cutting off closely every root that has made its way into the border: it is then ready for its top-dressing, the method of giving which I shall describe further on.

\* I now have my pots made with five holes, each  $1\frac{1}{2}$  inch in diameter. In remote places, where these cannot be procured, the enlarged holes may be used.

† If a tree with only three or four branches is potted, they must be cut in to 4 inches; and the tree must have a season's growth to form itself.

“The second season:—In February, or early in March, the leading shoot made the preceding year, and which ought to be from 2 to 3 feet long, must be shortened to 10 inches, and the young shoots, as they push forth in summer, be pinched off as in the first season. The third season:—As the tree will have increased in size, its leading shoots may be shortened to 6 inches; and as it becomes aged and fruitful, annually to 4 inches, and at last pinched off in summer to 2 inches, so as to make a compact round bush. In the course of time some of the shoots in the centre of the tree will require thinning out with the knife, if at all crowded.

“A more simple mode of pruning even than that above given, is to purchase a bush Apricot of two or three years' growth, and during the spring and summer to pinch *every shoot* to five full-sized leaves as soon as it has made six or seven, exactly as recommended for pyramids. Trees thus treated increase slowly in size, but they form compact and most fruitful bushes. I fully believe that this simple mode of pruning, which even a lady may find pleasure in carrying out, will do away with one great difficulty in orchard-house culture—that of a spring pruning, always so difficult to teach. I recommend the shoots being pinched back to five or seven leaves (not counting the two or three small leaves at the base of the shoot) instead of three, as in bush Peaches, because the buds of Apricots are so close together.

“The general management of the trees the second year should be as follows:—

“February is with us, and, if the season be mild, buds are beginning to swell, and flowers to bloom; the trees in your orchard-house are, however, dry and stagnant. Place them in their stations, 3 feet stem from stem; give each of them a small quantity, say a quart, of water—not, however, if the frost be severe; let them rest three days, then give them two quarts each; in short, gradually saturate the earth in the pots, and when the trees are in full bloom, make holes in the centre of the earth in the pots with a pointed iron rod, and give each tree two gallons; afterwards water them regularly according to the state of the weather. The buds, if the weather be mild, will soon begin to swell, and in March, or early in April if the season be late, they will put forth their full bloom; and beautiful things they are, for no frosts, no storms, will destroy the blossoms. If the weather be sunny, with sharp frost at night, as is often the case in early spring, the shutters, both back and front, may be opened all day and closed at night: if a wind-frost and cloudy weather, they may be closed day and night; the ventilation through the joints of the boards will then be amply sufficient. With this treatment nearly every blossom will set.

“From recent experience, I find that Apricot trees are not liable to the red spider, and the fruit seems to like a dry warm climate; they therefore require syringing but once a-week, as too much syringing brings on black spots on the surface of the fruit, and decay. Weak liquid manure may be given once a-week during the summer. This is, however, almost a matter of choice. My trees grow and bear well without it. Guano-water, 1 lb. to twelve gallons, is perhaps as good as any; and a good soaking of this once a-week is better than using it more frequently. While in their young state, the fruit must be thinned, leaving, at first, upon a bush that has been two years in a pot, about three dozen, which, when they attain the size of a small nutmeg, must be reduced to twelve or eighteen.\* The third year, a tree, if it has prospered, will be able to bring two dozen to maturity; it is, however, better to have a few finely grown fruit, than many that are small.”

\* Instead of pulling off the fruit, which often lacerates the bark, they should be cut off with the point of a sharp penknife.

## TO OUR READERS.

WE have much pleasure in announcing to our readers that we have arranged to give a series of Plates of FRUITS as well as Flowers in our next year's Volume, by a new process, in a style of execution which has never yet been surpassed for fidelity of representation both in drawing and colouring. A specimen will appear in the January Number.

## OUR MONTHLY CHRONICLE.

INTERNATIONAL EXHIBITION AND CONGRESS OF 1866.—The time when this is to be held has at last been definitively settled for the 22nd, 23rd, 24th, and 25th of next May. The support received has been most encouraging. His Royal Highness the Prince of Wales has consented to become President, and among the Vice-Presidents are the Dukes of Marlborough, Rutland, and Buccleuch, and many other influential noblemen and gentlemen. The donations already amount to upwards of £2700, and nearly £4000 have been guaranteed. With such support the prospect is most encouraging, and there can be now little reason to doubt of the entire success of the project, more especially as fresh supporters continue to give in their adherence. We are also happy to be enabled to state that Professor De Candolle has been unanimously elected President of the Congress; and with a botanist of such renown at its head, it is to be hoped that the transactions of the Congress will excite greater interest, and be productive of more solid results, than some of those recently held on the Continent.

EDINBURGH HORTICULTURAL SOCIETY.—This prosperous young Society will, in all probability, soon be united to the Caledonian Horticultural Society. The amalgamation of the two had been mooted for some time previous to the Edinburgh Show, which was so successfully carried out by the younger Society, and the subject was adverted to at the dinner after the Show; but some of those present, though not altogether opposed to such a step, were inclined to question its expediency. Now, however, the matter is all but decided, for at the annual meeting of the Edinburgh Horticultural the report of a joint committee of the two Societies was read, and unanimously adopted, and it only remains for the Caledonian Society to do the same. The recommendations of the report are, that the amalgamated Society be called the Royal Caledonian Horticultural Society; that its President be the Duke of Buccleuch, and its Vice-Presidents the Duke of Argyle, and the Earls of Dalkeith, Stair, and Haddington; that the Council consist of four amateurs, four nurserymen, and four practical gardeners; and that the annual subscription be one guinea, and for gardeners 10s. and

5s. The Chairman of the meeting, Mr. Thomson, in moving the adoption of the above report, stated his belief that the union of the two Societies would be beneficial to both. The funds of the Society, which is thus on the eve of being united to the Caledonian, are in a most prosperous condition, for, according to the statement of accounts laid before the meeting, after an expenditure of no less than £520 10s. 6d. in prizes, and £275 13s. 2d. in other ways, there is a balance in hand of £317 7s. 1d.; the total receipts, including a balance from the previous year, being £1113 10s. 9d.

TESTIMONIAL TO THE REV. S. REYNOLDS HOLE.—A subscription has been set on foot to present a testimonial to that eminent rosarian the Rev. S. Reynolds Hole, of Caunton Manor, to whose exertions the National Rose Show owes its origin. Such a project cannot fail to be well supported, not merely by the lovers of that flower which he has done so much to popularise, but by many besides, who have the advantage of knowing his kindly disposition and of perusing his genial writings. The Secretaries are the Rev. H. Dombain, Deal, and Mr. Charles Turner, Slough.

SOUTHAMPTON HORTICULTURAL SOCIETY.—The first of a series of monthly meetings, in connection with the above Society, was held at the Carlton Rooms, November 13th, Capt. O'Shea in the chair. A considerable number of subjects were staged for exhibition, among which were some fine pans of Mosses, from Major Lacy; a splendid white double Primula, flaked and spotted with purple, shown by Mr. Blandford; a handsome specimen of the beautiful *Sonerila margaritacea*, by Mr. Boyce, gardener to H. P. Buchan, Esq.; while from Messrs. Windebank and Kingsbury came a fine plant of the *Echeveria metallica*; a variegated Primula, with well-marked foliage, and a small specimen of the variegated Chrysanthemum, sent out by Mr. Bull, of Chelsea: also a box of twenty-four Chrysanthemum blooms. From Mr. Higgs, gardener to R. Driver, Esq., came a box of twenty-four Chrysanthemums, and an interesting collection of twenty sorts of Apples. Very fine samples of Apples, Pears, Medlars, and Grapes, were also exhibited by other

members. To many of these subjects first and second-class certificates were awarded.

The most gratifying portion of the evening's proceedings consisted in the reading of short papers, on various subjects, in the first of which Mr. Higgs ably treated of the culture and pruning of the Apple, strongly advocating the practice of root-pruning where necessary, and generally supporting the modern system of pruning as applicable to fruit-culture. An interesting discussion followed. Mr. Higgs also read another paper upon the growing of the Chrysanthemum in pots for conservatory decoration, advocating the striking of cuttings early in June, frequent stoppings and shiftings, and such a mode of operation as would ensure an abundance of bloom on dwarf plants, well furnished with foliage, and in every respect adapted to produce a brilliant display of flowers in-doors during the gloomy months of November and December. The reading of this paper caused an animated discussion, in which Mr. Kingsbury warmly supported the one-shift system, as practised by the Chinese, by which the plants are transferred from 60's to their blooming pots at once. Mr. Dean took the opportunity to allude to a visit paid to Mr. Salter's nursery, at Hammersmith, twelve months previously, giving a description of the appearance his beautiful winter garden then presented, and also of some of the best varieties of the Chrysanthemums then in bloom; and mentioned the method of pot-culture adopted so successfully by Mr. Salter with some of the large-flowering kinds, by which low bushy plants, well covered with blooms, were produced. After the close of the discussion Mr. Tinkler, the Honorary Secretary, related how, under the advice of a Dublin Professor, he had carried out some simple experiments to a successful issue; among which, that of sowing three pots with some kind of flower seeds, leaving one pot exposed to the full light of the sun, and covering the others with thin paper, one blue and the other yellow. He found that the seed sown under the blue paper came up several days earlier than that exposed to the sun; while that covered with yellow paper never came up at all. The cause of this singular result was thus explained: The actinic rays of the sun's light are absolutely essential to the vegetation of seeds, the blue colour possesses the power of concentrating these rays in an extraordinary degree, and thus giving a powerful stimulus to vegetation; while the yellow colour absorbs the whole of these rays and thus prevents them from entering the soil. Mr. Tinkler also mentioned, in connection with this experiment, a curious fact, but of more importance to the photographer than to the gardener. The impossibility of reproducing the eyes of a subject distinctly, when the colour is light blue, is well known to all, they generally presenting

the appearance of blindness in the picture; to remove this difficulty, Mr. Tinkler said, that if a piece of yellow calico were hung on the opposite side of the room to that on which the subject was placed, so that the colour was reflected into the person's eyes, it would so absorb the actinic rays of light, as to enable the operator to produce eyes of the most satisfactory character. The relation of this latter fact so elated a photographic member of the Society, that he generously offered to photograph, gratuitously, any good specimens or subjects which the Committee might desire to have done to decorate the walls of the Society's room.

After an interesting conversation upon other professional topics, a vote of thanks was passed to Mr. Higgs for his valuable papers; and the members separated highly gratified with the success that had attended their first effort to combine the culture of the intellect with the exhibition of gardening produce. May other societies go and do likewise.—A. D.

**NEILL PRIZE.**—This was instituted by the late Dr. Patrick Neill of Edinburgh, who left by his will the sum of £500, in trust, to the Council of the Caledonian Society, and directed that its interest should be given once in three years to some one in Scotland who had advanced any branch of natural science, including botany, vegetable physiology, &c. This year the triennial period of 1862-65 expired, and the prize at the disposal of the Society was bestowed on Mr. William Thomson, of Dalkeith, a distinction which, from his services to horticulture, he has well deserved.

**THE CHELSEA PENSIONERS' GARDENS.**—These little allotments of garden ground are between 5 and 6 yards square each of them, and it is entertaining to see the variety of treatment they display. In some you see a little hut built as a garden seat; in others, an improvised greenhouse; in others, monumental trophies, grotesque heads, and plaster seats, are interspersed in the borders. Some are utilitarian, and grow vegetables; others ornamental, and devoted to flowers, and most combine both. Among them were several plots for the raising of Musk plants, and, as respects one plot, I was informed that the season before, by the careful management of the occupant, he had realised £6. This plot was so arranged that in the spring, when the street-hawkers of Musk came to buy it, it could easily be removed with the layer of earth in which it grew without disturbance to the roots.—J. BELL, in *Society of Arts Journal*.

**POMEGRANATES.**—At the Meeting of the Fruit Committee of the Royal Horticultural Society, held on November 7th, some remarkably fine fruit of the Pomegranate were produced by Mr. Downing, gardener to Thos. Grissell, Esq., of Marbury Park, Dorking. The following statement, which may possess an interest for many, was forwarded with the

fruit:—"The plant which produced these fruit is about eight years old, and for the first six years it grew luxuriantly, but very rarely showed a blossom. In the autumn of 1863 the roots were pruned within 2 feet of the stem, and then enclosed with brickwork; the following autumn there was one or two small fruit on the plant, which did not ripen. This season the plant has produced seventeen fine fruit, of which these are specimens. The plant has been grown under glass in an orchard-house without artificial heat, excepting during the cold weather of the past three weeks." The Fruit Committee awarded a special certificate to Mr. Downing for the splendid fruit he had thus developed.

## OBITUARY.

Within a few months we have had to record the loss of two great men, whose lives and whose labours were connected with horticulture—Sir Joseph Paxton, and Sir William Hooker—the one great as a gardener, as an architect, and as being associated with vast commercial undertakings; the other an assiduous worker in the quieter domains of botanical research, but not less deserving well of his country. To these names we have now to add a third in Dr. JOHN LINDLEY, who expired at his residence, at Acton Green, on Wednesday, the 1st of November. Few men had gone through a greater amount of labour than he had, and few men were better fitted from their natural strength of constitution to endure it; but at last the brain gave way, it gradually softened, and this malady went on increasing and increasing till it terminated in apoplexy. Disorders of the brain and diseases of the heart are alarmingly on the increase; they seem to be evils inseparable from a high state of civilisation, in which the brain is overtaxed, and the organisation of the heart affected to a degree, and by circumstances, almost unknown to our ruder ancestors.

Dr. Lindley was born at Catton, near Norwich, on February 5th, 1799, where his father, Mr. George Lindley, a portly and robust Norfolk-man, was a nurseryman, and to whom we owe the "Guide to the Orchard and Kitchen Garden," a work of considerable usefulness and merit, but which never, somehow, met with the appreciation which it deserved. Dr. Lindley was educated under Dr. Valpy, at the Grammar School of Norwich—that city of botanists—and he left there at the age of sixteen, and remained with his father for some years. In 1819 he published a translation of "Richard's Analyse du Fruit," and this was followed by "Rosarum Monographia" in 1820. Previous to the appearance of the latter, Lindley had, in consequence of his father's failure in business, come to London, where, through the introduction of his friend Mr., afterwards Sir William, Hooker, he was introduced to Sir Joseph Banks. Through the recommendation of the latter he was em-

ployed by Mr. Cattley to edit "Collectanea Botanica," which appeared in 1821; and in the same year he published "Digitalium Monographia." Soon afterwards the formation of the Chiswick Garden of the Horticultural Society was commenced, and of this, in 1822, he became Garden Assistant Secretary, at the salary of £120 a-year, there being another Assistant Secretary whose duties were chiefly confined to the London business of the Society. In 1823 he married the daughter of Anthony Freestone, Esq., of St. Margaret's, Southelmham, Suffolk. In 1826, through the misconduct of the then Assistant Secretary of the Society, Lindley was appointed to that post, having to attend daily at the London office, in Regent Street, as well as at the Garden; and this post he held up to 1858, with, however, a change of title in 1841 to that of Vice-Secretary, when, on the retirement of Mr. Bentham from the Secretaryship, most of the duties of the latter office were transferred to Dr. Lindley. The interval between 1826 and 1841 was a precarious one for the Horticultural Society; a heavy debt had accumulated, partly in consequence of the immense cost of the old hot-pressed quarto "Transactions," embellished with expensive coloured plates, partly in consequence of the formation of the Chiswick Garden, but more than all from a generally lavish expenditure. The crisis arrived in 1830; there was a rupture between Mr. Lindley and his friend Mr. Sabine; there was a prolonged investigation into the Society's affairs; many things that were objectionable in the management were disclosed; the debt was large, and the members' subscriptions were greatly in arrear; but the resources and the vitality of the Society were still great, and no one thought its position hopeless. These circumstances led to the retirement of Mr. Sabine, the Secretary, a high-minded and honourable gentleman who, however he may have erred in the administration of some of the affairs of the Society, had done more perhaps than any man to raise it to a position of usefulness, and to further the objects for which it was founded. After Mr. Sabine's retirement a large share of the active duties of the Secretary devolved on Mr. Lindley, and most assiduously did he perform them. By degrees the Society recovered its position; exhibitions, which had been tried before and failed, were re-established on a new basis, and became fashionable, and the result was a large accession to the funds and a great reduction of the heavy debt. This once touched a point so low that its speedy extinction seemed probable; but evil days came; weather was unfavourable; a Chiswick fête came to be regarded as synonymous with a wet day, the attendance fell off, and the number of the Society's members, too, affairs became desperate, and that which had never been entertained in 1830 under a much heavier load of debt, the break-up of the Society—

seemed imminent. Dr. Lindley then not only resigned his salary, but made a considerable advance for the assistance of the Society through its difficulties. Its subsequent history under the Presidentship of the late Prince Consort, and that of his esteemed successor in that office is too recent to need recapitulation.

As a botanist and vegetable physiologist Dr. Lindley has rendered eminent services, though none of his systems of classification, and they were many, ever met with extensive adoption; his descriptions of plants were short, and the salient points were seized upon; and as a lecturer, though not very fluent, and never eloquent, he was lucid, full of facts, and illustrated these so that his meaning could never be mistaken. His lectures were arranged beforehand with great care as to the sequence of the points to be fixed on the mind, and these, wherever possible, were accompanied with some apt illustration, and thus the memory was greatly assisted, as well as the after-study of the subject. In his writings, also, even when dealing with the most complex subjects, he was likewise singularly clear.

His botanical works, besides those already named, were numerous, and consisted of a "Synopsis of the British Flora" (1829), in which British flowering plants were arranged on De Candolle's system; "Outlines of Botany" in 1830; and in the same year an "Introduction to the Natural System of Botany," in which the system propounded was a modification of that of De Candolle, but throwing apetalous and polypetalous plants together, and consequently altering the sequence of the natural orders. An "Introduction to Botany," giving an account of the organs and functions of plants, appeared in 1832, and this, much enlarged, reached a fourth edition in 1848. "Nixus Plantarum" followed in 1833, and in this the author threw the natural orders into cohorts, and these again into groups called nixus (tendencies), depending on the albumen as a primary character. "Ladies' Botany," in the form of letters, appeared in 1834; a "Key to Structural and Systematic Botany," being a combination and revision of the "Outlines" and "Nixus," in 1835; and in 1836 his "Natural System of Botany," being a second edition of the "Introduction" published in 1830. In this the arrangement was nearly the same as that adopted in the "Nixus." In the years 1837 and 1838 appeared "Flora Medica," being an account of medical plants found in different parts of the world, subsequently enlarged, and published under the title of "Medical Botany;" the treatise on "Botany," published by the Society for the Diffusion of Useful Knowledge; and a "Monograph of Victoria regia," of which only twenty-five copies were published. In 1839 "School Botany," which has passed through several editions, was first brought out; and in 1840 the "Theory of Horticulture," a title changed,

on a second and much enlarged edition appearing in 1855, to the "Theory and Practice of Horticulture." This work, which was dedicated to the memory of Thomas Andrew Knight, Esq., of Downton Castle, was translated into German, Dutch, and Russian, and was sufficient of itself to have won for its author a great name. It is decidedly the best and most generally useful of Lindley's works, and so he considered it, with perhaps the exception of the "Vegetable Kingdom." In 1841 came "Elements of Botany," and in the same year he, in conjunction with Sir Joseph Paxton and others, established the "Gardeners' Chronicle," as editor of which he acted till within a few days of his death. The task of editing that journal, his labours in connection with the Horticultural Society, and his botanical lectureships, now left him little time for writing books, and accordingly, with the exception of the "Vegetable Kingdom," a voluminous work of 908 pages, with upwards of 500 illustrations, and the new editions of that work, the "Introduction to Botany," and the "Theory and Practice of Horticulture," his writings were confined to the periodicals with which he was connected.

There are, however, some works to add to those above enumerated, viz:—"Sertum Orchidaceum," a folio, with magnificent coloured plates, and "Genera and Species of Orchidaceous Plants," both of which came out in parts, the former completed in 1838, the latter in 1840; and "Folia Orchidacea," commenced in 1852, but never completed. When a much younger man he was engaged on Loudon's "Encyclopædia of Plants," which appeared in 1829, and most of the descriptions are his; he also revised "Paxton's Botanical Dictionary," a work of a similar nature though not descriptive. To Sibthorp's "Flora Græca," a magnificent work, of which only a limited number of copies were issued, he likewise contributed, and the whole of the ninth volume was written by him; also to Hutton's "Fossil Flora of Great Britain," to the "Penny Cyclopædia," and other works of a similar nature. Of the "Botanical Register" he was editor for many years until it was given up; and afterwards of "Paxton's Flower Garden," a beautifully illustrated but unsuccessful work, of which only three volumes appeared. He likewise edited the "Transactions of the Horticultural Society," and, subsequent to their discontinuance, the Society's octavo "Journal," and to both he contributed reports and descriptions of new plants; and in the "Transactions" there are also papers of his on tropical fruits, the rate of growth in plants, and a variety of other subjects. From 1829, when London University was established, till 1861 he was Professor of Botany at that Institution; there was then no Underground Railway to Gower Street, and many a morning, so early as four o'clock, he might have been seen on the road to London, performing

the distance on foot. He likewise lectured at the Apothecaries' Garden, Chelsea, and occasionally at the Royal and other institutions.

When the Potato disease produced such disastrous results in Ireland Dr. Lindley was one of the commission appointed by Sir Robert Peel to go there and report upon it, his colleagues being Dr. Lyon Playfair and Sir Robert Kane. He was also frequently consulted on vegetable products by different Government departments. In connection with the International Exhibition of 1851 Dr. Lindley took a very active part, and his labours on that occasion, prolonged for many months, added to his other work, brought on an illness. In 1858 he resigned the post of Vice-Secretary to the Royal Horticultural Society, and became Secretary, which he continued to be till, in 1863, at his own pressing instance, his resignation was accepted. His professorship at the London University he resigned in 1861; but in that and the following year he underwent a heavy amount of labour and anxiety in connection with the Exhibition of 1862, and

of which the colonial department, that which he took in hand, was perhaps the best arranged and most instructive in the building. It was, probably, anterior to this time that his disease commenced, but it was in that year that it first became evident.

Dr. Lindley was member of the Royal, Linnean, and numerous other scientific societies, and a corresponding member of the French Institute. In 1859, though then sixty years of age, he was one of the first to join the 3rd, or Chiswick, company of the 2nd (South) Middlesex Volunteers, setting an example, as a private in its ranks, to younger men than himself, of perseverance in drill and ready obedience to orders.

Naturally impetuous, determined, and full of energy, he often said things that wounded the susceptibilities of others—this was his great fault; but during his long career his services to horticulture were great, and we shall not soon "look upon his like again." He was buried at Acton on Monday, the 6th of November.

## CALENDAR OF OPERATIONS.

### CONSERVATORY AND SHOW-HOUSE.

THE plants named in our last will mostly be over, and their places will have to be filled with other stove plants and forced things. *Eranthemum pulchellum*, *Justicias*, *Luculia gratissima*, stove *Jasmines*, *Euphorbia splendens*, *Epiphyllums*, and other plants which have been brought forward for the purpose, will now lend their assistance. Forced *Camellias* and *Orange trees* will come in by the end of the month, as well as early *Tulips*, *Narcissus*, and *Hyacinths*. If the roof is occupied by climbers let them now be well thinned out to admit as much light to the interior as possible; look to our last directions as to firing and cleaning.

### GREENHOUSE.

*Azaleas and Camellias*.—Both these, where not wanted to bloom early, should be kept cool, with a rather dry atmosphere; those which are to bloom next month will require very slight artificial heat to bring them on, the *Camellias* particularly. *Azaleas* will stand more heat, and should be syringed daily in bright weather, keeping the plants near the glass. *Cinerarias*.—Little can be done with these beyond what was advised last month. All specimen plants should now have had their final shift. Great care must be taken in watering and ventilating; water early in the morning, that the foliage may get dry before nightfall, or mildew may follow; where such has made its appearance, a slight dressing of sulphur is necessary to eradicate it. Peg out the leaves of specimen plants, so as to let them have the full action of light and air. Remove

all small suckers and superfluous leaves, and be cautious not to allow any frosty draughts, which will cause the foliage to curl. Keep as near the glass as possible. *Hardwooded Plants*.—These will require free admission of air on all opportunities. Do not light the fires to any extent, except occasionally to dry the house and to keep out frost. On this point, we prefer covering the glass in severe weather with some protecting material to making strong fires. Let the plants be kept clean, and free from dust. *Pelargoniums*.—Any plants which require shifting should be done at once. Keep them close for a few weeks, until they have struck root into the new soil. Avoid keeping much fire at this season; a moderately dry heat, just excluding frost, will be sufficient; however, the fancy varieties do best in an intermediate-house. Water in the morning for the house to become dry by the middle of the day. Look over frequently, and pick off any decayed foliage. Stand the plants as thinly as your room will allow, and also keep the shoots tied out frequently, so that they may get a free circulation of air through them. Spare no labour to keep the plants in a healthy vigorous state.

### FORCING.

*Forcing-ground*.—Forced vegetables will now be in demand, for which reason the production of Dwarf Kidney Beans, Sea-kale, Asparagus, and Rhubarb should be attended to regularly, so as to keep up a succession. If our previous advice was taken, to plant a pit or two of dwarf Beans where there were means of heating, they will now prove in-

valuable. Fill a few lights with Asparagus every two or three weeks, to keep up a succession during midwinter; a hot-water pit is the best place for this useful root. Parsley, Endive, and Lettuce, in frames, should have an abundance of air daily, and the same rule applies to small Cauliflowers and Lettuce for the spring. A slight hotbed should now be got ready for a sowing of Horn Carrot and frame Radish, and a few early Potatoes may be put in heat to sprout. *Peach-house*.—It will not be desirable to apply fire heat by night, unless the house falls below 40°, until the buds are well swollen and ready to open; but a little fire heat may be given by day in dull cold weather, so that it does not exceed 55°. When a sunny day occurs, take advantage of it by closing the house early; in other respects air should be admitted daily, that the buds may break strong and produce bold perfect blooms, when there will be no fear about their setting; if any part of the border is outside the house, it should be protected from wet and frost by a covering of leaves, and thatched. Dress and train the next house, for bringing forward by the middle of the month. *Pinery*.—Where fruit is required to ripen in May, those plants which have been longest rested should now have additional heat to induce them to throw up; the bottom heat, too, should be increased, either by turning up the bed, or replunging the pots; or, if heated by hot-water pipes, putting on more heat. When the plants are well supplied with bottom and top heat water should be given to the roots; this excitement to grow will most probably result in the greater part of them showing; the top heat should be as dry as is practicable. We know a good grower who always at this season puts his plants in a flued pit to get them up, and it certainly produces the effect more quickly than pipes. For other Pines, consult our last directions. The stock of fruiting plants intended for summer should now be kept quiet at about 60° night, 75° day. *Vinery*.—The Vines started last month will now soon break. Thin out the buds as soon as the fruit is discernible, and stop the shoots one joint above the fruit, when grown sufficiently long. The night temperature may be raised by degrees to 60° at night, increasing this to 65° and 68° by the time the Vines get into bloom. To this may be added 10° extra for the day temperature when the weather is bright, but during dull weather work more slowly, that a sufficient amount of light may accompany the growth of the young wood. The second house should be dressed, trained, and the heating apparatus got ready for starting the Vines, so as to keep up the required succession.

#### KITCHEN GARDEN.

If a sowing of the Sangster's No. 1 Pea was not made last month, no time should now be lost, planting them on a dry warm soil, not over-rich, but where they can be protected from the cutting blasts of March. Look to

them after sowing, for mice, which very frequently spoil the crop unobserved. A small crop of Mazagan Beans may also be planted.

#### FRUIT GARDEN.

*Hardy Fruit*.—Where wall fruit trees have been much infested with insects, it is a good plan to unnailed them at this season, pick off the shreds, and to boil those that will come into use again, to destroy the eggs of insects; the best of the nails, too, after being heated in a shovel over a hot fire, and well shaken to remove the dirt from them, should be dropped into linseed oil; the walls may then be washed over with a wash composed of cement and Spanish red (for colouring), adding a little sulphur vivum. Where walls are old and the trees much infested with insects during the summer, we have found the above plan assist materially to keep the trees clean afterwards. Pears and Plums infested with scale should be dressed over with the Gishurst compound, using from three to four ounces per gallon; and the same composition may be applied to any trees on which insects have been troublesome the past season. Continue the pruning and training of hardy fruit trees as the weather permits, and protect Figs by tying the branches together and wrapping haybands round them, or thatching the trees with fern or straw. Look to the fruit-room, and remove anything decaying before it infects adjoining fruit, keeping the air and temperature uniform, as advised in our last.

#### FLOWER GARDEN AND SHRUBBERY.

Alterations in this department, including earthwork and turfing, may be proceeded with when the weather suits. Deciduous trees and shrubs may also be planted, but unless with the very hardiest evergreens, which may be planted almost any time, we should defer the others till spring. Where the border soil of shrubberies is exhausted, a good dressing of dung should be added; now is a good time to thin out and prune deciduous shrubs. Rose-borders should be well dressed with manure forked in, or soaked with manure water. Keep the grass free from leaves and frequently rolled.

#### FLORISTS' FLOWERS.

*Auriculas*.—These should be kept quiet at this season. Give them only sufficient water to keep them alive, but keep them clear of all dead foliage and aphides, and give plenty of air. *Carnations and Picotees*.—These will now require going over to clear them of all dead foliage, and to slightly stir the surface of the soil; give scarcely any water, and keep the lights off during fine weather, and tilted at the back on all occasions, if the weather is at all open, when the lights cannot be entirely removed. *Dahlias*.—Seed may be cleaned during this dull time, and wintered in a tolerably dry place; damp or very dry situations will be alike injurious. Seed should be cleaned and stored in a dry, but not too dry a place.

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